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## **Transformational Leadership Style and Team Innovation: The Moderating Role of Leaders' Emotional Intelligence**

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### **Abstract**

Organizations around the world continuously confront a wide range of challenges, risks and obstructions occurring in dynamic and complex business environment. These vulnerabilities keep on menacing their sustainability and appropriate functioning. Given such uncertain external pressures, the capabilities of employees working in teams within these organizations have become crucial and by time evolving as their viable assets. Business leaders are often tested for their agility in response, resource base sufficiency and innovative outcomes through unpredicted crises. Leading in tough times is itself a toughest challenge in face of unparalleled environmental pressures. It is therefore important to understand and explore what entails a successful leadership role for teams to remain innovative given any drastic change occurs. The objective of intended research was to address gaps in the understanding and comprehension of team innovation through leadership and leaders' emotional intelligence in order to identify how leaders derive their teams in uncertain business environments. This study determined the influence of transformational leadership on team innovation with emotional intelligence of leaders as a moderating variable. The results showed that a relationship exists between transformational leadership and innovation in teams in an uncertain environment. Transformational leadership boosted employee innovation in teams. Accordingly, emotional intelligence has been seen as ability of leaders to make a set of norms that recognize employees in teams; yet, unpredicted effect of emotional intelligence on the relationship between transformational leadership and team innovation has been witnessed in this research.

**Keywords:** Emotional Intelligence, Online Businesses, Team Innovation, Transformational Leadership, Uncertain Business Environment.

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### **1. INTRODUCTION**

Organizations around the world continuously confront a wide range of challenges, risks and obstructions occurring in an ever

changing and complex business environment. These vulnerabilities keep on menacing their sustainability and appropriate functioning. Given such uncertain external pressures and circumstances, the capabilities of employees

working in teams within these organizations have become crucial and by time evolving as their viable assets (Paltzer, 2020).

Unprecedented changes occurring in the environment bring distress for the organizations, leaders, and employees due to not being proactively prepared enough to develop an effective response to such pressures and traumas. Leadership role in an organization includes confronting and dealing with unnumbered challenges in a fluid and turbulent environment. These challenges might comprise of various factors such as economic and financial turmoil, internal organizational politics, stakeholder management, regulatory changes, resource scarcity and rivalry, technological advancement, competitive rivalry, data and information security, acquisition and retention of experienced and qualified employees, natural disasters, and pandemic caused business disruptions among many others. For example, organizational innovation has driven by pandemic COVID-19 and digital transformation to adapt for environmental change (Gabryelczyk, 2020). In the organization, many scholars proposed that individual' innovation is depended on social circumstances a leadership is one of the essential contextual factor of the team innovation (Lim, and Moon, 2022). Furthermore, it has been noticed that innovative behavior in the team influenced by transformational leadership. Similarly, growing literature found a significant association between transformational leadership and innovation (Jung, Chow and Wu, 2021).

Business leaders are often tested for their agility in response, resource base sufficiency and innovative outcomes through unpredicted crises

and threatening risks. Leading in tough times is itself a toughest challenge in face of drastic changes and unparalleled environmental pressures. It is therefore important to understand and explore what entails a successful leadership role for teams to remain competitive and innovative given any drastic change occurs. Real time past scenarios and success stories of fortune organizations have shown that adaptive and transformational leaders have not only survived but also prospered in circumstances of collapse and stressing change. The idea of the transformational leadership positively impact on the innovation. For example, transformers leaders act as role model of innovation (Jun and Lee, 2023). It is also found transformational leadership and innovation has seen into practice (Evered, Hartel and Neale, 2001).

### ***1.1 Pakistan and challenges***

Innovation and creativeness are considered vital to the development, navigation and progression of any nation as we have obvious instances of the developed economies in the world. According to the report of the Global Innovation Index (GII) 2016, Pakistan ranked 119th among 128 nations. The ranking was based on the score obtained on 83 different parameters for innovation. This indicates that Pakistan lags in keeping pace with developed as well as emergent developing nations, and because of the lack of investment and exploitation in innovation, we are still combating against same old problems. If we have to make Pakistan a leading country in the world, we have to promote creativity and innovation (Nayspak, 2017). Pakistan's flourishing online business scene has merely contributed to digital innovation. New businesses are inadequate of

the capable human resources with skillful expertise and monetary investment to capitalize upon their firms' innovation. SME sectors are slow to exert maximum efforts and pool-in resources, resulting in the uneven monetary progression of our Country. Our organizations majorly lack in terms of institutionalizing transformative management and legitimate governance for motivating teams to bring improvements and inventiveness in existing and new products. Substantial levels of innovation are restrained in entrepreneurial firms in designing innovative products due to the lack of self-regulatory and positive coping functions demonstrated by their teams. Organizational leaders lack proactive personalities that are a significant predictor of team innovative behaviors and outcomes, thus unable to seek and seize the opportunities hidden in the external environmental turbulence during hard times (Nayspak, 2017).

Pakistan's thin exports' market shows that almost all entrepreneurial firms, be they big or small, are engaging their total efforts in previously discovered marketplaces and products, and therefore playing in the same antique rivalry. Consequently, team innovation also fails in Pakistan due to not meeting end users' needs. This is because successful team innovation also requires stimulating triggers, precisely a radical shift in the market shift or advancement in technology. This requires organizations to acquire and capitalize upon innovative and agile teams that bounce forward the adversaries of unprecedented crises events. It is hence, necessary for the persistently struggling companies' leaders to establish a culture of team

innovation in their organizations by building and capitalizing upon proactive teams (Yang, 2020).

Team innovation is hardly derived as organizational leaders fail to develop tough teams having the least capacity to think beyond the box and create operational excellence with innovation. Our organizational leadership reflects defensive behaviors, policies, practices that prevent its teams from making errors and learning from them, at the same time, prevents them from discovering the causes of the threats and mistakes being made (Paltzer, 2020). Organizational leaders have consciously or unconsciously induced defensive behaviors among our teams and made them risk-avoidant, which is killing for the innovation outcomes. But to avoid the pitfall of risk-avoidance, leaders have to mobilize much psychological effort to continuously monitor 'weak signals' conducive to 'big problems' by capitalizing upon team spirit and its ability to develop an adaptive response capacity (Ahmad, 2018).

### **1.2 Research gap**

Despite its importance, fewer research studies have been earlier conducted with regard to leadership and innovation. Specifically, additional research calls for investigating the impression of a leadership role for the team as well as organizational performance (Carmeli et al., 2013). Few research studies focusing on the leadership roles and their teams in driving a company's innovation have been done despite the rising importance of the issue (Paulsen et al., 2013). Consequently, it calls for new research seeing the uncertainties, changes and advancement occurring at a fast pace in the current business environment. It's critical to look

into the dimensions of leadership roles carried by the leaders in influencing and sustaining innovation in their teams (Hunt & Conger, 1999; Avolio and Yammarino, 2002). Simultaneously, little has been investigated how and really do teams innovate under certain leadership support in times of large scale turbulence and uncertainty occurrence? Conversely, most of the previous researches are centered on transformational leadership, largely they lack in distinguishing between team creativity and team innovation (Hughes et al., 2018). This limits our attention to gain knowledge and insights on what traits and behaviors are required by the leaders in stimulating innovation and creativity outcomes in their teams, hence numerous research gaps identified in this regard call for further information instigation over this topic (Anderson, Potocnik, & Zhou, 2014; Mascareño, Rietzschel & Wisse, 2020). Existing researches root their attention towards identifying the most suitable behaviors and traits constituting effective transformational leadership role in uplifting their followers' innovation, yet integrating it with the emotional intelligence of leaders, an emergent idea with its strong base for increasing employee satisfaction and commitment to the job is under researched (Palmer et al., 2001; Antoniou, 2005; Kumar, 2014). Moreover, in view of the scarce literature, it also imperative to take into account the empirical assessment of the fundamental mechanism of a team focused transformational leadership style for innovation behavior outcomes of the teams (Jiang and Wang, 2015; Afsar and Umrani, 2019). It is recommended to examine what is the underlying mechanism that links the transformational leadership role with innovative work performance of the teams (Afsar

and Umrani, 2019). Extra-effort, effectiveness and satisfaction professed by the employees in public and private organizations reflect a significant and positive relationship between emotional intelligence and transformational leadership outcomes of these both variables proposed for future research directions. (Biswas and Rahman, 2017). Prior research found there has direct impact of transformational leadership style on the team innovation (Jun and Lee, 2023). In sum, transformational leaders also act as effective appeal for the team and setting down the best expectations (Aminah et al., 2022).

The objective of our intended research is to address the identified gaps on the understanding and comprehension of team innovation through leadership and leaders' emotional intelligence in order to identify how leaders derive their teams in uncertain and changing business environments. The present study will determine the influence of transformational leadership on team innovation with emotional intelligence of leaders as a moderating variable. This research contributes to the evolving conceptualization and abstraction of the relationship established between transformational leadership and team innovation in online business organizations sustained by the emotional acumen of the leaders in supporting their followers for innovative work behaviors (Kumar, 2014). Moreover, transformational style of the leaders motivate to team and are positive associated with innovative behavior (Bednall et al., 2018).

Additionally, this study explains how organizational senior management on leadership position can promote innovation in their working teams to bring improvements and inventiveness

in their objectives, processes, products and services. Likewise, linking contingent support of leaders' emotional intellect in leading their team members for successfully embracing changes in face of substantial turbulence occurring in the external business environment is also one of the salient contributions of this study. In fact, transformational leadership subsequently positively associated with innovative performance of the team (Rampa and Agogue, 2020). This research will serve as an eye opener and guide for the newly emerging and established entrepreneurial and corporate leaders as well as their teams in online business to stay abreast of the ongoing uncertainties and advancements. In line with the objective of the study, our research tends to probe the answer to the following question:

**RQ:** *How do transformational leaders influence innovation in teams using their emotional intelligence within online business organizations?*

## 2. LITERATURE REVIEW

The leadership concept is the assertion of Lord and Freiberg, (1999) who have researched this area with the basic aim of moving away from accepting leaders as individuals who have specific characteristics. They suggested that the lessons derived from transactional and transformational approaches might end up having a greater impact on the ongoing dynamics of the employees' demands as well as the organizational demands. Managers need to be in tune with the employees' demands, perceptions, and expectations. However, employees, on the other hand, should function as a team rather than just an aggregate of individuals, whereby their managers can represent the general interest of

employees collectively (Rosete and Ciarrochi, 2005). Transformational leadership is one of the most studied approaches in current times. From the last three decades it's the most researched topic in academia and management practitioners because of its practicality in organizations (Northouse, 2010, Ergeneli et al., 2007). In regard, Chollathanrattanapong (2022) found that transformational style among the leaders highly affected on team innovation behavior and indirect impact on the job characteristics.

### **2.1 Transformational leadership and team innovation**

The theory pertaining to Transformational Leadership posits its noteworthy role for leaders to play in stimulating personal development of their followers and teams as well as encouraging organizational change.

This theory endorses the support of the leaders in supporting their teams toward meeting and exceeding the performance expectations (Avolio, 2005). Innovative and R&D intensive organizations rigorously uphold the leader team relationships, where team leaders influence and capitalize upon the innovative work performance of their employees working in interdependency by sharing specialized and diverse knowledge and competencies to maximize innovation outcomes (Gillespie and Mann, 2004; Su et al., 2020). For teams to be innovative, it is important for leaders to provide them with the opportunities that uplift their intellectual and creative capabilities (Hunt, 2005; Garcia-Morales et al., 2008; Sauermann and Cohen, 2008; Herzog, 2008). Transformational leaders inspire, influence and challenge their team followers to contest their prevailing mindset and for granted assumptions

by articulating a strong and clear visionary direction, and stimulating their intellectual capacity to bring change within the organization (Bass and Riggio, 2006; Eisenbeiss et al., 2008).

Team innovation is also incited when transformational leaders present a symbolic picture by exhibiting creative and eccentric behaviors and action (Bass and Riggio, 2006). Moreover, for team innovation to be encouraged within the organizations, transformational leadership can play chief role through personalized mentoring and individualized attention towards the needs of each team member (Bass, 1985). Previous studies conducted on R&D teams of the organizations found a supportive relationship between transformational leadership and revolution actions (Eisenbeiss et al., 2008). Transformational leadership helps directly as well as indirectly increase innovation in teams through instilling an atmosphere supportive of novelty and advancement (Jung et al., 2003; Pei, 2017). Transformational champions embed within the organization's creative values among the members of the teams, help them explore new ways of solving problems and provide them a healthy creative atmosphere where innovative outcomes are highly treasured (Mumford & Gustafson, 1988; Amabile, 1998). As advocated by Mahmood et al. (2019), that creative process commitment and involvement of the teams are improved through strongly contributive role played by their transformational leaders. They offer flexible and autonomous work environment conducive to their creative and innovative outcomes (Li et al., 2016). Under the increased complexity of the task and innovation support,

Mahmood et al. (2019) found that transformational leadership holds a significantly positive impact on involving teams in creative processes and innovative work designs. Transformational leaders thus gain a substantially positive impact of team innovation, by inspiring a learning motivation in their employees and boosting their inventive work behaviors (Ayob and Zainal, 2011; Wang et al., 2015; Al-Zu'bi et al., 2017; Afsar and Umrani, 2019) under complex circumstances where they feel strong affinity with their task and execute innovative task actions and behaviors (Li et al., 2019). Leaders especially in retail service stores where customer interface is higher, provide autonomy to their team members in contributing to the knowledge they gain while (Jiang and Chen, 2018) interacting with and addressing customers' demands and preferences (Ye et al., 2012; Tho et al., 2020) thus come up with innovative ideas and ultimately overall team innovation increases (Mascareño et al., 2020). Moreover, transformational leadership indirect impact on the innovative behavior of the employee (Michaelis, Stegmaier and Sonntag, 2009). Similarly innovative behavior has reported positive associated with charismatic leadership style (Jun and Lee, 2023). Results of Khan, Khan and Ahmed (2021), transformational leadership found significant association with innovative work behavior among employee. This leads us to propose the following hypothesis:

*H<sub>1</sub>: Transformational leaders play a substantial role in enhancing the innovation in teams*

**2.2 Emotional leadership as moderator - transformational leadership and team innovation**

Kim (2017) studied that leaders who underestimate emotional intelligence are likely to fail due to their incompetence to motivate followers. Carmeli (2002) acknowledged that senior managers are successful in the workplace because managerial skills, especially emotional intelligence improves their work attitude. Managers' work attitude will, in turn, influence the performance of employees. Similarly, Emotional Intelligence is often used regarding the ability to perceive, understand, and manage the emotions of both the self and others to accomplish personal and collective goals (Goleman, 1999). Emotional Intelligence can be conceptualized as either ability (Ciarrochi et al., 1999), a personality trait (Schutte et al., 2010), or a competency that is required to expand positive attitudes toward work, and drive positive practices and better performance (Mayer et al., 2000). Emotional intelligence is considered as an effective attribute of leaders and provides support for the growth of an effective leader. Transformational leadership enhances employee commitment with the organization. Manager's transformational leadership style and moderating role of emotional intelligence support employee retention. Employees' effective and efficient performance outcomes show that transformational leadership and emotional intelligence positively affects employee behavior (Wang and Tao, 2018).

Research studies have advocated that Emotional intelligence moderates the relationship between transformational leadership and the outcomes of the employees of large organizations in China. Job satisfaction is considered the only indicator to measure the relationship of the transformational leadership style among

managers with the mediating role of emotional intelligence (Lam and O'Higgins, 2012). Being a leader's trait, emotional intelligence has a high significance among leaders as compared to non-leading individuals employed by multinational companies in Europe. Meanwhile, Trait EI is positively associated with tenure and negatively correlated with gender. Accordingly, the cognitive ability of managers is negatively correlated with age and gender. Afterward, the average tenure was high observed than non-leaders with no differences among age and cognitive ability (Siegling et al., 2014).

Pervez and Sabir (2019) supposed four gears of transformational leadership including inspirational motivation, intellectual stimulation, admired influence, and individualized considerations having been assembled with emotional intelligence scores by moderating the role of gender and age among managers of public sector banks in Pakistan. Subsequently, age and gender come upon insignificant while transformational leadership and emotional intelligence are found positively associated with each other. The behavior of transformational leaders is directly associated with emotional intelligence (Sivanathan and Fekken, 2002). The organizational structure is the fundamental constituent that empowers innovation. Likewise, effective leadership helps evolve work productivity among nursing staff. As regards, there has been found a relationship between innovative works behaviors with emotional intelligence with statistical measurements that show that head nurses who have high innovative work behavior possess higher emotional intelligence (Aladhyani, et al., 2020). Managers'

interpersonal emotional competencies and transformational leadership style in services industry are positively associated with each other and enhance supervisors' focus on human resource development (Vasilago et al., 2018).

Innovative behavior overlaps with other different ideas like innovativeness in the professional environment, innovative work behavior, entrepreneurship, individual activity, and employee-driven innovation. Emotional intelligence is positively correlated with the intelligence of leaders, team psychological safety, and leader-member exchange on team innovative performance. In order of this, team innovation performance has comparatively mediated the relations among emotional intelligence of leaders and team innovative performance. Simultaneously, leader-member exchange positively influences team psychological safety (Wang et al., 2019). Similarly, emotional leadership helps build up a positive workplace and constructively anticipate employee performance (Shahong, 2015). Transformational leadership is significantly associated with innovative work behavior likewise it increases trust on the leader and posts a positive impact on the employee's work engagement as evidenced among 281 China's multinational organizations. Moreover, a significant sequential mediation among transformational leadership, trust in leader, work engagement, and innovative work behavior among employees has been perceived (Li et al., 2019).

Furthermore, transformational leadership is positively associated with team performance and team innovation. Emotional intellect of leaders

regulates the relationship between transformational leadership and team performance and innovation among employees working at MNCs in Malaysia (Kee et al., 2020). Organizational Climate has also been assumed as an effective factor in the practices of innovative behavior within the organizations. In such a manner, organizational climate depends on leader and employer impacting and empowering innovative activities among their teams. Consequently, leadership styles have affected innovation within the organizations (Jung and Lee, 2016). Exploratory and exploitative learning of the team has immediate and positive impact on team innovation across the role of ambidextrous leadership style among retail services in two cities of Vietnam. By referring Tho et al. (2020), team exploratory learning positively affects by opening leadership behavior; besides, closing leadership behavior has a constructive impact on exploitative learning. Managers have to attain emotional intelligence skills for using their leadership role in capitalizing upon innovation among their employees. A substantial and positive effect of EI on all the dimensions of TL significantly emphasizes that just managers' professional competencies do not transform their subordinates but their emotional intelligence plays a key role in it. EI has a positive moderating impact on transformational leadership and team performance. One of the most important recommendations indicated that managers have to be trained to acquire emotional intelligence skills (Hunite, 2016). Furthermore, sustainable leadership can uphold innovation when it balances and builds up the referenced intelligence and related abilities. It is associated with cognitive and emotional intelligence due to

reflecting sustainable leadership, particularly while being innovative, will be introduced (Schüz, 2016). The existing literature showing emotional intelligence has direct effect on transformational leadership with mediating role of psychological empowerment of leader (Khan, Khan and Ahmed, 2022). Similarly, leaders with high emotional intelligence impact positively on innovative behavior of the team (Scott and Bruce, 2020). Alotaibi (2020) checked the role of transformational leadership and emotional intelligence in increasing employee innovative behavior at work space. Resultantly, following research hypothesis can be established in view of the literature support.

*H<sub>2</sub>: The support of transformational leaders for improving innovation in teams is conditional to their emotional intelligence.*

### 3. METHODOLOGY

#### 3.1 Measures, descriptive statistics and reliability

This research carried out the explanatory design by conducting a convenience sampling technique endeavoring the relationship between Transformational Leadership (TL) and Team Innovation (TI), keeping Emotional Intelligence (EI) of managers as the moderator in the uncertain business environment.

Moreover, the adapted instrument was divided into four parts, first taken demographics information. The Transformational Leadership scale was adapted from Carless et al. (2000) with 7 items based on a five-point Likert scale 1 as 'Rarely or Never' and 5 as 'Very Frequently'. Seeing the items with lower loadings and insufficient adequacy of the data, the items were

reduced to 4 and hence the reliability index of the TL construct (Mean = 3.8370; SD = .77369) was recorded to be 0.743. 6 items of Team innovation adapted from Axtell et al. (2000) (designed by Borrill et al., 1998) based on five points Likert scale 1 = 'Never' and 5 = 'A Great Deal'. The items with lower loadings and insufficient adequacy of the data were reduced to 5 and hence the Alpha reliability index of the TI (Mean = 3.7478; SD = .66067) was verified to be 0.645. A 26 items' scale of Emotional intelligence was adapted from Palmer et al. (2001) and it utilized a five Likert scale (5) Strongly Agree to (1) Strongly Disagree measure on 5 major dimensions consisting of 'self-awareness', 'empathy', 'social skills', 'motivation', and 'self-regulation'. The items with lower loadings and insufficient adequacy of the data were reduced to 11 and hence the Cronbach's reliability value for the construct EI (Mean = 3.4523; SD = .50627) was proved to be 0.666. Garson (2008) recommended a rule of 10. There should be 10 respondents for each question used in the research instrument (Garson, 2008; p.166; cited by Zhao, 2010). Thus, the sample comprised 207 respondents with a 38% response rate. The reliability values can be seen as depicted in Table 2 given below.

### 4. ANALYSIS AND FINDINGS

#### 4.1. Demographics

Table 1 shows the demographic characteristics of the respondents in the chosen sample. Focusing on the greater percentage of the demographic traits, it can be found that out of 207 respondents, 51.7% were males, with 55.6% falling within the age group of 35 to 44 years. Almost 84.5% of the respondents were employed in the private sectors. Concerning the sectoral

split of the employees working in online service-based businesses, the results showed that almost 31% of employees represented the education sector, 20% IT firms, 32% banks and

merely 16% respondents were from other industrial sectors. Around 52% of employees were MS/MPhil qualified and having a majority of working experience of up to 5 years i.e. 43%.

**Table 1:** Demographic Details of the Sample

	Frequency (N = 207)	Percentage
<b>Gender</b>		
Male	100	48.3%
Female	107	71.7%
<b>Age Group</b>		
24-34	91	44.0%
35-44	115	55.6%
45-54	1	0.5%
<b>Type of Employer Organization</b>		
Private	175	84.5%
Government	32	15.5%
<b>Industrial Sector</b>		
Education	64	30.9%
IT	42	20.3%
Banking	67	32.4%
Other	34	16.4%
<b>Firm's Age Range</b>		
Less than 10 Years	90	43.5%
Less than 20 Years	111	53.6%
Less than 40 Years	6	2.9%
Total	207	100%

*Note: Author's own work*

#### 4.2. Correlations

Analyzing the correlations through determining the association among the variables showed that there occurred a significant correlation of nearly 28% between Transformational Leadership and the Team Innovation ( $p$  - value  $< 0.01$ ), confirming that for increasing the innovation and incentives within teams working in online business, a true transforming, and inspiration role was executed and considered important for them. Certainly, the Emotional Intelligence of firms' leaders also was

significantly and affirmatively correlated (35%,  $p < 0.01$ ) with their transformational individualities. Conversely, it could be gathered that there was marked no evidence on the presence of a significant relationship between Emotional Intelligence of senior managers performing leadership roles and Team Innovation with an insignificant correlation value of 1.7% ( $p$  value  $> 0.01$ ). A compact and summarized view of the correlations, means and SD values along with internal reliability indexes is exhibited below in Table 2.

**Table 2: Descriptive Statistics and Correlation Analysis**

Constructs	SA	EMP	SS	MOT	DR	TL	TI
SA	-						
EMP	0.177*	-					
SS	0.009	0.266**	-				
MOT	-0.120	0.384**		-			
SR	0.001	-0.094	0.263**	0.452**	-		
TL	0.152*	0.225**	0.043	0.072	-0.035	-	
TI	0.248**	0.031	0.068	-0.082	-0.065	0.288**	-
			-0.141*				
<b>Mean</b>	3.452					3.387	3.748
<b>Std. Deviation</b>	0.506					0.775	0.661
<b>Reliability</b>	0.666					0.743	0.645

Note: Author's own work; \* Significance level 0.01 level (2-tailed). \*\* Significance at 0.05 level (2-tailed). In Table 2, TL is Transformational Leadership, TI is Team Innovation, five dimensions of Emotional Intelligence (EI) i.e. SA is self-awareness, EMP is empathy, SS is social skills, MOT is motivation, and SR is self-regulation.

### 4.3 Moderation -Hayes Process Approach

The given below Table 3 shows an associated illustration of hierarchical moderation regression analysis conducted for organizations dealing in online businesses in terms of a basic and an interaction model. In order for analyzing the direct effect of Transformational Leadership on the Team Innovation, and as well as an interaction/moderation effect of Transformational Leadership yet again on the Team Innovation in online business organizations, a 'hierarchical moderation regression analysis' was conducted. This helped in assessing both 'Base Model' and the 'Interaction Model'. On successfully satisfying assumptions of regression analysis, moderation regression was directed and established using the Process method.

Before proceeding any further, primarily the research involved validation and confirmation of regression's assumptions followed by 'Regression Analysis' that involved determining the deviation observed in the level of innovation among the teams by their leaders through exercising a transformational or change driven

role. Results showed that transformational leadership sustained a significantly positive effect on team innovation in the organizations exercising online businesses with  $\beta$  coefficient equal to 0.288 having significance value sinking below 0.05 ( $\beta = .288, p = 0.001$ ). This predicts the significance of the theoretical model and explains that an increase in the value of transformational leadership by single unit value brings an increase in team innovation in a positive direction by almost 29%.

Considering the context of organization doing their businesses online, the results of the analysis show that for Base Model 1, the predictor variable i.e. Transformational Leadership has a significant direct effect on the criterion variable i.e. Team Innovation ( $\beta = 0.288, p\text{-value} = 0.001 < 0.05$ ). This study involves interaction of five moderating variables to determine the contingent impact of TL on TI. Similarly, the moderating or regulating variable Self-Awareness also shows a direct and significantly positive effect on Team Innovation ( $\beta = 0.418, p\text{-value} = 0.000 < 0.05$ ) showing clear

evidence for the existence of strong support of controlling moderator, Self-Awareness. Contrarily, the controlling variables Empathy, Social Skills, Motivation and Self-Regulation exhibit completely insignificant effects on Team Innovation having Beta coefficients and p-values as  $\beta(\text{EMP}) = 0.057$ , p-value =  $0.329 > 0.05$ ;  $\beta(\text{SS}) = -.195$ , p-value =  $.115$ ;  $\beta(\text{MOT}) = -.146$ , p-value =  $.325$ ; and  $\beta(\text{SR}) = -.109$ , p-value =  $.349$  respectively. These coefficients contradict the significance of the moderation to create and impact and show a true indication for the absence of any support of these four moderators i.e. Empathy, Social Skills, Motivation, and Self-Regulation.

Furthermore, allowing for application of Interaction Model with the product or interaction term between an independent (x) and the moderating variables (z1, ..., z5) such that the interaction based relationship between Transformational Leadership and the five moderators i.e. Self-Awareness, Empathy, Social Skills, Motivation and Self-Regulation, the results depict that there is a significantly positive interaction based moderating effect of Self-Awareness and Transformational Leadership on Team Innovation of the managers ( $\beta = 0.346$ , p-value =  $0.000 < 0.05$ ). This can be decided that in online business organizations, taking existence of the transformational role of leaders escorted by their higher levels of self-awareness, the innovation with teams substantially increases. The rise in the value of R2 change i.e.  $\Delta R2 = 0.065$ , p-value =  $0.000$  grounded in moderation effect authorizes the existence of a strong

stimulus of self-awareness among transformational leaders, which ultimately leads to higher level of innovation in business teams working in online business during uncertain times. The statistical results have been exhibited in Table 3 shared below. On the other hand, the results depict that there are completely insignificant interaction based moderating effects of Empathy, Social Skills, Motivation, & Self-Regulation and Transformational Leadership on Team Innovation of the managers such that their coefficients and significance p-values are 1) 'Interaction Term 1':  $\beta(\text{EMP} \times \text{TL}) = -0.092$ , p-value =  $0.531 > 0.05$ ; 2) 'Interaction Term 2':  $\beta(\text{SS} \times \text{TL}) = 0.617$ , p-value =  $0.197 > 0.05$ ; 3) 'Interaction Term 3':  $\beta(\text{MOT} \times \text{TL}) = 0.156$ , p-value =  $0.803 > 0.05$ ; and 4) 'Interaction Term 4':  $\beta(\text{SR} \times \text{TL}) = -0.127$ , p-value =  $0.745 > 0.05$ ) This can be established that in online business organizations, taking existence of the transformational role of leaders escorted by their higher levels of social skills, empathy, motivation and even self-regulation, the innovation with teams remains unaffected. The decline in the value of R2 change for insignificant moderating variables i.e.  $\Delta R2(\text{EMP}) = 0.001$ , p-value =  $0.587$ ;  $\Delta R2(\text{SS}) = 0.016$ , p-value =  $0.068$ ;  $\Delta R2(\text{MOT}) = 0.006$ , p-value =  $0.272$ ; and  $\Delta R2(\text{SR}) = 0.005$ , p-value =  $0.325$  grounded in moderation effects proves the absence of any influence of social skills, empathy, motivation and self-regulation among the transformational leaders, which ultimately leads to lack of increase in innovation among the business teams working in online business during uncertain times. The statistical results have been exhibited in Table 3 shared below.

**Table 3:** Direct and Interaction Effects

Independent Variable	Base Model		Interaction Model	
	B	t	B	t
Constant	4.625	7.608*	4.923	8.279*
TL	0.288	5.126*	0.355	5.2106*
SA	0.418	6.2101*	0.320	3.763*
EMP	0.057	0.9788	0.053	0.544
SS	-0.195	-1.5844	-0.150	-1.835
MOT	-0.146	-0.9858	-0.097	-1.102
SR	-0.1094	-0.9389	-0.073	-0.986
TL*SA			0.346	6.3925*
TL*EMP			-0.092	-0.6270
TL*SS			0.617	1.2948
TL*MOT			0.156	0.2501
TL*SR			-0.127	-0.3258
Adjusted R <sup>2</sup>	0.113(TL)		0.057*(SA) -0.007(EMP) 0.008(SS) -0.002(MOT) -0.003(SR)	
$\Delta R^2$			0.065*(SA) 0.001(EMP) 0.016(SS) 0.006(MOT) 0.005(SR)	

Note: Author's own work; \*p-value < 0.05. In Table 3, Team Innovation is the dependent variable and TL is Transformational Leadership, five dimensions of Emotional Intelligence (EI) i.e. SA is self-awareness, EMP is empathy, SS is social skills, MOT is motivation, and SR is self-regulation.

## 5. DISCUSSION

Drawing upon the Magic Balancing Formula, this study aims to inquire the role of Transformational Leadership (TL) in the Team Innovation (TI) along with the moderating role of Emotional Intelligence (EI) of the Leaders during the uncertain environment. There is a relationship endured between Transformational Leadership and Team Performance along with moderating effects on Team Innovation in respect of knowledge on entrepreneurship (Kee et al., 2020). Previous studies evinced Emotional Intelligence relationships with Team Performance, which have perceived a significant positive relationship between emotional intelligence and team performance (Pearmen,

2011; Prentice and King, 2011; O'Boyle et al., 2011; Shamsuddin and Rahman, 2014). Results were deployed on the survey data accumulated from 207 employees according to a rule of 10 with a 38% response rate from different sectors from Pakistan.

The effort to improve team creativity and team innovation has appeared as an ongoing debate between practitioners, researchers, and policymakers. The role of Transformational Leadership of a manager is capable of determining Team Innovation. In particular, according to the H<sub>1</sub> hypothesis, Transformational Leadership was found to have a significantly positive correlation with Team Innovation. Thus, transformational leadership has a confined

positive impact on the innovative work design and creative process of the team (Mahmood et.al, 2019) by inspiring a learning motivation of the employees and incentive work behavior (Afsar and Umrani, 2019). On the other hand, Transformational Leadership has observed significant and affirmative relationships with Emotional Intelligence. Transformational behavior of the managers linked with the Emotional Intelligence (Sivanathan and Fekken, 2002) while Jin et al., (2008) also found a liaison between transformational leadership and emotional intelligence. Hence, regression analysis involved determining the degree of innovation among the team by exercising the transformational driven having significance value. Transformational leaders may help employees regarding enhanced motivation and intellectual stimulation meanwhile to share a convincing vision to work effectively toward accomplishing a shared goal (Zheng et al., 2016). Beside by analyzing the idea of Tung (2016) that transformational leaders guide team members to be innovative and creative in terms to enhance team performance. Furthermore, there has a significant positive impact of transformational leadership on team performance with the mediated effects of Team Innovation on the relationship between transformational leadership and team performance (Kee et al., 2020).

Likewise, looking at the H2 hypothesis entailing that transformational leadership improves team innovation in condition to the existence of emotional intelligence of the leaders. Subsequently, innovation is viewed as significant at the organizational level in manufacturing and business associations, it is similarly essential to

understand the relationship between leadership and innovation (Gunduz et al., 2016). Therefore, James et al. (2010) argued at the point when employees can comprehend and manage their own emotions, relationships with others become stronger, and performance increases.

Particularly, emotional intelligence supposed as an effective attribute of the leaders while transformational leadership enhanced the commitment of the employees with the moderating effects of emotional intelligence that encourages employee retention (Wang and Tao, 2018). Table 4 showed the contingent effect of emotional intelligence on the relationship between the transformational leadership and team innovation, the reflected results showed the significance of two models in which model fit's statistical significance rises ( $p < 0.05$ ) with an increase in R2 value. Oppositely, for Model 2, the interaction effect comes out to be insignificant ( $p > 0.05$ ). Hence, the value of R2 that the variation and the acute difference instigated in Model 1 is visibly higher than that of insignificance established in Model 2. In sum, innovation moves in their teams indicated no variance in a dependent variable then the transformational leadership and emotional intelligence alone impacting team innovation with the 'R2 Change' = .012 ( $p = .094$ ). The higher the emotional intelligence of the leader, the better they can get themselves as well as others, make positive things in the work environment, have an effective relationship with their colleagues, peers, and proficiency to improve performance (Jafri et al., 2016). Hunitie (2016) argued that emotional intelligence has a moderating impact on transformational leadership and team

performance. It is associated with cognitive and emotional intelligence (Schüz, 2016). This literature driven relationship does not support our study's results for moderating the role of emotional intelligence of transformational leaders for innovation in their teams.

The results derived from the "Process (Hayes Process)" technique and overall model (complete/total effect) reflected that significant impact of transformational leadership role on innovation in the teams  $F(2, 204) = 14.664$ ,  $p < 0.05$  while the complete moderation interaction effect shows a considerable insignificant impact on team innovation with  $p\text{-value} = 0.738$  i.e.  $p$  greater than 0.05. The following indications from the analysis showed that the H1 hypothesis supported which transformational leaders played a substantial role in enhancing the innovation in teams. Some facts are behind for supporting the relationship among transformational leadership and innovative work behavior instilled with persuasive inspirations, self-confidence, direction, vision, and goal. This leadership inspired intellectual stimulation, intrinsic motivation, and upheld innovation.

While the H2 hypothesis was not supported because of the insignificance of the moderating impact of leaders' emotional intelligence in the relationship between their transformational roles and improvement in and introduction of new products and services in online businesses. It evidently indicates an unsupportive role of H2 as it does not support the theoretical basis as shown in Table 4. From here on emotional intelligence has direct effects on the performance of the managers. At the same time, innovative work

behavior has moderating effects on the relationship between transformational leadership and manager performance (Supriyanto et.al, 2018). Although, emotional intelligence appeared as a moderator among the relationship of the Five-Factor Model (FFM) with employee creativity (Jafri, 2020) but did not upkeep with our results.

## 6. CONCLUSION

Encouraging team innovation is progressively a significant leadership function by referring to the empirical studies, the role of transformational leadership in inciting team innovation. Kee et al. (2020) proved that the leadership approach may impact on employee tendency to innovate. This study explored the role of transformational leadership in enhancing innovation in teams. A relationship exists between the transformational leadership and innovation in teams in an uncertain environment. Authors mutually argued that transformational leadership among managerial level may boost employee innovation in the team (Tung 2016). Accordingly, emotional intelligence has been seen as ability in the leaders to make a set of norms that recognize the employee among the team (Lee, 2019); yet, unpredicted effect of emotional intelligence on the relationship between transformational leadership and team innovation has been witnessed in this research. The insignificant moderating effects of leaders' emotional intelligence on the transformational role and innovativeness toward new products and services in online business have been inferred from the results of this study.

### 6.1 Future recommendations and Contribution

This study showed that the role of the transformation leadership style of the leaders in online business might boost the innovativeness of the team. Meanwhile, emotional intelligence is supposed to moderate the relationship between transformational leadership of the leaders and team innovation. These following results indicated in terms of transformational leadership and emotional intelligence ought to be used as maximally to obtain innovation in teams. This study showed in the order of transformational leadership has positively impacted on the team innovation. Therefore, different private and public sectors should be advised managers to use

transformational leadership to enhance team innovativeness. Further research may investigate the resilience of the transformational leadership among professionals with the moderating effects of teams' emotional intelligence. Certain control variables such as gender, age group or type of industrial sector can be considered on account of future research to empirically analyze if emotional intelligence of leaders causes impact on boosting innovation. Although studies have proved that the emotional intelligence of the leaders has been associated with organizational outcomes/creativity. Future research may explore the direct effects of emotional intelligence on team innovation with the intervening effects of the transformational and transactional leadership style of the leaders.

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