Shared Leadership and Team Outcomes: A Mediated Moderation Model

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Abstract

The link between Shared Leadership and Team Performance has been demonstrated in a multitude of past research. Little is known, however, about the potential mechanisms behind this link. In the current study a moderated mediation model is tested, with Shared Leadership acting as a predictor, Team Performance being an outcome variable, Procedural Justice being a mediator, and Team Cohesion moderating the relationship between Procedural Justice and Team Performance. Linear regression analysis is used. The sample (N=75) consisted of people over 18 who work a minimum of 20 hours a week in teams of three or more. The results supported the hypothesis stating the link between Shared Leadership and Team Performance. It did not, however, support the hypothesis of Procedural Justice predicting Team Performance nor the hypothesis that Team Cohesion moderates the link between Procedural Justice and Team Performance. The strengths and limitations of the study as well as further directions of research on Shared Leadership are discussed.

Keywords: shared leadership, team performance, procedural justice, team cohesion

Shared Leadership and Team Outcomes: A Mediated Moderation Model

Shared Leadership has been defined as a system where leadership is distributed among team members (Sweeney et al, 2019; Conger and Pearce, 2003). It is a dynamic process in which teammates influence each other and motivate one another to achieve their goals (Sweeney, 2019).

Although an abundance of data has been collected on Team Performance, Procedural Justice, and Team Cohesion, research in industrial-organizational psychology has rarely focused on exploring these variables in the Shared Leadership context. In this research, we attempt to examine one of the potential mechanisms behind Shared Leadership and Team Performance.

Literature Review

Shared Leadership and Team Performance

A strong link between Team Leadership and Team Performance has been noted in previous research (Sweeney et al, 2019; Nicolaides et al, 2014; Wang et al, 2014).

In the study by Wu et al. (2020) the link between Shared Leadership and Team Performance has been found. Similar results were achieved in a subsequent study by Wu & Cormican (2021), where Team Effectiveness was measured as well as in an earlier study conducted on 59 consulting teams (Carson et al., 2009). Other studies used a longitudinal approach and also supported the hypothesis that Shared Leadership Predicts Team Performance (Lorinkova & Bartol, 2020; He & Hu, 2021). In this study, we build on these results to investigate potential mediating and moderating variables.

The Role of Procedural Justice

Procedural Justice is defined as fairness in the way decisions are being made (Konovsky, 2000). It highlights the process rather than the outcome.

Procedural justice has been demonstrated to prevent misconduct and promote citizenship behavior (Konovsky, 2000), the question remains however if and how it might be linked to Team Performance. In the study by Choi et al. (2020) Procedural Justice mediated the relationship between Perception of Leader-Member Differentiation (PLMXD) and Team Performance and thus predicted Team Performance, which is a promising result. Little to no literature seems to exist, however, that examines Procedural Justice in the context of Shared Leadership.

The Moderating Role of Team Cohesion

Team Cohesion has been defined as the extent to which team members identify with the group and feel compelled to stay in it (Forsyth, 2021). Many definitions have been proposed in the literature, each focusing on a different aspect of Team Cohesion, but for this research, Team Cohesion will be defined as including two components: interpersonal attraction (*social cohesion*) and shared understanding of tasks that are performed by the group (*task cohesion*) (Bryan et al., 2019).

Team Cohesion has been noted as a moderator between Shared Leadership and Team Performance (Bergman et al., 2012, Sweeney et al., 2019). It was also noted to be a predictor of Team Performance, the effect being especially strong in business teams (Castaño et al, 2013; Forsyth, 2021). The current study aims to examine whether Team Cohesion might interact with Procedural Justice to predict Team Performance in a Shared Leadership context. The role of group cohesion in strengthening group performance shall be especially prominent in teams where shared leadership is present and cooperation is much needed, as we theorize it shall help to bring team members together and prevent diffusion of responsibility and lack of motivation, as shown by Karau & Williams (1997; Forsyth, 2021).

Hypotheses

Shared Leadership Predicting Team Performance

We predict that there will be H_1) a positive link between Shared Leadership and Team Performance. We assume that sharing leadership will be empowering for the members of the team. The agency they will find in their tasks might facilitate an active approach. In addition, shared leadership will allow them to share the workload so that the burden of the project does not lie solely on the shoulders of the single leader (Cox et al 2003; Pearce et al, 2013; Goldsmith, 2010).

Procedural Justice Predicting Team Performance

Secondly, H_2) Increased Procedural Justice will predict an increase in Team Performance, mediating the relationship between Shared Leadership and Team Performance. Shared leadership gives individuals autonomy and a sense of agency in a team. In the shared leadership framework, all members of a team are viewed as equals and their unique contributions are valued. The burden is split evenly as no one individual is primarily responsible for the team outcomes. This might lead to teammates having a sense of fairness regarding the way their group functions. This sense of fairness will be motivating and result in increased Team Performance.

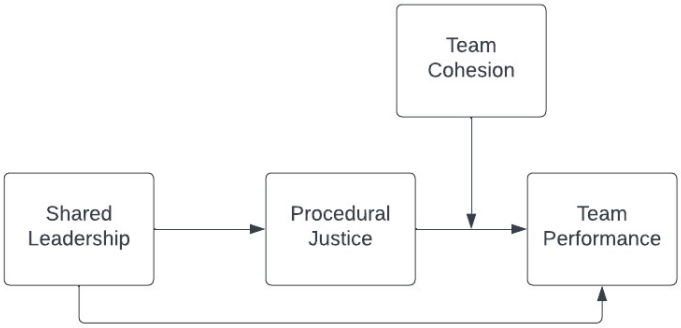
Procedural Justice And Team Cohesion

Finally, we predict that H_3) Team Cohesion will strengthen the relationship between Procedural Justice and Team Performance thus moderating the mediation. We estimate that a high level of team cohesion will strengthen the link between Procedural Justice and Team Performance while low level of Team Cohesion will weaken the relationship. Shared Leadership requires great cooperation between team members and coordination of different elements of the project at the same time. We assume that while Procedural Justice might motivate team members to work, stronger Team Cohesion would facilitate communication between them so they can manage tasks easily as well as help team members maintain group identity.

Together, these hypotheses form a moderated mediation model with the link between Shared Leadership and Team Performance being mediated by Procedural Justice and the link between Procedural Justice and Team Performance being moderated by Team Cohesion. The model is illustrated in Figure 1.

Fig. 1

Moderated Mediation Model of Shared Leadership and Team Performance



Social Relevance of Research on Shared Leadership

One of the aspects that makes research on shared leadership so relevant is the fact that implementing SL might lead to the democratization of a workplace. Democratic political systems are prevalent in modern Western societies, this egalitarian approach however rarely extends to the organizational setting. The model where a firm is considered CEO's private property and employees have little say in the decision-making, as well as little share in a company's assets, is still common. As citizens spend a considerable amount of their time at the workplace, it is crucial that they are given decision making-power and that their voices are heard. It is difficult to build a civil society when one of the major components of citizens' life – their workplace promotes antidemocratic standards. By modeling an egalitarian approach in industrial settings, we contribute to building a society that is built on cooperation and active citizenship.

Shared leadership might contribute to promoting healthy interpersonal relations in the workplace. In the shared leadership framework, the worker is treated as a subject instead of merely an object. They are not obliged to submit to their supervisor's will, instead, they are given agency as they are responsible for their tasks. In this model, work relations are not built on dependency and compliance. As demonstrated by Salin (2003) power imbalance in the workplace enables workplace bullying. It might be assumed that shared leadership in the workplace creates an environment where workplace bullying is less likely to emerge.

Finally, shared leadership might contribute to increasing sustainability in the workplace. This view seems to be shared in the scientific (Pearce et al, 2013) and popular (hbr.org, 2010) sources alike. Work systems based on shared leadership are better able to adapt to changes and function better in face of adversity (Cox et al 2003; Pearce et al, 2013). Increased task complexity requires leadership to be divided (Goldsmith, 2010) so that the burden does not lie on the shoulders of one person.

Method

Participants

Age, Gender, and Nationality

A total of 118 participants took part in the study. 43 of them were excluded from the data analysis due to the fact they did not fulfill the inclusion criteria (described below) or had withdrawn from the study and had not completed the questionnaire fully making the final sample size 75 (30 females, 43 males, 1 otherwise defined, 1 missing, M_{age}= 42,49; SD= 14,18). The age of participants varied between 21 and 65. The nationalities of the participants included mainly Dutch (20), German (30) and, Polish (15). Other nationalities included American, Australian, British, Costa Rican, Irish, Japanese, Luxembourgish (one each), and Pakistani (2).

Education and Employment

The majority of participants were university graduates (58,7%). Higher vocational education was the second most prevalent highest finished level of education (17,3%). The least popular options included intermediate vocational training (6,7%), secondary school, doctorate, and other education (5,3% each). Participants worked in various sectors which included: administration, construction, finances, hospitality, tourism and culture, industry and production, ICT, consulting and legal consulting, communication and marketing, public administration, health and social welfare, education and instruction, insurance, research, and IT. There has been great variability regarding the duration of employment in the company (mode 69 months) and time spent working as part of their team (mode 24 months). 74,7% of participants worked between 20 and 40 hours a week and the remaining 25,3% worked more than 40 hours a week. 72% of participants had a permanent contract, and 16% had a limited period of time contract. The rest of the participants worked as freelancers, did not have a contract, or were temporary workers. The participants worked at junior (21,3%), medium (30,7%) as well as senior (46,7%) positions. The majority of participants worked in person and switched online during lockdown (44%), the rest worked online (6,7%), hybrid (both online and in-person) (17,3%), and in-person (30,7%).

Inclusion Criteria

For a person to be eligible to participate in the study, three criteria needed to be fulfilled: a person needed to be over the age of eighteen, they needed to work in a team of at least three and they needed to work in a team for at least twenty hours a week.

Recruitment Method

We have emailed human resources departments of several companies based in Groningen asking to encourage employees to fill in the survey. In addition, we have used our social networks to spread information about the study and attract participants. No financial or other incentive was used.

Confidentiality of Participants

Data of the participants are anonymous. The collected demographic information was only used for research purposes.

Attrition

12 participants who were eligible for the study have withdrawn from it, which makes the attrition rate approximately 13,79% (12/87). We have received information that the reason for attrition was the length of the questionnaire.

Research Design and Procedure

To explore the nature of the link between shared leadership and team outcomes multivariate correlational study was conducted. We tested a moderated mediation regression model with the predictor Shared Leadership, mediator Procedural Justice, moderator Team Cohesion and outcome variable Team Performance.

Data collection started on May 15th and finished on June 1st, 2022. Filling the survey took each participant approximately 25 minutes. Participants who did not fulfill the inclusion criteria were automatically removed from the survey. The participants indicated how much they agree with given statements on a Likert scale. In addition, demographic data were collected.

Measures

Shared Leadership

To measure the distribution of leadership in a team we used an adapted version of Hoch et al (2010) questionnaire. The original scale measures shared and vertical leadership as divided by transformational, transactional, directive, individual empowerment, team empowerment, and aversive leadership dimensions. The adapted questionnaire consisted of 18 items and measured a transformational, directive, individual empowerment, and team empowerment dimensions. The original questionnaire has a high internal consistency (α= .85).

Examples of items included (all items are included in Appendix A):

My team members provide a clear vision of whom and what our team is.

My team members and I sit down together and reach agreement on my performance goals.

My team members encourage me to give myself a pat on the back when I meet a new challenge.

Team Performance

To measure team outcomes a questionnaire from Thompson et al (2009) was used. The measure has a high internal consistency (α= .97).

Examples of items included (all items are included in Appendix B):

Team members encouraged one another to express their opinions and thoughts.

Team members willingly participated in all relevant aspects of the team.

Team members were recognized when something they said helped the team reach a good decision.

Procedural Justice

The used Procedural Justice measure was taken from Searle et al. (2011) and developed by Niehoff, B.P., and Moorman, R.H. (1993). The scale is highly internally consistent (α =.89).

Examples of items (all items are included in Appendix C):

Job decisions are made in an unbiased manner.

Job decisions are applied consistently across all affected employees.

Employees can challenge or appeal job decisions made by management.

Team Cohesion

The used Team Cohesion measure was adapted from Acton et al (2019) and developed by Kozlowski et al (2010). It measures both social cohesion (how much team members like each other) and task cohesion (how much teammates' ideas about their goals as a team align). The Cronbach's alpha of the original scale varies from α = .77 to α= .87.

Examples of items (all items are included in Appendix D):

1. Our team members get along well with each other.
2. Our team has a unified vision for what we should do.
3. Our team is committed to our team's task.

Results

Assumption Checks

Five assumptions of linear regression were checked; linearity, normality, homoscedasticity, independence, and absence of multicollinearity. A scatterplot was used to inspect linearity between Shared Leadership and Team Performance (Fig 2a, Appendix B) and Procedural Justice and Team Performance (Fig. 2b), Team Cohesion and Team Performance (Fig. 2c) and Shared Leadership and Procedural Justice (Fig. 2d). Then, normality was inspected using a p-p plot (Fig. 3). Homoscedasticity was checked using scatterplots (Fig 4). The independence of residuals was assessed using Durbin Watson Index (Fig. 5) and the absence of multicollinearity was checked using the Variance Inflation Factor (Fig. 6). Durbin-Watson value equaled 1,985 and thus it was concluded that the independence assumption was met. The values of three and above were estimated to be indicating multicollinearity among the variables. All the VIF values were smaller than this cut score (VIF_{SL}= 2.105; VIF_{PJ}= 1.950; $VIF_{TeamCoh}$= 1.801) and thus the assumption of no multicollinearity was met.

Descriptive Statistics

Means, standard deviations and, correlations between the variables of interest were calculated (Table 1). The variable with the highest mean was Team Cohesion (M =5.64, SD =1.05) and the variable with the lowest noted mean was Procedural Justice (M=4.54, SD= 1.22). There was little variability between the means as all of them were at the medium-medium high level. The standard deviations of different were also similar between the

variables, the highest one noted for the Procedural Justice variable and the lowest for Team Performance.

Significant high correlations have been noted between all variables. Shared Leadership was most strongly correlated with team performance, r(73)=.72, $p < .01$. Procedural Justice was most strongly correlated with Shared Leadership, r(73)=.66, $p < .01$. Team Cohesion was most strongly correlated with Team Performance and Team Performance with Team Cohesion, r(73)=.80, $p < .01$. Given the strength of bivariate correlations between the variables, partial correlations were calculated so the impact of other variables can be controlled for.

Table 1.

Descriptives and Correlations Between Variables

Variables	***M***	***SD***	***1***	***2***	***3***	***4***
1. Shared Leadership	4.73	1.10	1	.66**	.63**	.72**
2. Procedural Justice	4.54	1.22	.66**	1	.59**	.62**
3. Team Cohesion	5.64	1.05	.63**	.59**	1	.80**
4. Team Performance	5.08	1.03	.72**	.62**	.80**	1

Note. N = 75. ** $p < .01$,

Partial Correlations

The analysis started by analyzing the partial correlation between Shared Leadership and Team Performance, controlling for Team Cohesion (Table 2a). The strength of the relationship was much lower than the previously calculated bivariate correlation, the relationship of medium strength, r(71)=.39, $p < .001$.

Table 2a

Partial Correlations Between SL and TeamPerf (Controlling for PJ and TeamCoh)

Control Variables	SL	TeamPerf

PJ & TeamCoh	SL	Correlation	1.000	.39
		Significance (2-tailed)	.	<.001
		df	0	71
	TeamPerf	Correlation	.39	1.00
		Significance (2-tailed)	<.001	.
		df	71	0

Next, partial correlations between Procedural Justice and Team Performance were explored, Team Cohesion and Shared Leadership being the control variables. The obtained partial correlation was weak but the effect was not statistically significant, r(71)=.12, *p* = .31.

Table 2b

Partial Correlations Between PJ and TeamPerf (Controlling for TeamCoh and SL)

Control Variables			PJ	TeamPerf
TeamCoh & SL	PJ	Correlation	1.00	.12
		Significance (2-tailed)	.	.31
		df	0	71
	TeamPerf	Correlation	.12	1.00
		Significance (2-tailed)	.31	.
		df	71	0

Finally, a partial correlation between Team Cohesion and Team Performance was calculated while Shared Leadership and Procedural Justice were being controlled for. The relationship remained strong, r(71)=.62, *p* <.001.

Table 2c

Partial Correlations Between SL and PJ (Controlling for TeamPerf and TeamCoh)

Control Variables			TeamCoh	TeamPerf
SL & PJ	TeamCoh	Correlation	1.00	.62
		Significance (2-tailed)	.	<.001
		df	0	71
	TeamPerf	Correlation	.62	1.00
		Significance (2-tailed)	<.001	.
		df	71	0

The majority of the obtained results are in line with our predictions as we have expected a strong relationship between Shared Leadership and Team Performance and Team Cohesion and Team Performance. The low partial correlation between Procedural Justice and Team Performance contradicted our predictions. To further assess the nature of the link between Shared Leadership and team outcomes, linear regression analysis was performed.

Hypotheses Testing – Moderated Mediation Model

The following hypotheses were tested; H_1) There will be a positive link between Shared Leadership and Team Performance, H_2) Increased Procedural Justice will predict an increase in Team Performance, mediating the relationship between Shared Leadership and Team Performance, and H_3) Team Cohesion will strengthen the relationship between Procedural Justice and Team Performance.

First, the relationship between Shared Leadership and the mediator Procedural Justice was explored. The model summary is displayed in table 3a. 44% of the variance in Procedural Justice was explained by Shared Leadership, $R=.66$, $R^2=.44$, $F(1,73)=57.06$, $p < .05$.

Table 3a

Results of Regression Analysis for Mediated Moderation (outcome variable: PJ)

Model Summary						
R	R^2	MSE	F	df_1	df_2	p
.66	.44	.85	57.06	1	73	.00

Table 3b

Results of Regression Analysis for Mediated Moderation (outcome variable: PJ)

Model						
Predictor	***B***	***SE***	***t***	***p***	***LLCI***	***ULCI***
Constant	1.06	.47	2.25	0.03*	.12	2.00
Shared Leadership	.73	.10	7.55	.00*	.54	.93

Note: N=75. * $p < .05$.

The complete model predicting Team Performance that includes the main effects of Shared Leadership, Procedural Justice, and Team Cohesion, as well as an interaction term (PJxTeamCoh), explains 73.3% of the variance in Team Performance, R=.86, R^2=.73, F(4,70)=48.19, $p < .05$ (Table 4a). However, only the main effects of Shared Leadership (β = .30; $p < .05$) and Team Cohesion (β = 74; $p < .05$) were significant (Table 4b). The results are in line with H_1 which stated that Shared Leadership will predict Team Performance. They are, however, not in line with H_3 which stated that Team Cohesion will interact with Procedural Justice to moderate the effect of Procedural Justice on Team Performance.

Table 4a

Results of Regression Analysis for Mediated Moderation (outcome variable: TeamPerf)

Model Summary						
R	R^2	MSE	F	df_1	df_2	p
.86	.73	.30	48.19	4	70	.00

Table 4b

Results of Regression Analysis for Mediated Moderation (outcome variable: TeamPerf)

Model						
Predictor	***B***	***SE***	***t***	***p***	***LLCI***	***ULCI***
Constant	-.85	1.06	-.80	.43	-2.97	1.27
Shared Leadership	.30	.08	3.55	.00*	.13	.46
Procedural Justice	.37	.27	1.36	.18	-.17	.91
Team Cohesion	.74	.19	3.86	.00*	.36	1.12
Int_1	-.05	.04	-1.13	.26	-.14	.04

Note: N=75. Int_1: PJ x TeamCoh ; * $p < .05$.

Next, the indirect effect of Shared Leadership predicting Procedural Justice predicting Team Performance was examined (Table 5). The effect was not significant on either of the three levels of moderation. This result is not in line with H_2 which stated that increased Procedural Justice will predict an increase in Team Performance, acting as a mediator between Shared Leadership and Team Performance.

Table 5

Results for the analysis of indirect effect (SL →PJ→TeamPerf)

TeamCoh	***Effect***	***BootSE***	***BootLLCI***	***BootULCI***
4.58	.10	.09	-.09	.29
5.67	.06	.08	-.08	.21
6.81	.02	.08	-.14	.19

Finally, it can be concluded from the Index of Moderated Mediation (Table 6) that there is no evidence of statistically significant moderated mediation. This result provides further evidence that the null hypothesis for H_3 cannot be rejected.

Table 6

Index of Moderated Mediation

	Index	***BootSE***	***BootLLCI***	***BootULCI***
TeamCoh	-.04	.05	***-.12***	***.06***

Discussion

The following hypotheses were tested during the current study:

H_1) There will be a positive link between Shared Leadership and Team Performance,

H_2) Increased Procedural Justice will predict an increase in Team Performance, mediating the relationship between Shared Leadership and Team Performance.

H_3) Team Cohesion will strengthen the relationship between Procedural Justice and Team Performance.

The data obtained in the current study supports the first hypothesis as Shared Leadership predicted Team Performance. The effect was highly significant. The second hypothesis described Procedural Justice as a moderator between Shared Leadership and Team Performance. Although Shared Leadership predicted 44% of the variance in Procedural Justice and the effect was highly significant, the later analysis of indirect effect showed that there is no statistically significant evidence for the mediation regardless of the level of moderator Team Cohesion given that all the calculated bootstrap confidence intervals contained zero. The second hypothesis was thus not supported. Regarding the third hypothesis, even though Team Cohesion was demonstrated to predict Team Performance at a high level of significance, no evidence has been found in support of the hypothesis that Team

Cohesion interacts with Procedural Justice to predict Team Performance. The third hypothesis was thus not supported.

Strengths of the Study

The main strength of the present study lies in its diverse sample. As explained in the method section, participants came from various backgrounds ranging from finances to IT. This unique combination of different skills and experiences of participants increases the external validity of the study. Participants were also age-diverse, with some subjects being young adults while others were approaching their retirement age. Length of tenure and time spent working in the team were also varied, so much so that reporting the mean was not considered useful, and the median for these two variables was reported instead. Participants also worked in different formats, some of them working in person while others worked online or in a hybrid form. This factor was especially important given its potential to affect Team Cohesion or the sense of "togetherness" of the team. The educational background of the participants was also varied; while the majority of subjects were university graduates, many other backgrounds were reported. All these factors give the results of this study the potential to be applied in various settings.

Another factor that enhances the external validity of the present study is the fact that participants worked in a corporate setting. It is prevalent in social science research that student samples are used, which severely limits the applicability of the results to non-academic environments. Most of the subjects spent months if not years working in their companies and as part of their teams which makes the study setting less artificial than teams created ad hoc and consisting mainly of first-year psychology students.

The last advantage of the current study is the usage of highly internally consistent, validated scales, with alphas ranging from α=.77 (Kozlowski et al, 2010) to α=.97 (Thompson et al, 2009). This choice of measure increased the construct validity of the study.

Limitations and Future Direction

The first limitation that we noticed throughout the study was the high attrition rate. The questionnaire used in the study measured multiple variables and a lot of demographic data was collected which made filling in the survey time-consuming. That affected the number of completed surveys negatively, decreasing the sample size and thus decreasing the statistical power of the study. The length of the questionnaire frustrated many participants which poses a threat that their answers might have been altered by their mood. Some data could have been corrupted by participants who were fatigued and less careful filling in the questionnaire and misunderstood some of the instructions as a result. People who finished the survey might differ from the general population. They might be more cooperative and motivated, which could have had an impact on Team Cohesion.

Another limitation of the current study was the usage of a primarily Western sample. Although the participants were of different nationalities, the vast majority came from Western countries that might not differ much in terms of working culture. A big percentage of companies contacted during the study was based in Groningen. This cultural aspect is worth exploring in future studies. It can be theorized that it might have an impact on the way Shared Leadership predicts Team Performance. The participants in our current study came mostly from countries with individualistic cultures, so it might be beneficial to explore how Shared Leadership and team outcomes are related in teams comprised of people with collectivistic cultural backgrounds.

Another crucial limitation of the study that created opportunities for future research is the fact that the majority of participants worked in senior positions. This might have severely skewed their perception of equality (and how leadership is shared) in the team. This subgroup of participants might have believed that other team members have a similar level of leadership to themselves (enjoy a similarly high level of leadership) which in turn could have inflated the

reported Shared Leadership. This shortcoming was only noticed after the data has been collected. It would thus be beneficial for future studies to control for the level of seniority in the organization they work for.

In the current study the correlations, partial correlations, and linear regression were analyzed. Although they were helpful in explaining the nature of the link between Shared Leadership and team outcomes, they cannot be used to make causal claims. A (quasi)experimental setting is needed to obtain more certainty regarding causality between the mentioned variables.

Another aspect of the current study that may open the door for future research is the huge variability in the reported group sizes. Future research might control for this aspect as it might have an impact on Team Cohesion, as the size of the group is negatively linked with the liking of the group (Mullen and Copper, 1994).

Theoretical and Practical Implications

Given that the mechanism behind the link between Shared Leadership and Team Performance and the potential causal relationship between these variables is not fully understood, no recommendations about implementing a shared leadership style can be made. This is an area of research to be explored further.

Conclusions

A strong positive link between shared leadership and team performance has been established. The exact mechanism behind it, however, is still unknown. Variables explored in the study correlated which might make separating how each of them is linked challenging. Future research might use experimental techniques to examine potential causality between the variables.

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Appendix A

***S*hared leadership** (Hoch et al., 2010)

Answering format (1= Strongly disagree, 4= Neither agree nor disagree, 7= Strongly agree)

Instruction; The following statements are about Shared leadership. Please indicate your agreement with the statements.

1. My team members provide a clear vision of whom and what our team is
2. My team members are driven by higher purposes or ideals
3. My team members show enthusiasm for my efforts.
4. My team members encourage me to rethink ideas which had never been questioned before
5. My team members seek a broad range of perspectives when solving problems
6. My team members encourage me to go above and beyond what is normally expected of one (e.g., extra effort)
7. My team members decide on my performance goals together with me
8. My team members and I work together to decide what my performance goals should be
9. My team members and I sit down together and reach agreement on my performance goals
10. My team members work with me to develop performance goals
11. My team members encourage me to search for solutions to my problems without supervision
12. My team members urge me to assume responsibilities on my own
13. My team members encourage me to learn new things

14. My team members encourage me to give myself a pat on the back when I meet a new challenge.
15. My team members encourage me to work together with other individuals who are part of the team.
16. My team members advise me to coordinate my efforts with the others, who are part of the team.
17. My team members urge me to work as a team with the others, who are part of the team.
18. My team members expect that the collaboration with the other members in the team works well.

Team Performance (Thompson et al, 2009)

Answering format (1= Strongly disagree, 4= Neither agree nor disagree, 7= Strongly agree)
Instruction; The following questions are about Team Performance. Please indicate your agreement with the statements.

1. All team members made an effort to participate in discussions.
2. When team members had different opinions , each member explained his or her point of view.
3. Team members encouraged one another to express their opinions and thoughts.
4. Team members shared and received criticism without making it personal.
5. Different points of view were respected by team members.
6. Often members helped a fellow team member to be understood by paraphrasing what he or she was saying.

7. My team used several techniques for problem solving (such as brainstorming) with each team member presenting his or her best ideas.

8. Team members worked to come up with solutions that satisfied all members.

9. All team members consistently paid attention during group discussions.

10. My team actively elicited multiple points of view before deciding on a final answer.

11. Team members listened to each other when someone expressed concern about individual or team performance.

12. Team members all willingly participated in all relevant aspects of the team.

13. Team members resolved differences of opinion by openly speaking their mind.

14. Team members used feedback about individual or team performance to help the team be more effective.

15. Team members seemed attentive to what other team members were saying when they spoke.

16. My team resolved many conflicts by compromising between team members, with each one giving a little.

17. Members who had different opinions explained their point of view to the team.

18. Team members were recognized when something they said helped the team reach a good decision.

Procedural Justice (Niehoff, B.P., and Moorman, R.H., 1993)

Answering format (1= Strongly disagree, 4= Neither agree nor disagree, 7= Strongly agree)

Instruction; The following questions are about Procedural Justice. Please indicate your agreement with the following statements below.

1. Job decisions are made in an unbiased manner.
2. Employees' concerns are heard before job decisions are made.
3. Job decisions are based on accurate and complete information.
4. Job decisions are applied consistently across all affected employees.
5. Employees can challenge or appeal job decisions made by management.

Team Cohesion (Kozlowski et al, 2010)

Answering format (1= Strongly disagree, 4= Neither agree nor disagree, 7= Strongly agree)

Instruction; The following questions are about Team Cohesion. Please indicate your agreement with the following statements below.

4. Our team members get along well with each other.
5. Our team members enjoy working together
6. Our team members have good relationships with each other.
7. Our team has a unified vision for what we should do.
8. Our team members contribute to the team's task.
9. Our team is committed to our team's task.

Appendix B

Fig. 2a

Scatterplot illustrating linearity between the predictor (Shared Leadership) and the outcome variable (Team Performance)

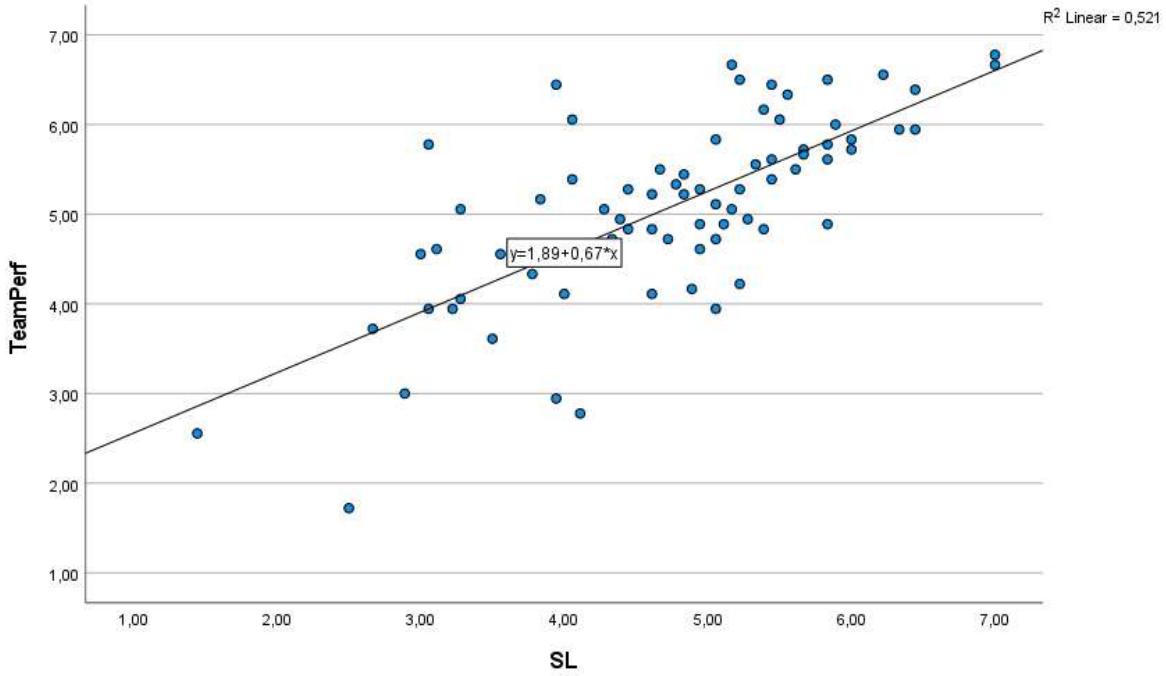

Fig. 2b

Scatterplot illustrating linearity between the mediator (Procedural Justice) and the outcome variable (Team Performance)

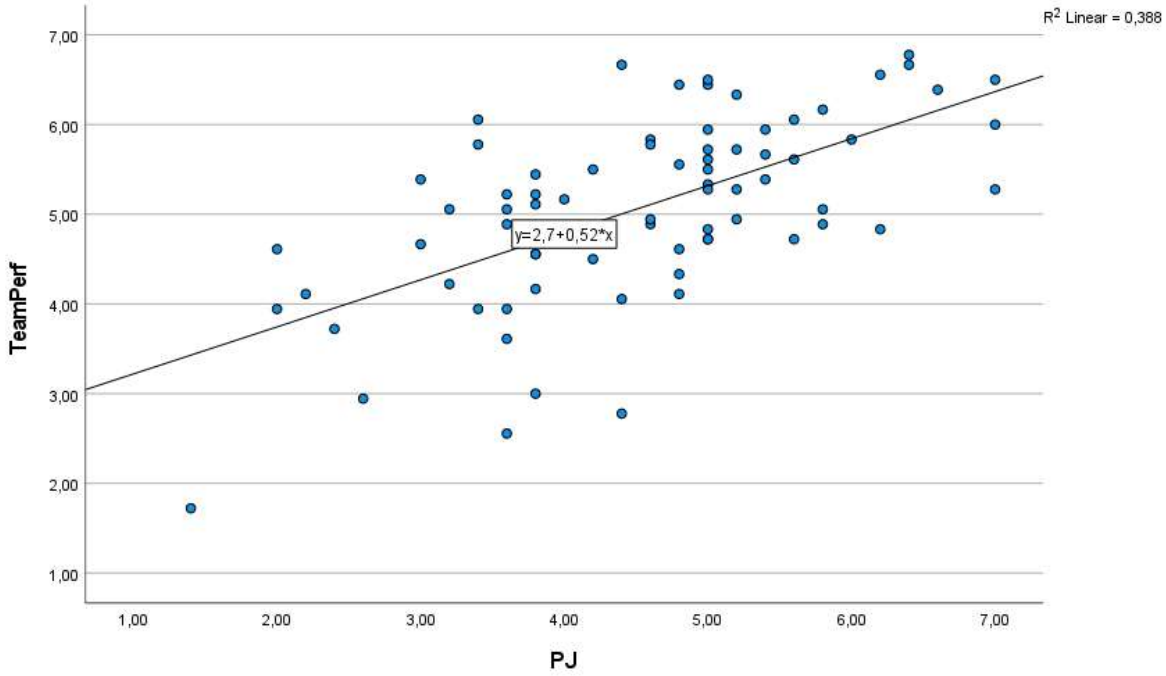

Fig. 2c
Scatterplot illustrating linearity between the moderator (Team Cohesion) and the outcome variable (Team Performance)

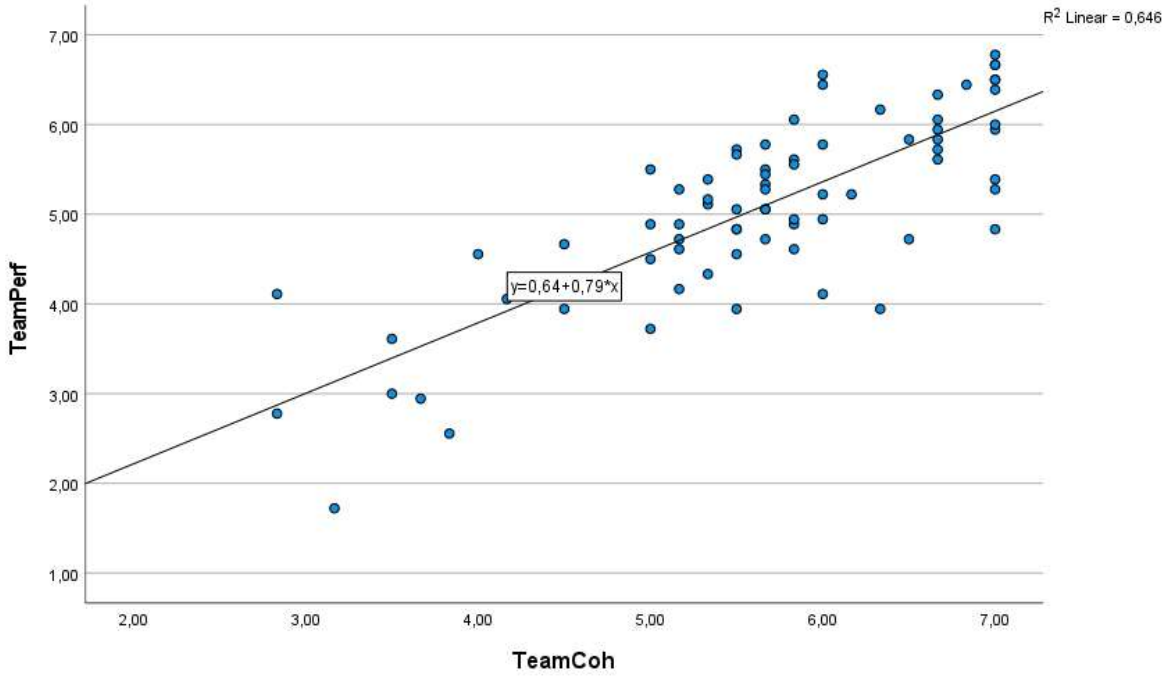

Fig 2d
Scatterplot illustrating linearity between the predictor (Shared Leadership) and the mediator (Procedural Justice)

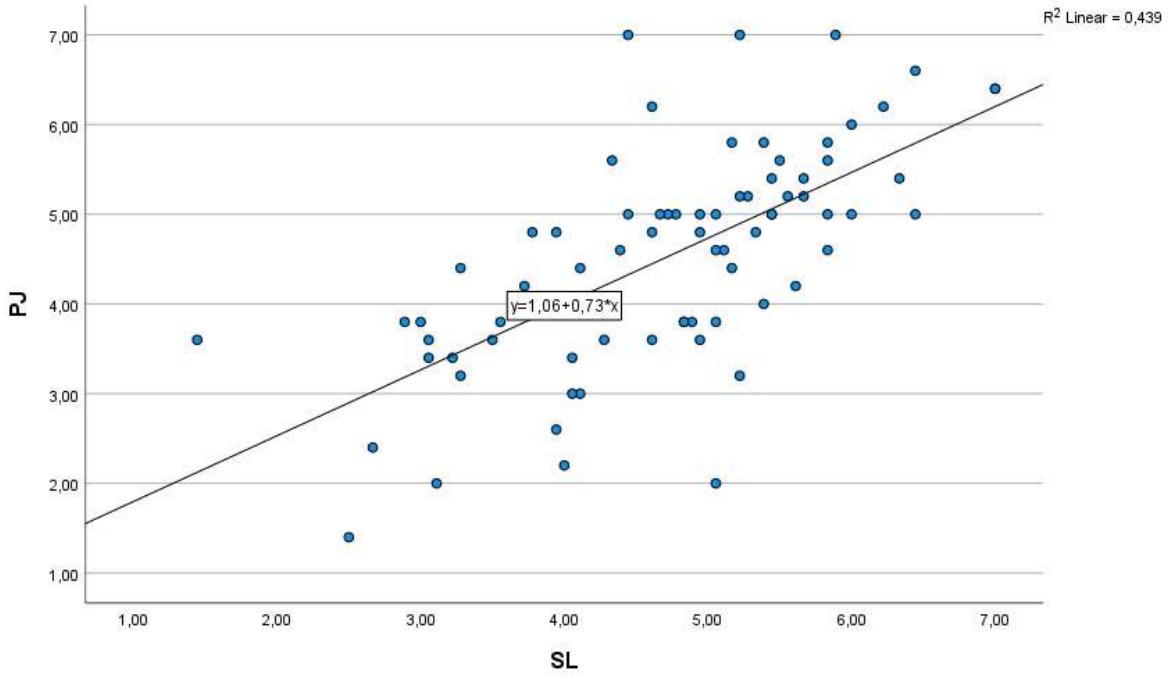

Fig. 3
A p-p plot illustrating normality of the data.

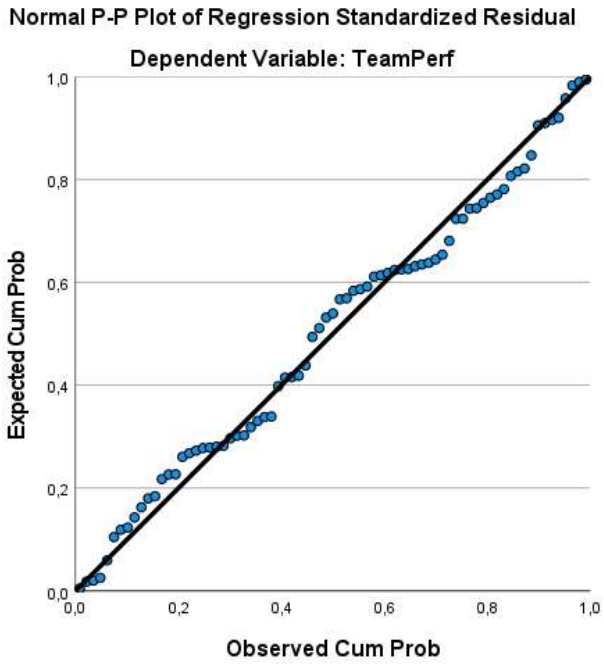

Fig. 4a
A scatterplot illustrating homoscedasticity for Shared Leadership and Team Performance.

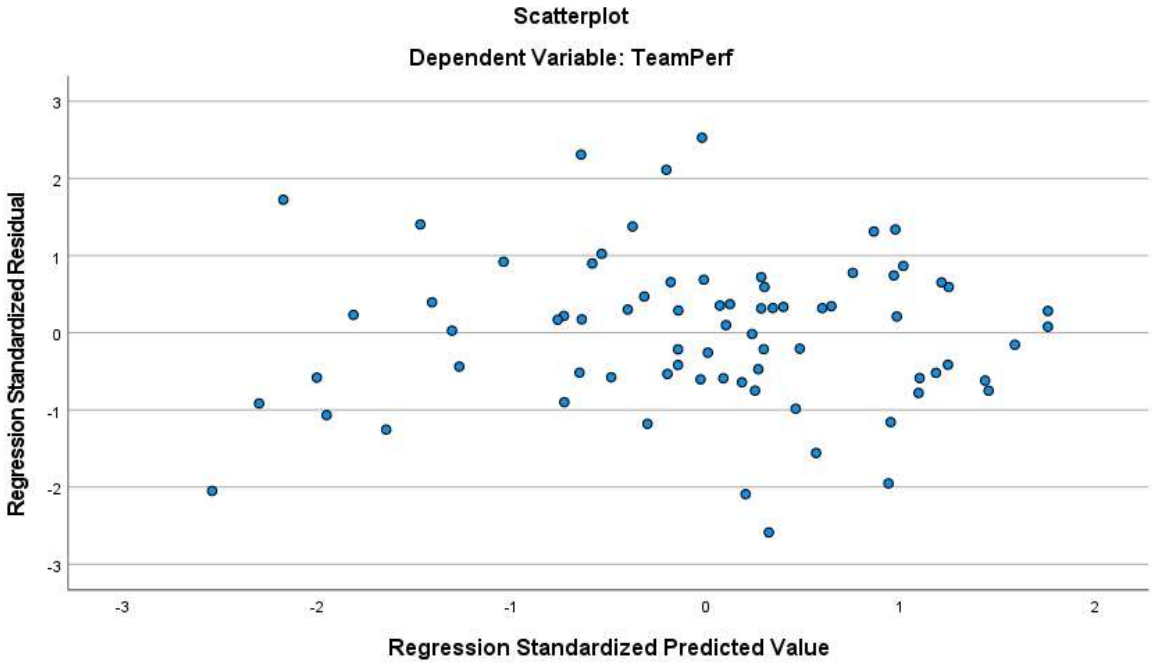

Fig. 4b
A scatterplot illustrating homoscedasticity for Procedural Justice and Team Performance.

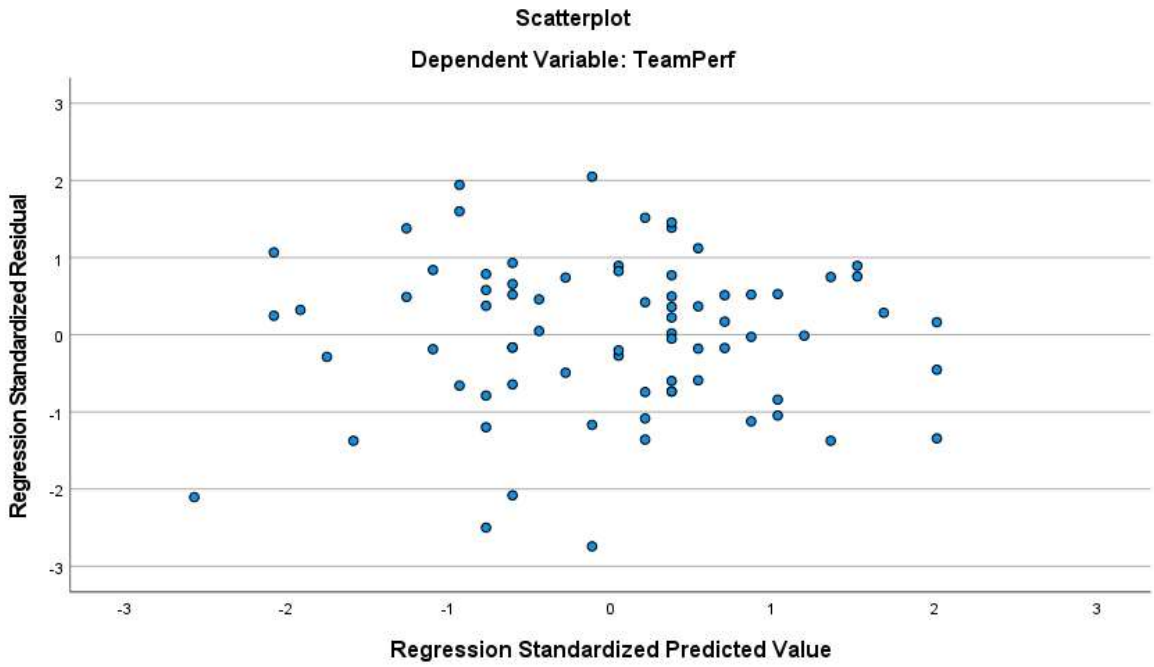

Fig. 4c
A scatterplot illustrating homoscedasticity for Team Cohesion and Team Performance.

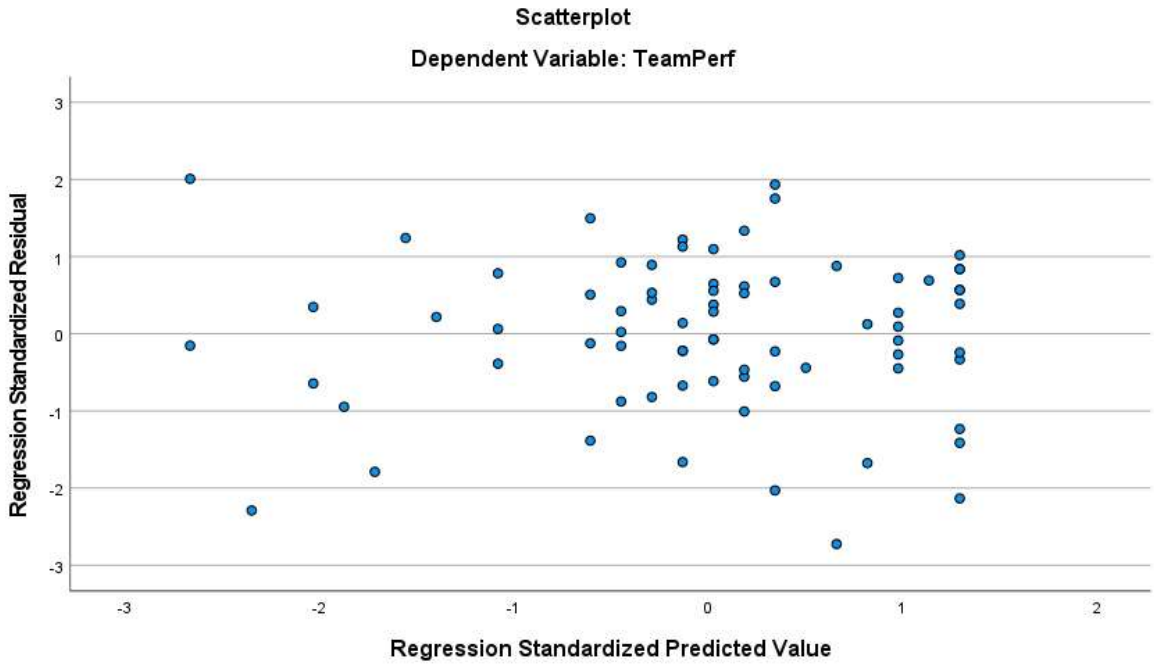

Fig. 4d

A scatterplot illustrating homoscedasticity for Shared Leadership and Procedural Justice.

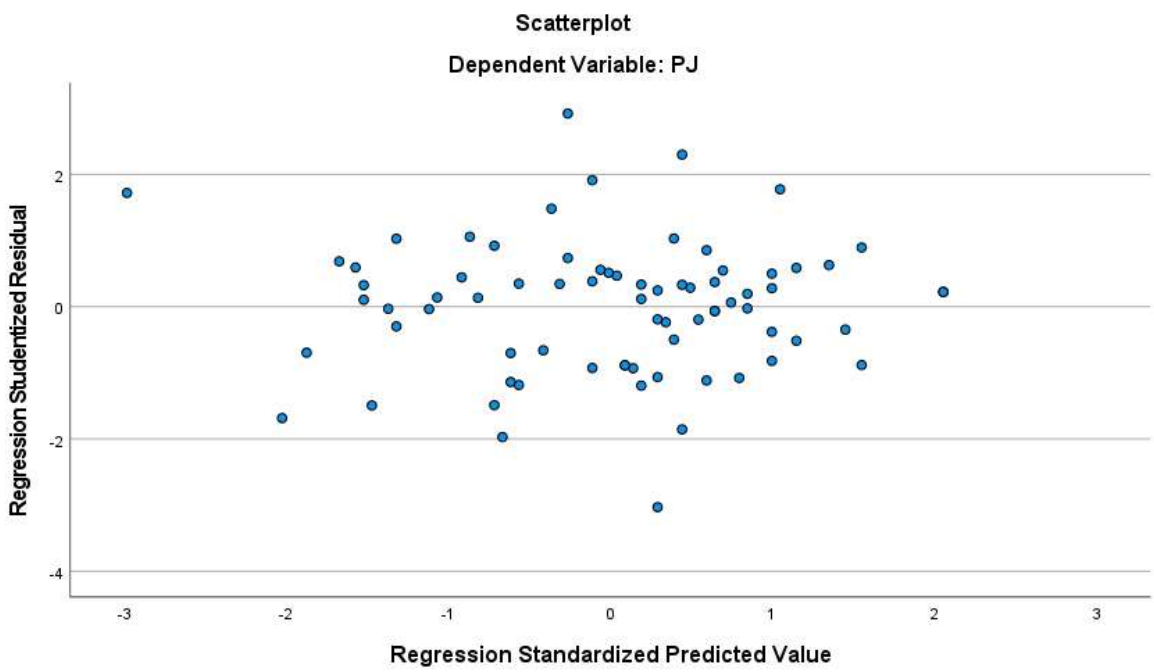

Table 7

Table illustrating the outcome of the Durbin-Watson test.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,854[a]	,729	,717	,54770	1,985

a. Predictors: (Constant), TeamCoh, PJ, SL

b. Dependent Variable: TeamPerf

Table 8

Table illustrating the value of the Variance Inflation Factor (VIF)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,285	,355		,804	,424		
	SL	,296	,084	,316	3,529	<,001	,475	2,105
	PJ	,074	,073	,088	1,017	,313	,513	1,950
	TeamCoh	,542	,081	,554	6,682	<,001	,555	1,801

a. Dependent Variable: TeamPerf