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# 1 Introduction

Throughout political history, tyrants, and despots have influenced great power over large swaths of land and communities. One common thread amongst these individuals is how they wield their great power, often through dominant tactics such as threats and political subversion. Recent history has shown with individuals like Donald Trump, Kim Jong-Un, and Rodrigo Duterte who display authoritarian traits often wield their power through fear and threats of violence (Bernstein, 2020; “Glamorizing Dictators,” 2018; Kirby, 2021). How this power is wielded is often different for each individual. Some individuals such as Duterte and Bolsonaro wielded their power more dramatically than the likes of Trump. Individuals wielding power need not be tyrants such as the former. Individuals like Angela Merkel used her position and leadership skills to be a world leader in most negotiations. While individuals more well known for their status demonstrated their power through prestige motives. To better understand how individuals such as world leaders or opinion makers gain and wield their power over others. Research in this field is often difficult to research yet strides have been made to understand power, namely through research in moral judgment and decision-making such as power orientation.

## 1.1 Dominance, Prestige, and Leadership orientation

Research in power desire motives has focused on three subdomains: dominance, leadership, and prestige (Suessenbach et al., 2019). Each of these three different power motives is explained as to different ways or methods that individuals in power sought power or were bestowed upon them. Often these dominant individuals will wield their power with force and possible risk to themselves to hold onto that power.

### 1.1.1 Dominance

The dominance motive is one of the more researched methods and well-depicted power motives. Individuals with a dominant orientation display the more primal of human behavior. These individuals will seek power through direct methods such as asserting dominance, control over resources, or physically assaulting someone (Johnson & Bruner, 2012; Winter, 1993). Early research in dominance motives has shown that acts of dominance ranging from asserting physical dominance over another to physical displays of violence has been shown in many mammalian species, including humans (Petersen et al., 2018; Rosenthal et al., 2012).

81 Individuals high in dominance are often high in Machiavellianism, nar-  
82 cissism, and often are prone to risky behavior (discussion further in the next  
83 section). Continued research has hinted at a possible tendency for males to dis-  
84 play these dominant seeking traits more than females (Bareket & Shnabel, 2020;  
85 Sidanius et al., 2000). When high dominance individuals assert themselves they  
86 are doing so to increase their own individual sense of power (Anderson et al.,  
87 2012; Bierstedt, 1950). Asserting one’s own sense of dominance over another can  
88 be a dangerous task. In the animal kingdom, it can often lead to injury. While,  
89 in humans asserting dominance can take a multitude of actions such as leering  
90 behaviors, physical distance, or other non-verbal methods to display dominance  
91 (Petersen et al., 2018; Witkower et al., 2020). Power from a dominant perspective  
92 is not always bestowed upon someone. Often, high dominance individuals will  
93 take control and hold onto it.

### 94 **1.1.2 Prestige**

95 Contrary to the dominant motivation of using intimidation and aggression  
96 to gain more power, a prestige motivation or prestige, in general, is bestowed upon  
97 an individual from others in the community (Maner & Case, 2016; Suessenbach  
98 et al., 2019). Different from the dominance motivation, a prestige motivation is  
99 generally unique to the human species (Maner & Case, 2016). Due in part to  
100 ancestral human groups being smaller hunter-gatherer societies, individuals that  
101 displayed and used important behaviors beneficial to the larger group were often  
102 valued and admired by the group. Therein, the social group bestows the authority  
103 onto the individual. Generally, this type of behavior can be passively achieved by  
104 the prestigious individual. However, this does not remove the intent of the actor  
105 in that they too can see prestige from the group, but the method of achieving  
106 that social status greatly differs from that of dominance-seeking individuals.  
107 Apart from dominance-motivated individuals that continually have to fight for  
108 their right to have power over others, individuals that seek or were given power  
109 through a prestige motivation are not generally challenged in the same sense as  
110 dominant individuals. Displaying behaviors that the community would see as  
111 beneficial would endear them into the community making the survival of the  
112 community as a whole better (Maner & Case, 2016). Evolutionarily this would  
113 increase the viability of the prestigious individual and their genes. Similar to  
114 the dominance perspective, the prestige perspective overall increases the power  
115 and future survivability of the individual. However, due to the natural difference  
116 between prestige and dominance, dominance-seeking individuals are challenged  
117 more often resulting in more danger to their position (Johnson & Bruner, 2012).

### 118 1.1.3 Leadership

119 With a shared goal a leader is someone that takes initiative and attracts  
120 followers for that shared goal (Van Vugt, 2006). Leadership is an interesting  
121 aspect of behavior in that it is almost exclusive to human interaction. Dis-  
122 cussions by evolutionary psychologists point to the formation of early human  
123 hunter-gatherer groups where the close interconnectedness created a breeding  
124 ground for leadership roles. As early humans began to evolve it would become  
125 advantageous for individuals to work together for a common goal (King et al.,  
126 2009). In the case of some situations, an individual with more knowledge of a  
127 situation would take charge. Multiple explanations of the evolution of leadership  
128 exist such as coordination strategies, safety, along with evidence for growth in  
129 social intelligence in humans.

130  
131 An interesting aspect of leadership motivation is the verification of the  
132 qualities of the leader by the communities. Individuals that are often put into  
133 leadership roles or take a leadership role often display the necessary goals, qual-  
134 ities, and knowledge to accomplish the shared/stated goal. However, this is not  
135 always the case especially for those charismatic leaders where they could stay  
136 on as a leader longer than the stated goal requires (Vugt & Ronay, 2014). Tra-  
137 ditionally, leadership was thought to be fluid in that those with the necessary  
138 knowledge at the time would be judged and appointed as the leader. However,  
139 these charismatic leaders use their charisma, uniqueness, nerve, and talent to hold  
140 onto their status.

## 141 1.2 Risk

142 Every time people leave the relative safety of their home, every decision  
143 they make they are taking some form of risk. Financial risk is often discussed  
144 in the media usually concerning the stock market. However, the risk is not  
145 just present in finances but also in social interactions such as social risk, sexual  
146 risk, health and safety risk, recreational, and ethical risks (Breakwell, 2007;  
147 Kühberger & Tanner, 2009; Shearer et al., 2005; Weber et al., 2002). Each  
148 individual is different in their likelihood and perception of participating in those  
149 risks. Some will be more inclined to be more financially risky while others would  
150 risk their health and safety.

151  
152 Whether to engage in a risky situation is very complex depending on a  
153 cost-benefit analysis. Do the positives outweigh the negatives? In practice, not  
154 all individuals will do a cost-benefit analysis of a risky situation. Often, the

155 timing of an event makes such an analysis disadvantageous. The benefits are  
156 often relative to the individual decision-maker. Differences emerge in the general  
157 likelihood to engage in risky behavior such that males tend to be more likely to  
158 engage in risky behaviors than their female counterparts. Women tended to avoid  
159 risky situations except for social risks.

### 160 **1.3 The present study**

161 The present study sought to further our understanding of dominance, pres-  
162 tige, and leadership motivations in human decision-making. Furthering this, we  
163 seek to bridge the connection between risk-taking behaviors, from diverse do-  
164 mains, and the dominance, prestige, and leadership orientations. Following the  
165 literature, we predicted that participants that were high in dominance orientation  
166 would be more likely to not only engage in risky behaviors but praise the ben-  
167 efits of participating in those behaviors. Individuals with prestige or leadership  
168 orientation.

## 169 **2 Experiment 1**

### 170 **2.1 Methods**

171 Participants were a convenience sample of 111 individuals from Prolific  
172 Academic’s crowdsourcing platform ([www.prolific.io](http://www.prolific.io)). Prolific Academic is an  
173 online crowdsourcing service that provides participants access to studies hosted  
174 on third-party websites. Participants were required to be 18 years of age or  
175 older and be able to read and understand English. Participants received £4.00,  
176 which is above the current minimum wage pro-rata in the United Kingdom, as  
177 compensation for completing the survey. The Psychology Research Ethics Com-  
178 mittee at the University of Edinburgh approved all study procedures [ref: 212-  
179 2021/1]. The present study was pre-registered along with a copy of anonymized  
180 data along with a copy of the R code and supplemental materials are available  
181 at (<https://osf.io/s4j7y>).

### 182 **2.2 Materials**

#### 183 **2.2.1 Demographic Questionnaire**

184 In a demographic questionnaire administered prior to the main survey,  
185 participants were invited to respond to questions about their self-identified de-  
186 mographic characteristics such as gender, ethnicity, and ethnic origin.

## 187 2.2.2 Dominance, Prestige, and Leadership Orientation

188 The 18-item Dominance, Prestige, and Leadership scale, DoPL (Suessen-  
189 bach et al., 2019), is used to measure dominance, prestige, and leadership orien-  
190 tation. Each question corresponds to one of the three domains. Each domain is  
191 scored across six unique items related to those domains (e.g., “I relish opportuni-  
192 ties in which I can lead others” for leadership) rated on a scale from 0 (Strongly  
193 disagree) to 5 (Strongly agree). Internal consistency reliability for the current  
194 sample is  $\alpha = 0.86$ .

## 195 2.2.3 Domain Specific Risk-taking Scale

196 The 40-item Domain-Specific Risk-taking Scale, DOSPERT (Weber et al.,  
197 2002) is a scale assessing individuals’ likelihood of engaging in risky behaviors  
198 within 5 domain-specific risky situations: financial (“Gambling a week’s income  
199 at a casino.”), social (“Admitting that your tastes are different from those of your  
200 friends”), recreational (“Trying out bungee jumping at least once”), health and  
201 safety (“Engaging in unprotected sex”), and ethical (“Cheating on an exam”)  
202 situations. Each risky situation is then rated on a five-point Likert scale (1 being  
203 very unlikely and 5 being very likely). Two additional five-point Likert scales  
204 assess risk perception and expected benefits (1 being not at all risky and 5 being  
205 extremely risky; 1 being no benefits at all and 5 being great benefits) respectively.  
206 Example risky situations are “Admitting that your tastes are different from those  
207 of a friend” and “Drinking heavily at a social function.” Internal consistency  
208 reliability for the current samples for the 3 sub-domains are  $\alpha = 0.85$ ,  $\alpha = 0.90$ ,  
209  $\alpha = 0.92$  respectively.

## 210 2.3 Procedure

211 Participants were recruited via a study landing page on Prolific’s web-  
212 site or via a direct e-mail to eligible participants (Prolific Academic, 2018). The  
213 study landing page included a brief description of the study including any risks  
214 and benefits along with expected compensation for successful completion. Par-  
215 ticipants accepted participation in the experiment and were directed to the main  
216 survey (Qualtrics, Inc; Provo, UT) where they were shown a brief message on  
217 study consent.

218 Once participants consented to participate in the experiment they an-  
219 swered a series of demographic questions. Once completed, participants com-  
220 pleted the Dominance, Prestige, and Leadership Scale and the Domain Specific  
221 Risk-taking scale. The two scales were counterbalanced to account for order ef-  
222 fects. After completion of the main survey, participants were shown a debriefing



statement that briefly mentions the purpose of the experiment along with the contact information of the main researcher (AI). Participants were compensated £4.00 via Prolific Academic.

## 2.4 Data analysis

Demographic characteristics were analyzed using multiple regression for continuous variables (age) and Chi-square tests for categorical variables (gender, race, ethnicity, ethnic origin, and education). Means and standard deviations were calculated for the relevant scales (i.e., DoPL and DOSPERT). All analyses were done using (R Core Team, 2021) along with (Bürkner, 2017) package.

The use of bayesian statistics has a multitude of benefits to statistical analysis and research design. One important benefit is through the use of prior data in future analyses. Termed as priors, is the use of prior distributions for future analysis. This allows for the separation of how the data might have been collected or what the intention was. In essence, the data is the data without the interpretation of the scientist.

All relevant analyses were conducted in a Bayesian framework using the brms package (Bürkner, 2018) along with the cmdstanr packages notes (Gabry & Cesnovar, 2021). In addition to the aforementioned packages, we used bayestestR, rstan, and papaja (Aust & Barth, 2020; Makowski et al., 2019; Stan Development Team, 2020).

## 2.5 Results

One hundred and eleven individuals completed the main survey. Of these individuals, 111 completed all sections without incomplete data and were therefore retained in most data analyses. In later analyses to account for outliers two participants had to be excluded from the dataset. Table 1 shows the demographic information for the participants. The average completion time for participants was 20M 58s ( $SD = 10M\ 43s$ ).

### 2.5.1 Preregistered Analyses

We first investigated DoPL orientation on general risk preference (Figure 1). General risk preference was anecdotally explained by dominance orientation, participant gender, and participant age (see table 2).

### 2.5.2 Demographic and DoPL

All participants completed the dominance, leadership, and prestige scale (Suessenbach et al., 2019). Empirically, men have generally been more

**Table 1**

Variables	*n* = 111
Age	
Mean (SD)	26.84 (9.21)
Median [Min, Max]	24 [18,61]
Gender	
Female	54 (48.6%)
Gender Non-Binary	2 (1.8%)
Male	55 (49.5%)
Education	
Primary School	4 (3.6%)
GCSes or Equivalent	8 (7.2%)
A-Levels or Equivalent	32 (28.8%)
University Post-Graduate Program	21 (18.9%)
University Undergraduate Program	44 (39.6%)
Doctoral Degree	1 (0.9%)
Prefer not to answer	1 (0.9%)
Ethnicity	
African	8 (7.2%)
Asian	6 (5.4%)
English	10 (9.0%)
European	77 (69.4%)
Latin American	2 (1.8%)
Scottish	2 (1.8%)
Other	6 (5.4%)

dominance-oriented in their behavior (citation). Following the literature, men tended to be more dominant-oriented than women. The marginal posterior distribution of each parameter is summarized in Table #. Interestingly, older individuals tended to be more dominance-oriented than younger individuals.

## 2.6 Domain-Specific Risk-Taking

## 2.7 Interactions

When investigating dominance, prestige, and leadership motivations with domain-specific risk-taking findings supported the common expectations in the literature. Table 5 shows the interactions with like CI values. Dominance overall explained the relationship of DoPL orientation and preference, specifically for ethical, financial, social, health and safety, and recreational preference. Participant age and gender also appeared to affect recreational preference.

Following these findings, we investigated the effect of DoPL on general risk preference and found that dominance overall affected risk preference along with gender and age of the participant (Table 5).

## 272 2.8 Discussion

## 273 3 Experiment 2

### 274 3.1 Methods

275 Materials remain the same in terms of the (1) Demographic Questionnaire,  
276 (2) Dominance, Prestige, and Leadership Questionnaire, and (3) DOSPERT  
277 Questionnaire. However, we added the Brief-Pathological Narcissism Inventory to  
278 assess possible interactions of dominance and narcissism in risky decision-making.  
279 Materials and methods were approved by the University of ## Participants

280 Following experiment 1, participants were a convenience sample of 111  
281 individuals from Prolific Academic’s crowdsourcing platform (www.prolific.io).  
282 Prolific Academic is an online crowdsourcing service that provides participants  
283 access to studies hosted on third-party websites. Participants were required to be  
284 18 years of age or older and be able to read and understand English. Participants  
285 received £4.00, which is above the current minimum wage pro-rata in the United  
286 Kingdom, as compensation for completing the survey. The Psychology Research  
287 Ethics Committee at the University of Edinburgh approved all study procedures  
288 [ref: 212-2021/2]. The present study was pre-registered along with a copy of  
289 anonymized data and a copy of the R code is available at ([https://osf.io/](https://osf.io/s4j7y)  
290 s4j7y).

### 291 3.2 Materials

#### 292 3.2.1 Brief-Pathological Narcissism Inventory

293 The 28 item Brief Pathological Narcissism Inventory (B-PNI; Schoenleber  
294 et al., 2015) is a modified scale of the original 52-item Pathological Narcissism  
295 Inventory (PNI; Pincus et al., 2009). Like the PNI the B-PNI is a scale measuring  
296 individuals’ pathological narcissism. Items in the B-PNI retained all 7 patholog-  
297 ical narcissism facets from the original PNI (e.g., exploitativeness, self-sacrificing  
298 self-enhancement, grandiose fantasy, contingent self-esteem, hiding the self, de-  
299 valuing, and entitlement rage). Each item is rated on a 5 point Likert scale  
300 ranging from 1 (not at all like me) to 5 (very much like me). Example items  
301 include “I find it easy to manipulate people” and “I can read people like a book.”

### 302 3.3 Procedure

303 Participants were recruited via a study landing page on Prolific’s website  
304 or via a direct e-mail to eligible participants (Prolific Academic, 2018). The study  
305 landing page included a brief description of the study including any risks and ben-  
306 efits along with expected compensation for successful completion. Participants

307 accepted participation in the experiment and were directed to the main survey  
308 on pavlovia.org (an online JavaScript hosting website similar to Qualtrics) where  
309 they were shown a brief message on study consent.

310       Once participants consented to participate in the experiment they an-  
311 swered a series of demographic questions. Once completed, participants com-  
312 pleted the Dominance, Prestige, and Leadership Scale and the Domain Specific  
313 Risk-taking scale. An additional survey was added (the novel aspect of experi-  
314 ment 2) where participants, in addition to the two previous surveys, were asked to  
315 complete the brief-pathological narcissism inventory. The three scales were coun-  
316 terbalanced to account for order effects. After completion of the main survey,  
317 participants were shown a debriefing statement that briefly mentions the purpose  
318 of the experiment along with the contact information of the main researcher (AI).  
319 Participants were compensated £4.00 via Prolific Academic.

### 320 **3.4 Data analysis**

321       Demographic characteristics were analyzed using multiple regression for  
322 continuous variables (age) and Chi-square tests for categorical variables (gender,  
323 race, ethnicity, ethnic origin, and education). Means and standard deviations  
324 were calculated for the relevant scales (i.e., DoPL and DOSPERT). All analyses  
325 were done using (R Core Team, 2021) along with (Bürkner, 2017) package.

326       The use of bayesian statistics has a multitude of benefits to statistical  
327 analysis and research design. One important benefit is through the use of prior  
328 data in future analyses. Termed as priors, is the use of prior distributions for  
329 future analysis. This allows for the separation of how the data might have been  
330 collected or what the intention was. In essence, the data is the data without the  
331 interpretation of the scientist.

332       All relevant analyses were conducted in a Bayesian framework using the  
333 brms package (Bürkner, 2018) along with the cmdstanr packages notes (Gabry &  
334 Cesnovar, 2021). In addition to the aforementioned packages, we used bayestestR,  
335 rstan, and papaja for analysis along with creation of this manuscript (Aust &  
336 Barth, 2020; Makowski et al., 2019; Stan Development Team, 2020).

337	<b>3.5</b>	<b>Results</b>
338	<b>3.6</b>	<b>Preregistered Analyses</b>
339	<b>3.6.1</b>	<b>Demographic and DoPL</b>
340	<b>3.7</b>	<b>Domain-Specific Risk-Taking</b>
341	<b>3.8</b>	<b>Interactions</b>
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343	<b>3.10</b>	<b>Limitations</b>
344	<b>3.11</b>	<b>Future Implications</b>

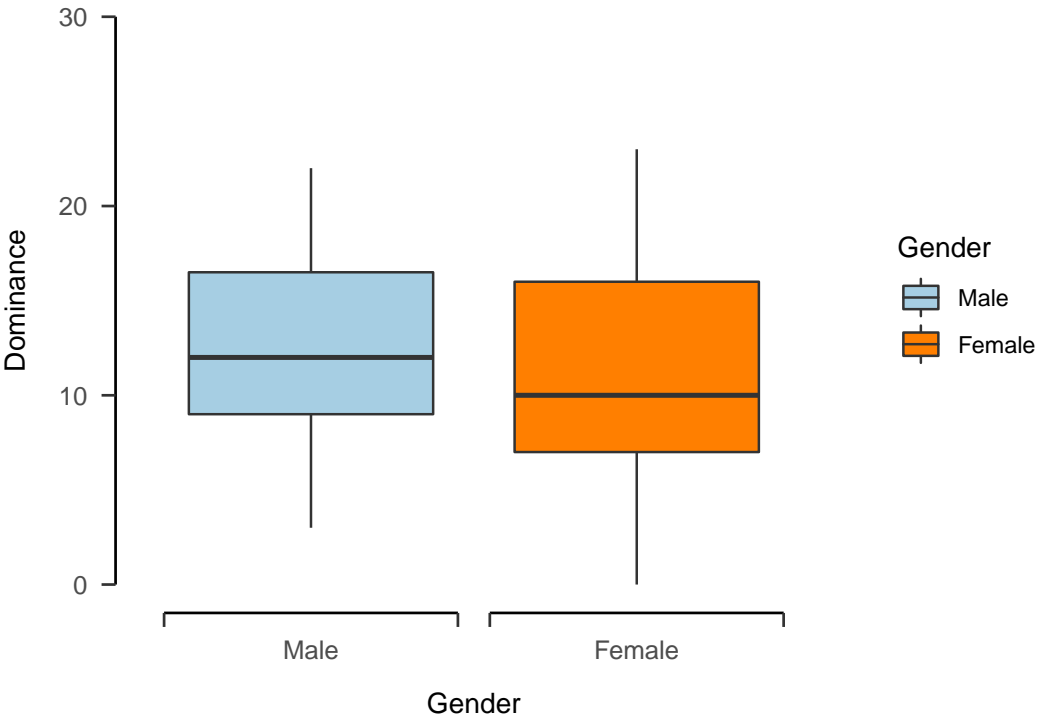
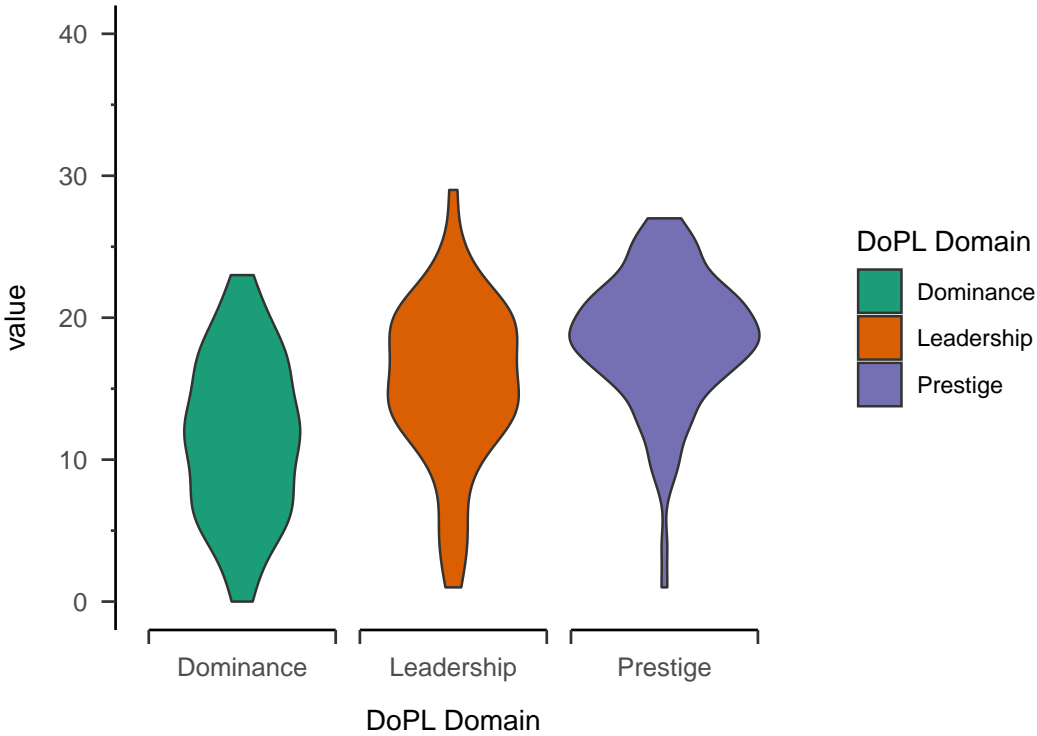
## 4 References

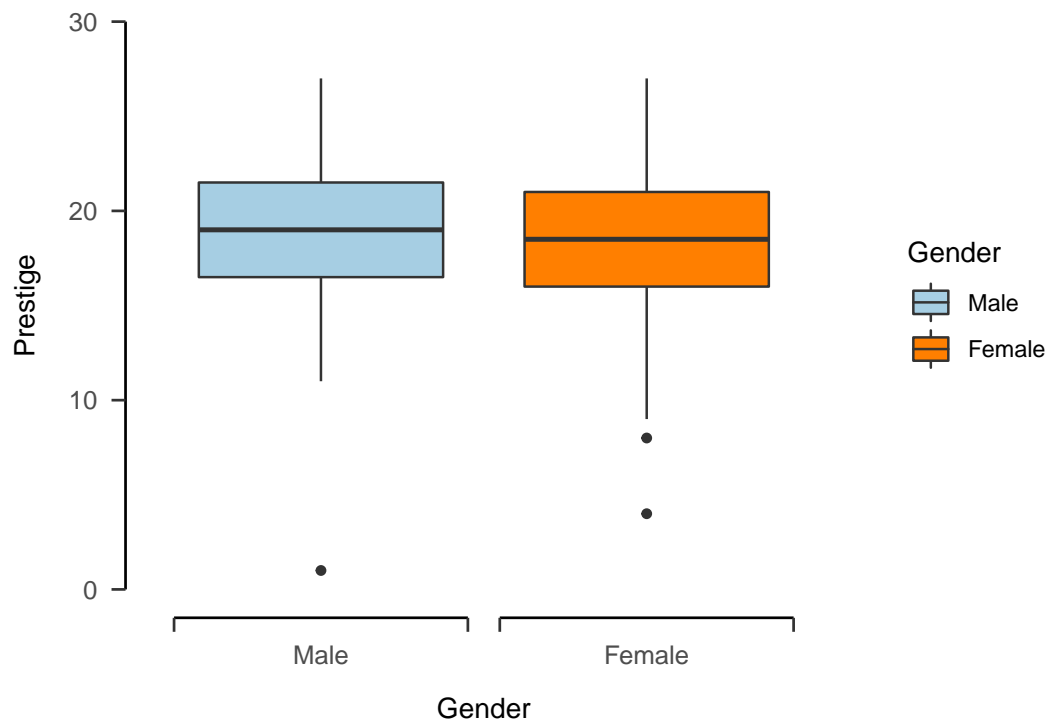
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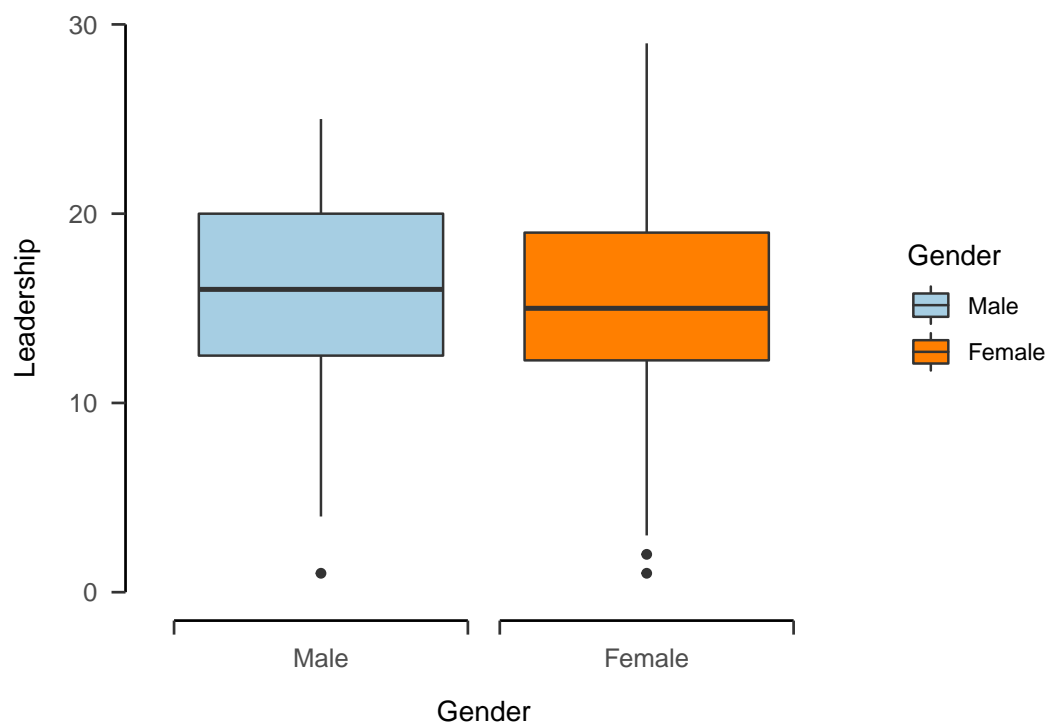
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**Table 2**

Parameter	CI	CI_low	CI_high
b_Intercept	0.95	1.37	5.81
b_dominanceSum	0.95	1.07	4.91
b_leadershipSum	0.95	-3.88	-0.02
b_Gender1	0.95	-4.95	-1.09
b_Age	0.95	-4.80	-0.96

**Table 3**

	Estimate	Est.Error	Q2.5	Q97.5
Intercept	3.62	1.13	1.41	5.86
dominanceSum	3.00	0.99	1.08	4.93
prestigeSum	0.09	0.99	-1.84	2.02
leadershipSum	-1.91	0.98	-3.85	0.02
Gender1	-3.02	0.99	-4.95	-1.08
Age	-2.86	0.99	-4.78	-0.93

**Table 4**

	Parameter	CI	CI_low	CI_high
5	b_ethicalPreference_Intercept	0.95	2.85	4.42
6	b_ethicalPreference_dominanceSum	0.95	0.61	1.71
14	b_financialPreference_Intercept	0.95	7.50	9.67
15	b_financialPreference_dominanceSum	0.95	0.14	1.59
41	b_socialPreference_Intercept	0.95	8.34	11.67
42	b_socialPreference_dominanceSum	0.95	0.60	2.87
23	b_healthAndSafetyPreference_Intercept	0.95	4.65	6.59
24	b_healthAndSafetyPreference_dominanceSum	0.95	0.41	1.77
32	b_recreationalPreference_Intercept	0.95	0.95	2.48
33	b_recreationalPreference_dominanceSum	0.95	0.66	1.74
29	b_recreationalPreference_Gender1	0.95	-1.83	-0.47
28	b_recreationalPreference_Age	0.95	0.06	0.87