

Extraversion and Introversion Personality Type of Mature Students in Private Higher Education

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Abstract

The study's primary purpose was to explore the differences between mature male and female students based on extroversion and introversion personality types studying an undergraduate business programme in a private higher education institution in the UK.

The Big Five Inventory-BFI (a short form with 10 items), BFI-10, was used to collect data from adult participants (N=131). The sample data were analysed using the Statistical Package for Social Sciences (SPSS) version 26. The researchers used descriptive statistics and graphical representation to describe the data and gain meaningful insights.

The results revealed no significant differences between males and females based on the mean extroversion score. The detailed results for all five-personality dimensions for both genders showed that female participants were higher on neuroticism/emotional stability and agreeableness than males. Also, male participants' mean scores of Extraversion, Conscientiousness and Openness to Experience were almost similar. Previous research has shown females to be high on some facets of conscientiousness.

However, these results are inconsistent across cultures, and no significant gender differences in conscientiousness have been found.

Keywords: Big Five Inventory-BFI-10, Extraversion, Introversion, Mature Students, Private Higher Education.

Introduction

Many traditional and contemporary personality psychologists believe that even though there are thousands of different dimensions to personality, they all fall into one of five basic categories (Marsh, Nagengast, Morin 2013), often referred to as the Five-Factor Model (FFM) used by researchers to examine individuals' personality through identifying and predicting their stable covert patterns and behaviours (John, Xavier, Waldmeier, Meyer & Gaab, 2019). The FFM of personality, also known as Big Five Factor (BFF), was first introduced by McCrae and Costa (1997) and subsequently researches have led to the development of its two broad classifications: Big Five Inventories (BFI-44, BFI-10, and BFI-2).

The model proposes the five trait factors of Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (Gurven et al., 2013; John et al., 2008; McCrae, 2011; Silva & Nakano, 2011; Yarkoni, 2010; Wright, 2017) by creating the common acronym "OCEAN". The five primary personality traits in all versions of BFI Inventories are extraversion also often spelled extroversion (Cherry, 2022).

The Big Five Inventory (BFI) is a self-report scale that was developed to measure the big five personality traits. The scale was developed based on the Big Five Inventory 44-short phrases (BFI-44) that the respondent answers on a five-point rating scale, ranging from 1 (disagree strongly) to 5 (agree strongly) to measure personality traits (John, Donahue, & Kentle, 1991; Rammstedt, 1997, John, Naumann, & Soto, 2008).

In personality research, the Big Five Inventory (BFI; John and Srivastava, 1999) has evolved into one of the most frequently used measures of the Big Five. Recently, a new version of this inventory was developed: the Big Five Inventory-2 (BFI-2; Soto and John, 2017).

The Big Five Inventory (BFI-2) is a 60-item measure of the five-factors with 15 specific facet scales with few reversed items. It is a more reliable measure than the original BFI, offering a hierarchical structure, higher bandwidth, construct validity, and predictive power while preserving the conceptual emphasis, conciseness, and simplicity of the first measure (Soto & John, 2017).

Over the years, researchers and psychologists have been trying to measure personality traits in the possible shortest time in order to suit the needs of test takers and follow scientific norms, personality tests have got shorter and shorter throughout time (Lovik, Verbeke & Molenberghs, 2016). As a result, the ten-item version of the Big Five Inventory (BFI-10) was developed (Rammstedt & John, 2007) as a subset of the original Big Five Inventory (BFI) contained 44 items. The BFI-10 is a 10-item scale measuring the Big Five personality traits. There are five dimensions, each representing the five core personality dimensions: extraversion, agreeableness, conscientiousness, neuroticism/emotional stability and openness to experience, in the scale with two items each and the 10 items (2 per factor) BFI used in the present study seems to work appropriately on the target population (Gosling et al., 2003; Rammstedt & John, 2007; Rammstedt et al., 2012) with minimal potential response biases.

Literature Review

The general personality traits can be summarised as follows. Openness to experience: Reflects the degree of intellectual curiosity, creativity, and a preference for novelty and variety; Conscientiousness: Indicates a tendency to show self-discipline, to act dutifully, and to aim for achievement; Extraversion: Energy, positive emotions, assertiveness, sociability, the tendency to seek for stimulation in the company of others, and talkativeness describe this trait; Agreeableness: Expresses a tendency to be compassionate and cooperative rather than suspicious and antagonistic towards others; and Neuroticism: Reflects the tendency to frequently experience unpleasant emotions, such as anger, anxiety, depression, or vulnerability (Gouveia et al., 2021). Each dimension of the Big Five represents a continuum, ranging from high, moderate and low, regarding each trait.

The extraversion and introversion dimensions are a factor of the Big-Five Factor Model (Digman, 1990). The personality type extroversion is, often known as extraversion, is characterised by sociability, talkativeness, assertiveness, and excitability. Extraverts prefer seeking, engaging in, and enjoying social interactions, whereas introverts prefer to avoid social situations and be reserved, withdrawn, or shy in social settings (Costa & McCrae, 1980; John, 1990).

People high in extroversion tend to aspire to social stimulation and opportunities to engage actively with others. Therefore, they are often described as full of liveliness, optimism, vitality, and enthusiasm. On the other hand, contrary to extroverts, introverts are individuals who are low in extroversion and tend to be quiet, reserved and less involved in social activities. People low in extroversion are not scared of social situations. On the contrary, they prefer to spend more time alone and do not need as much social stimulation.

Abernethy (1938) defined an extrovert and introvert as

“One who enters with interest and confidence into social activities of the direct type and has little liking for planning or detailed observation.” Conversely, introverts were defined as being “below the general average in social inclination and above the average in liking for thought.” (p. 218)

Woolsey (2001) distinguishes between extraversion and introversion as:

People who prefer extroversion attend to the outside world; giving and receiving their energy there by interacting with people and the environment. They are likely to prefer to communicate and work out ideas by talking. They prefer to learn through doing and talking it through with others. They tend to have a wide variety of interests and to take the initiative in work and in relationships. They tend to be sociable and express themselves well. People who prefer introversion focus their energies on their inner world of ideas and experiences. They get their energy from their inner world through reflection. They tend to prefer communication through writing and to work out ideas through reflection. This is also their preferred way to learn. People who prefer introversion tend to be private. They will take the initiative in things that are very important to them (p.14).

Myers and Myers (1995) distinguished between introversion and extraversion in which introversion is defined as a type whose primary interest lies within their inner world, ideas and concepts. On the other hand, extroverts are more involved with the world of people and things surrounding them. According to The Big Five (Goldberg, 1992), extraversion is defined as the degree to which people are talkative, social, spontaneous, boisterous, energetic, and like to seek adventure (Shiota & Kalat, 2018).

This extraversion-introversion (E-I) differences impact students' engagement during classroom time, the actions or steps they take to learn and understand course content, and the way they process information (Lawrence, 1997; Ruth-Sahd, 2014).

When thinking about a student's needs, extroverts need many stimuli to stay engaged. However, introverts function best when given time to think and process before participating in classroom activities (Myers, McCaulley, Quenk, & Hammer, 2009). Compared to extroverted learners, introverted learners employ various metacognitive and cognitive methods. Kayaoglu (2013) examined the relationship between extraversion and language-learning strategies. The findings indicated that extroverted learners used more interpersonal communication techniques while introverted learners actively employed goal-oriented particular behaviours to facilitate the acquisition, retrieval, storage, and use of information for both comprehension and production. Therefore, they use their own initiative to set goals and then concentrate their energy towards achieving them. This may lead to higher ambitions in life for education and a bright career future. Thus academic performance is influenced by personality (Sokić, Qureshi and Khawaja, 2021).

Levy (2012) suggests identifying and counting private higher education by a "nations' own legal designation" (p. 178).

Higher Education Statistics Agency (HESA) defines and distinguishes between public and private higher education institutions.

A public higher education provider is receiving recurrent funding from one of the UK's higher education funding bodies. The UK Higher Education Funding Councils are for England HEFCE, Wales HEFCW, Department for Employment and Learning Northern Ireland (DEL(NI)) and Scottish Funding Council (SFC). This may be defined as authority funded. In contrast, a private or Alternative Provider (AP) is an organisation providing higher education which is not in receipt of direct recurrent funding from one of the UK's higher education funding bodies (HEFCE, HEFCW, DfE (NI) and SFC). This may be defined as non-authority funded.

Generally, private HEIs can be understood as 'the non-state sector in higher education' (Bjarnason et al. 2009:55), which typically does not receive government funding or rely on government funding for expansion.

The UK private higher education institutes are fully autonomous alternative providers, which operate for profit, do not receive any grant from the government and are "responsible for their own funding" (Altbach, 1999: 2). Another definition conveys the similar meaning, "Education can be privatised if students enrol at private schools or if higher education is privately funded" (Belfield and Levin 2002: 19).

To summarise the discussion, private HEIs are independent, do not receive government funding and operate for profit (Qureshi, Khawaja and Zia, 2020).

The term 'mature student' refers to anyone attending college or university after some time out of full-time education (Qureshi, Khawaja and Zia, 2020). Generally, this means students who are over 21 years of age at the beginning of their undergraduate studies or over 25 years of age at the beginning of their postgraduate studies (UCAS, 2020) and up to pensionable age (NUS, 2012).

Methods

We explored the differences between mature male and female students studying an undergraduate business programme in a private higher education institution in the UK.

The Big Five Inventory (short form with 10 items), BFI-10, was used to collect data from adult participants (N=131) with an average age of 26 years. Prior to data collection, written informed consent was obtained from participants. The sample data was analysed using SPSS version 26 wherein the researcher used descriptive statistics and graphical representation to describe the data and gain meaningful insights. There were no missing data.

This report concentrated upon the measure of 'Extraversion' along with brief details concerning other personality dimensions. To understand extraversion factor well, it was further bifurcated into low level (scores 1 to 5) and high level (scores 6 to 10). The two statements in this dimension are:

S1. I see myself as someone who is reserved (R)

S2. I see myself as someone who is outgoing, sociable

Statement (a) is reversed scored.

Results and Discussion

The results of the descriptive analysis showed an unequal male and female ratio in the data (Table1). There were 43.5% male participants and 56.5% female participants. On the other hand, there were 26% participants who scored low on the personality factor extraversion and majority of participants scored high on extraversion dimension (74%).

Table1: Descriptive Statistics of Categorical Data (N=131)

<i>Variables</i>	<i>Categories</i>	<i>Frequencies (f)</i>	<i>Percentages (in %)</i>
Gender	<i>Male</i>	57	43.5
	<i>Female</i>	74	56.5
Extraversion	<i>Low</i>	34	26.0
	<i>High</i>	97	74.0

The five personality dimensions and age variables were treated as the continuous data whereas gender and levels of extraversion were nominal data in the sample. The Table2 below depicts the mean scores of each personality dimension and participants' age separately.

Table 2: Descriptive Statistics of Continuous Data (N=131)

<i>Variables</i>	<i>Mean (M)</i>	<i>Standard Deviation (SD)</i>	<i>Minimum</i>	<i>Maximum</i>
<i>Extraversion</i>	6.55	1.755	2	10
<i>Agreeableness</i>	7.60	1.775	2	10
<i>Conscientiousness</i>	6.79	1.763	3	10
<i>Neuroticism</i>	5.52	1.935	2	10
<i>Openness to Experience</i>	6.69	1.692	2	10
<i>Age</i>	26.56	8.631	18	45

The results obtained for continuous data (Table 2) showed that the mean score of age of participants was found to be 26 years. The mean score of Extraversion of both male and female participants was 6.55. The mean score of personality dimension Agreeableness was found to be higher than the rest of the dimensions. The lowest mean score obtained was for the dimension Neuroticism.

Table 3: Descriptive Statistics of Continuous and Categorical Data (N=131)

<i>Gender</i>	<i>Variables</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Male	<i>Extraversion</i>	74	6.82	1.713	3	10
	<i>Agreeableness</i>	74	7.46	1.733	3	10
	<i>Conscientiousness</i>	74	6.77	1.899	3	10
	<i>Neuroticism</i>	74	4.82	1.862	2	10
	<i>Openness to Experience</i>	74	6.75	1.745	2	10
Female	<i>Extraversion</i>	57	6.34	1.769	2	10
	<i>Agreeableness</i>	57	7.72	1.810	2	10
	<i>Conscientiousness</i>	57	6.80	1.663	4	10
	<i>Neuroticism</i>	57	6.05	1.827	2	10
	<i>Openness to Experience</i>	57	6.64	1.660	3	10

To understand the data more, the data was split across gender (Table 3). Results showed that male participants scored slightly higher on Extraversion dimension of personality (M=6.82) than their female counterparts (M=6.34). However, to see whether this difference is significant, it is essential to draw inferences through a parametric t-test, which is discussed later in this paper.

Other personality dimensions such as Agreeableness, Conscientiousness and Neuroticism were scored slightly higher by females than males. Also, males were slightly higher on the dimension Openness to Experience (M=6.75), which is characterized by the cognitive disposition to creativity and aesthetics, than females (M=6.64). Interestingly, none of the participants strongly disagreed with any of the statements of BFI-10.

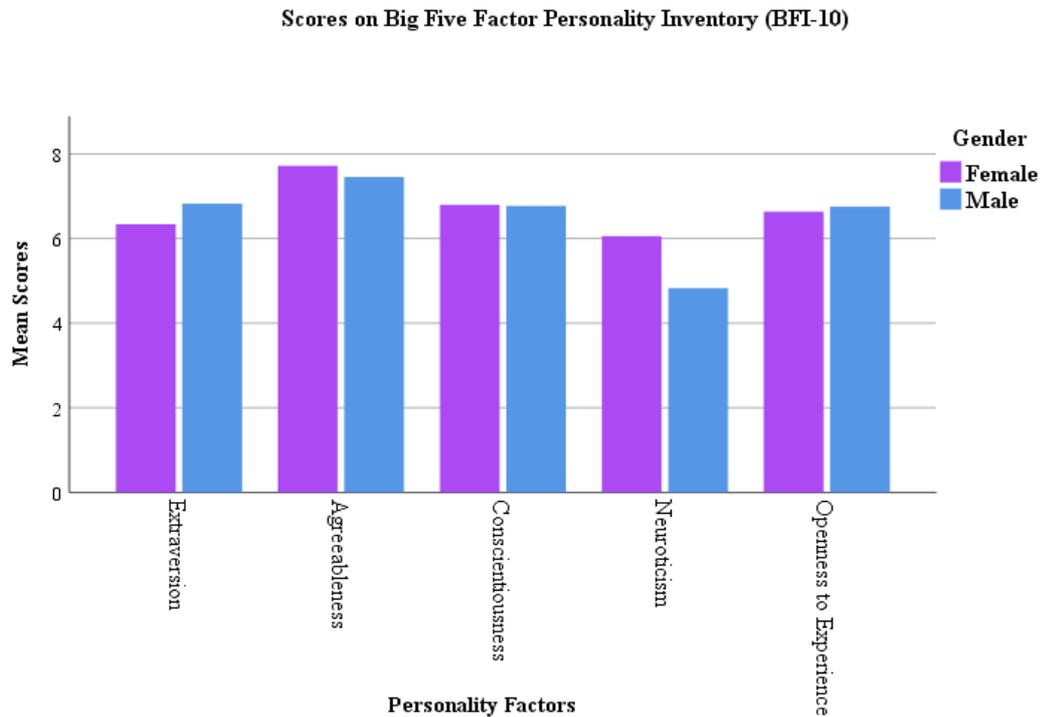


Figure 1: Mean Scores of Personality Factors among Males and Females

The graph above (Figure1) depicts the mean scores of all personality factors for male and female participants separately. The results showed that male (M=7.46) and females (M=7.72) scored high on the agreeableness dimension than rest of the personality dimensions.

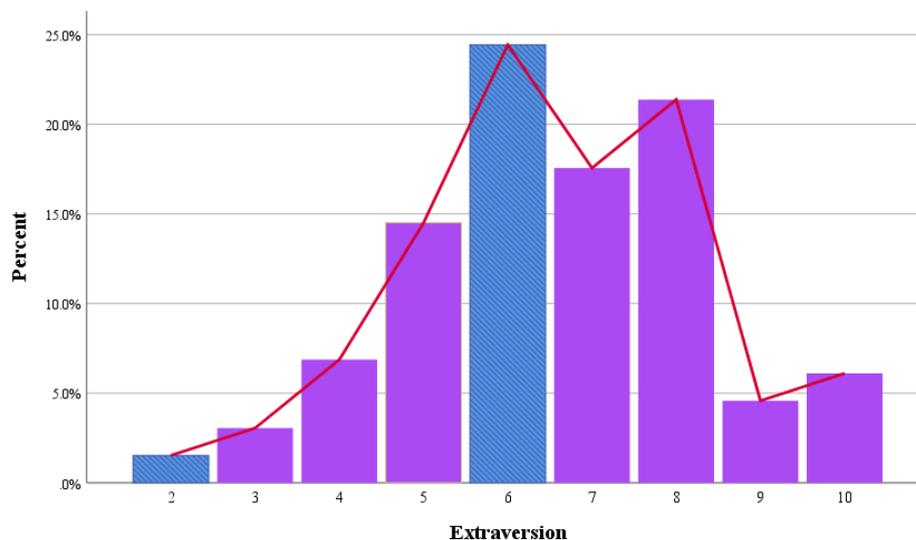


Figure 2: Histogram: Response Percentages on Extroversion Factor

A histogram was created to plot the percentage scores of extraversion dimension by the participants (Figure 2). The result showed that most participants (24.4%) scored 6 on extraversion and the lowest percentage of participants (1.5%) scored 2 on the extraversion dimension of personality.

Higher score on extraversion (more than 5) signifies that the person is sociable, outgoing, reflects the tendency to be enthusiastic, assertive, and to seek excitement.

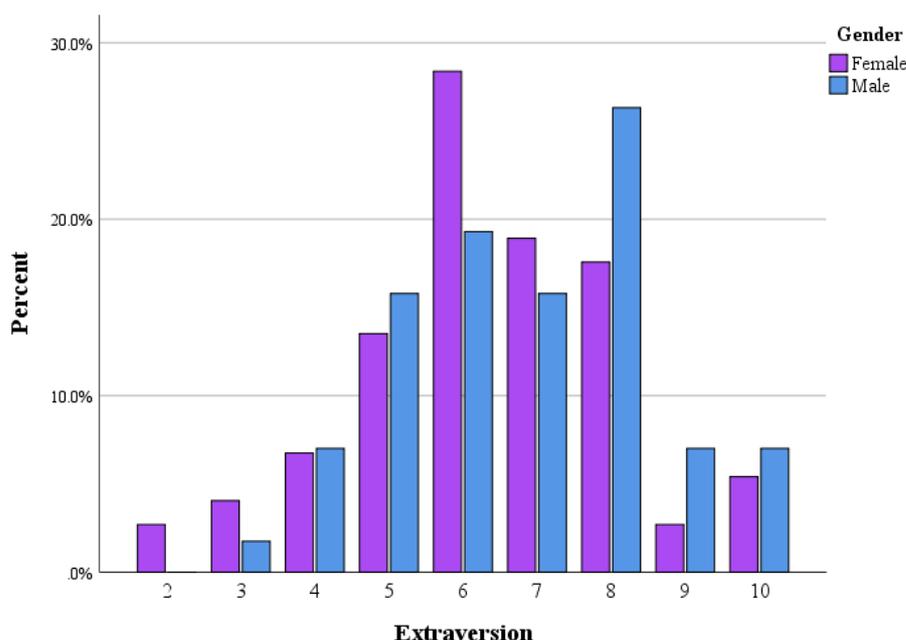


Figure 3: Clustered Distribution of Extroversion in terms of Gender

To gain more insights, a clustered graph was created to represent the extroversion dimension across both genders separately (Figure 3). The results showed that female participants scored 6 on extraversion dimension (28.4%) more than the male participants (19.3%). On the contrary, males scored 8 on extraversion scale (26.3%) more than their female counterparts (17.6%).

Prior to inferential statistics, it is essential to check the distribution and normality of variable(s) under study. In this case, we focused on extraversion dimension, therefore, a Q-Q plot for extraversion scale was plotted to see if observed data points best fit around the expected data line. The results of probability plot indicated that the extraversion data fits the straight reference line (Figure 4) and there were no significant outliers to be removed, hence we can test the data using parametric tests.

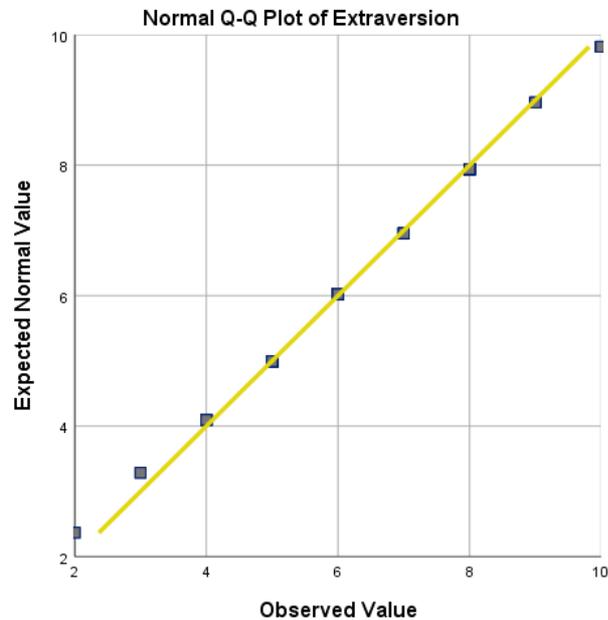


Figure 4: Normality Q-Q Plot: Extraversion Dimension

Table 4: Correlation Test

Variables	<i>S1</i>	<i>S2</i>
<i>S1</i>	1	0.083
<i>S2</i>		1

p>0.05; not significant

S1. I see myself as someone who is reserved (*R*)

S2. I see myself as someone who is outgoing, sociable

The results of Pearson correlation revealed a weak and insignificant relationship ($r=0.08$, $p>0.05$) between the two statements of extraversion scale (Table 4). Statement1 (*S1*) is reversed keyed. It means that participants scoring low on this statement will be high on extraversion and vice-versa. A weak correlation shows that both statements are different from each other. In other words, if an individual highly agrees with statement 2, he/she will disagree with statement 1 to score high on extraversion dimension.

Table 5: t-Test Analysis

Variable/Statement	Gender	N	Mean	SD	t-Test	Sig
Extraversion	Male	57	6.82	1.713	1.583	0.116
	Female	74	6.34	1.769		
S1	Male	57	2.93	1.252	1.361	0.176
	Female	74	2.64	1.212		
S2	Male	57	3.89	1.012	0.947	0.345
	Female	74	3.70	1.247		
Neuroticism	Male	57	4.82	1.862	3.777	0.000**
	Female	74	6.05	1.827		

****P<0.05; significant at 0.01 level**

S1- I see myself as someone who is reserved (R)

S2- I see myself as someone who is outgoing, sociable

The results of t-Test analysis showed that there is no difference between male and female participants on the dimension of extraversion, $t(129)=1.583$, $p=0.116$, however, a significant gender difference was found on the neuroticism dimension, $t(129)=3.777$, $p=0.000$. In other words, male and female participants don't differ on the extraversion personality dimension. This result does not support the previous research evidence, which showed a small but significant difference in genders on extraversion measure of personality (Weisberg, Deyoung & Hirsh, 2011).

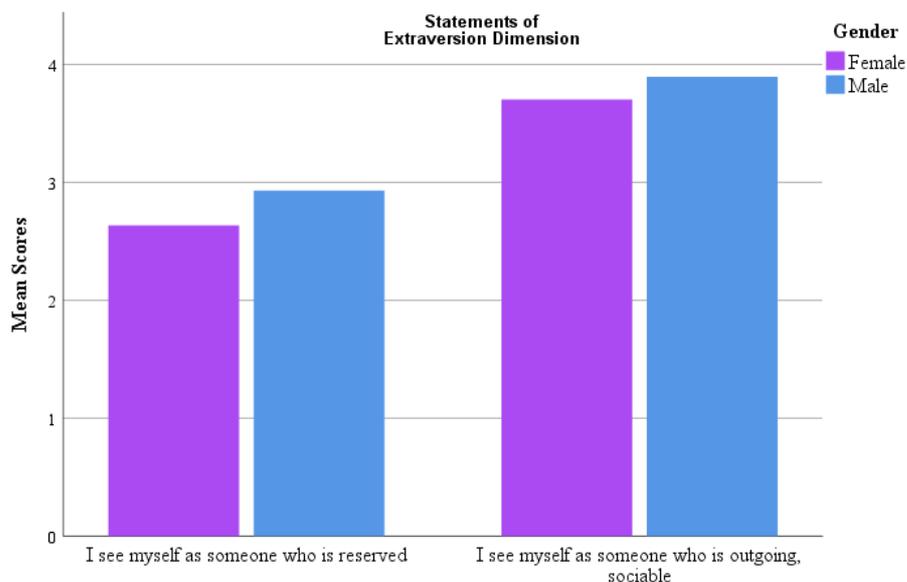


Figure 5: Mean Scores of Extroversion Scale Statements across Gender

There are two statements in the extraversion dimension of personality. The result of the both statements showed that male participants had higher mean scores than female participants (Figure 5). In general, both genders scored higher on the second statement (S2) “I see myself as someone who is outgoing, sociable” than on the reversed statement.

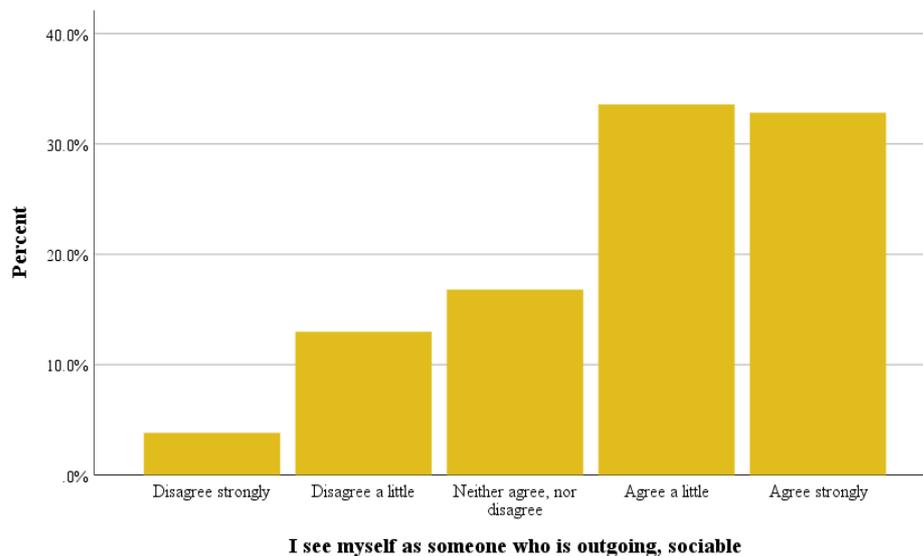


Figure 6: Category Distribution of Extroversion Statement S2

The results of category distribution of both statements suggest that participants mostly agreed with the extraversion statement “I see myself as someone who is outgoing, sociable” (M=33.6%) and mostly disagreed with the reversed statement “I see myself as someone who is reserved” (M=30.5%) which further implies that the sample population was high on extraversion on an average (Figure 6 & 7).

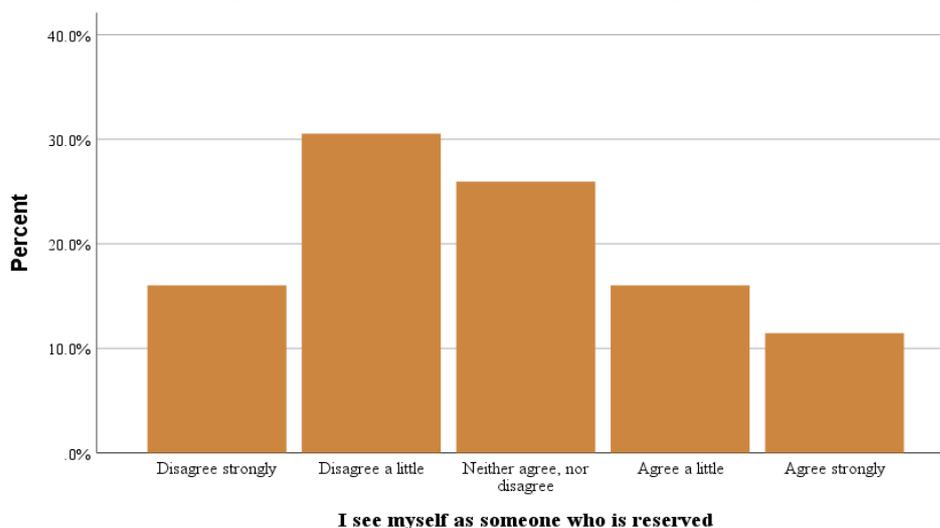


Figure 7: Category Distribution of Extroversion Statement S1 (Reversed-keyed)

Moreover, it is evident from the graphs that participant had a higher percent score of responding to strongly agree for statement S2 (32.8%) than the reversed statement S1 (11.5%).

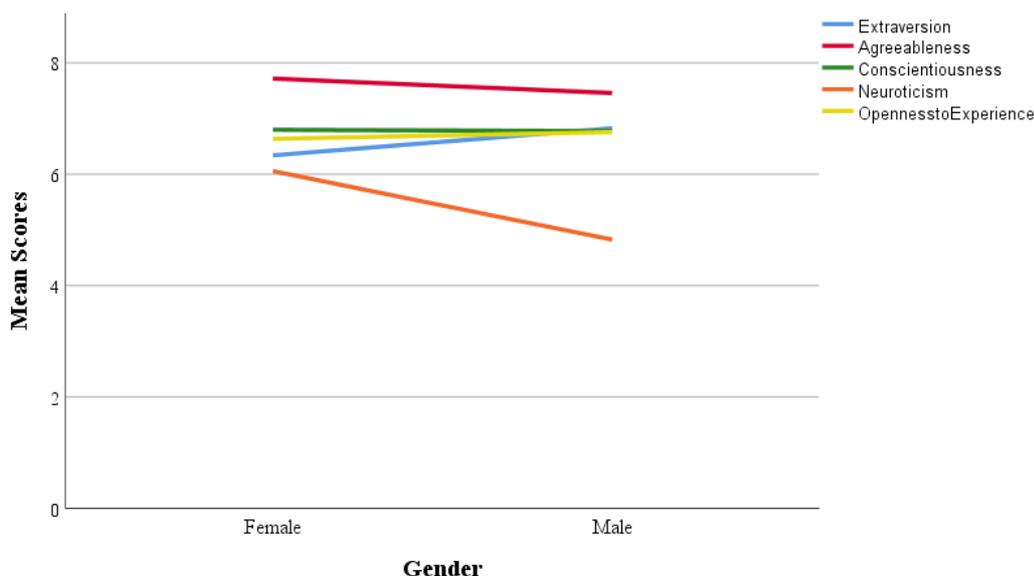


Figure 8: Mean Scores of Personality Dimensions across Gender

The results obtained for all five personality dimensions for both genders showed that female participants were higher on neuroticism/emotional stability (Weisberg, Deyoung & Hirsh, 2011) and agreeableness than males (Feingold, 1994). Also, the mean scores of Extraversion, Conscientiousness and Openness to Experience of male participants were almost similar/overlapping (Figure 8). Previous researches have shown females to be high on some facets of conscientiousness (Weisberg, De Young & Hirsh, 2011), however these results are not consistent across culture and no significant gender differences on conscientiousness have been found in general (Feingold, 1994; Costa et al., 2001).

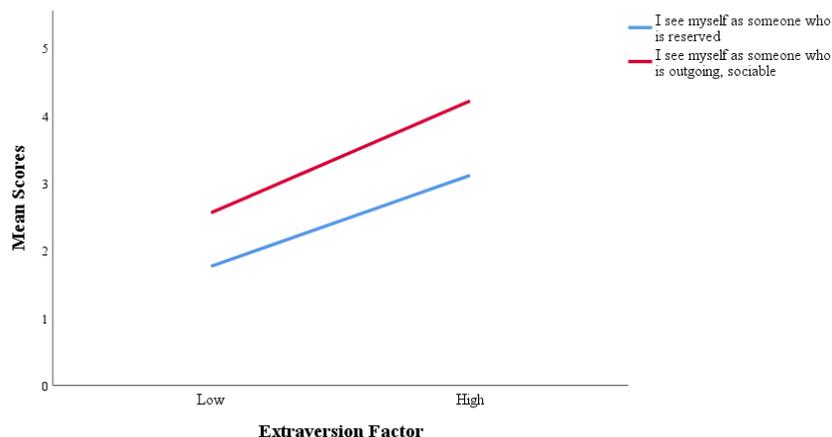


Figure 9: Mean Scores of Statements of Extraversion across Extraversion Levels

The extraversion dimension was further divided into low and high levels of measurements to gain more insights about the data under study. The results of mean scores of both statements of extraversion across both levels of extraversion dimension showed that participants who were low on extraversion were found to disagree with both statements and vice-versa (Figure 9). The results also suggest that as individual transitions from low to high levels of extraversion, they agree with the statement “I see myself as someone who is outgoing, sociable.” In other words, the individuals tend to become more extrovert in such case.

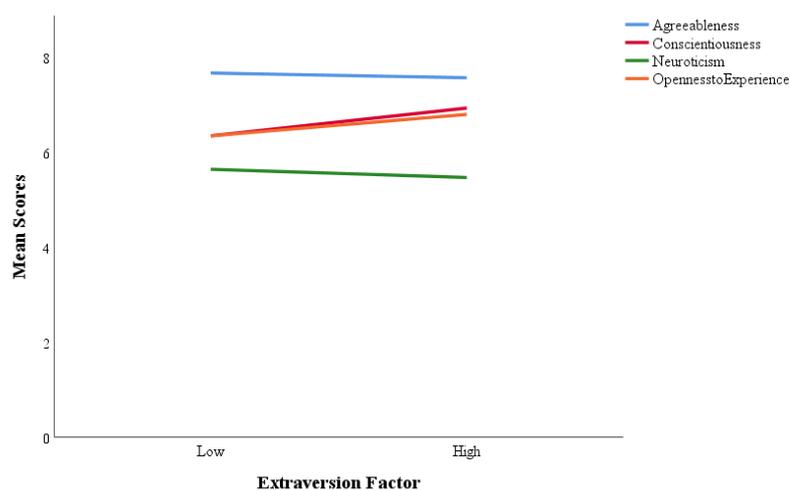


Figure 10: Mean Scores of Personality Dimensions across Extraversion Levels

The results of mean scores of four personality dimensions across both levels of extraversion dimension showed that participants who were low on extraversion were found to score low on conscientiousness (M=6.35) and openness to experience (M=6.35), but high on neuroticism (M=5.65) and agreeableness (M=7.68). On the contrary, participants who scored high on extraversion measure were found to be high on conscientiousness (M=6.94), openness to experience (M=6.80) and low on neuroticism (M=5.47) and agreeableness (M=7.58).

Conclusion

The objective of the present study was to assess BFI-10 across gender, mainly focusing on the dimension of extraversion. Extraversion and Neuroticism dimensions of personality have been found to be related to the frequency and intensity of positive and negative emotions (Verduyn & Brans, 2012). Extraversion is characterised by talkativeness, sociability, and outgoingness, whereas Neuroticism describes the tendency to experience negative emotions such as anxiety, depression, anger, self-consciousness, and emotional lability (Costa & McCrae, 1985; Eysenck & Eysenck, 1975).

The previous studies indicated a significant gender difference in the personality dimension extraversion (Weisberg, Deyoung & Hirsh, 2011), where females tended to report greater Sociability and Energy levels but not greater Assertiveness than men (Soto & John, 2017). However, the results of the present study do not support such results. Contrarily, we found females to be high on neuroticism/emotional stability, which is in line with a former research study that showed females to be higher on Neuroticism than Males on the Big Five trait level (Weisberg, De Young & Hirsh, 2011; Costa et al., 2001). Furthermore, female participants scoring high on agreeableness indicates that, on average, they are more nurturing, sensitive, and altruistic than Males to a greater extent (Feingold, 1994; Costa et al., 2001). Additionally, a study reported that psychological conditions such as depression are significantly associated with non-interpersonal chronic life stress among females (Costa, Terracciano, & McCrae, 2001). Finally, our findings indicated an insignificant gender difference in the Openness domain, which supports previous research results showing a facet of personality dimension, Openness to Experience, and Aesthetic Sensitivity to be greater among females.

In contrast, males tended to report more unique facets of the same domain, Creative Imagination and Intellectual Curiosity (Soto & John, 2017). On the other hand, females were found to be high on a few facets of conscientiousness. However, they scored higher on agreeableness and Neuroticism than their male counterparts. These results support previous research reports where females scored higher on agreeableness and Neuroticism. Also, we found a relationship between some personality domains such as extraversion, conscientiousness and openness to experience on the surface level (Weisberg, Deyoung & Hirsh, 2011).

It should be highlighted that males and females do not simply experience emotional states on opposite ends of a characteristic personality spectrum, as implied by gender differences in terms of mean differences, rather considerable differences might exist together with a significant degree of overlap between the distributions of male and female participants (Hyde, 2005). Since the differences in mean scores were diminutive, thus it is essential to test BFI-10 on extensive sample data with more demographics to get detailed information and significant results. Furthermore, it is recommended that BFI-10 should be used in cross-sectional studies and undergo a confirmatory factor analysis for the study sample in order to check its internal validities and any possibilities of social desirability, a type of psychological response bias across various samples and cultures.

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