

# Influence of Extraversion on Social Loafing Behavior: A Pilot Study

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## Abstract

The present study aimed to investigate extraversion as a moderator of social loafing on a motor task that requires fine motor skills as well as perceptual-motor skills. Participants with higher and lower levels of extraversion were asked to group dots according to their color during high and low identifiability conditions. The performance was determined by the number of dots accurately grouped. A 2 (group; high/low extraversion) × 2 (identifiability; high/low) mixed model of ANOVA revealed a significant interaction between extraversion and identifiability, which means that extraverts' performance increased from the low to high identifiability condition. On the other hand, introverts' performance remained relatively stable across high and low identifiability conditions. Overall, results suggested that in an identifiable state, extraverts tend to increase their performance.

**Keywords:** Social loafing, Extraversion, Group performance

## 1. Introduction

In a sports team, success is determined by the athletes' effort and contribution in a collective task, in which each members' contribution is pooled with other members of the team. For this reason, members of a team are required to sustain their effort and motivation to achieve a specific goal in both training and competition. Therefore, an examination of the factors with the potential to influence individual performance when working on a group task is of both theoretical and practical importance.

Norman Triplett was the first investigator who noticed that the presence of other co-actors might influence individuals' performance. Triplett (1898) discovered that bicycle racers were faster when they were racing in the presence of other athletes than when they cycled alone. Triplett also conducted a laboratory experiment to validate his observations on bicycle racers.

However, later Max Ringelmann discovered that as the group size increased, group performance gradually decreases than would be expected from the simple addition of individual performances (Karau & Williams, 1993; Kravitz & Martin, 1986). Later, coordination loss, as well as motivation loss, were identified as the main reasons that can lead to a decrease in performance while working collectively on a group task (Steiner, 1972). Latané, Williams, and Harkins (1979) labeled the motivational loss in individuals working together as social loafing, which can deteriorate a group's overall performance.

To date, social loafing has received sufficient scientific attention from researchers in the field of sport psychology. These researchers provided evidence for the performance decrement in individuals working collectively on a group task. Moreover, results from these studies revealed that specific situational and individual characteristics might facilitate or inhibit the social loafing effect. In this respect, identifiability has been consistently demonstrated as a situational factor with the potential to influence the occurrence of social loafing. For example, Williams, Nida, Baca, and Latane (1989) demonstrated that swimmers were faster in 100 yd freestyle relays than a 100 m individual freestyle race when identifiability was high. Identifiability has also been found to moderate the link between specific individual differences and the magnitude of social loafing. Hence, Woodman, Roberts, Hardy, Callow, and Rogers (2011) have shown that narcissists' performance in a collective group task may vary depending on whether identifiability was high or low.

Similarly, in a study by Swain (2013), it has been found that low task/high ego orientation individuals tended to decrease their performance level during a collective group task in a nonidentifiable team, but not in an identifiable team. Identifiability has also been found to have the potential to moderate the association between social loafing and mental toughness. Haugen, Reinboth, Hetlelid, Peters, and Høigaard (2016) revealed that individuals with low mental toughness might be more prone to reduce their effort in a non-identifiable team condition than their counterparts with high mental toughness.

Recently, few studies have started to examine personality traits considering the Big Five model factors as the possible predictors of social loafing. As expected, these studies focused mainly on conscientiousness and found that conscientiousness may inhibit social loafing (Klehe, Ute-Christine, & Anderson, 2007; Tan & Tan, 2008). Another personality trait within the Big Five model that may lead to social loafing behavior is extraversion.

Individuals with high extraversion are expected to be sociable, talkative, energetic, optimistic, and enthusiastic (Costa & McCrae, 1992), which can make them more vulnerable to be a desirable and high performer group member. Previous research has provided evidence that extraversion may be associated with better individual performance in group tasks (Balthazard, Potter, & Warren, 2004; Jung, Lee, & Karsten, 2012). Moreover, Barry and Stewart (1997) suggested that extraversion may be the most relevant variable in predicting individual differences in the member's contribution to group performance. On the other hand, Barry and Stewart (1997) also suggested that the other group members may perceive extraverted individuals as having a more significant effect than introverts on group outcomes; this perception may stem from extraverts' socioemotional inputs, in addition to task-related

contributions. The results and arguments presented by Barry and Stewart (1997) indicate that certain social and situational factors, such as identifiability, may give rise to variation in an extraverted individual's performance on a group task. Another theoretical reason to assume an association between extraversion and performance in group task is the extraverted individuals' tendency to use self-deceptive enhancement strategies (Davies, French, & Keogh, 1998). Taken together, it seems that extraverted individuals may have a desire to perform better than others while working as a member of an identifiable group. However, despite the theoretical reasons that suggest that the link between extraversion and social loafing during a collective group task may be mediated by identifiability, to the best of my knowledge no previous study tested whether such a link exists.

The present study aimed to explore whether identifiability, together with extraversion, maybe the situational and individual factors that can explain social loafing during a collective group task. In light of the research findings and theoretical explanations mentioned above, it was predicted that extraverted individuals should perform better when their contribution to the group's total performance is identifiable. Contrarily, it was predicted that extraverted individuals perform poorly when their contribution to the group's total performance is not identifiable. Finally, it was hypothesized that the performance of the individuals low on extraversion should not differ between high and low identifiability conditions.

## **2. Method**

### *2.1 Participants*

The sample consisted of 54 right-handed college athletes (17 females) ranging from 23–27 years of age (mean age = 25.6, standard deviation [SD = 2.86] years). All participants were recruited from the Faculty of Sports Sciences of a university. Participants were required to abstain from the use of any medications or commercial ergogenic aids that could influence their mental and physical performance. Participants were also required to have a normal color vision (see the procedure of this article) and no history of any psychopathology, or surgical procedure due to upper extremity damage. The local ethics committee approved all experimental procedures, and all experimental procedure were executed following the latest version of the Helsinki Declaration. All participants provided informed written consent.

### *2.2 Personality Measure*

To assess extraversion, the short form of the Five-Factor Personality Inventory (FFPI) developed by Tatar (2005) was used. The FFPI is an 85-item personality inventory designed to evaluate the five personality traits of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Item responses are made using a 5-point Likert format. In this study, only the extraversion subscale of the FFPI was used. Based on a median split of the extraversion score from all participants, they were grouped into either high or low neuroticism groups. The median value of extraversion was 2.0. Hence, individuals who had extraversion scores higher than the median value were included in the high-extraversion group, and those with scores below the median value were included in the low-extraversion group. The high-extraversion group included 31 (eleven females) individuals, and the

low-neuroticism group included 23 (six females) individuals.

### *2.3 Procedure*

The second author personally invited the participants to take part in what was described as a fine motor skill study. Although participants were informed about the experimental protocol, they were unaware of the real purpose of the study. The same author tested each team consisting of three persons separately in the same laboratory. On arrival, participants were subjected to the Ishihara test to determine whether their color perception was normal. Participants with normal color vision completed the extraversion items from the Short Form Five-Factor Personality Inventory. Afterward, participants practiced the experimental task for one minute. After the completion of the practice session, participants executed the experimental task twice, in both, high and low identifiability conditions. In the high identifiability condition, the experimenter told participants that the group's overall performance score and the individual performance of each team member would be recorded and publicized on the faculty notice boards as well as the experimenters' social media accounts. In the low identifiability condition, the experimenter told participants that only the group's total performance score would be recorded and publicized on the faculty notice boards and experimenters' social media accounts. However, the experimenter recorded each participants' performance for both high and low identifiability conditions. The order of the experimental conditions for each team was counterbalanced.

### *2.4 Task*

A bead grouping task was specifically designed for the present study that required both fine and perceptual-motor skills. Accordingly, the participants' task was to choose the beads one by one from a bowl containing 500 beads in five different colors (blue, green, white, black, and brown) and put them into the color glasses corresponding to the color of the beads. The performance was determined in terms of the number of the beads grouped accurately in one minute. The teams performed the same experimental task twice in high and low identifiability conditions.

### *2.5 Statistical Analysis*

To analyze the obtained data set, a 2 (group; high/low extraversion)  $\times$  2 (identifiability; high/low) repeated measures ANOVA was performed. In this analysis, the within-subject factor was the experimental conditions (high versus low identifiability), and the between-subject factor was extraversion (high versus low extraversion groups). The dependent variables were the number of beads grouped accurately in high and low identifiability conditions.

## **3. Results**

The result of the 2 (group; high/low extraversion)  $\times$  2 (identifiability; high/low) mixed model of ANOVA with repeated measures on the identifiability factor demonstrated significant main effect of group [ $F(1, 52) = 4.40, p = .041, \eta^2 = .08$ ] and a significant main effect of identifiability [ $F(1, 52) = 18.50, p = .001, \eta^2 = .26$ ]. The interaction between Group and

identifiability was also significant [ $F(1, 52) = 5.35, p = .024, \eta^2 = .09$ ].

Table 1. Means and standard deviations of high and low extraversion groups for low and high identifiability conditions

Group	Identifiability			
	Low		High	
	Mean	S.D.	Mean	S.D.
High Extraversion (n = 23)	52.00	11.34	59.97	9.81
Performance				
Low Extraversion (n = 31)	49.35	9.45	51.74	10.70
Performance				

As illustrated in Table 1, an examination of the descriptive statistics about the number of beads grouped accurately suggests that while there was a significant increase from low to high identifiability condition for high extraversion group, the number of beads grouped accurately remained relatively stable between the same conditions for low extraversion group.

#### 4. Discussion

The present study aimed to investigate whether extraversion within the Big Five personality model might be a moderator of social loafing on a collective group task. Results obtained from the present study provided preliminary evidence for the hypothesis that extraverted individuals tend to increase their performance level while working on a group task when identifiability is high. Accordingly, extraverts were able to group almost nine extra beads when identifiability was high. In other words, extraverted individuals loafed when identifiability was low.

The dominance sub-facet of extraversion, which refers to striving for superiority, control, and influence over others (Driskell, Goodwin, & Shea, 2006), may present a theoretically sound background for the link between extraversion and social loafing. Driskell, Goodwin, and Shea (2006) argued that the effect of extraversion on team performance might stem from the effect of assertiveness/dominance sub-facets of extraversion. In essence, having a better performance than other team members in an identifiable team may provide an opportunity for extraverts to have a more dominant social status in the group.

Another theoretical reason that can explain extraverts' enhanced performance in the high identifiability condition concerns with extraverts' tendency to use self-deceptive enhancement strategies. Previous research has shown the link between self-deceptive enhancement strategies and extraversion (Davies et al., 1998; Meston, Heiman, Trapnell, & Paulhus, 1998;

Paulhus & John, 1998). Hence, in an identifiable team, extraverted individuals may perceive that a higher level of performance compared to other team members while working on a group task may be an ideal opportunity for self-enhancement. Further, previous studies provided support for the argument that the presence of other individuals may lead to an increase in extraverted individuals' performance (Nevicka, De Hoogh, Van Vianen, Beersma, & McIlwain, 2011).

The association of extraversion to narcissism presents another theoretical reason for the results suggesting that extraversion may give rise to increased performance in a group task when identifiability is high. In this respect, research findings consistently revealed a moderate relationship between extraversion and narcissism (Miller & Campbell, 2008; Nevicka et al., 2011), which may give rise to an increased level of performance while working on a group task within an identifiable team (Woodman et al., 2011).

The interpretation of the results suggested that identifiability may be the critical factor for a better understanding of the link between extraversion and performance in a group task. Despite the extensive evidence indicating a positive relationship between extraversion and group performance (Bell, 2007; Jung et al., 2012; Kramer, Bhawe, & Johnson, 2014), the results of the present study demonstrated that extraversion might be associated with performance only in certain circumstances. As the experimental task used in this study does not require inter-individual coordination, extraverted individuals' performance decrement in nonidentifiable condition can be attributed to the motivational loss.

## **5. Conclusions**

Considering the findings, it was concluded that social loafing could occur only in certain circumstances. Consistent with previous studies (Haugen et al., 2016; Swain, 2013; Williams et al., 1989), the present study demonstrated that the influence of dispositional factors on social loafing might depend on situational factors; in this case, identifiability.

The results obtained from the present study may have several implications for researchers and practitioners aiming to maximize a team's performance. First, it seems that extraversion can be a useful construct to predict consistency of team members' performance. In this regard, introverted individuals appeared to have more consistent performance levels across high and low identifiability conditions. In other words, highlighting individual contributions of team members seemed to be less critical for introverted individuals. However, extraverted individuals elevated their effort and performance when their input is highlighted and socially loafed when their contribution is not highlighted. Thus, practitioners should be aware of team members' personality traits to prevent the social loafing effect.

## **6. Limitations**

This study has several limitations. In this study, artificially composed teams were used rather than well-established real teams. As team identification may have the potential to prevent social loafing, future research should consider using well-established real teams to examine social loafing further. The experimental task used in the present study was not physically demanding. Therefore, researchers should consider testing whether extraversion, together



with identifiability, may have an account for social loafing in physically demanding tasks. To the best of my knowledge, this is the first study that examines extraversion as a possible antecedent of social loafing. Therefore, researchers should consider testing the effect of extraversion on social loafing in well-controlled experiments. Lastly, the use of laboratory-based tasks may limit the generalizability of the results to the field.

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