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Article

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Influence of Team Identification on Proactive Work Behavior and Task Performance: The Mediating Role of Team Support for Innovation

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Abstract

This study aims to investigate a model that applies team support for innovation as a mediating mechanism for the association of team identification (TI) with task performance (TP) and proactive work behavior (PWB) in the software companies. The sample encompasses 92 teams working in software companies in Pakistan. Data were collected from two sources: team identification, team support for innovation (TSI), and task performance data were collected from employees, while PWB data were collected from the team supervisor. Multi-level data was analyzed using structural equation modelling technique through Mplus, AMOS and SPSS software. Findings of the study revealed that team support for innovation plays an intervening role between team identification and its outcomes (PWB and TP). This study proposes that team support for innovation can effectively encourage PWB and TP. Therefore, managers and leaders of software companies who aim to achieve PWB and TP need to encourage team identification among the team members. The present paper links a gap relating to factors and antecedents that impact proactive work behavior and task performance in a multi-level research design.

Keywords: Team support for innovation, team identification, proactive work behavior, task performance, software companies, Pakistan.

1. Introduction

Surviving and flourishing in the current turbulent and dynamic business environment has been a challenging job for the organization. In the current business scenario, to the prosperous, it's become necessary for the organization to emphasize more proactive work behavior along with real task performance (TP). To address the necessity of time, numerous organizations have accepted the importance of proactive work behavior (PWB) as an important factor for the efficient functioning of the organization to meet future challenges successfully (Kumar & Shukla, 2022; Wu & Parker, 2017). Along with the involvement of proactive work behavior, it is also essential for employees to perform job tasks effectively.

Team identification has a significant impact on employee attitudes and behaviors (Lee et al., 2015), including the IWB (Litchfield et al., 2018). Team identification is essential for adapting to the dynamic business environment and encouraging proactive behavior among employees to achieve organizational success. In this study, we place emphasis on team identification as an important factor that promotes proactive behavior among individuals. Team identification promotes loyalty, trust, and trustworthiness among the team members (Han & Harms, 2010), which increase motivation by giving them psychological ownership of their work, thereby increasing the proactive work behavior of employees. Earlier studies argued that team identification has an optimistic effect on work-associated outcomes (Lee et al., 2015; Litchfield et al., 2018). Team-oriented individuals exhibit higher levels of motivation, responsibility, and proactivity in enhancing their work performance. They demonstrate creativity and innovation by adapting promptly and flexibly to changes in the supportive environment for innovation. Prior research has demonstrated that team identification has a positive impact on creativity (Hwang & Choi, 2020), innovation (Litchfield et al., 2018), knowledge sharing (Liu & Li, 2018), and team performance (Lin et al., 2017). The investigations have demonstrated the positive effects of team identification. However, they have not prioritized investigating the mechanisms that enhance the favorable impact of team identification on employees' proactive work behavior and task performance.

In proactive work behavior (like creative and innovative processes), more engagement is required, which may detract an individual from real task performance (Harari et al., 2016). According to the attention capacity theory, individuals have finite cognitive resources and attentional capacity (Kahneman, 1973). Consequently, employees are not intelligent enough, except in some exceptional cases, to apply equivalent resources to fulfil competing work demands. A more superior focus on task performance may detract an individual from creative behavior, and a more superior focus on creative behavior may detract an individual from task performance (Scott, 1995). Although the ultimate aim of proactive work behavior is to increase task performance, individuals might have fewer cognitive resources and less attentional abilities to perform core tasks while engaging in innovation.

For equal involvement of both extra-role behavior (proactive behavior) and in-role behavior (task performance), more supportive team behavior is needed, like support for

innovation. Team support for innovation (TSI), referred to as the anticipation, endorsement, and applied support of initiatives to introduce novel and improved methods of doing things in the work setting (West, 1990), is a crucial process to promote proactive work behaviors in organizations along with task performance. Although many studies back up the connection between TSI and innovation work behavior, very few studies have investigated the predictors of TSI (for exceptions, see Scott & Bruce, 1994; Farnese & Livi, 2016). Team identification (TI) might enhance the TSI.

Team identification denotes the course of practices through which each team member recognizes himself or herself in terms of team-shared attitudes, goals, values, and behaviors (Janssen & Huang, 2008). Correspondingly, the impression of team identification means that all team individuals observe the other team members as their own in-group members (Hogg et al., 2017). In the social identity process, team identification may be significant to team innovative behaviors (Gumusluoglu et al., 2017). Belongingness and oneness within the team may stimulate team members to assume the team's goals as their own, as they perceive them as emotionally interwoven with the team's destiny. When employees are recognized as part of a team, they place the team before themselves and emphasize shared goals.

We will expand our current understanding to address the gap in the existing literature. First, this study examines how team identification affects employee proactive work behavior and task performance in a top-down approach from team to individual. Second, we investigate the role of TSI as a mediator in the association between team identification and employees' proactive work behavior and task performance. Team support for innovation involves foreseeing, approving, and providing practical assistance for efforts to implement innovative and enhanced work practices in the workplace (West, 1990). Employees with a supportive climate for innovation are likely to exhibit a more demanding, open-minded, proactive, and innovative approach to achieving organizational success (Modliba et al., 2024). This investigation presumes that the supportive and innovative climate encourages the team members to be more proactive and task-oriented in their behaviour to achieve the objectives of the organization, along with routine task performance. By considering team support for innovation as a key process underlying the association between team identification and its outcomes, i.e., PWB and task performance, we seek to expand our understanding of how team identification improves employees' PWB and task performance.

In this research, we evaluate how team identification would impact proactive work behavior and task performance in response to researchers' queries for investigation from team to individual in a top-down approach (Prewett et al., 2018; Song et al., 2020; Xu et al., 2019). We are the first, as far as we are aware, to assess the cross-level effects of team identification on individual employees's proactive work behavior and task performance. We trust that investigating the cross-level impact that the dynamics of team identification

have on individual employee behaviors will considerably provide theoretical mastery of the effects of team dynamics across the diverse level of analysis (Prewett et al., 2018; Song et al., 2020; Xu et al., 2019).

2. Literature Review

2.1 Team Identification and Proactive Work Behavior

In the work environment of the 21st century, proactive behaviors such as voluntarily helping others (Li et al., 2010), taking the initiative (Meyers, 2020; Shin & Kim, 2015), and speaking up (Xu et al., 2019) are predominantly viewed as important where organizations constantly need to evolve and adapt (Grant & Ashford, 2008). Proactive work behavior is the self-initiative behavior of employees at the workplace. Employee proactive behavior can be defined as self-initiated revolutionary action to find opportunities and endeavor to lead innovation (Segarra-Ciprés et al., 2019). Proactivity refers to employees' future-oriented, change-focused, and self-starting behaviors (Unsworth & Parker, 2003). Proactive work behavior is anticipatory behavior at the workplace that employees may undertake to impact themselves and/or their surroundings (Grant & Ashford, 2008). Proactive behavior is characterized by the change-oriented, self-starting behavior of employees in the work setting that helps identify problems and suggest improvements to increase the process of innovation in the form of products or services that ultimately lead to performance (Anderson et al., 2014).

Proactive work behavior is an anticipatory behavior that employees adapt to impact at the organizational end and on their own to gain future positive advantages (Grant & Ashford, 2008; Ouyang et al., 2015). To promote employees' proactive behavior, an encouraging and motivating social context is required where employees can express their feelings and consider themselves part of the team. In this rapidly changing environment where employees' self-initiative behaviors are more meaningful and valuable to introducing changes (Kraus et al., 2012), proactive work behavior can be a significant predictor of innovation (Escrig-Tena et al., 2018). Thus, organizations need to create work environments that encourage employees' proactive behavior to take novel initiatives at work (Xu et al., 2019). On the basis of this, we hypothesized that team identification has a positive association with the proactive work behavior of employees.

- Hypothesis 1: Team identification is positively associated with employee's proactive work behavior.

2.2 Team Identification and Task Performance

Along with the involvement of proactive work behavior, it is also essential for employees to perform job tasks effectively (Crant, 2000). Task performance (TP) refers to fundamental actions that are expected or needed by the organization by individual employees (Williams & Anderson, 1991) and is simply known as work performance or in-role performance (Awan & Fatima, 2018). Task performance is the basic job description that is defined in the employee job description manuscript (Bacha, 2014). Task

performance or in-role behavior, comprises behaviors that are explicitly or implicitly related to the organization's fundamental objectives.

The social identity theory proclaims that the team members consider themselves part of the team and develop a psychological bond under the representation of team identification (Conroy et al., 2017). The psychological linkages strengthen cohesion and collaboration among team members, which may lead to improved performance of organization. The employees develop sense of belongingness with team members and feel more valued, owing to the team identification (Gumusluoglu et al., 2017). Employees who tend to develop feelings of ownership with their team are inclined to be more sincere with their job and express more attentive behavior to different tasks (Pearsall & Venkataramani, 2015). The employees exert higher level of efforts to achieve the organizational goals, exhibit responsible behavior, achieve prescribed role and get involved in proactive behavior (Kim & Beehr, 2017). On the basis of this, it can be hypothesized that:

- Hypothesis 2: Team identification is positively associated with task performance.

2.3 Mediating Role of Team Support for Innovation Between Team Identification and Proactive Work Behavior

Not only an internal stimulator (i.e., team identification) but also some sort of external support (like team support for innovation) is also needed to enhance performance (Bala, 2013), such as proactive work behavior and task performance. Researchers have also recommended evaluating the driver in a similar stream, which enhances team support for innovation (Farnese & Livi, 2016). Team support refers to providing knowledge-gaining opportunities to employees from different sources to improve their innovation capabilities to achieve the organization's objectives. Support for innovation represents encouragement to improve the current changing work environment, which is greatest when support is communicated and enacted. Employees working in more innovative, supportive environments are more likely to initiate innovative behavior (Dul & Ceylan, 2014) by being more involved in self-starting behavior. The firm focuses on innovative performance and regulates and facilitates suitable knowledge hubs for members of the organization to attain, assimilate and exploit knowledge to achieve the organization's objectives (Mokhber et al., 2018).

The inflated identification levels will inspire individuals to enhance their support towards team innovation. We recognize that there may be a possibility in a certain setup where identification does not lead to innovative employee outcomes. This scenario can happen in groups where team goals are not prominent, team goals are not effectively communicated to the employees, and individual employees are not fully agreed with the team objectives or how to execute them (Ashforth & Mael, 1989). Team identification enhances the motivation of the employees to link team goals with their own and produces an influential, stimulating role that encourages the persistent effort to support innovation (Song et al.,

2018) in the team. Individuals with high team identification have more willingness to achieve team goals (van Dick et al., 2007), like proactive work behavior.

Employees identification with the team encourages motivational environment (Van Der Vegt & Bunderson, 2005), ethical work behavior (Cheng & Wang, 2015), organizational citizenship behavior (Van Der Vegt et al., 2003), team performance (Widianto et al., 2024) and innovation (Song et al., 2018), which are ultimately leads to higher job performance (DeConinck, 2011). In the presence of higher team identification, the individuals tend to align their responses with team efforts (Litchfield et al., 2018) through proactive work behavior, and support the team interests, norms, and values to achieve the organizational goals (Tajfel & Turner, 1986). Team identification has been revealed to be related to innovation (van Dick et al., 2018), which can be induced through the PWB of employees through the mechanism of TSI.

- Hypothesis 3: Team support for innovation mediates the relationship between team identification and proactive work behavior.

2.4 Mediating Role of Team Support for Innovation Between Team Identification and Task Performance

Team identification is defined as “a sense of oneness” within the team (Johnson & Avolio, 2019) and the extent to which individual team members identify with their particular work team rather than the larger social group they belong to (Boyraz, 2019; Gundlach et al., 2006). It signifies an individual member’s feelings of belongingness to a specific team. It forces him or herself to be involved in such activities as support for innovation that enhances the ranking of the team among other rival teams. Team identification encourages individuals to participate in activities that are beneficial for the team and strengthen their links (Ruggieri & Abbate, 2013). Team identification is an important element in the workplace in fostering loyalty (Wu et al., 2012) of team members that enhances satisfaction (Prayag et al., 2020) and commitment (Liu & Li, 2018) by involving in more innovation supporting behavior (Akhtar et al., 2019) which eventually helpful in achieving assign task. Team identification has emerged as a key factor that profoundly influences employee's attitudes and behaviors (e.g., van Dick, 2004) that lead to task performance.

The theoretical explanation of social identity theory provides grounds for understanding the mediating role of TSI in the relationship between TI and TP. It proclaims that due to the sense of belongingness, individuals tend to involve in positive behaviors. Thus, when the team members identify themselves with the team, this will create a perception that the team is supporting innovation initiatives. This can be observed from the prior studies claiming team identification as one of the key predictors of positive organizational behavior, highlighting the role of TSI as an innovation-enhancing mediator (Pugliese, 2023). Similarly, prior literature stressed that highly identified team members perceive their team as a source of innovation facilitator and tend to deliver better performance in the organizations (Yang, 2023). The study also contended that TSI can work as a processing

mechanism between team identification and overall team effectiveness. Based on the arguments, it can be hypothesized that:

- Hypothesis 4: Team support for innovation mediates the relationship between team identification and task performance.

2.5 Theoretical Framework

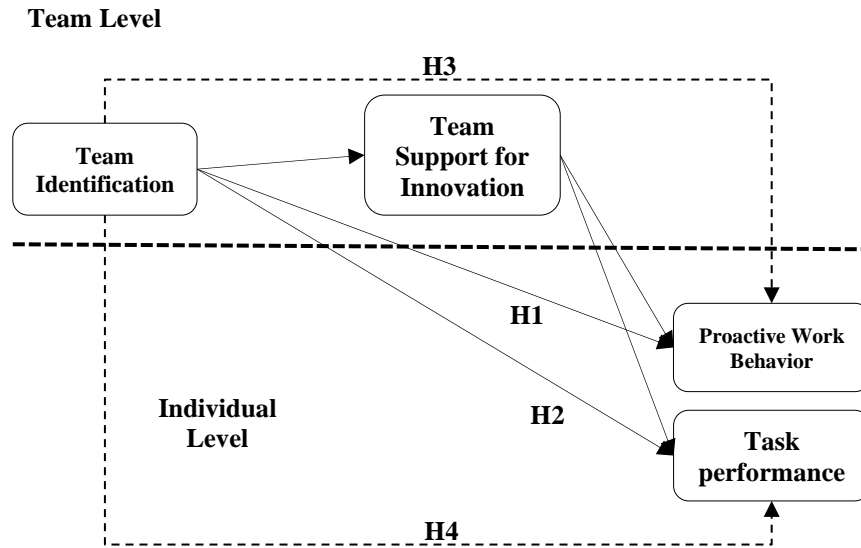


Figure 1: Theoretical Framework

The figure 1 exhibits theoretical model of the study. It can be observed that team identification and team support for innovation are based on team (group) level data. While the proactive work behavior and task performance has been considered on individual (employees) level. All the four hypotheses can be observed through the path depicted path arrows. The straight line arrow depicts a direct path while a dotted line arrow depicts an indirect path between the team identification, to PWB and TP.

3. Method

Twenty large Pakistani software companies' 92 teams provided the study's data, which included reviews from 344 employees and their immediate managers. At the software companies, supervisors led a staff of IT specialists. Members of the team were employed as software engineers or IT specialists. Teams were defined as groups of workers overseen by the same manager.

The data was collected from employees and managers at two times of measurement, spaced by around four weeks. The four-week timeframe was chosen to minimize biases related to common methods and single sources (Podsakoff et al., 2003). Participants were invited to a brief informational meeting where the survey process was explained before data collection began. An email invitation with a cover note outlining the study's goals and ensuring privacy and voluntary participation was sent to participants. A total of 92 teams made up the study sample, representing an 83.6% participation rate out of the 110 supervisors and their teams who were invited to participate. Of them, 18 did not reply to the invitation. At time 1, team members were requested to rate team identification and team support for innovation among the team members. At time 2, team members rated their individual task performance, and the supervisor rated the proactive work behaviors of team members. The mean number of participants per team was 4.02, with a standard deviation of 1.22. 34.3% of the participants are aged between 31 and 35. 20.3% of participants are aged between 21 and 30 years. 21.5% of participants are aged between 36 and 40 years. 18.3% of participants fall within the age group of 41–45 years. 5.5% of participants were 46 years of age and older, and 54.4% were male. The majority of participants had 16 years of education (72.1%), 18 years of education (20.5%), and a Ph.D. degree (7.4%). It exhibits that majority of the respondents (72.1%) are well educated, and can easily read and understand the questionnaire in true letter and spirit. Therefore, the education group emerged as a representative of the total sample due to its major share.

3.1 Measures

3.1.1 Team Identification

Researchers used Smidts et al. (2001) 5-item scale to measure team identification. All items are rated on a 5-point Likert scale, with 5 indicating strongly agree and 1 indicating strongly disagree. Here are some sample items: “I feel strong ties with my team” and “I feel proud to work for my team.”

3.1.2 Proactive Work Behavior

Proactive work behavior was measured by Parker and Collin's (2010) 13 items measurement scale. The sample item is “How often do your subordinates attempt to implement enhanced practices in their workplace? The supervisor rated employee PWB by using a five-point Likert scale, with ratings ranging from 1 (very infrequently) to 5 (very frequently).

3.1.3 Team Support for Innovation

TSI will be evaluated by using the 4-item scale developed by Nisula and Kianto (2016). Sample items comprised "The team dedicated time to cultivate a novel concept" and "The team members offered practical support for fresh ideas and their implementation."

3.1.4 Task performance

Task performance was evaluated using the five-item scale created by Williams and Anderson (1991). Example items comprised of “perform the task that is expected of him/her” and “fails to perform essential duties.”

3.2 Control Variable

As this was a multi-level cross-sectional predictive research investigation, team-level and individual-level demographic variables will be considered as control variables, including team size (number of employees). Demographic variables significantly related to positive work behavior (George & Zhou, 2001) are individuals’ age, gender, education, and salary.

4 Analytic Strategy and Levels of Analysis

We used Mplus to estimate the direct hypothesis and mediation effect of team support for innovation on task performance and proactive work behavior. Furthermore, statistical software packages SPSS and AMOS were applied to test the reliability and validity of the study variables.

4.1 Common Method Variance (CMV)

We used the Harman single-factor test to detect CMV. We performed factor analysis without rotation on four study variables. The results indicated that the single-factor model did not provide a significant fit, as it only accounted for 31.48% of the variance, indicating that the study's CMV risk was negligible (Podsakoff et al., 2012).

4.2 Measurement Model

Furthermore, to analyze the model fit, we concentrated on various model fits: chi-square/df, the comparative fit index (CFI), the standardized root mean square residual (SRMR), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). The chi-square/df values below 5.00 are regarded as acceptable (e.g., Hu & Bentler, 1999). The range of acceptable values for RMSEA and SRMR is between 0.05 and 0.10, with TLI and CFI values above .90 (Browne & Cudeck, 1992).

According to Hair et al. (1998), the hypothesized 4-factor model has a greater model fitness than competing models with a $\chi^2/df = 3.54$, RMSEA = 0.08, SRMR = 0.06, CFI = 0.91, and TLI = 0.90. The results (demonstrated in table 1) of the hypothesized and alternative model fit indices proved the distinctiveness of the study variables.

Table 1: Measurement Model Comparison

Measurement Model	χ^2	df	$\Delta\chi^2$	CFI	TLI	RMSEA	SRMR
1. 4-Factor Measurement model	581.15	164		.91	.90	.08	.06
2. 2-Factor Measurement Model	1281.01	169	699.86**	.70	.66	.14	.11
3. 1-Factor Model	1705.65	170	1124.5**	.56	.51	.16	.12

Note: Number of teams = 92. Number of individual employees = 344. In measurement model 2, TSI and TI were merged as well as task performance and proactive work behavior were merged. In model 3 all constructs were merged

4.3 Results of Data Analysis

The variables of team identification and team support for innovation were introduced at the team levels of analysis, as previously mentioned. However, further analyses required aggregating these variables to the team level because they were measured at the individual level. Therefore, we computed (1) $rwg(j)$, a measure of team agreement (James et al., 1984), (2) intraclass correlations (ICC1), (3) reliability of team means (ICC2), and (4) F-tests to see whether average scores varied significantly among teams.

For team identification, the average $rwg(j)$ was .86. The ICC1 was .83, and ICC2 was .88, $F(343,1372)=6.92$, $p<.001$. For team support for innovation, the average $rwg(j)$ was .83. The ICC1 was .78, and ICC2 was .86, $F(343,1029)= 6.40$, $p < .001$. For the explanation of inter-rater agreement, it has been recommended that $rwg(j)$ cut-off values must be above .70 and $rwg(j)$ values between .83 and .86 indicate almost perfect agreement (LeBreton & Senter, 2008).

The average ADI values for team identification (Mean ADI = .39, SD = .31) and team support for innovation (Mean ADI = .43, SD = .31) were below .83, as suggested for the 5-point Likert scales applied in this research (Burke & Dunlap, 2002). Additionally, an $rwg(j)$ of .70 or above is considered adequate indication to validate aggregation. The mean values for the $rwg(j)$ index for team identification and team support for innovation were .86 and .83.

Table2: Inter-rater Agreement, interclass Correlation, and ANOVA

Variables	Mean r_{wg}	ICC1	ICC2	F ratio	P value
Team identification	.86	.83	.88	6.92	.000
Team support for innovation	.83	.78	.86	6.40	.000

The mean, standard deviations, and correlations for each study variable are shown in table 3.

Table 3: Descriptive Statistics and Correlations

Variables	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9
Individual level											
1. Gender	1.46	.50									
2. Education	2.87	.86	-.07								
3. Age	2.54	.16	-.40**	.71**							
4. Salary	2.27	.95	-.25**	.60**	.80**						
5. TP	4.30	.82	.07	-.08	-.10	-.09	(.90)				
6. PWB	4.06	.67	-.02	-.03	.02	.01	.45**	(.88)			
Team Level											
7. Team Size	4.01	1.22	-.03	-.01	.04	.01	-.05	-.06			
8. TI	4.36	.50	-.01	.03	-.02	-.02	.43**	.28**	.05	(.86)	
9. TSI	3.92	.53	.02	-.02	-.05	-.05	.37**	.53**	-.18**	.47**	(.84)

Note: **p = 0.01. Reliabilities are presented in parentheses.

4.3.1 Hypothesis Testing

Mplus was employed for multilevel data analysis because of its versatility and robustness in managing many statistical models, especially multilevel modelling. Regression analysis via MPlus identified a significant positive association between perceptions of team identification and individual proactive behavior ($\beta=.60$, $p<.01$). Hence, Hypothesis 1 was supported.

Table 4: Multi-level Analysis of Hypothesized Model

Variables	Model 1		Model 2		Model 3		Model 4	
	TP		PWB		TP		PWB	
TI	.96***	(.11)	.60**	(.18)	.52***	(.11)	.08	(.09)
TSI					.24*	(.10)	1.13***	(.07)
Mediation effect								
TI → TSI → TP					.12*	(.05)		
TI → TSI → PWB							.62***	(.16)

Note. Level 1: N=344; Level 2: N=92. TI = team identification, TSI = team support for innovation, TP = task performance, PWB = proactive work behavior. * $p<.05$. ** $p<.01$. *** $p<.001$. Standard errors are in parentheses.

As anticipated, perceptions of team identification were positively related to individual task performance ($\beta=.96$, $p<.001$). Therefore, Hypothesis 2 was fully supported. The results shows that team identification enhance the performance of the employees. The result is consistent with the revious studies (Widianto et al., 2024) that team identification enhance the team performance.

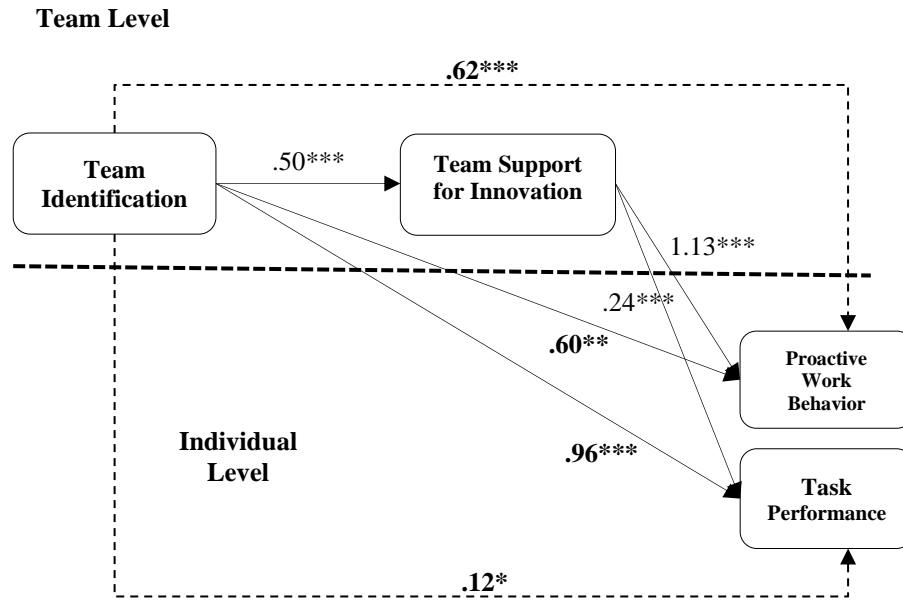


Figure 2: Hypothesized Results

The mediation effect of team support for innovation between team identification and proactive work behavior was analyzed ($\beta=.62$, $p<.01$) and found significant, supporting hypothesis 3. Similarly, the mediation effect of team support for innovation between team identification and task performance ($\beta=.12$, $p<.05$) also significantly supported hypothesis 4. Results are consistent the previous studies that team support for innovation mediate (Jaiswal & Dhar, 2015; Modliba et al., 2024) the link between team level motivation (i.e., team identification) and its performance outcome in term of proactive work behavior and task performance.

5. Discussion

We trust that our research precedes previous team identification research in multiple ways. The existing study comprises one of the rare investigations to have identified the effect of team identification on related outcomes at employee levels in a top-down approach from team to individual. Specifically, we observed a positive association between perceptions

of team identification and individual outcomes at the cross-level (i.e., proactive work behavior and task performance) in a top-down approach from team to individual. Results of the study are consistent with the prior studies proclaiming positive association of team identification and employees helping behavior in organizational tasks, extra tasks, and improves collaborative outcomes (Breuer et al., 2019). Similarly, the team identification and proactive work behavior are also support in previous research and may be affected by some (employee's personal) moderators (Twemlow et al., 2022). This study's findings provide empirical support that team identification encourages proactive behavior/task performance through TSI in a multi-level research design.

We presented empirical evidence that TSI played a mediating role in the connection between team identification and individual-level outcomes (like proactive behavior and task performance) in a cross-level mediation. Indeed, team identification emerges to indicate that the team is a supportive unit, such that team individuals cultivate collective insights into the team's supportive behavior (Lock et al., 2014). These insights contribute to developing individual positive outcomes, i.e., proactive behavior and task performance. The supportive team environment boost employees' innovative as well as proactive behavior, owing to strong team identification among members (De Backer et al., 2022). Therefore, the results are consistent with the prior research supporting a significant role of team support for innovation in generating positive outcomes (Tassi et al., 2023). Similarly, team support for innovation also exhibited a positive role to enhance performance of the employees in prior studies (Chen et al., 2020).

We validated and expanded on previous research (Shahid et al., 2022) and theories (Lock & Heere, 2017) about how team identification can improve individual performance in software companies, specifically in terms of task performance and proactive work behavior. Moreover, findings of the study are also applicable to the other industries such as technology sector, having significant role of innovation in project outcomes (Zhang & Li, 2020), as well in the healthcare sector signifying importance of team identification (Coleman et al., 2021). Even though software technology figures out the future of our globe and team identification, as well as collective team efforts, are inclined to play a significant role in achievement and growth, there is a dearth of research in this context, from team to individual employees (Song et al., 2020; Prewett et al., 2018). This research is the first to empirically validate the effect of team identification on the proactive work behavior and task performance of individual employees in software houses in a multi-level research design.

5.1 Practical Implications

The study findings highlight the significance of team identification at multi-levels, how team identification inspires team members to reflect on team and individual insights into their actions, and how team identification can be encouraged at both team and employee levels. The study findings propose that organizations should instigate training programs

that inculcate the attitude of team identification at multi-levels (i.e., team-directed and individual-directed) to offer essential skills and knowledge.

Second, this study's findings highlight the influence of TSI. To begin with, team members in the context of team identification ought to pay attention to developing a supportive team climate among the team members. Furthermore, it is significant to observe that team identification positively encourages TSI among teammates. Consequently, it would be appreciated to arise team identification regarding their substantial influence on TSI. In particular, team identification nurtures an open environment of interaction and cohesion among the team members (van Veelen & Ufkes, 2019).

Third, team identification must be considered in training, promoting, and hiring employees in software houses. Overall, our findings suggest that the software setting can work as an example for other businesses by illuminating the effects of a culture characterized by team identification, cohesion, and belief on all fronts.

5.2 Theoretical Contribution

The study's findings provide significant support for Social Identity Theory (SIT), particularly in relation to team dynamics and performance. SIT suggests that individuals derive a large portion of their self-concept from their membership in social groups, influencing their behavior and attitudes within these groups. The multi-level results highlight key relationships between Team Identification (TI), Team Support for Innovation (TSI), Task Performance (TP), and Proactive Work Behavior (PWB), showing a strong alignment with the core principles of SIT.

It can be observed from the results that a strong positive correlation between TI and TP reveals that individuals who identify closely with their teams tend to engage in behaviors that improve team performance. This aligns with SIT's premise that a strong group identity promotes cooperation and collective effort. When team members view themselves as part of a cohesive unit, they are more motivated to contribute to the team's success, further reinforcing the idea that social identity boosts motivation and performance.

The study also demonstrates that TSI mediates the relationship between TI and PWB, underscoring the importance of SIT. According to SIT, group norms and support systems significantly impact individual behavior within teams. The findings show that when team members feel supported in their innovation efforts, their proactive behaviors are enhanced, consistent with the idea that social identity influences individual actions through group dynamics and support mechanisms.

5.3 Limitation and Future Directions

There are some limitations with this research that must be considered when inferring the results. This is among the first studies that clearly evaluated the impact of team identification on proactive work behavior and task performance in a multi-level approach with a mediating process through TSI. We strongly inspire scholars to extend and validate

our research framework. Further studies are expected to benefit from focusing attention on the following areas:

First, our findings largely rely on questionnaire data, which could be related to common method biases. We strived to minimize biases relating to common methods (Podsakoff et al., 2003) by seeking responses from different sources, like employees and their team leaders (PWB). Furthermore, the robustness of our study is that we got data from more than one source to evaluate the outcomes of team identification, i.e., proactive work behavior data were obtained from the supervisor, whereas individual employees measured task performance. However, the significant findings attained even from these different measures underlined the impact of team identification.

Second, examinations of this theoretical framework in diverse cultural settings are imperative. Pakistani culture is probable (a power distance culture) to have had a substantial impact on our findings. The effect of team identification has been investigated in numerous diverse cultures (Hentschel et al., 2013). However, team support for innovation among teammates is subtle due to cross-cultural variances (Taylor et al., 2019). Therefore, it might be significant to examine further the differentiation of TSI among team members in other cultures, like Europe.

Third, it would be fascinating to widen this theoretical model by focusing on the suggested significance of team identification in software companies. This model was limited to the positive impact of team identification on task performance and proactive work behavior mediated by TSI. In doing so, we ignored (a) additional intervening variables, (b) possible downsides to the anticipated associations, and (c) other forms of identification. However, software engineers contribute to our society's development (mobile technology, business, health, and financial assistance). Therefore, it is logical to presume that they must be motivated and encouraged by the psychological state of team identification, which explicitly encourages them to be involved in self-initiated behavior that leads to task performance. It would also focus on measuring additional intervening constructs in upcoming research that describe the specific work uncertainty. For example, team identification's positive psychological articulation may add to the stability of team mood in the presence of work uncertainty. Furthermore, contextual factors, like leadership, climate for innovation, and task interdependence, could moderate the association between team identification and task performance or proactive behavior. Upcoming research is required to discover these potential boundary conditioning variables.

Lastly, the sample of the study is majorly consisted of respondents having 16 years of education, future studies may also use a more diverse set of samples to get robust results from the study. Owing to the questionnaire based data, the future research may utilize mixed method research design to get better understanding of the phenomena at large. Moreover, future research may also consider personal level factors of employees that may

strengthen or weaken the relationship of team identification on TSI, PWB and TP in different sectors.

5.4 Conclusion

Regardless of the limitations described, this research makes numerous considerable contributions to research and multi-level theory. We revealed that team identification enhances proactive work behavior and task performance at the individual level in a multi-level approach from team to individual and directed attention to the significance of TSI among teammates. In this way, we showed a strong link between TSI and proactive work behavior and task performance at the individual level in a multi-level analysis. We also showed that team identification is linked to better task performance and proactive work behavior in software companies. We anticipate that our findings will augment the field and motivate future multi-level team identification research.

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