

**An Investigation into the Relationship Between
Emotional Intelligence and Prosocial Tendencies and
Machiavellianism**

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Abstract

The link between emotional intelligence and prosocial behaviour has been greatly investigated, however research into the possible negative uses of emotional intelligence have not received such attention. This study seeks to investigate the association between emotional intelligence and prosocial tendencies & Machiavellianism. This research consists of a cross-sectional, observational research design to measure quantitative data. Three measures were used to quantify each variable: prosocial tendencies (PTM), emotional intelligence (Schutte Self-Report Inventory), and Machiavellianism (MACH-IV). The three questionnaires were shared on Google forms, alongside a disclaimer form and a consent form explaining the rationale for the research and any additional information the participant may require. Participants were also asked to provide some basic demographic information about themselves for descriptive statistics, such as age, sex, occupation and community type (i.e. rural vs. urban). Participants ($n = 105$) were recruited using snowball sampling through social media, and were aged 18 and over. Statistical analysis consisted of two simple correlations to investigate the nature of the relationship between emotional intelligence and prosocial tendencies ($r = .33$) and Machiavellianism ($r = -.35$). Correlation was followed by two linear regression analyses, where the predictor variable was EI score and the criterion variables were prosocial tendencies and Machiavellianism scores, respectively.

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1. Introduction

1.1 An Introduction to Emotional Intelligence

Emotional intelligence is widely considered to be a person's capability to recognise and regulate one's own emotions as well as the emotions of others. Emotional intelligence was originally seen in the research of the early 20th century, with Thorndike's (1920) Social Intelligence theory. Thorndike's theory described social intelligence as the individual ability to understand people and to behave correctly during human-to-human interaction. Thorndike's construct of social intelligence could be divided into emotional and motivational intelligence. Approximately two decades later, Wechsler's Adult Intelligence Scale (WAIS; 1940) was introduced. Wechsler included social reasoning as a dimension in his measure, though he did not fully represent social intelligence with this element. Emotional Intelligence did not become the concept it is known as today, until in 1990 when Salovey and Mayer proposed the term 'emotional intelligence'. The pair defined emotional intelligence as "the subset of social intelligence that involves the ability to monitor one's own and other's feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, p.5). They put forward the idea that emotional intelligence includes different dimensions, including verbal/non-verbal appraisal and expression of emotion, emotional regulation within the self and in others, and the use of emotional content to solve problems. Their model of emotional intelligence consisted of four aspects: emotional perception (identifying emotions, nonverbal communication such as body language and facial expressions), reasoning with emotions (using emotions to promote cognition, attention), emotional understanding (interpreting the cause of emotion) and managing emotion (i.e. emotional regulation). The measure utilised within this research, the

Schutte's Self-report inventory, is based on Salovey and Mayer's framework of emotional intelligence.

Salovey and Mayer's (1993) emotional intelligence framework systemised the pre-existing literature within Individual Differences research, specifically surrounding the ability to process and adapt to affective information. There is some overlap between Salovey and Mayer's theory of emotional intelligence and Gardner's (1983) intrapersonal intelligence, an aspect of his multiple intelligences theory. Gardner (2000)'s inter- and intra-personal intelligences appear to be a key part of modern psychology's emotional intelligence's roots (Petrides, 2011). Gardner says: "In its most primitive form, the intrapersonal intelligence amounts to little more than the capacity to distinguish a feeling of pleasure from one of pain ... At its most advanced level, intrapersonal knowledge allows one to detect and to symbolize complex and highly differentiated sets of feelings..., to attain a deep knowledge of... feeling life" (p. 239). In the later part of the twentieth century, emotional intelligence became popularised within general society by David Goleman's (1995) book: *Emotional Intelligence*. In his ground-breaking book, Goleman stressed the importance of emotional intelligence, going as far to say that emotional intelligence is more important in predicting success in life, than natural intelligence or IQ.

In a similar way to Goleman's writing, Lam and Kirby's (2002) study found that overall emotional intelligence, as well as emotional perception and regulation, was able to uniquely explain cognitive-based ability in individuals, more so than even general intelligence (IQ). Further on, Lyons and Schneider (2005) found that certain dimensions of emotional intelligence were associated with enhanced performance on general tasks, even after controlling for cognitive ability. It had become clear that emotional intelligence was a separate and distinct entity to general intelligence and IQ. More and more examples of the

beneficial outcomes and characteristics associated with high emotional intelligence began to appear in the research. Generally thought to be advantageous to both the individual with high emotional intelligence, and to those whom the individual interacts with, several studies have associated emotional intelligence with positive outcomes. Such outcomes include happiness, life satisfaction, psychological health and wellbeing and size of social network (Austin, Saklofske, & Egan, 2005; Day, Therrien, & Carroll, 2005; Furnham & Petrides, 2003). Goleman, Boyatziz, and McKee's (2001) book *Primal Leadership* describes the benefits of emotional intelligence in workplace settings, specifically extolling the virtues of emotionally intelligent leaders.

1.2 Emotional Intelligence and Pro-socialness

Emotion is a factor which has been said to play an important role in the cultivation of helping or prosocial behaviours, as well as prosocial motivations and values (Eisenberg, 1986; 2000). As discussed previously, emotional intelligence has been identified as having several positive attributes, including prosocial behaviour (Mayer, Hsee & Salovey, 1993). Research began to theorise reasons why this relationship may exist. For example, Mayer et al. (1993) proposed the Mood Regulation Strategy; a theory which posits that people behave in a prosocial manner in an attempt or drive to regulate their negative mood states, or as a means of escaping from negative situations. The Mood Regulation Strategy claims that the likelihood of an individual engaging in prosocial behaviour to regulate their mood, depends on their emotional intelligence or ability (i.e. emotional understanding and management). Even Goleman's (1995) book on emotional intelligence, reviewed in the beginning of this research, mentions that higher emotional intelligence and prosocial behaviours are linked. More recent research appears to widely consider empathy and altruism to be linked to emotional intelligence, and that both are facets of prosocial behaviour (Jordan, Ashkanasy &

Daus, 2008). Jordan et al. (2008) discusses whether aspects of emotional intelligence such as emotional awareness, understanding, knowledge etc., predict prosocial behaviour. Similarly, Mayer and Salovey (1995) suggest that positive emotion management shapes prosocial behaviour.

1.3 Prosocial Behaviour

The research regarding the proposed interaction between emotional intelligence and prosocial behaviour is well documented, alongside the many positive aspects of emotional intelligence (Côte, DeCelles, McCarthy, Van Kleef, & Hideg, 2011; Penner, Dovidio, Piliavin, & Schroeder, 2005). The investigation within the current thesis focuses, not on prosocial behaviours themselves, but instead, on an individual's tendency to perform them i.e. prosocial tendencies. Prosocial tendencies refer to an individual's likelihood to perform behaviour's which assist or aid other people. Quite simply, the word prosocial was originally created by social psychologists to represent an antonym to the word antisocial. Batson and Powell (2003) describe prosocial behaviour as a behaviour which "covers the broad range of actions intended to benefit one or more people other than oneself - behaviours such as helping, comforting, sharing, and cooperating" (p.463). Prosocial behaviours include helping, sharing, providing emotional comfort and support etc. Prosocial behaviour and tendencies have often been conflated with the motivational concept of altruism. MacIntyre (1967) describes altruism as the motivation to increase another person's welfare or wellbeing, contrasting to egoism, the motivation to increase one's own wellbeing. While like altruism, where prosocial behaviours are performed for purely selfless means such as self-sacrifice or risking one's own life without obvious external rewards, Simpson (2004) describes prosocial behaviour as any action intended to benefit another, regardless of the motive behind it. It is important to note the distinctions between these two concepts before further investigation. It

is clear these two concepts are not the same, as, simply put, prosocial behaviour does not have to be motivated by altruism but altruism will generally always produce prosocial behaviour. Within the constraints of this research, prosocial tendencies describe an individual's likelihood of behaving in a way which benefits another, independent of their motive for doing so. This is the working definition of prosocial tendencies utilised here.

Research into prosocial behaviour, and the reasons behind it, began in the early social psychology research of the 30's and 40's. After a trying start to the century, psychologists began to question the psychology behind the rise of Nazism, the world wars, the Holocaust and the other great tragedies of the time that were caused by the behaviours of human beings. Theorists began to examine the effects of authoritarianism, conformity and prejudice on behaviour and society (Adorno, Frenkel-Brunswik, Levinson, & Stanford, 1950; Jenness, 1932;). Incidences of groups of people witnessing other people suffering or being in danger and failing to assist or provide aid began to raise questions and concerns about the fall of social decency and "neighbourly" behaviour. This was especially true, as people began to raise families within bustling cities instead of more rural environments. Most noteworthy of these incidences is that of Kitty Genovese. The twenty-four-year-old was brutally stabbed and eventually died outside her apartment building in Queens, New York (Manning, Levine, & Collins, 2007). Several neighbours reported hearing her screams for help, but nobody assisted her in the half an hour it took for her attacker to return to the scene of the attack and murder her. This crime provoked outrage as The New York Times claimed her murder was witnessed by 38 neighbours and that no one even called the police. While this number has since been confirmed as inflated by the press, the crime gave rise to the psychological phenomenon known as the bystander or the Genovese effect (Darley & Latane, 1968). More positively, Freedom fighters and civil rights workers, of all races were willing to be beaten, imprisoned

and die in order to further the civil rights movement in the American South. These contrasting acts provoked social psychologists to question why people do and do not behave in a prosocial way. An answer to this question might aid researchers in encouraging prosocial behaviour in the general population. While most motivation theories in psychology are founded on the principles of universal egoism (Mansbridge, 1990), one must question if universal egoism explains all prosocial behaviour or if they might exist outside one another. It is difficult to understand the motivation behind why people engage in helping behaviours which benefit others, but are costly to the individual. Individuals will often behave prosocially, even in cases where individuals must risk their lives to help others, even strangers (Rand & Epstein, 2014). Psychologists suggest that there are several reasons for engaging in prosocial behaviour, such as empathy and concern for others (Sanstock, 2007) or egoistic concerns such as social status, reputation or hope for reciprocity (Eisenberg, Fabes, & Spinrad, 2007).

Often, these behaviours are encouraged by adults in childhood and adolescence, such as sharing and behaving kindly and helpfully. Evolutionary psychology explains prosocial behaviours in terms of natural selection (McCullough, Kimeldorf, & Cohen, 2008). While putting yourself in danger decreases the likelihood of surviving to pass on one's own genes, the idea of kin selection (first proposed by Darwin in his book *The Origin of Species*) purposes that helping members of one's own genetic family increases the likelihood that your kin will survive to pass on their genes. Likewise, research suggests that people are more likely to help those to whom they are closely related (Barber, 1994; Essock-Vitale & McGuire, 1985; Madsen, Tunney, Fieldman, Plotkin, Dunbar, Richardson & McFarland, 2007). Comparatively, the norm of reciprocity, otherwise known as the golden rule, puts forward the idea that when one helps another person, that person will be more likely to help in return. In

evolutionary psychology, this is called reciprocal altruism (Trivers, 1971) and suggests this behaviour developed because humans who understood that helping may lead to reciprocation were more likely to survive to reproduce.

Another theorist, Batson (1991) proposes the empathy-altruism hypothesis, which puts forward the idea that if someone feels empathetic towards someone else, they will behave in a prosocial manner towards them and show helping behaviour, regardless of what they can gain. Empathy or emotion affected by the perceived welfare of others, is distinguished here. Alternatively, the empathy-joy hypothesis, suggests that people behave in a prosocial way because they feel pleasure or joy at seeing another person at ease (Batson et al., 2008). Blau (1964) put forward the idea of social exchange theory, wherein the rewards of prosocial behaviour i.e. helping, outweigh the costs, and that therefore helping is in our own self-interest. Social-exchange theory is suggested to explain prosocial behaviour when there is no empathy felt. Other theories suggest egoistic reasons like being prosocial to improve one's own self-image, and more altruistic reasons such as prosocial behaving purely out of empathy (Batson, 1991) empathy-altruism hypothesis; Toi & Batson, 1972). It is here where we see a possible link between prosocial tendencies and the empathetic aspects of emotional intelligence. In his book, Goleman (1995) alleged that "there is an old-fashioned word for the body of skills that emotional intelligence represents: character . . . the psychological muscle that moral conduct requires" (p. 285). Brackett, River, Shiffman, Lerner, and Salovey (2006) found that emotionally intelligent individuals criticised others less. Similarly, Brackett and Mayer (2003) found them to be less aggressive. In addition, Izard et al. (2001) found that those adept at recognising emotions were more cooperative.

1.4 The Negative Aspect of Emotional Intelligence

Despite the numerous positive aspects associated with emotional intelligence, such as prosocial behaviour, it is possible that emotional intelligence could relate to negative outcomes as well. For example, one's ability to read the emotions of others may be used to identify how and when an individual should provide help or comfort, but could also be utilised to manipulate others to suit one's own needs and goals, otherwise known as interpersonal manipulation. However, regardless of this possible negative aspect of emotional intelligence, research into this area is in short supply (Côté, DeCelles, McCarthy, Van Kleef, & Hideg, 2011). Carr (2000), a professor of philosophy reasons that the worth of emotional intelligence is "dependent on the moral end which it serves" and that emotional cleverness or cunning is often not discernible from emotional intelligence (p. 31). Simply put, he suggests that prosocial and manipulative behaviours are two outcomes of the same skill; only differing in the motivation behind them. Because of the lack of research into this possible manipulateness, it appears that this question represents a clear gap in the literature and is a possible area of interest for researchers.

1.5 Machiavellianism

The individual characteristics of cunning, dishonesty and emotional manipulateness is known by another name: Machiavellianism. Wilson, Near and Miller (1996) define Machiavellianism as "a strategy of social conduct that involves manipulating others for personal gain, often against the other's self-interest" (p.285). Christie and Geis (1970) based their construct of Machiavellianism on historical figure, Niccoló Machiavelli (1469-1527) an Italian politician, philosopher and writer from the Renaissance period. Machiavellian is a phrase that is widely used by the general public to describe individuals who display amoral,

manipulative tendencies. For Niccoló Machiavelli, it is a word which describes the morally corrupt behaviours (i.e. deceit, deviousness, evil) of politicians in his renowned novel *The Prince*; in which he writes “a wise ruler cannot, nor ought he, keep faith when such promises may be turned against him, and when the reasons that caused him to promise no longer exist,” and, “There will never be a shortage of good reasons to excuse going back on your word” (p. 27). Machiavelli stated that for people in leadership, honesty, honour and other virtuous traits, are completely expendable where treachery, deceit or violence would be more efficient.

In psychology, Machiavellian describes a person that does not choose to be manipulative, but simply is. Christie and Geis define the individual who scores high in Machiavellianism or the Machiavellian as “someone who views and manipulates others for his own purposes” (1970, p.1). An individual who scores high in Machiavellianism or a ‘high Mach’ appears to have an innate ability for deception and manipulation. A Machiavellian sees other people as a means to an end, simply tools to use as a way to achieve their goals. While deceit may not be atypical in the life of the everyday individual, most would presumably agree that such behaviour is to be avoided. A person scoring high in Machiavellianism may consider this to be normal behaviour. Christie and Geis (1970) introduced the first psychometric measure of Machiavellianism, the Mach IV. Machiavellianism, psychopathy and narcissism constitute the “Dark Triad” of personality types, although it seems that Machiavellians have gotten far less attention than the other two facets. However, Machiavellianism is relevant in both psychopaths and narcissists as both types often display Machiavellian behaviour.

1.6 Emotional Intelligence and Machiavellianism

Regarding Machiavellianism's association with emotional intelligence, a negative correlation between Machiavellianism and empathy has also been identified (Barnett & Thompson, 1985); as well as, a negative association with the ability to identify emotions, otherwise known as alexithymia (Simon, Francis, & Lombardo, 1990; Wastell & Booth, 2003). However, the strongest associations between Machiavellianism and personality were negative correlations between "Big 5" personality traits: agreeableness and conscientiousness (Jakobwitz & Egan, 2006; Paulhus & Williams, 2002). In summary, the traits associated with Machiavellianism have been negatively correlated with emotional intelligence, suggesting that Machiavellianism may not represent the emotionally manipulative outcome of high emotional intelligence. For instance, Barlow, Qualter and Stylianou (2010) investigated the associations of Machiavellianism with trait and ability emotional intelligence in primary school children. Consistent with previous adult research (Austin, Farrelly, Black & Moore, 2007) negative associations were found between Machiavellianism and social and emotional understanding. Regression analysis showed that for girls, being high in emotional intelligence does not result in interpersonal manipulation. However, this was not the case in boys, suggesting sex differences in emotional intelligence.

Interestingly, however, O'Connor and Athota (2013) reassessed this negative association between Machiavellianism and emotional intelligence, by examining whether Big 5 trait Agreeableness mediates this relationship. Results indicated that individuals with high trait emotional intelligence tend to be low in Machiavellianism because of their agreeable/positive nature, not because of their emotional adeptness. Furthermore, individuals high in 'perceived emotional competence' still have the potential to be high in

Machiavellianism, especially when low in Agreeableness. These findings suggest there is a relationship between the two variables and further research is needed.

1.7 Demographic Differences

There has also been evidence to suggest individual or demographic differences in emotional intelligence, specifically that differences exist between the sexes (Furnham & Petrides, 2000; Harrod & Scheer, 2005; Mandel & Pherwani, 2003). This can be seen in the growing support around emotional intelligence research which suggest women generally score higher than men in measures of EI (Cabello, Sorrel, Fernández-Pinto, Extremera, & Fernández-Berrocal, 2016; Wright, Riedel, Sechrest, Lane, & Smith, 2018). This can be seen in Petrides and Furnham (2000) which examined gender differences in emotional intelligence scores and found that females scored higher on the social skills aspect of emotional intelligence when compared to males. Similarly, some research has suggested that individuals from rural backgrounds will score higher in prosocial tendencies than their urban counterparts (Aknin, Broesch, Hamlin, & Van de Vondervoort, 2016; Steblay, 1987; Weiner, 1976). Amato (1983) measured helping rates in rural and urban populations within six different helping scenarios. Passer-by's from rural environments helped 50% of the time versus people from urban environments who only helped 15% of the time.

1.8 Research Aims and Hypotheses

The aim of the current research therefore, is to investigate the nature of the relationship between emotional intelligence, and prosocial tendencies and Machiavellianism. It is hypothesised that emotional intelligence will positively correlate with both prosocial tendencies and Machiavellianism (hypothesis 1 and 2). This research also aims to identify if there is any gender difference in emotional intelligence scores. It is hypothesised that females

will score higher than males, on average, in emotional intelligence (hypothesis 3). Similarly, it is hypothesised that individuals from rural backgrounds will score higher in prosocial tendencies than those from an urban background (hypothesis 4). This research will hopefully shed more light onto both the positive and negative effects of emotional intelligence, such that, the possible relationships between emotional intelligence and prosocial tendencies and Machiavellianism should be made more distinct.

1.9 Rationale

In summary, if emotional intelligence scores can be encouraged or promoted in someone, and if emotional intelligence does positively predict prosocial tendencies, then prosocial behaviours can also be enriched in individuals. The ability to promote an individual's tendencies to behave in a prosocial way is beneficial to humankind and may help negate phenomena such as the bystander effect. Being able to better understand the individual factors which influence a person's likelihood of engaging in prosocial behaviour has applications in policy and education. Similarly, research around Emotional Intelligence has largely ignored any possible negative effects of emotional intelligence and such, further research in this area will contribute to this research gap. If high emotional intelligence is associated with high scores on interpersonal manipulation, known as Machiavellianism, it is important for such negative effects to be considered as research into emotional intelligence continues.

2. Methodology

2.1 Participants

The sample for this study included individuals aged eighteen and over who were recruited using social media such as Facebook, Reddit, Tumblr and Twitter (n = 105). The sample did not contain any participants from a vulnerable population. In Table 1, participants were categorised by sex (male = 41, female = 62), occupation (student = 51.4%, unemployed = 7.6%, social work = 6.7%, other = 27.6%, retail = 4.8%, tradesman = 1.9%) and community type (rural = 40%, urban = 60%). There were more females than males and ages ranged between 18 and 54, with a mean age of 28.65, and a median age of 21 (SD = 11.75). Participants were mostly occupied as students (n = 54) and a slight majority described their community type as urban (n = 63). Participants were recruited through convenience and snowball sampling as the first round of participants were accessible to the researcher, following this, each participant was then encouraged to share the survey with others within their social group. Participants provided typed informed consent before participating. The sample size met the required amount for the number of variables within the study (Tabachnick & Fidell, 2007).

Table 1. Frequencies for the current sample on each demographic variable (n = 105)

Variable	Frequency	Valid Percentage
Gender		
Male	41	39
Female	62	59
Other	2	1.9
Community Type		
Rural	42	40
Urban	63	60
Occupation		
Student	54	51.4
Unemployed	8	7.6
Social Work	7	6.7
Other	29	27.6
Retail	5	4.8
Tradesman	2	1.9

2.2 Materials

This experiment utilises three separate measures: *The Schutte Self-Report Inventory* (EIS; Schutte et al., 1998), *The Prosocial Tendencies Measure* (PTM; Carlo & Randall, 2002), and *The Mach-IV* (Mach-IV; Christie & Geis, 1970).

The Schutte Self-Report Inventory

The Schutte Self-Report Inventory ($\alpha = .87$ EIS; Appendix 1) is a self-report measure used to measure an individual's level of emotional intelligence. It is based on the Salovey and Mayer (1990) model of emotional intelligence, where high scores indicate a higher level of emotional intelligence. It consists of 33-items divided between four subscales: perception of emotions, managing own emotions, managing others' emotions and utilization of emotion. The measure was answered using a five-point Likert scale, in which "1" represented "strongly disagree", and "5" represented "strongly agree" to how much the statement described oneself. Each aspect of the original model was represented by multiple items. The original paper performed an internal consistency analysis and found a Cronbach's alpha of 0.90. When replicated, a Cronbach's Alpha of 0.87 was found, the same as the reliability value found by the current researcher. Two-week test-retest reliability was 0.78. Further information on the development and validation of this measure can be found in Schutte et al., 1998.

Prosocial Tendencies Measure

The Prosocial Tendencies Measure ($\alpha = .76$ PTM; Appendix 2) is a self-report measure which is used to quantify an individual's tendency towards behaving pro-socially, where higher scores indicate a higher tendency towards prosocial behaviour. It was created based on previously developed measures of prosocial dispositions and behaviours (Johnson et al., 1989; Rushton, Chrisjohn, & Fekken, 1981) and by examining the prosocial moral reasoning interview answers from college students (Eisenberg, Carlo, Murphy, & Court, 1995). The PTM consists of 23 items and identifies six categories of prosocial behaviour: public, anonymous, dire, emotional, compliant and altruism. Public prosocial behaviours were

defined as behaviours intended to benefit others which are performed in the presence of other individuals ($\alpha = 0.80$; 4 items; “When other people are around, it is easier for me to help others in need”). Anonymous behaviours were defined as being more inclined to help others without other’s knowledge ($\alpha = 0.88$; 5 items; “I often make donations without anyone knowing because they make me feel good.”). Dire prosocial behaviours refer to providing help to others in emergency situations ($\alpha = 0.54$; 3 items; “I tend to help people who are hurt badly.”). Emotional prosocial behaviours are performed to benefit others under emotionally evocative situations ($\alpha = 0.77$; 4 items; “I tend to help others especially when they are really emotional.”). Compliant behaviours refer to helping others when asked to ($\alpha = 0.87$; 2 items; “I never wait to help others when they ask for it.”). Finally, altruism refers to helping others with little or no perceived reward to the helper ($\alpha = 0.62$; 5 items; “I often help even if I don’t think I will get anything out of helping.”). Participants responded by way of a Likert scale, where “1” represented “does not describe me at all” and “5” represented “represents me greatly”. Two-week test-retest reliability correlation coefficients were 0.61 (public), 0.75 (anonymous), 0.72 (dire), 0.80 (emotional), 0.73 (compliant) and 0.60 (altruism). All were significant values.

Mach-IV

The final measure was the Mach-IV ($\alpha = .79$; Appendix 3). It measures an individual’s level of Machiavellianism and consists of 20 items. Of which, 10 items represented high Machiavellianism, and 10 items represented low Machiavellianism. The measure aims to quantify the takers thinking style and their opinions of other people, and draws on three aspects of Machiavellianism derived from the theoretical research: interpersonal tactics, cynical views of human nature, and utilitarian morality. Alike the other two measures, it was answered using a five-point Likert scale, with “1” meaning “strongly disagree” and “5”

meaning “strongly agree”. Scores range from 20 to 100, where those scoring 60 or more are considered ‘high machs’ and those scoring below 60 being considered ‘low machs’.

2.3 Procedure

The three measures were uploaded to google forms, along with a short demographic survey (appendix 4) where participants were asked to input their age, gender, occupation and community type (rural or urban). Participants read through an information sheet (appendix 6) which described the study and its purpose. Before completing the measures, participants were required to indicate their understanding of the study and what would be expected of them to obtain their informed consent (appendix 5). The link to the google form was then shared throughout social media and participants were encouraged to share the research on their own social media accounts. Recruiting took place between November 2017 and January 2018 using Facebook, Reddit, Twitter and Snapchat, and was first shared on the researcher’s own accounts. Participants completed the questionnaire in one sitting, in their own environment. There was no time limit enforced, but when measured, the form took approximately 15 minutes to complete, in total. Participants selected which value on the Likert scale was associated with the statement that best described them. After completing the measure, participants were given a debriefing form reaffirming their rights as participants and listing contact information should they experience any distress as a result of partaking in the research (appendix 7).

2.4 Data analysis

Firstly, the data was inputted into statistical analysis program, SPSS 24 and a dotted graph was generated in order to examine the data's linearity. After confirming that the data was linear, descriptive statistics were run on age, total emotional intelligence, total prosocial tendencies, and total Machiavellianism scores. Normality was assessed on the total scores, which approximated normally. Following this, a Pearson Product correlation was performed on emotional intelligence, and prosocial tendencies and Machiavellianism. Following this, two Linear Regression Analyses were conducted to investigate the two relationships between emotional intelligence and prosocial tendencies, and emotional intelligence and Machiavellianism. Independent Samples T-Tests were performed to investigate group differences in emotional intelligence and prosocial tendencies. Following the discovery of significant group differences (between sex and community type), a Two-way Between Groups ANOVA was conducted to retest the main effect of sex and community type of emotional intelligence and prosocial tendencies. The ANOVA also determined if an interaction effect existed.

3. Results

3.1 Descriptive Statistics

Descriptive statistics for each of the measured variables in the current study are presented in Table 2. Preliminary analysis indicated that all three variables approximated normally. On average the current sample was in their late 20's to 30's. Emotional intelligence and prosocial tendency levels were moderate-to-high. Machiavellianism levels were moderate. The relatively low standard error values, and close 95% confidence intervals suggests that the current sample is reasonably representative of the general population.

Table 2. Descriptive statistics of all continuous variables

	Mean (95% Confidence Intervals)	Std. Error Mean	Median	SD	Range
Age	28.65 (26.36-30.91)	1.15	21	11.746	18-54
TotalEI	122.58 (119.63-125.53)	1.49	124	15.23	79-156
TotalPS	74.02 (71.86-76.18)	1.09	74	11.14	38-122
TotalM	52.83 (52.90-54.75)	.97	52	9.95	30-83

3.2 Inferential Statistics

3.2.1 Pearson Correlation Analysis

The relationship between emotional intelligence and prosocial tendencies was investigated using a Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a moderate, positive correlation between the two variables ($r = .33$, $n = 105$, $p < .001$). This indicates that the two variables share approximately 11% of variance in common. Results indicate that higher levels of emotional intelligence are associated with higher levels of prosocial tendencies.

The relationship between emotional intelligence and Machiavellianism was investigated using a Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a moderate, negative correlation between the two variables ($r = -.35$, $n = 105$, $p < .001$). This indicates that the two variables share approximately 12% of variance in common. Results indicate that higher levels of emotional intelligence are associated with lower levels of Machiavellianism.

3.2.2 Linear Regression Analysis

A simple linear regression was carried out to investigate the relationship between emotional intelligence and prosocial tendencies. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. The scatterplot showed that there was a moderate positive linear relationship between the two, which was confirmed with a Pearson's correlation coefficient of 0.334. Simple linear regression

showed a significant relationship between emotional intelligence and prosocial tendencies ($p < 0.001$). The R^2 value was 0.112 so 11.2% of the variation in prosocial tendencies can be explained by emotional intelligence.

A simple linear regression was carried out to investigate the relationship between emotional intelligence and Machiavellianism. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. The scatterplot showed that there was a moderate negative linear relationship between the two, which was confirmed with a Pearson's correlation coefficient of -0.346. Simple linear regression showed a significant relationship between emotional intelligence and Machiavellianism ($p < 0.001$). The R^2 value was 0.120 so 12% of the variation in Machiavellianism can be explained by emotional intelligence.

3.2.3 Independent Samples T-Tests

An independent samples t-test was conducted to compare the emotional intelligence scores (EI) between males and females. There was a significant difference in scores between the two groups, $t(101) = -2.73$, $p = .007$, two-tailed with females ($M = 125.98$, $SD = 14.54$) scoring higher than males ($M = 117.85$, $SD = 14.95$). The magnitude of the differences in the means (mean difference = -8.13, 95% CI: -14.04 to -2.22) was medium (Cohen's $d = -.6$).

An independent samples t-test was conducted to compare the emotional intelligence scores (EI) between rural and urban community samples. There was a significant difference in scores between the two groups, $t(103) = -2.89$, $p = .005$, two-tailed with urban ($M = 125.97$, $SD = 14.93$) scoring higher than rural ($M = 117.50$, $SD = 14.39$). The magnitude of the differences in the means (mean difference = -8.47, 95% CI: -14.28 to -2.65) was medium (Cohen's $d = -.6$).

An independent samples t-test was conducted to compare the prosocial tendency scores between males and females. There was no significant difference in scores between the sexes, $t(101) = -.14$, $p = .89$, two-tailed with females ($M = 78.16$, $SD = 9.92$) scoring higher than males ($M = 77.90$, $SD = 8.82$). The magnitude of the differences in the means (mean difference = $-.26$, 95% CI: -4.05 to 3.54) was small (Cohen's $d = -.03$).

An independent samples t-test was conducted to compare the prosocial tendency scores between rural and urban communities. There was no significant difference in scores between the groups, $t(103) = -.52$, $p = .61$, two-tailed with urban individuals ($M = 78.22$, $SD = 9.16$) scoring higher than rural individuals ($M = 77.24$, $SD = 10.11$). The magnitude of the differences in the means (mean difference = $-.98$, 95% CI: -4.76 to 2.79) was small (Cohen's $d = -.10$).

3.2.4 Two-Way Between Participants ANOVA

A two-way between groups analysis of variance was conducted to explore for: (1) differences in community type, and sex, on levels of prosocial tendencies, and (2) to examine if the effect of community type on levels of prosocial tendencies depends upon the sex of the individual.

The interaction effect between community type and sex was not statistically significant, $F(1, 99) = .31$, $p = .58$. The main effect for sex was not significant and of a small magnitude ($F(1, 99) = .03$, $p = .86$, $\eta^2 = .000$). The main effect for community type was not significant and the effect was of a small size ($F(1, 99) = .25$, $p = .62$, $\eta^2 = .003$).

A two-way between groups analysis of variance was conducted to explore for: (1) differences in community type, and sex, on levels of emotional intelligence, and (2) to

examine if the effect of community type on levels of emotional intelligence depends upon the sex of the individual.

The interaction effect between community type and sex was not statistically significant, $F(1, 99) = 1.20, p = .28$. The main effect for sex was significant and of a moderate to large magnitude ($F(1, 99) = 7.08, p = .01, \eta^2 = .07$). The main effect for community type was significant and the effect was of a moderate to large size ($F(1, 99) = 7.08, p = .01, \eta^2 = .07$).

4. Discussion

4.1 General Discussion

This study aimed to investigate the relationship between emotional intelligence, and two variables: prosocial tendencies and Machiavellianism. By way of a cross-sectional and observational research design, participants' individual levels of each variable were measured by means of an online survey and statistically analysed. The current cross-sectional study showed that there is a significant relationship between emotional intelligence and prosocial tendencies and Machiavellianism. Higher emotional intelligence was shown to be significantly correlated with higher levels of prosocial tendencies. Comparatively, higher emotional intelligence was significantly negatively correlated with higher levels of Machiavellianism. Consistent with research into demographic differences in emotional intelligence, between-group analysis indicated that females scored higher, on average, in emotional intelligence. However, there was no significant difference in prosocial tendencies between rural and urban community members.

Findings supported the first hypothesis, that higher emotional intelligence scores would have a significantly, positive relationship with prosocial tendency levels. These findings were consistent with various research in the area of emotional intelligence and its beneficial behavioural outcomes. Such research has associated emotional intelligence with prosocial or helping behaviours, and prosocial motivations (Eisenberg, 1986; 2000; Mayer, Hsee, & Salovey, 1993). Such consistent findings indicate that a positive relationship does exist between the two variables. Research has shown that it is possible to encourage, or increase, emotional intelligence levels in people (Schutte, Malouff, & Thorsteinsson, 2013). Nelis, Quoidbach, Mikolajczak, and Hansenne (2009) placed an experimental group in an EI

training programme, whose content was based in empirical evidence. The training group significantly improved in emotion identification and management abilities. Such changes were still present even after six months. As such, as it appears that pro-sociality is associated with emotional intelligence, it should therefore be possible to encourage prosocial behaviour by proxy. A more prosocial society is presumably a society which would be better to exist in.

The findings of this study did not support the second hypothesis; that emotional intelligence would be positively associated with Machiavellianism. Within this research, higher levels of emotional intelligence had a significantly negative relationship with Machiavellianism. While previous research hadn't wholly supported a positive relationship between emotional intelligence and Machiavellianism, the lack of research in the area made investigating this relationship worthwhile. De Raad (2005) even noted the lack of research into the use of emotional intelligence in manipulative ways. The use of emotional intelligence in this way is scarce in the literature and should still be of interest to future researchers.

Due to the exhaustive literature regarding gender differences in emotional intelligence, it was hypothesised (hypothesis 3) that there would be emotional intelligence differences between males and females. By examining group differences, it was found that, on average, females scored higher on the measure of emotional intelligence than males. This is in fitting with research into sex differences in emotional intelligence levels.

The final hypothesis, (hypothesis 4) that rural community types would have higher levels of prosocial tendencies than their urban counterparts. This hypothesis was developed due to the literature regarding higher pro-sociality and helping behaviours in smaller, more tightly knit communities. However, this hypothesis was not supported by this research's

findings. There was no significant difference in mean prosocial tendency scores between rural and urban groups.

4.2 Implications

As emotional intelligence is positively correlated with prosocial tendencies, and as emotional intelligence can be increased in an individual, then prosocial behaviours can assumedly be encouraged in people, by proxy. Being able to increase an individual's prosocial tendencies or their likelihood of engaging in helping behaviours, benefits society and, as discussed in the introduction, may decrease the frequency of phenomena such as the bystander effect. Being able to better understand the individual factors which influence a person's likelihood of participating in prosocial behaviour has applications in policy and education. Similarly, research around Emotional Intelligence has largely ignored any possible negative effects of emotional intelligence and such, further research in this area will contribute to this research gap. The fact that Machiavellianism was not found to be positively related to emotional intelligence, supports previous research into this relationship. This research further supports the idea of sex differences in emotional intelligence. This hopefully will add to the literature which may provide the rationale for interventions to encourage emotional intelligence in males, therefore equalising the gender disparity.

4.3 Limitations

Before being able to make any meaningful interpretations of this study's results, one must consider its limitations, as limitations can affect the validity of the results and any inferences that could be made about them. Firstly, this research uses purely self-report measures to gather the data analysed. By only using self-report scales, this research leaves itself open to criticism from other researchers as these measures can sometimes lack

ecological validity. However, due to the nature of the study and the use of an online survey to gather data, self-report tests were the only realistic option. Similarly, by utilising the online survey the study was accessible to anyone with a social media account. This protects against the Hawthorne Effect. Likewise, as the self-report aspect was being conducted online in an uncontrolled environment, participant responses may have been carelessly inputted or biased. Comparatively, the online medium of data collection allowed participants to remain entirely anonymous and as such may allow more open and honest responses.

Regarding the fourth hypothesis, the research used to develop this hypothesis mainly involved communities at the two extremes of rurality, deeply rural and isolated communities, and closely populated central cities. Due to the sampling type utilised, it is likely that such extremes did not exist within the sample. While participants were separated into rural and urban groups, individuals who reported their community type as suburban were categorised as rural for parsimony. In retrospect this may have been an error on the researcher's part, as suburban living is likely not as close-knit as it was in the last century. As housing costs in the city centre rise, and more people move out towards the suburbs, cramped housing developments and new families have replaced the historical family homes and close community mentality. Without ensuring these extremes are represented, the relationship between community type and prosocial behaviour, or lack thereof, cannot be properly investigated. Similarly, research into rural and urban differences in prosocial and helping behaviours, was at the height of popularity in the mid- to late- twentieth century. As such, there was little modern research to draw on when designing this hypothesis. Basing the hypothesis on aging research, may have suggested an effect that is no longer as perpetuated in modern society.

Other limitations also exist. Due to the scarcity of research into the relationship between possible negative aspects of emotional intelligence, the research design of this study may be flawed. Not being able to draw on the design or findings of as much previous research as other hypotheses within this study, may have negatively impacted the current research design.

4.4 Future Research

Due to the limits of self-report mentioned in the previous section, future research may consist of a non-self-report experimental design. This may provide more meaningful information into the directionality of the relationships explored within this research, which is impossible with an observational research design. Similarly, a clinician performed measure may be more accurate than a self-report one as it avoids individual biases.

It would also be of interest to the field, to investigate which subscale of emotional intelligence is most associated with prosocial tendencies and Machiavellianism. As discussed in the introduction, certain aspects of emotional intelligence, such as perception of others' emotions, may be more associated with manipulative behaviours. Being able to note the emotional state of people in one's environment makes interacting with them, even with malicious intent, more effective. In the same way, understanding how another person is feeling or empathising with them, makes the likelihood of providing them with help or comfort more likely. Future research should consider exploring this more closely.

Most significantly, regarding emotional intelligence and Machiavellianism; as discussed in the introduction, while research has found negative correlations between Machiavellianism, and emotionally intelligent characteristics such as empathy, more recent research has begun investigating possible mediating effects on this interaction. O'Connor and

Athota (2013) found that the Big 5's Trait Agreeableness may be why findings have been inconsistent. In their study, results indicated that those with high emotional intelligence, and low Machiavellianism tend to be agreeable in nature. Their findings suggested it was their agreeableness that caused them to be low in Machiavellianism, not the emotional intelligence itself. This mediating factor is also seen when individuals with high perceived emotional competence are potentially high in Machiavellianism, when low in Agreeableness. Future research into possible mediating effects is imperative.

4.5 Conclusion

In summary, this research supports the notion that emotional intelligence and prosocial tendencies are positively correlated. Yet another beneficial outcome of high emotional intelligence, prosocial and helping behaviours are something we would benefit from as a society. However, this research did not identify a positive relationship between Machiavellianism and emotional intelligence. Contrastingly, Machiavellianism was negatively associated with emotional intelligence. This research also supports previous findings that identified sex differences in emotional intelligence levels. Nevertheless, community type did not have any significant impact on prosocial tendency levels. The research has contributed to the research surrounding both the positive and negative outcomes of emotional intelligence. However, it is clear that there is numerous opportunities for future research into these relationships as results have indicated some effect is occurring.

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Appendices

Appendix A. Emotional Intelligence Measure - The Schutte Self-Report Inventory (EIS) Items

1. I know when to speak about my personal problems to others.
2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.
3. I expect that I will do well on most things I try.
4. Other people find it easy to confide in me.
5. I find it hard to understand the non-verbal messages of other people. *
6. Some of the major events of my life have led me to re-evaluate what is important and not important.
7. When my mood changes, I see new possibilities.
8. Emotions are one of the things that make my life worth living.
9. I am aware of my emotions as I experience them.
10. I expect good things to happen.
11. I like to share my emotions with others.
12. When I experience a positive emotion, I know how to make it last.
13. I arrange events others enjoy.
14. I seek out activities that make me happy.
15. I am aware of the non-verbal messages I send to others.
16. I present myself in a way that makes a good impression on others.
17. When I am in a positive mood, solving problems is easy for me.
18. By looking at their facial expressions, I recognize the emotions people are experiencing.
19. I know why my emotions change.
20. When I am in a positive mood, I am able to come up with new ideas.
21. I have control over my emotions.
22. I easily recognize my emotions as I experience them.
23. I motivate myself by imagining a good outcome to tasks I take on.
24. I compliment others when they have done something well.
25. I am aware of the non-verbal messages other people send.
26. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.
27. When I feel a change in emotions, I tend to come up with new ideas.
28. When I am faced with a challenge, I give up because I believe I will fail. *
29. I know what other people are feeling just by looking at them.
30. I help other people feel better when they are down.
31. I use good moods to help myself keep trying in the face of obstacles.
32. I can tell how people are feeling by listening to the tone of their voice.
33. It is difficult for me to understand why people feel the way they do. *

Note. The authors permit free use of the scale for research and clinical purposes.

*These items are reverse scored

Appendix B. Prosocial Tendencies Measure - The Prosocial Tendencies Measure (PTM)

Items

Does Not	Describes	Somewhat		Describes
Describe	Me	Describes	Describes	Me
Me At All	A Little	Me	Me Well	Greatly
1	2	3	4	5

1. I can help others best when people are watching me.
2. It makes me feel good when I can comfort someone who is very upset.
3. When other people are around, it is easier for me to help others in need.
4. I think that one of the best things about helping others is that it makes me look good.
5. I get the most out of helping others when it is done in front of other people.
6. I tend to help people who are in a real crisis or need.
7. When people ask me to help them, I don't hesitate.
8. I prefer to donate money without anyone knowing.
9. I tend to help people who are hurt badly.
10. I believe that donating goods or money works best when I get some benefit.
11. I tend to help others in need when they do not know who helped them.
12. I tend to help others especially when they are really emotional.
13. Helping others when I am being watched is when I work best.
14. It is easy for me to help others when they are in a bad situation.
15. Most of the time, I help others when they do not know who helped them.
16. I believe I should receive more rewards for the time and energy I spend on volunteer service.
17. I respond to helping others best when the situation is highly emotional.
18. I never wait to help others when they ask for it.
19. I think that helping others without them knowing is the best type of situation.
20. One of the best things about doing charity work is that it looks good on my resume.
21. Emotional situations make me want to help others in need.
22. I often make donations without anyone knowing because they make me feel good.
23. I feel that if I help someone, they should help me in the future.
24. I often help even if I don't think I will get anything out of helping.
25. I usually help others when they are very upset.

Appendix C. Machiavellianism Measure - Machiavellianism measure (MACH-IV)

Items

1. One should take action only when sure it is morally right.
2. Anyone who completely trusts anyone else is asking for trouble.
3. Most people forget more easily the death of their parents than the loss of their property.
4. Most people are basically good and kind.
5. P.T. Barnum was wrong when he said that there's a sucker born every minute.
6. Honesty is the best policy in all cases.
7. People suffering from incurable diseases should have the choice of being put painlessly to death.
8. When you ask someone to do something for you, it is best to give the real reasons for wanting it rather than giving reasons which carry more weight.
9. It is possible to be good in all respects.
10. Most people who get ahead in the world lead clean, moral lives.
11. There is no excuse for lying to someone else.
12. Most people are brave.
13. It is hard to get ahead without cutting corners here and there.
14. Generally speaking, people won't work hard unless they're forced to do so.
15. Never tell anyone the real reason you did something, unless it is useful to do so.
16. It is safest to assume that all people have a vicious streak and it will come out when they are given the chance.
17. The biggest difference between most criminals and other people is that the criminals are stupid enough to get caught.
18. The best way to handle people is to tell them what they want to hear.
19. It is wise to flatter important people.
20. All in all, it is important to be humble and honest than to be important and dishonest.

Appendix D. Demographic Questionnaire

1. What is your age?
2. What is your sex?
Female/Male/Prefer not to Say/Other
3. Occupation
4. What best describes where you live?
Rural/Urban/Other

Appendix E. Information Sheet

Researcher: Jennifer O'Donoghue Email Address: Jennifer.Odonoghue@student.ncirl.ie

My name is Jennifer O'Donoghue and I am conducting research that explores the relationship between emotional intelligence and the absence and presence of pro social tendencies. This research is being conducted as part of an undergraduate dissertation in the School of Business at the National College of Ireland and is being supervised by Dr Michelle Kelly. You are invited to take part in this study. Participation involves completing the attached anonymous survey online. The survey consists of three separate measures: the Schutte self-report inventory (33 items), the Prosocial Tendencies measure (25 items) and the Machiavellianism measure (20 items): (e.g. 17. the biggest difference between most criminals and other people is that the criminals are stupid enough to get caught; When other people are around, it is easier for me to help others in need). While the survey asks some questions that might cause some minor negative feelings, it has been used widely in previous research. If you are affected by any of the questions presented, contact details for relevant support services are included on the final page. Participation is completely voluntary and so you are not obliged to take part. Participation is also anonymous and confidential. Thus, responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after finishing the survey. The questionnaires will be securely stored and data from the questionnaires will be on a password protected computer. It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study. Should you require any further information about the research, please contact Jennifer O'Donoghue, Jennifer.Odonoghue@student.ncirl.ie or 087 6755629. My supervisor can be contacted at michelle.kelly@ncirl.ie. Thank you for taking the time to complete this survey.

Appendix F. Consent Form

In agreeing to participate in this research I understand the following:

- This research is being conducted by Jennifer O'Donoghue, an undergraduate student at the School of Business, National College of Ireland. The method proposed for this research project has been approved in principle by the Departmental Ethics Committee, which means that the Committee does not have concerns about the procedure itself as detailed by the student. It is, however, the above-named student's responsibility to adhere to ethical guidelines in their dealings with participants and the collection and handling of data.
- If I have any concerns about participation I understand that I may refuse to participate or withdraw at any stage. I have been informed as to the general nature of the study and agree voluntarily to participate.
- There are no known expected discomforts or risks associated with participation.
- All data from the study will be treated confidentially. The data from all participants will be compiled, analysed, and submitted in a report to the Psychology Department in the School of Business. No participant's data will be identified by name at any stage of the data analysis or in the final report.
- At the conclusion of my participation, any questions or concerns I have will be fully addressed.

Signed: _____

Participant _____

Researcher _____ Date _____

Appendix G. Debriefing Form

Thank you for participating in this study! We hope you enjoyed the experience. This form provides background about our research to help you learn more about why we are doing this study.

You have just participated in a research study conducted by Jennifer O'Donoghue (Jennifer.Odonoghue@student.ncirl.ie) and supervised by Dr. Michelle Kelly (michelle.kelly@ncirl.ie). The purpose of this study is to examine the association between emotional intelligence and the presence or absence (Machiavellianism) or prosocial tendencies.

If you have questions about the research, please e-mail Jennifer O'Donoghue or Dr. Michelle Kelly. If, as a result of your participation in this study, you experienced any adverse reaction, please contact the Samaritans helpline at 116 123. This service is completely free to call.

Please feel free to ask any questions or to comment on any aspect of the study. You may keep a copy of this debriefing for your records.