MSc in Cyberpsychology

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Title

The Influence of Personality Traits on Impulsive Online Shopping Behaviours.

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Declaration.

This thesis is entirely my own work, and has not been previously submitted to this or any other third level institution.

Philip Nartey (N00104650)

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Dated

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I would like to thank my partner in life my wife Chloe and our son Noah for all the encouragement, support and patience they have given me during my studies.
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I wish to also express my appreciation for the lecturers throughout the Master's program, and to my fellow students for their knowledge, support and friendship.

Abstract

The objective of this research was to seek and understanding of how the role of demographics and personality traits influence impulsive shopping behaviours within online retail platforms. Whilst previous research has focussed on traditional offline shopping environments, analysis was deficient on how demographics and personality are intrinsically associated with irrational consumption online. Consequently, this research through quantitative analysis of 104 respondents from an adapted online questionnaire sought to confirm personality as a predictor of impulsive shopping behaviour. The findings revealed that age, gender and frequency had a positive correlation with impulsive consumption, however the results for personality traits proved inconclusive. Nevertheless, the research offered a viable model for future research on how demographics and personality dichotomies influence impulsive purchasing online.

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1: Introduction

The relationship between the personality traits of online retail consumers has been demonstrated to have a significant positive correlation with impulsive buying behaviour (Savci & Aysan, 2017). The key endogenous factor influencing consumer behaviours is personality, and research has demonstrated that personality is associated positively with influencing online shopping behaviours (Mulyanegara, Tsarenko, & Anderson, 2007; Tsao & Chang, 2010; Wojciechowska, 2017). Spontaneous online behaviours within e-commerce sites have demonstrated that consumers are influenced by a dual process thinking of two-step reasoning with individuals acting fast, unconsciously, and void of effort or control (Turel & Qahri-Saremi, 2017). Research has demonstrated that consumers are driven by personal image, expression of personality, and consolidation of self-image when they act impulsively (Verhagen & Van Dolen, 2011). Previous studies on impulsive purchasing behaviours have concentrated on the definitional factors that differentiate this specific element from other purchasing processes (Kassarjian, 1971; Rook, 1987). In response to characterizing this hedonic behaviour and to determine the key components, researchers began to focus on categorising the internal psychological conditions that contribute to the fundamental component of consumer's impulsive behaviours. Further definitions have defined impulsive buying tendency as a reactive "response to novel stimuli that occurred at a preconscious level due to biological tendencies" (Badgaiyan & Verma, 2014, p. 541).

Previous research on the phenomenon of impulsive buying supports that personality traits have a direct association with individuals who have a higher tendency to act spontaneously when shopping within online environments (Xiao & Nicholson, 2012). Further research noted that impulsive buying tendencies were influenced by website design, internal and external factors with hedonic outcomes, positive effect, and normative assessments being contributor elements in impulsive online consumer behaviours (Chih, Wu, & Li, 2012). The online consumer market has been defined as a computer-mediated environment, a digitized marketspace, and a subliminal channel where consumers' motivational behaviours are different from the traditional brick and mortar spaces (Hoffman & Novak, 1996). The contribution that intrinsic factors contribute to impulsive online shopping behaviours has been suggested to be associated with the cardinal psychological trait of personality and as a key predictor of surface trait impulsiveness (Chen, 2011).

The influence that personality has on purchasing intent within online shopping environments was examined by Barkhi and Wallace (2007) who stated that personality was a moderating consideration for online shopping behaviours. Additionally, research reported that gender was a contributing factor to online shopping intentions, with significantly more males engaging in online shopping activities when compared to females (Schlossberg, 2016; Statista, 2018; Wallace, 2018). The gender imbalance was also reported to be influenced by trust, where women were more cautious when transacting online, and these gender discrepancies are prevalent in all e-commerce online transactions irrespective of age, education or income (Chen, Yan, Fan, & Gordon, 2015; Hao Suan Samuel, Balaji, & Kok Wei, 2015; Sethna, Hazari, & Bergiel, 2017). Gender differences in online shopping platforms were supported by research that men are mission-driven to complete the task, with male consumers tending to hold utilitarian shopping values, whilst women are more likely to explore prior to committing to a purchase, and womens' shopping motives have a greater inclination to be hedonic in nature by comparison (Hoffman & Novak, 1996; Wahyuddin, Setyawan, & Nugroho, 2017).

2. Literature Review

The analysis of consumer behaviour is not a recent phenomenon with earlier work by Kotler and Armstrong (2010) demonstrating that personality is inextricably connected to consumer outcomes. Huang and Yang's (2010) research on the relationship between personality traits and online shopping motivations supported that personality traits were a key predictor of online shopping behaviours. The growing body of research on this topic has shown how key personality facets can influence online consumer shopping behavioural outcomes (Badgaiyan & Verma, 2014; Bellamy & Becker, 2015; Chan, Cheung, & Lee, 2017). This connection was previously supported in research by Shahjehan (2012) who presented that impulsive online shopping behaviours were directly associated with neuroticism, and the remaining key traits had a greater or lessening impact on impulsive buying tendency. Several studies have supported the research that personality is a significant element in how online consumers behave within online retail environments and how consumers respond and accept online enticements and inducements to purchase spontaneously and compulsively (Bosnjak, Galesic, & Tuten, 2007; Tsao & Chang, 2010). Research has also supported that an individual's personality is key a factor in how this cognitive process is organised, and how the behavioural orientations manifest whilst engaged in spontaneous consumer behaviours (Kwon, Byun, Katz, Deshpande, & Forsythe, 2016). This cognitive deliberation may also be a factor in interceding between impulsive consumption behaviours and external stimulus, and this lack of cognitive control can be the differentiator between uncontrolled consumption and planned purchases (Baun & Gröppel-Klein, 2003).

Earlier research by Allport (1937) reported that personality facets or heterogeneous traits are present in all individuals to a lesser or greater degree, with several studies exploring the link of personality traits being a fundamental predictor of consumer engagement (Bosnjak, Galesic, & Tuten, 2007; Huang & Yang, 2010; Tsao & Chang, 2010). As will be discussed below, these traits are a distinctive feature of emotional and behavioural responsive outcomes to internal and external stimuli, which can be grouped into distinct personality trait taxonomies. More recently these groupings of openness, conscientiousness, extraversion, agreeableness, and neuroticism have been summarised to five super traits, which can satisfactorily outline the key constitutes of personality within individuals. Termed as the concept of the Big Five, also referred to as the Five Factor Model (FFM), these super traits align and are predictors of an individual's personality (McCrae & John, 1992). More

recent research has argued that the Big Five are generic to all identities and are crucial for the task of characterizing unique differences in individuals, and furthermore that these traits seldom alter or change over an individual's lifetime (Kim & Jeong, 2015; Steenkamp & Maydeu-Olivares, 2015).

2.1 Personality

Personality traits are the characteristic of an individual's value, behaviour, and preferences, and these properties have been suggested to influence consumer decisions when shopping online (Soliño & Farizo, 2014). The personality trait orientation of the consumer in an online shopping environment is "the symbolic interaction framework variable" which can predict how a consumer would react within a virtual retail environment (Bellamy & Becker, 2015, p. 122). This framework explains the aspects of how the FFM can influence online shopping behaviours, outcomes, and consumer's experiences within online shopping platforms. The relationship between personality traits and irrational consumption considered in a study by Verplanken and Herabadi (2001) who stated that chronic personality types have a positive correlation with impulsive consumer outcomes. For example, the extraversion characteristic traits are sociability, positivity, synergism and an outward propensity to interpersonal interactions. Those who display this trait have been reported to exhibit hedonic online shopping behaviours and are more likely to be adventurous and risk takers and align with an increased predilection to purchase higher status products (Verplanken & Herabadi, 2001; Landis & Gladstone, 2017; Nartey, 2018). Earlier research by Tsao and Chang (2010) supported that consumers with higher degrees of extraversion displayed significantly increased levels of hedonic behaviours and were more predisposed to seek out pleasure and enjoyment whilst transacting online. Online consumers with the elevated extraversion trait were also shown to purchase "online in response to social motivation", and more likely to shop online for social aspects and the engagement of the online experience (Huang & Yang, 2010, p. 677). More recent research by Pelau, Serban, and Chinie (2018) on the influence of personality traits on impulsive buying behaviours reported that extroversion was a significant stimulus for irrational consumer behaviour, and that introversion was related to planned purchasing activities and non-impulsive shopping behaviours.

Openness to experiences as defined by Costa and McCrae (1995 p. 23) is an "intellectual curiosity" that manifests as a pursuit of interests and alternative ideas, acquiescent for new experiences, and a higher acceptance of new technologies, coupled with

increased purchase intentions (Yi, Jiang, & Benbasat, 2015). Whilst those who are closed to experiences can be dogmatic, risk-averse, unanalytical, and hold narrow interests (Zhao & Seibert, 2006). While not initially perceived as being directly linked to a heterogeneous nature, those individuals high in openness as a trait have been shown to demonstrate a higher self-efficacy, greater creativity, and higher need to achieve (Kerr, Kerr, & Xu, 2017). Openness has been demonstrated to be a key influencing trait to impulsive shopping behaviours, with individuals scoring high on this scale shown to act spontaneously when encouraged to consume impulsively (Farid & Ali, 2018). Significantly the correlation between openness to experience and irrational consumption was further reported to be linked with compulsive shopping behaviours (Shehzadi, Ahmad-ur-Rehman, Mehmood Cheema, & Ahkam, 2016) with age, gender and personality being key antecedents of impulsive tendencies.

Conscientiousness as another example is defined as a dimension where an individual's disposition is driven towards structure and organisation, goal objective behaviours, with their choice preference being predominately driven towards premeditated activities. It is possible that these attributes can lead to a cautious and sceptical attitude to online shopping, and these individuals would not typically display impulsive emotions or spontaneous tendencies online (Pervin & Cervone, 2017). Consumers with higher levels of conscientiousness when shopping online have been shown to purchase efficiently, create and investigate alternative options, do not purchase impulsively, and are more inclined to be utility driven rather than hedonistic (Tsao & Chang, 2010). Research by Huang and Yang (2010) sought to examine the relationship between personality traits and online shopping motivations, their study supported that conscientious online consumer behaviour correlated positively with convenience motivation and was driven by utilitarian needs within online purchasing environments. Gohary and Hanzaee (2014) further supported that open, conscientious, and neurotic personality traits have a positive effect on utilitarian, hedonic, and impulsive behavioural outcomes.

The assertion that individuals are more confident to transact online when the agreeableness trait is high, has been associated with a significant proclivity to trust and a contributing factor to increased online purchasing frequency (Chen, 2011; Marshall, Lefringhausen, & Ferenczi, 2015; Nartey, 2018). The higher on the scale of agreeableness an individual may project, the more trusting, helpful, sympathetic, and greater the desire to seek mutually beneficial relationships whilst transacting online (Bosnjak, Galesic, & Tuten, 2007).

Research has supported that individuals with higher levels of agreeableness hold a positive association with online impulse buying behaviours and display higher susceptibility to compulsive purchase patterns (Turkyilmaz, Erdem, & Uslu, 2015).

In contrast, neurotic personalities are anxious by nature, emotionally unstable, and have been shown to display feelings of depression, anger, low self-confidence, and more likely to be unsociable and less trusting. They will actively avoid situations where they have to take control or make decisions (Turkyilmaz, Erdem, & Uslu, 2015; Nartey, 2018), and their impulsive actions within online retail platforms are "prone to occur with diminished regard" (Rook, 1987 p. 191). Consumers with neurotic personality are inclined to purchase impulsively and exhibit compulsive buying behaviours within e-commerce platforms (Tsao & Chang, 2010).

2.2 Trait Aspects of Impulsive Purchasing

Personality and environmental cues on impulsive consumer behaviours has been suggested to be a key trigger for spontaneous purchases (Sharma, Sivakumaran, & Marshall, 2010), with impulsive personality traits defining how the consumer makes affective, cognitive and behavioural responses spontaneously within online shopping environments with little regard for the outcome (Roberts, Pullig, & Manolis, 2015). More recent research by Sofi and Nika (2017, p. 26) of 630 consumers supported that personality was an “intrinsic catalyst” for impulsive buying behaviours, and that the lower the levels of cognition than the higher are the impulsive behaviours. Previous research by Shahjehan (2012) on the influence of personality on impulsive buying outcomes, identified a positive correlation between personality traits and impulsive purchasing, and suggested that consumers with higher levels of neuroticism were more likely to engage in impulsive buying behaviours. Research supported that personality variables are a key indicator of impulsive shopping behaviours, and that openness and neurotic personality traits correlate with impulsive behaviours (Troisi, Christopher, & Marek, 2006). An investigation into the psychological function of self-regulation and buying behaviours within individuals reported a negative correlation between irrational consumption and self-regulation, with younger females reported to be more inclined to purchase spontaneously than other demographics (Pradipto, Winata, Murti, & Azizah, 2016). Furthermore, Verplanken and Herabadi (2001) demonstrated that an individual’s impulsivity was positively associated with personality, and the purchasing profile of an impulsive consumer was associated with low levels of conscientiousness coupled with

higher degrees of extraversion. In addition, the research by Herabadi (2003) on impulsive consumption behaviours reported that agreeableness and conscientiousness had a negative association with the propensity to purchase impulsively, and that neuroticism had a significant bearing in determining impulsive buying behaviours. These impulsive traits have also been associated with heritability factors with the motivational behaviours categorised as genetic, and further defined as being a significant contributing factor to "impulsive irritability" (Coccaro, Bergeman, & McClearn, 1993, p. 229).

Age was demonstrated to be a key factor in online shopping intentions and frequency, with more recent data for Ireland reporting that the 18 to 24 demographic age group shop online with the greatest frequency (European Consumer Centre, 2017), whilst those in the 35-54 age group were more likely to spend more per transaction (G2A, 2018; Verto Analytics Inc, 2018). The skew in age and spend per transaction has been shown to positively associate with younger consumers greater acceptance of technology (Dastorani & Khoshneshin, 2017; Amirtha & Sivakumar, 2018). Likewise, the 35-54 age group who have higher disposable incomes, have been reported to purchase with greater frequency in online platforms for fast moving consumable goods and electronic products (Central Statistics Office, 2018; Eurostat, 2017). Additionally, research into the impact of demographics on online shopping frequency reported from the study of 820 consumers that age and more significantly gender correlated strongly with online shopping buying behaviours, with younger men more likely to engage in regular, hedonic and increased purchasing intentions when shopping online (Lian & Yen, 2014).

2.3 Demographic Factors

The association of personality dimensions and sociodemographic as reported by Roy, Sethuraman, and Saran (2016) demonstrated a correlation existed between personality traits and consumer demographic. These findings were also supported in research conducted by Bosnjak, Galesic, and Tuten (2007) who reported that key demographic variables and the big five personality traits were associated, and reported a positive and significant association between demographic characteristics, personality and impulsive purchasing behaviours.

The demographics of gender, age, and income have been demonstrated to have a positive correlation with online consumer behaviours and outcomes. Hasan (2010) reported that these key demographic factors had a direct association with consumers on the perceived

ease of use, acceptance of new technology. Furthermore, this research reported that frequency and spend value also have a direct correlation with gender, age and income. These findings were further supported in research by Rohm and Swaminathan (2004, p. 754) who suggested that gender and age influenced shopping behaviours within online environments and suggested that a homogeneous online topology with respect to demographics existed. However, these findings were contradicted in later research that failed to demonstrate a correlation that gender and age were an influencer on online shopping behaviours (Hernández, Jiménez, & José Martín, 2011). Furthermore, the behavioural intent of consumers within e-commerce environments was shown not to be influenced by demographic profiles but rather was reliant on the consumers' personal perspective and understanding of the product (Malik & Guptha, 2013).

2.4 Gender

In a comprehensive study of 320,000 Swedish participants by Kajonius and Johnson (2018) to the gender differences of the five-factor model of personality, their findings reported that women scored higher when measured across all five personality traits in contrast to men, and that these difference in scores was consistent across varying age demographics. The interpretation of this study was that females may make certain choices appertaining to their personality when exposed to an external stimulus, and that gender differences within personality traits are multidimensional. The influence of gender and personality on shopping outcomes has reported that male and female consumers have different shopping needs, wants, and outcomes in online consumer platforms (Chen, Yan, Fan, & Gordon, 2015). Their study of 582 participants on trust and gender within online shopping platforms supported that gender was a key variable for trust propensity for online shopping behaviours outcomes, with female respondents reporting a higher level of perceived risk in comparison to men.

Research by Hasan (2010) detailed that men display more utilitarian traits, and are more logic based in their actions, seek convenience, and are driven by outcomes, whilst women are more likely to foster a greater inclination to hedonic shopping values, express and display intrinsic responses whilst engaged, enjoyed the sociality, and view their experience as a journey. Additionally, a key differentiator between the genders was cognitive attitude, with females valuing the online shopping experience higher than male counterparts (Zhang, Xu, Zhao, & Yu, 2018). However, one factor where gender differences were significantly positively biased towards males was their propensity to trust, self-privacy, perception of security risk,

and higher “target-agnostic trait-based perception” of the online vendor (Alarcon et al., 2018, p. 1908). With little exception, researchers have consistently shown that females are more inclined to be apprehensive when transacting online, value the vendor’s integrity, review transactional security more frequently than males, and have demonstrated their trust intensifies over time with increased reciprocity (Hoffman & Novak, 1996; Hao Suan Samuel, Balaji, & Kok Wei, 2015; Yoon & Occeña, 2015).

2.5 Age

Erkan and Evans (2016) reported that age was a key attribute to consumer engagement and behavioural outcomes in e-commerce platforms. The study confirmed that online shoppers in the age category of 18 to 25 years were more inclined to experience fun and enjoyment whilst transacting and were more likely to use mobile technology to transact online. This age denomination was also reported to add items to their cart on checkout when recommended by the vendor, and were more likely to use social media for product. Whilst older online shoppers were shown to place higher regard on security and privacy, tended to more pragmatic, and research products in advance of purchase (Lin, Featherman, Brooks, & Hajli, 2018). Whilst those in the 35-44 age group were more disposed to complete a purchase if the product had positive reviews and affirmative feedback. Related studies on impulsive consumer behaviours supported that younger consumers have greater impulsive buying tendency when contrasted with older age groups, with older age groupings responding to impulsive purchasing behaviours with increased discipline (Kacen & Lee, 2002). In reality, the age demographic may not be as simple as young versus old adage, with PwC's (2018) Irish retail report citing that the online consumer age demographic profile has become segmented. The report also detailed how age was no longer a linear trend for online consumer engagement, and that all age categories presented coextending behaviours and strategies when shopping in online environments.

2.6 Enticement and Engagement

Online marketing stratagems have demonstrated that shopping personality orientations can be a reliable indicator of purchasing intentions (Yi, Jiang, & Benbasat, 2015). Research also supported an association that personality is a key factor in influencing traditional shopping motivations and outcomes (Kassarjian, 1971; Raju, 1980; Babin, Darden, & Griffin, 1994; Turley & Milliman, 2000). Research has also recognised that when a consumer is exposed to a multi-media avalanche of cues and signals that encourage spontaneous purchasing within

this virtual environment that the online shopper's decision processes are motivated by cognitive and affective aspects (Dhurup, 2014). This cognitive process is reported as an action or reaction to stimuli, and how an individual responds to the presence of psychological triggers is a contributing element of impulsive shopping behaviours. How consumers responded to the stimulus was reported by Youn and Faber (2002) in their paper which examined how cognitive and affective aspects influence impulsive buying. Their paper suggested that consumers' impulsiveness was a multi-dimensional construct where an individual's failure to suppress urges, coupled with diminished regard, and emotional conflict all had an influence on irrational consumer behavioural outcomes. Research on impulsive behaviours within e-commerce platforms may be a relatively recent studied phenomenon, with previous investigations on how personality traits can influence impulse purchasing being traditionally associated with brick and mortar stores. This research will seek to understand the prevalence that personality traits have on impulsive shopping outcomes within online retail environments.

This thesis will seek to support if age, gender, frequency and online shopping motivations are instrumental to spontaneous online consumer outcomes. It will also endeavour to predict the impact of the personality traits of extraversion, openness, agreeableness, neuroticism, and conscientiousness on impulse buying behaviour as illustrated in Figure 1

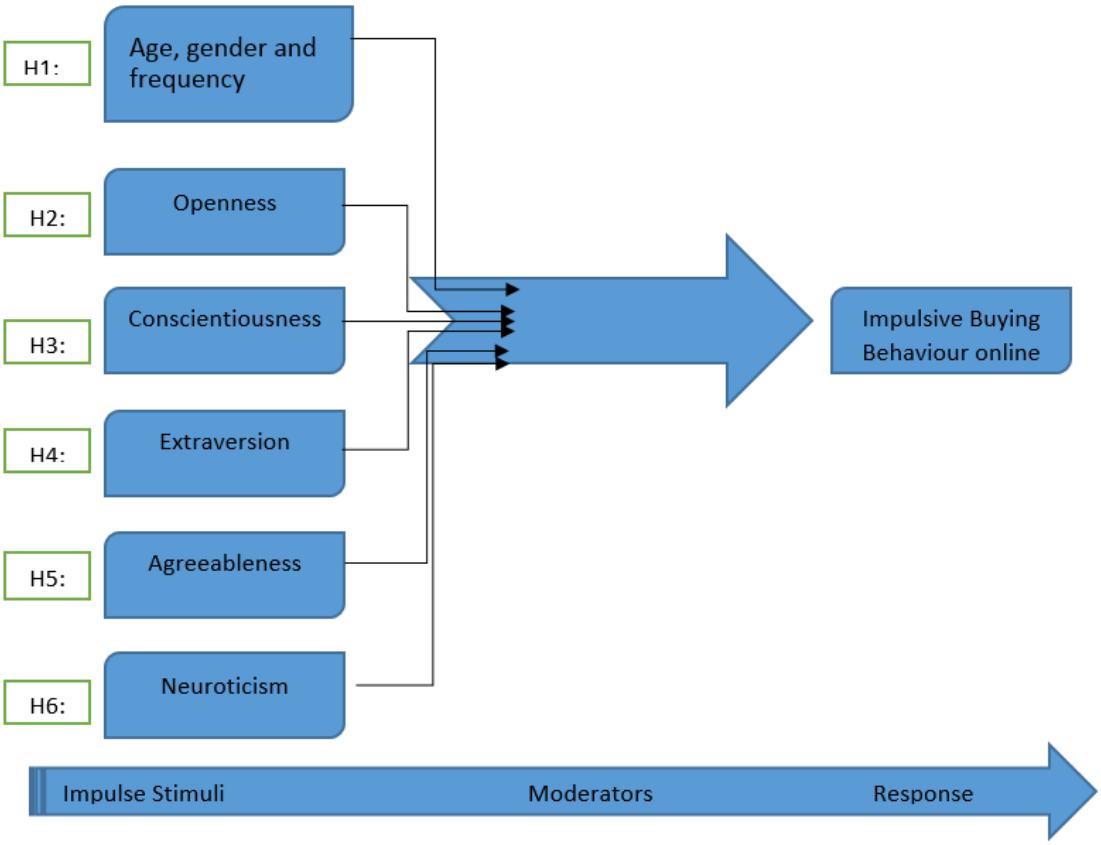


Figure 1. Proposed research framework

2.7 Research Questions

RQ1: What are the relationships between age, gender, frequency and impulsive shopping behaviours?

RQ2: What is the influence of personality traits on impulsive shopping behaviour in online retail environments?

2.8 Hypothesis

H1: Age, gender and frequency will have a significant association with impulsive online buying behaviours.

H2: Openness has a positive effect on impulsive online buying behaviour.

H3: Conscientiousness has a negative effect on impulsive buying behaviour.

H4: Extraversion has a positive effect on impulsive online buying behaviour.

H5: Agreeableness has a negative effect on impulsive online buying behaviours.

H6: Neuroticism has a positive effect on impulsive online buying behaviours.

3. Research Methodology

3.1 Design

This study used quantitative research utilizing the design of causal research, this quantitative-based cross-sectional designs used data to make statistical inferences about the population of interest, an online questionnaire was the main resource for data collection and was designed specifically for the research problem. The analysis method used in this research consisted of correlation and regression. The research used the combination of distribution methods of convenience sampling, using personal contacts and work colleagues with employer's consent (Appendix A), and additional distribution with snowballing.

3.2 Participants

There were no inducements were offered for taking part or completion of the questionnaire. Participants were assured that their responses were confidential, and the information collected would be treated with strictness confidence. By the final date for receipt of questionnaires, a convenience sample of 106 responses was gathered. From the 106 responses collected, 2 were deemed invalid, leaving a total sample size of n=104. The appropriateness of the sample size was also validated using Survey System sample size calculator (Creative Research Systems, 2012), with a confidence level of 95%, and a confidence interval of 9%, based on the 1.8 million active online shoppers in Ireland for 2017 (Ecommerce Europe, 2018) as illustrated in Figure 2. The returned valid sample size was approximately two times greater than the number of independent variables being evaluated, which meet the recommended scope of five to ten ratio (Hair, Black, Babin, & Anderson, 2013).

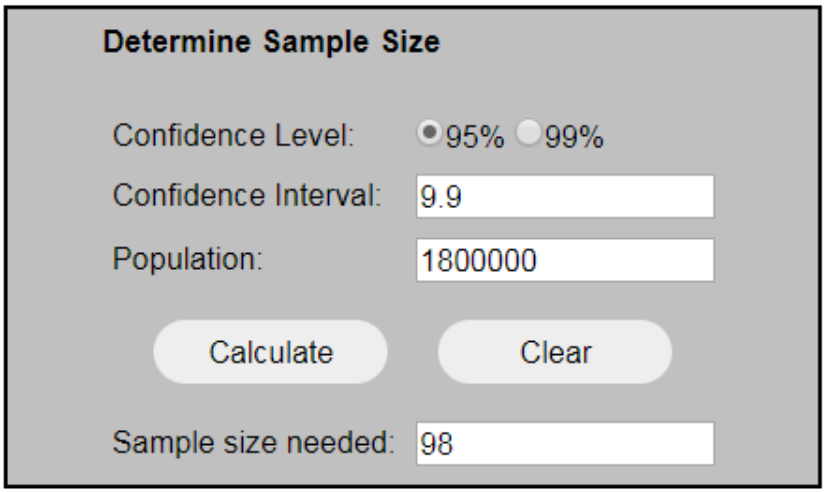


Figure 2. Sample size calculation (Creative Research Systems, 2012)

3.3 Research Instruments

This research used an online site survey questionnaire (Appendix B). The research sought to explore online shopping behaviours, the target population included both consumers who had previous online shopping experience and used the internet to seek out product information prior to purchasing in an offline environment. The collected data was analysed using IBM SPSS software (v23) Appendix C.

Although several accoutrements have been devised previously for the measurement of personality traits (John, Robins, & Pervin, 2008), this study utilised the brief ten trait adjective personality assessment devised by Gosling, Rentfrow, and Swann (2003). Though some limitations of the shorter single item trait personality scales may exist (Diamantopoulos, Sarstedt, Fuchs, Wilczynski, & Kaiser, 2012), the Ten-Item Personality Inventory (TIPI) offers brevity, epitome, non-redundancy, validation and has been demonstrated to be a competent alternative to larger contemporary personality trait scales (Burisch, 1984; Bergkvist & Rossiter, 2007). The TIPI scales comprised of ten questions, encompassed five constructs, and capitalized two elements per construct. The participants were asked to self-appraise on a 7-point Likert scale ranging from 1 (Disagree Strongly) to 7 (Agree Strongly) (Appendix B). The Cronbach alpha for each construct may be adjudged to be considered low to moderate within reliability levels when measuring only two constructs per trait as shown in Table 1.

Table 1.
Mean, Standard Deviation and Cronbach alpha for TIPI.

TIPI-subscales	M	SD	Cronbach alpha
Extraversion.	4.44	1.45	0.68
Agreeableness.	5.23	1.11	0.40
Conscientiousness.	5.40	1.32	0.50
Emotional stability.	4.83	1.42	0.73
Openness.	5.38	1.07	0.45

Note. Gosling, Rentfrow & Swann (2003)

However, by its nature in measuring only two items per construct, and using opposite pole responses, researchers have put forward that test and test reliability may offer better predictive results validation than solely basing internal consistency calculations on criterion correlations (McCrae, Kurtz, Yamagata, & Terracciano, 2010). Previous research has substantiated that the temporal stability of this TIPI which has displayed strong correlations with more detailed personality trait evaluations with significant convergent correlations (E, *r* = .87; A, *r* = .70; C, *r* = .75; ES, *r* = .81; O, *r* = .65) (Ziegler, Kemper, & Kruyen, 2014). Furthermore, factorial analyses have supported the validation of the psychometric properties and the foundation of FFM with respect to Gosling and colleagues' (2003) TIPI (Hofmans, Kuppens, & Allik, 2008; Nunes, Limpo, Lima, & Castro, 2018).

The participant's online shopping regularity utilized the Statista scale (2017) for the data collection of frequency and online shopping experience (Appendix B).

The scales used to evaluate the internal motivations of impulsive buying was Verplanken and Herabadi's (2001) Impulsive Buying Tendency Scale (IBT) (Appendix B). The scale consisted of 20 items, composed of two constructs of ten questions each to measure the cognitive and affective aspects of impulsive buying motivations. The ten items of a cognitive nature ($\alpha = 0.901$) and the ten items of an affective nature ($\alpha = 0.837$) performed well. All twenty items combined were also found to be highly internally consistent ($\alpha = 0.903$) as shown in Table 2.

Table 2. *The Impulse Buying Tendency Scale and factor loadings for a single and a two factor solution, alpha scales*	IBT Total	IBT Cognitive	IBT Affective
Cognitive Subscales (α = 0.901)			
I usually think carefully before I buy something online.(Reverse coded item)	0.63	0.83	-0.18
I usually only buy things that I intended to buy.(Reverse coded item)	0.84	0.79	0.19
If I buy something, I usually do that spontaneously.	0.75	0.78	0.07
Most of my purchases are planned in advance.(Reverse coded item)	0.69	0.78	-0.02
I only buy things that I really need.(Reverse coded item)	0.77	0.74	0.16
It is not my style to just buy things.(Reverse coded item)	0.81	0.74	0.21
I like to compare different brands before I buy one.(Reverse coded item)	0.45	0.67	-0.23
Before I buy something I always carefully consider whether I need it.(Reverse coded item)	0.56	0.66	-0.04
I am used to buying things 'on the spot'.	0.65	0.65	0.09
I often buy things without thinking.	0.67	0.65	0.12
Affective Subscales (α = 0.837)			
It is a struggle to leave nice things I see online.	0.56	0.02	0.81
I sometimes cannot suppress the feeling of wanting to buy something online.	0.61	0.02	0.79
I sometimes feel guilty after having bought something online.	0.32	-0.15	0.66
I'm not the kind of person who 'falls in love at first sight' with things I see online.(Reverse coded item)	0.25	-0.20	0.65
I can become very excited if I see something I would like to buy online.	0.42	-0.09	0.63
I always see something nice whenever I browse online.	0.44	0.08	0.54
I find it difficult to pass up a bargain.	0.61	0.32	0.48
If I see something new online, I want to buy it.	0.42	0.12	0.47
I am a bit reckless in buying things.	0.71	0.44	0.47
I sometimes buy thing because I like buying things, rather than because I need them when browsing online.	0.44	0.15	0.45
Summative Scales (α = 0.903)			
Note. Verplanken & Herabadi 2001.			

These results indicate that it is acceptable to average the ten items of a cognitive and the ten items of an affective nature to acquire internal IBT scores. The responses were scored on a five-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree).

The scales for measuring the responses from participants was validated for internal consistency utilising the Cronbach's α. All requisite scales surpassed Cronbach's α in excess of .7, with the exception of the TIPI as shown in Table 1.

3.4 Research Procedure

All ethics for this research proposal was vetted and granted approval by DTP Ethics Committee (Appendix D). The research structure was a quantitative based method which facilitated the emphasized objective measurements, with the collected data gathered by means of on an online survey questionnaire to document and interrogate responses from the participants. (Appendix B). The survey questionnaire was constructed to discover the potential contributing relationship between the independent and dependent variables. For a purposeful composition of research questions, a pilot test was conducted with five participants. Based on the feedback on the pilot test, no alterations or adaptions were required. All participants were provided with a Research Overview, Research Ethics Information, and Participant Information Sheet (Appendixes E, F, G), in advance of the Consent Form being signed (Appendix H). The instrument for data collection was a questionnaire Appendix B). Upon conclusion of the online survey, a debriefing statement was provided to all participants (Appendix I).

4. Results

4.1 Demographic Analysis

The collected data sample size comprised of 104 participants of which 64 were female (61.5%), with key age composition of 29 participants (27.9%) from categories of 35-44 and 45-54 years.

Responding to how frequently do they shop online, the wide spectrum of responses was well covered within participants' responses as illustrated in Figure 3. Most of the responses fell into category of online shoppers who are more frequent than once a month but less than once a week.

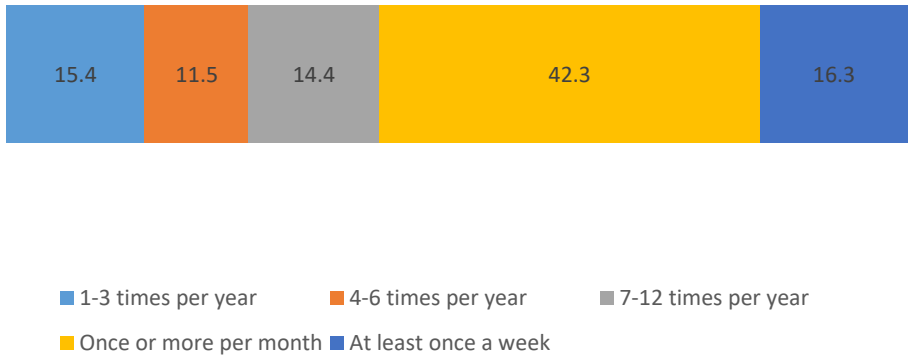


Figure 3. Distribution of shopping frequency relative to other responses. Numbers indicate percentage of total responses.

4.2 Psychometric Assessment

The scales basic descriptive measures for each facet and total score are provided in Table 3. Notable that all TIPI facets did reach theoretical maximum values, indicating that a ceiling effect may be present; a phenomenon in which variation or a measured trait is restricted due to instruments used. In present case, it is possible that participants would have had higher values on each of the traits if that was possible. This could be mitigated in future research either by creating a more detailed questionnaire or offering a wider scope of responses. These problems were not present in the BIS scales, however cognitive facet did demonstrate a flooring effect as shown in Table 3.

Table 3.

Descriptive statistical measures for every subscale.

Subscale	Theoretical		Empirical		*M*	*SD*	*zSk*	*zKu*
	Min	Max	Min	Max				
Extraversion [TIPI]	2	14	4	14	9.45	2.74	0.67	-0.73
Neuroticism [TIPI]	2	14	2	14	9.74	2.55	-4.81	3.47
Conscientiousness [TIPI]	2	14	4	14	11.25	2.28	-3.69	0.33
Agreeableness [TIPI]	2	14	3	14	10.33	2.26	-4.26	2.86
Openness [TIPI]	2	14	4	14	10.17	2.07	-5.03	4.75
Cognitive [BIS]	10	50	10	48	25.19	8.53	2.58	-0.50
Affective [BIS]	10	50	11	47	24.76	7.46	3.55	1.58
Sum [BIS]	20	100	23	95	49.95	14.67	2.86	.47

Measures of standardized skewness (zSk) and standardized kurtosis (zKu) are reported in order to facilitate interpretation of distribution shape. Standardized values in range of ±1.96 for both values indicate normal bell shape of distribution. Values of skewness out of that range indicate that distribution is skewed either to the right (zSk > 1.96) or to the left (zSk < -1.96), while values of kurtosis out of that range indicate that distribution is either leptokurtic, higher than normal (zKu > 1.96) or platokurtic, flatter than normal (zKu < -1.96). The value of ±1.96 corresponds to 95% confidence interval, supplementing the application of testing to reject null hypothesis at $p < .05$ (Ghasemi & Zahediasl, 2012). The table demonstrates that most of the scales have a distribution that deviates from normal to be considered statistically significant. Namely, only extraversion from TIPI shows normal distribution. This amount of skew in the data can pose some problems for linear analyses.

Cronbach's (1951) alpha index [α] was used to verify the internal consistency of the scale, homogeneity [*H*] of the scale was calculated as average inter-item correlation for every facet. Sampling adequacy was calculated for both forms as well, to provide a simple overview of a scale's adequacy for factor analysis (Tavakol & Dennick, 2011). Although it is not a direct measure of construct validity, a key factor in situations in which the main focus of the study is not validation but application of a certain scale. This demonstration of an instrument's limited dimensionality can prove valuable while factorization of the scale is not encouraged due to limited sample size (Osborne, Costello, & Kellow, 2014) as shown in Table 4.

Table 4.

Scale-wide parameters of psychometric quality.

Subscale	α	*H*	*KMO*
Extraversion [TIPI]	.579	.415	.500
Neuroticism [TIPI]	.439	.285	.500
Conscientiousness [TIPI]	.414	.268	.500
Agreeableness [TIPI]	.076	.042	.500
Openness [TIPI]	.192	.107	.500
Cognitive [BIS]	.921	.537	.899
Affective [BIS]	.867	.400	.899
Sum [BIS]	.932	.407	.914

Reliability indices as shown in Table 4 suggest that scale is suitable for use in applied research as most of its scales fall short of widely accepted .7 criteria but are relatively close to values reported by researchers in original validation study (Gosling, Rentfrow, & Swann, 2003). Acceptability of reported values for TIPI subscales is further justified by having in mind that the value of alpha coefficient depends on scale's length, with longer scales having in principle higher values. Although higher reliability is often considered desirable, it should be noted that values this high can be problematic, and may indicate the existence of redundancy among scale's items (Tavakol & Dennick, 2011). Apart from that, only problematic value is that of agreeableness facet of TIPI that is alarmingly low. Homogeneity values are in satisfactory range for all of the subscales except for the fore-mentioned agreeableness. Measure of sampling adequacy indicates psychometric robustness for each scale, and met a minimum .5 (Kaiser & Rice, 1974).

Although facing some problems, it is concluded that administered scales are suitable for analysis, especially having in mind that research is not purely theoretical but one with some clear applications in real-world, that can allow itself imperfect measurement for the sake of answering important questions.

4.3 Relationship between Personality and Impulsive Purchases

In order to assess relationships between these variables, several multiple linear regression models were constructed. Regression analysis was used to determine the relationship

between independent variables and the dependent variable. Linear regression was employed to explore the relationship, and provide a quantitative measure of its strength, expressed in an index ranging from 0 to 1. This index R^2 is proportion of variance of dependent variable explained by variation present in dependent variables, where the quality of prediction of dependent variable is based on values of independent variables (Field, 2013). The use of *B* coefficient indicates strength of influence of a single predictor, expressed in units in which that predictor was measured. Thus allowing *B* provide information about amount of change in impulsiveness score when score for a certain trait is changed by one.

Three separate regression analyses were used in order to assess effects of personality on impulsive buying: cognitive aspect as dependent variable reported in Table 5, affective aspect as dependent variable reported in Table 6, and summative score as dependent variable reported in Table 7. This approach offered an understanding of the differential effects of personality on different aspects of impulsive buying. The normality of distributions of all included variables was not met as shown in Table 1 and adjunct discussion, as a further enhancement of the available data bootstrapping procedures, bias-correction, and accelerated bootstrapping [BCa] procedures were employed.

Table 5.

Regression analysis for influence of Big Five personality traits on cognitive facet of impulsiveness.

Source	B	BCa 95% confidence interval	
		Lower	Upper
Intercept	30.50*	14.36	45.81
Extraversion	.43	-.26	1.19
Neuroticism	-1.12*	-1.75	-.61
Conscientiousness	.05	-.71	.90
Agreeableness	-.08	-.86	.67
Openness	.18	-.56	.90

Notes. F (5, 98) = 3.06, p = .013, R^2 = .135; bias-corrected and accelerated bootstrapping on 1000 samples; * indicates significance at p < .05 level.

Table 6.

Regression analysis for influence of Big Five personality traits on affective facet of impulsiveness.

Source	B	BCa 95% confidence interval	
		Lower	Upper
Intercept	34.10*	23.21	45.42
Extraversion	.27	-.34	.88
Neuroticism	-1.27*	-1.87	-.77
Conscientiousness	.22	-.60	1.13
Agreeableness	-.29	-.91	.40
Openness	.09	-.45	.58

Notes. F (5, 98) = 5.09, $p < .001$, $R^2 = .206$; bias-corrected and accelerated bootstrapping on 1000 samples; * indicates significance at $p < .05$ level.

Table 7.

Regression analysis for influence of Big Five personality traits on impulsive shopping (summative score).

Source	*B*	BCa 95% confidence interval	
		Lower	Upper
Intercept	64.60*	40.29	88.33
Extraversion	.70	-.49	2.05
Neuroticism	-2.39*	-3.48	-1.37
Conscientiousness	.26	-1.15	1.76
Agreeableness	-.36	-1.47	.93
Openness	.28	-1.06	1.46

Notes. F (5, 98) = 4.74, $p = .001$, $R^2 = .195$; bias-corrected and accelerated bootstrapping on 1000 samples; * indicates significance at $p < .05$ level.

The results of regression analyses were consistent but failed to assess the proposed hypotheses. The results reported neuroticism had a negative relationship with the dependent variable while all other personality traits fall short of reaching statistical significance. The connection of neuroticism is a stable one as it influences both aspects of impulsive

purchasing, cognitive and affective. Regarding the hypotheses put forth earlier, it can be concluded that H5 – "neuroticism has a negative influence on impulsive shopping behaviours" is rejected, while other hypotheses remain inconclusive. This we speculate may be due to small sample size, and it is possible that other personality traits have a weaker influence on shopping behaviours.

4.4 Relationships with Demographic Variables

For research question two ANOVA was employed as the procedure for assessing differences between means of several groups of independent variable on one dependent variable. ANOVA linear procedure and bootstrapping was applied once again following the same rationale. The single factor ANOVA's with age, gender and frequency of online shopping as independent variables was performed, bias-correction and accelerated bootstrapping methods were applied for bias correction percentile, and estimation of distributed approximate pivots as shown in Table 8.

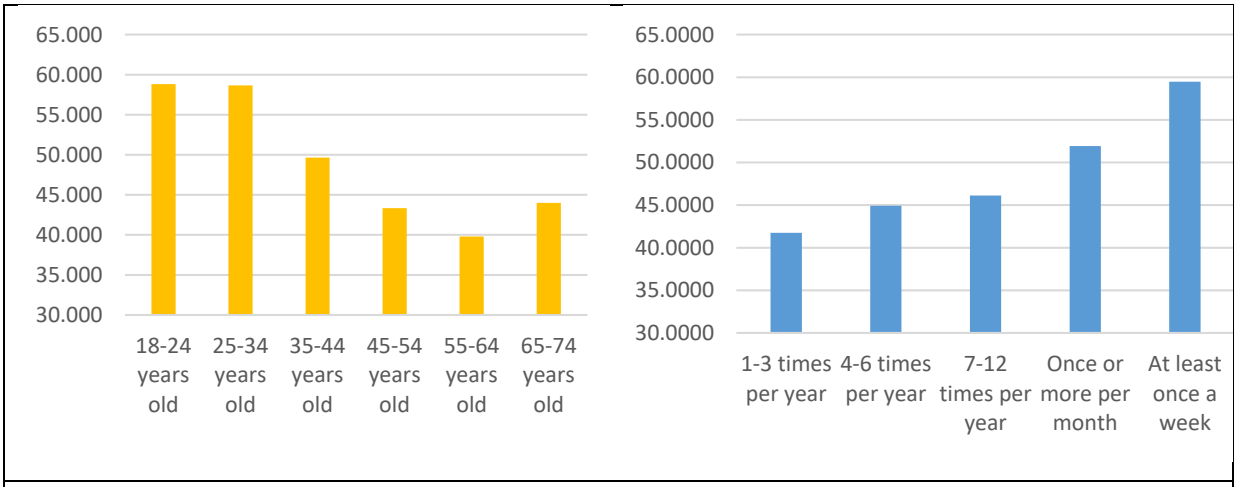
Table 8.

Results of omnibus ANOVA tests.

Variable	*df1*	*df2*	*F*	*p*
Age	5	98	5.77	<.001
Gender	1	102	16.28	<.001
Frequency of online shopping	4	99	4.346	<.003

The results for the three demographic variables reported significant influence on summative score of impulsive buying. Since gender is the only variable that has two levels, it is evident that women are more prone to impulsive shopping than men. Post-hoc test with applied correction for Type I error inflation indicated that 18-24 year olds shop impulsively more than all other groups, and that the difference is statistically significant between them and every other group with the exception of 25-34 year olds. Participants from 25 to 34 category were more prone to shop impulsively than older groups, and that difference is statistically significant. The data demonstrated that participants aged between 35 and 44 were more prone to shop impulsively than 45-54 and 65-74 year olds, but not more than those aged between 55 and 64. There are no statistically significant differences between the

three remaining groups. In relation to impulsive shopping and frequency of online shopping, the research already reported that a connection exists. However, only after conducting post hoc tests with correction it was possible to conclude that participants shopping 1 to 3 times per year are statistically significantly different from those who shop at least once per month or at least once a week, but not from those who are shopping less frequently; those who shop 4-6 times per year significantly differ only from the group that buys online once a week or even more frequently; those who shop online 7-12 times a year are significantly different regarding their tendency to impulsively buy only from the group of those who shop once a week or more as illustrated in Figure 4.



A. Age B. Frequency

Figure 4. Group means on summative score of BIS scale for variables of age and frequency of purchase

4.5 Results of Hypothesis Testing

4.5.1 H1: Age, gender and frequency will have a significant association with impulsive online buying behaviours.

Age and gender have been demonstrated to have a significant correlation with irrational shopping behaviours previously, the gender differences with regard to cogitative and affective impulse purchasing was reported by Coley and Burgess (2003). Whilst the age profile of online consumers was reported as a contributing factor to on impulsive shopping behaviours (Sorce, Perotti, & Widrick, 2005), with this regard the following was proposed that there would be a relationship between age, gender, frequency and unprompted online purchasing outcomes.

For age, the p-value associated with Age as a predictor of impulse buying was less than 0.05 ($p < 0.001$). As a result at 95% confidence level we reject the null hypothesis of non-association and conclude that Age was a significant predictor of impulsive online buying as shown in Table 8 which supports Erkan and Evans (2016) research.

In relation to gender as shown in Table 8, the p-value associated with Gender as a predictor of impulsive buying was less than 0.05 ($p<0.001$). As a result, at 95% confidence level we reject the null hypothesis and conclude that Gender was a significant predictor of impulsive online buying which supports Pradipto, Winata, Murti, and Azizah (2016) report.

For the significance of frequency, the p-value associated with Frequency of online shopping as a predictor of impulsive buying was less than 0.05 ($p < 0.003$) as shown in Table 8. Thus we reject the null hypothesis and conclude that frequency of online shopping was a significant predictor of impulsive online buying.

From the foregoing, we can conclude that at 95% confidence level, Age, gender and frequency have a significant association with impulsive online buying behaviours.

4.5.2 H2: Openness has a positive effect on impulsive online buying behaviour.

Individuals who record low scores in this personality trait are deemed to be habitual, reserved, conservative, whilst those who rate high in this trait are imaginative, broad-minded, and flexible to new ideas (McCrae, & Costa, 2008). It was predicted that open-minded consumers are willing to be adventurous, and try out new products, therefore it was anticipated that these individuals would act spontaneously within online shopping environments.

Although openness had a positive effect on impulsive online buying ($b = 0.275$) as shown in Table 9, the coefficient was not significant ($t = 0.418$, $p = 0.677$). Thus at 95% confidence level, there is no sufficient evidence to conclude that openness has a positive effect on impulsive online buying behaviour.

Table 9.

Coefficients[a] Table.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	64,599	11,469		5,632	,000
	E_TOTAL	,701	,495	,131	1,418	,159
	N_TOTAL	-2,392	,544	-,417	-4,402	,000
	C_TOTAL	,264	,622	,041	,424	,672
	A_TOTAL	-,362	,611	-,056	-,593	,555
	I_TOTAL	,275	,657	,039	,418	,677

Note. a. Dependent Variable: BIS

4.5.3 H3: Conscientiousness has a negative effect on impulsive buying behaviour.

The conscientiousness trait describes personality types who are persistent, have high self-control, cautious in nature, planners, and focus on future planning (Verplanken & Herabadi, 2001), therefore it is expected that individuals who rate lower in this trait are inclined to be more impulsive as compared to the people with higher values on this scale.

Conscientiousness has a positive effect on impulsive online buying (b = 0.264, t = 0.424, p = 0.672) as shown in Table 9. However, at 95% confidence level, the coefficient is not significant (p > 0.05) and we therefore fail to reject the null hypothesis of non-association. We conclude that there is no sufficient evidence to support the claim that conscientiousness has a negative effect on impulsive buying behaviour.

4.5.4 H4: Extraversion has a positive effect on impulsive online buying behaviour.

This trait predominately sees individuals high with this trait as outgoing, assertive, energetic, highly sociable, strong teamwork focus, independent, risk takers, and have lower self-control (Fischer, Lee, & Verzijden, 2018), the prediction was that participants high in this are more substitutable to consume irrationally within online shopping platforms.

Extraversion has a positive effect on impulsive online buying behaviour (b = 0.701, t = 1.418, p = 0.159). However, at 95% confidence interval, the coefficient is not significant (p >

0.05) as shown in Table 9, and we therefore fail to reject the null hypothesis and conclude that there is no sufficient evidence to conclude that extraversion has a positive effect on impulsive online buying behaviour.

4.5.5 H5: Agreeableness has a negative effect on impulsive online buying behaviours.

Agreeableness personality types are cooperative, trusting, prosocial behaviours, hold high degrees of empathy, are motivated to help others, and happy building new relationships, they are more often to think about outcomes (Verplanken & Herabadi, 2001). Therefore the expectation was agreeableness would have a negative but insignificant relationship with impulsive shopping behaviours.

Agreeableness had a negative effect on impulsive online buying behaviour (b= -0.362, t = -0.593, p = 0.555). However, at 95% confidence level, the coefficient was not significant (p > 0.05)as seen in Table 9 thus we fail to reject the null hypothesis of non-association and conclude that there is no sufficient evidence to support the claim that agreeableness has a negative effect on impulsive online buying behaviours.

4.5.6 H6: Neuroticism has a positive effect on impulsive online buying behaviours.

Neurotic individuals are associated with fearfulness, holding negative emotions, anxious, are apathetic in nature. McCrae and Costa (2008) reported that individuals who rate high in this trait are depressive, emotional and prone to act impulsively. Therefore, the prevision was that neurotic personality types would be more versed to act impulsively when shopping online.

Neuroticism have a negative effect on impulsive online buying behaviours (b = -2.392, t = -4.402, p = 0.000) as reported in Table 9. At 95% confidence level, the coefficient was significant (p < 0.05) thus we reject the null hypothesis of non-association and conclude that there is sufficient evidence to support the claim that Neuroticism has a negative effect on impulsive online buying. This statement does not support the initial claim (H6).

5. Discussion

This research sought to advance a greater understanding of the existing role of impulsive shopping behaviours within online retail environments. The research reviewed the specific literature pertaining to irrational online consumption, and attempted to demonstrate an association between the big five personality traits and if these traits inspired or discouraged impulsive online shopping behaviours. The present study also set out to distinguish if age, gender and frequency revealed an association with spontaneous shopping behaviours.

In order to explore the impulse purchasing tendency of consumers in relation to their personality, the research adapted Verplanken and Herabadi (2001) IBT to pertain if affective or cognitive facets had greater influence on irrational consumption. The analysis revealed that impulsive shopping behaviours are largely driven by affective aspects, and motivated by feelings of excitement and emotions as reported by Tsao and Chang (2010). The results imply that impulsive shopping behaviours are formed by emotion rather than logical reasoning, and that consumer are more inclined to disregard cognitive processes when presented with exogenous factors (Shahjehan, 2012).

The study also revealed that the key demographics of age, gender and the frequency a consumer shops online had a direct correlation with impulsive buying behaviours (Table 8). The results supported the literature that younger consumers, particularly females are more inclined to shop impulsively within online retail platforms (Kajonius & Johnson, 2018; Pradipto, Winata, Murti, & Azizah, 2016). The influence that gender has on spontaneous purchasing behaviours has previously suggested that female consumers are more hedonic in nature and are motivated by affective elements (Hoffman & Novak, 1996; Wahyuddin, Setyawan, & Nugroho, 2017).

Although the results did support that age, gender and online shopping frequency correlated with impulsive shopping outcomes, the results failed to substantiate a visible relationship between personality and impulsive responses (Table 9). The present study was inconclusive is supporting how key personality traits have a greater or reducing influence on impulsive shopping behaviours (Bosnjak, Galesic, & Tuten, 2007). The negative effect that neuroticism has on impulsive shopping outcomes reported in this study disclaims the majority of studies which previously supported that neurotic personality traits have a moderating relationship with impulsive purchasing patterns (Tsao & Chang, 2010; Shahjehan, 2012; Gohary & Hanzaee, 2014). Given the fragmented outcome from our study of how personality

traits impact impulsive buying behaviours, and noting that previous research have successfully demonstrated a correlation exists between these variables as significant. This research was not consistent with previous studies and failed to substantiate our research questions.

Notwithstanding that the empirical results of this study did not establish a theoretical relationship between the variables. However, the framework and design of this study may support future research on the interaction of personality traits and online shopping behaviours within this "heterogeneous and complex" channel (Peterson, Balasubramanian, & Bronnenberg, 1997, p. 329).

6. Limitations

6.1 Limitations

Whilst this research topic proposed the potential to offer a valuable contribution to the study of the key influences of online impulsive shopping behaviours, the study had consequential limitations that should be recorded whilst generalizing the conclusions. The principle shortcoming of this research was the sample size of 104, which may have been too small to reflect an accurate and confident capturing of how personality is a contributing factor to spontaneous online shopping behaviours, this was further limited by convenience and non-probabilistic sampling techniques implemented to collect data. Secondly, the responses to the survey questionnaire were self-reported, and did not observe the participants actually engaged in an online retail environment. Thirdly, the capturing of personality traits may be served best with a more detailed scale that excludes linear responses, and the utilization of trait constructs that are more robust in defining the nuances of personality attributes. Although the TIPI scale did provide valid and respected measurement for the applicability of anatomical equation modelling, the single item scales contributed to a restriction in the extent of analysis of the collected data. However, the selection of the TIPI over longer measurement instruments of personality was deemed as a prerequisite to minimise the possibility of question fatigue from the respondents. The convergent and discriminant validity of the TIPI has been shown to offer good internal consistency (Soto & John, 2009), however Credé, Harms, Niehorster, and Gaye-Valentine (2012) did demonstrate that the two aspect personality traits of the TIPI can lead to an over or under estimation of personality trait or inconclusive results compared to extended models. Lastly, this research did not use moderate variables in the foundation assessment, and future research could focus if certain personality types and specific products have a greater influence on impulsive buying tendencies within online retail environments.

6.2 Direction of Future Research

Predicting and understanding online shopping behaviours has become an essential requirement for online vendors, the potential failure of vendors to appreciate how personality can influence online comportment and shopping intent, has also been demonstrated to have a negative association with online consumer behaviours (Constantinides & Geurts, 2005). Retailers are increasingly aware that manipulating intrinsic

and extrinsic elements can have a positive outcome on impulsive buying tendencies and complement unplanned purchasing behavioural outcomes (Davis, Lang, & San Diego, 2013).

The future study of the holistic consumer behaviours which has been absent from quondam research could be a future key topic of investigation, principally with artificial intelligence (AI), internet of things (IoT) and how mobile applications are changing and influencing the digital landscape of retail businesses (Marbach, Lages, & Nunan, 2016). Future research could facilitate online vendors and web designers in appreciating the role that personality, cognitive and affective aspects, and key demographics contribute to impulsive buying behaviours.

This study explored impulsive purchasing behaviours from the perspective of key demographics and personality. Future research could investigate the association of impulsive buying behaviours and evaluate how price, product quality, availability and personality influence the consumer's choices through situational characteristics within online retail platforms.

Although e-impulse buying is a relatively newly studied phenomenon, future researchers can look forward to exploring how advancing technology can act as a relevant stimulus to impulsive purchasing within e-commerce platforms.

7. Conclusion

Determining if there was a link between personality types and online shopping behaviours could offer online vendors a business strategy to tailor and direct how and which products are sold online. Furthermore, research could learn by assigning if shared personality traits and behaviours could be a determining influence on if one buys, how one buys, when one buys and why one buys. With this knowledge, e-commerce businesses may direct their campaigns to specific demographic targets. More comprehensive research on e-impulsive behaviours may extend an invaluable contribution to predicting if consumption behaviours and impulsive online shopping motivations are determined by personality attributes, specific products, or online purchasing intent (Małecki & Wątróbski, 2017). Future research may offer an alternative viewpoint for online retailers who traditionally focused on demographic groups to target their message. This research may re-orientate the emphasis of personality types for the e-tailers to reveal the influences that these traits have on the behaviours of consumers when shopping online (Pappas, Kourouthanassis, Giannakos, & Chrissikopoulos, 2017; Nartey, 2018).

This study sought to solicit a framework to acknowledge if different personality dimensions can influence impulsive online shopping behaviours and outcomes. The research attempted to identify if personality was a key factor in presupposing online shopper's intentions to conclude transactions online, and if spontaneous online shopping behaviours are influenced by personality attributes.

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Appendix A

Request to organisation

Ms. Maria Commerford.
HR Department,
Exertis Ireland Ltd,
M50 Business Park,
Ballymount,
Dublin 12.

7th June 2018.

Dear Maria,

Further to our conversation please find formal request to approach my colleagues to complete a short online questionnaire.

The survey is a 5 minute questionnaire which is to collect first-hand information to determine the influences that, personality traits has on the consumers' online shopping performance, and the individual's perceptions of the overall online shopping experience. The questionnaire can be accessed online from outside your business, and my main objective is to allow me to recruit enough participants to validate my research proposal. I wish only to email perspective candidates and contact them directly if they wish to take part in the survey.

The survey has been vetted and approved by the Ethics Committee of Institute of Art & Design Dun Laoire, and I am more than happy to furnish more details on the survey topic, methods, and questions if required.

This study is the first of its kind and its results should have significant implications for the development of online eshopping for e-tailors and how online vendors can improve and influence the online shopping experience of potential clients.

Please be assured that all collected information will be treated with the utmost confidentiality and stored securely, in line with the stringent requirements for best practice research at IADT.

In anticipation of your response, I thank you for your assistance.

Yours sincerely,

Philip Nartey

From: Philip Nartey
Sent: 18 July 2018 16:17
To: Maria Comerford <maria.comerford@exertis.com>
Cc: Jim Lehane <Jim.Lehane@exertis.com >
Subject: RE: Thesis Survey Participants.

Hi Marie,

No problem fully understand – thank you for the consent from yourself and Exertis.

I will keep you updated as the assignment progresses.

Thanks again, much appreciated.
Philip

From: Maria Comerford
Sent: 18 July 2018 11:52
To: Philip Nartey <Philip.Nartey@exertis.com >
Cc: Jim Lehane <Jim.Lehane@exertis.com >
Subject: RE: Thesis Survey Participants.

Hi Philip

Apologies for delay in responding. We have no issue with this and your approach is good with regard to consent. Happy to support.

Thanks
Maria

_____
Maria Comerford
HR Manager
Exertis Supply Chain Services & Exertis Ireland

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maria.comerford@exertis.com

From: Philip Nartey
Sent: Friday 15 June 2018 14:31
To: Maria Comerford

Cc: Jim Lehane
Subject: Thesis Survey Participants.

Good Afternoon Maria,

Thank you for the time and courtesy extended to me in relation to my research proposal thesis.

As outlined, as part of the thesis in my final year project for my Masters in Cyberpsychology (IADT), I wish to conduct research into online shopping experiences and how individual's personalities influence and impact e-shopping outcomes. To gather the information and data on individuals buying strategies through product recommendations, marketing strategies, impulsive and compulsive purchases – I am required to survey 50 people on their views, and see if personality traits can drive the online shopping experience or whether certain traits are discouraging factors to engage with purchasing online.

I have broken down the proposed research into 3 main headlines: Introduction, Methodology, and Format.

- **Introduction:**
  - The scope of this research is to provide a discernment into the relationship between the Big Five Personality traits, and customer engagement within the scope of online shopping (e-shopping). The study will examine the five key personality types to deduce if a positive correlation exists that personality influences the intention to engage, and is a contributing factor to online shopping behaviours. The research will also examine if certain personality trait dimensions can be positively associated with an increased predisposition to disburse more per transaction when purchasing through online shopping. The research objective is to expand if personality traits can explain if distinct differences exist in online shopping behaviours, solely based on individual personality dimensions.

- **Methodology:**
  - This study will analysing data collected via a web-based questionnaire survey. I propose to recruit 50 candidates for the initial research questionnaire, the research selection sample will be a convenience sample, with a minimum age limit of 18, and not gender specific.
    - Invitations to participate in study will be sent by email from my student IADT email, prior to enlisting the respondents.
    - All participants will be provided with an Overview, Participant Information Sheet, and Consent Form prior to starting the online questionnaire – and a debriefing form upon completion.
    - Participants will complete a demographic profile questionnaire which will classify overall survey response information into meaningful categories of respondents.
    - The questionnaire should take 20 minutes to complete,

- The research has been approved by IADT Ethics Committee –
    - All participants will be free to choose if they wish to take part in the study,
    - Participants are free to skip questions, withdraw from the research at any time, ask for their responses to be removed from the data collection.
    - Confidentiality and anonymity, will be paramount in protection the anonymity and privacy of the respondents, and all identifying data will be stored securely and will not be attributable to the respondent's questionnaire responses.
    - Responsibility and Integrity will be assured at all times, and the participants can be confident that the research will adhered to appropriate guidelines and The Psychological Society of Ireland (PSI) code of practice.
- **Format:**
    - I would hope to start the survey collection of data early November 2018.
    - I will specifically ask colleagues within Exertis who I have a relationship with to part-take in the survey.
    - The preference is that participants would complete the questionnaires outside normal working hours.
    - Participants will be asked to respond to approximately 50 questions using a scale of 1 to 5 to gauge their feelings towards online shopping.
    - All data is collected through an online survey anonymously.
    - Participants are free to have their answers removed from the survey at any time – the survey data collected will be held for a maximum of 12 months once submitted, or longer if prior consent is received from the individual.

I trust this gives an overview, and that the Exertis will look favourably on my request.

Thank you once again, if you require any additional information please feel free to contact me on the below.

Kind Regards
Philip

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Appendix B

Questionnaire

Demographic Profile:	(2 questions)

Question 1.

Age: What is your age?	
	18-24 years old
	25-34 years old
	35-44 years old
	45-54 years old
	55-64 years old
	65-74 years old
	75 years or older

Question 2.

Gender:	
	Male
	Female
	Other

Online Shopping Frequency:	1 Question

Question 3.

How often do you shop online?	
	At least once a week
	Once or more per month
	7-12 times per year
	4-6 times per year
	1-3 times per year
	Never

(Statista 2017)

Ten-Item Personality Inventory-(TIPI)	10 Questions - 7 point Likert Scale

Questions 4 – 13.

4: Extraversion	I see myself as extraverted, enthusiastic
5: Agreeableness*	I see myself as critical, quarrelsome (Reverse coded item)
6: Conscientiousness	I see myself as dependable, self-disciplined
7: Neuroticism*	I see myself as anxious, easily upset (Reverse coded item)
8: Openness	I see myself as open to new experiences, complex
9: Extraversion*	I see myself as reserved, quiet (Reverse coded item)
10: Agreeableness	I see myself as sympathetic, warm
11: Conscientiousness*	I see myself as disorganized, careless (Reverse coded item)
12: Neuroticism	I see myself as calm, emotionally stable
13: Openness*	I see myself as conventional, uncreative (Reverse coded item)

(Gosling, Rentfrow & Swann, 2003)

Impulse Buying Tendency Scale	20 Questions - 5 point Likert Scale

Questions 14- 33.

14: Cognitive*	I usually think carefully before I buy something online.(Reverse coded item)
15: Cognitive*	I usually only buy things that I intended to buy.(Reverse coded item)
16: Cognitive	If I buy something, I usually do that spontaneously.
17: Cognitive*	Most of my purchases are planned in advance.(Reverse coded item)
18: Cognitive*	I only buy things that I really need.(Reverse coded item)
19: Cognitive*	It is not my style to just buy things.(Reverse coded item)
20: Cognitive*	I like to compare different brands before I buy one.(Reverse coded item)
21: Cognitive*	Before I buy something I always carefully consider whether I need it.(Reverse coded item)
22: Cognitive	I am used to buying things 'on the spot'.
23: Cognitive	I often buy things without thinking.
24: Affective	It is a struggle to leave nice things I see online.
25: Affective	I sometimes cannot suppress the feeling of wanting to buy something online.
26: Affective	I sometimes feel guilty after having bought something online.
27: Affective*	I'm not the kind of person who 'falls in love at first sight' with things I see online.(Reverse coded item)
28: Affective	I can become very excited if I see something I would like to buy online.
29: Affective	I always see something nice whenever I browse online.
30: Affective	I find it difficult to pass up a bargain.
31: Affective	If I see something new online, I want to buy it.
32: Affective	I am a bit reckless in buying things.
33: Affective	I sometimes buy thing because I like buying things, rather than because I need them when browsing online.

(Verplanken & Herabadi 2001)

Appendix C

SPSS Output Tables

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FREQUENCIES VARIABLES=AGE GENDER FREQUENCY
  /ORDER=ANALYSIS.
```

Frequencies

Statistics				
		AGE	GENDER	FREQUENCY
N	Valid	104	104	104
	Missing	0	0	0

Frequency Table

AGE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24 years old	17	16,3	16,3	16,3
	25-34 years old	18	17,3	17,3	33,7
	35-44 years old	29	27,9	27,9	61,5
	45-54 years old	29	27,9	27,9	89,4
	55-64 years old	10	9,6	9,6	99,0
	65-74 years old	1	1,0	1,0	100,0
	Total	104	100,0	100,0	

GENDER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	64	61,5	61,5	61,5
	Male	40	38,5	38,5	100,0
	Total	104	100,0	100,0	

FREQUENCY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 times per year	16	15,4	15,4	15,4
	4-6 times per year	12	11,5	11,5	26,9
	7-12 times per year	15	14,4	14,4	41,3
	Once or more per month	44	42,3	42,3	83,7
	At least once a week	17	16,3	16,3	100,0
	Total	104	100,0	100,0	

```
DESCRIPTIVES VARIABLES=E_TOTAL N_TOTAL C_TOTAL A_TOTAL I_TOTAL COGNITIVE
AFFECTIVE BIS
  /STATISTICS=MEAN STDDEV MIN MAX KURTOSIS SKEWNESS.
```

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
E_TOTAL	104	4,00	14,00	9,4519	2,74438	-,267	,237
N_TOTAL	104	2,00	14,00	9,7404	2,55425	-,556	,237
C_TOTAL	104	4,00	14,00	11,2500	2,28014	-,826	,237
A_TOTAL	104	3,00	14,00	10,3269	2,26172	-,216	,237
I_TOTAL	104	4,00	14,00	10,1731	2,07361	-,589	,237
COGNITIVE	104	10,00	48,00	25,1923	8,53443	,611	,237
AFFECTIVE	104	11,00	47,00	24,7596	7,46057	,791	,237
BIS	104	23,00	95,00	49,9519	14,67207	,679	,237
Valid N (listwise)	104						

Descriptive Statistics

	Kurtosis	
	Statistic	Std. Error
E_TOTAL	-,771	,469
N_TOTAL	,363	,469
C_TOTAL	,259	,469
A_TOTAL	,059	,469
I_TOTAL	,545	,469
COGNITIVE	-,235	,469
AFFECTIVE	,349	,469
BIS	,222	,469
Valid N (listwise)		

```
*RELIABILITY & HOMOGENEITY.
RELIABILITY
  /VARIABLES=E ER
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=CORR.
```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	104	100,0
	Excluded[a]	0	,0
	Total	104	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,579	,587	2

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Inter-Item Correlations	,415	,415	,415	,000	1,000	,000

Summary Item Statistics

	N of Items
Inter-Item Correlations	2

```
RELIABILITY
  /VARIABLES= N NR
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=CORR.
```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	104	100,0
	Excluded[a]	0	,0
	Total	104	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,439	,444	2

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Inter-Item Correlations	,285	,285	,285	,000	1,000	,000

Summary Item Statistics

	N of Items
Inter-Item Correlations	2

```
RELIABILITY
  /VARIABLES=C CR
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=CORR.
```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	104	100,0
	Excluded[a]	0	,0
	Total	104	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,414	,423	2

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Inter-Item Correlations	,268	,268	,268	,000	1,000	,000

Item Statistics

	N of Items
Inter-Item Correlations	2

```
RELIABILITY
  /VARIABLES=A AR
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=CORR.
```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	104	100,0
	Excluded[a]	0	,0
	Total	104	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,076	,080	2

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Inter-Item Correlations	,042	,042	,042	,000	1,000	,000

Summary Item Statistics

	N of Items
Inter-Item Correlations	2

```
RELIABILITY
  /VARIABLES=I IR
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=CORR.
```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	104	100,0
	Excluded[a]	0	,0
	Total	104	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,192	,193	2

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Inter-Item Correlations	,107	,107	,107	,000	1,000	,000

Summary Item Statistics

	N of Items
Inter-Item Correlations	2

```
RELIABILITY
  /VARIABLES=C1R TO C10
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=CORR.
```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	104	100,0
	Excluded[a]	0	,0
	Total	104	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,921	,921	10

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Inter-Item Correlations	,537	,155	,702	,547	4,532	,016

Summary Item Statistics

	N of Items
Inter-Item Correlations	10

```
RELIABILITY
  /VARIABLES=A1 TO A10
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=CORR.
```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	103	99,0
	Excluded[a]	1	1,0
	Total	104	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,867	,870	10

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Inter-Item Correlations	,400	,093	,650	,557	6,980	,023

Summary Item Statistics

	N of Items
Inter-Item Correlations	10

```
RELIABILITY
  /VARIABLES=C1R TO A10
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=CORR.
```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	103	99,0
	Excluded[a]	1	1,0
	Total	104	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,932	,932	20

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Inter-Item Correlations	,407	-,105	,703	,808	-6,693	,028

Summary Item Statistics

	N of Items
Inter-Item Correlations	20

```
*KMO.
FACTOR
  /VARIABLES E ER
  /MISSING LISTWISE
  /ANALYSIS E ER
  /PRINT KMO
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,500
Bartlett's Test of Sphericity	Approx. Chi-Square	19,196
	df	1
	Sig.	,000

```
FACTOR
  /VARIABLES N NR
  /MISSING LISTWISE
  /ANALYSIS N NR
  /PRINT KMO
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,500
Bartlett's Test of Sphericity	Approx. Chi-Square	8,618
	df	1
	Sig.	,003

```
FACTOR
  /VARIABLES C CR
  /MISSING LISTWISE
  /ANALYSIS C CR
  /PRINT KMO
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,500
Bartlett's Test of Sphericity	Approx. Chi-Square	7,590
	df	1
	Sig.	,006

```
FACTOR
  /VARIABLES A AR
  /MISSING LISTWISE
  /ANALYSIS A AR
  /PRINT KMO
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,500
Bartlett's Test of Sphericity	Approx. Chi-Square	,175
	df	1
	Sig.	,676

```
FACTOR
  /VARIABLES I IR
  /MISSING LISTWISE
  /ANALYSIS I IR
  /PRINT KMO
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,500
Bartlett's Test of Sphericity	Approx. Chi-Square	1,164
	df	1
	Sig.	,281

```
FACTOR
  /VARIABLES C1R TO C10
  /MISSING LISTWISE
  /ANALYSIS C1R TO C10
  /PRINT KMO
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,899
Bartlett's Test of Sphericity	Approx. Chi-Square	628,385
	df	45
	Sig.	,000

```
FACTOR
  /VARIABLES A1 TO A10
  /MISSING LISTWISE
  /ANALYSIS A1 TO A10
  /PRINT KMO
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,899
Bartlett's Test of Sphericity	Approx. Chi-Square	400,128
	df	45
	Sig.	,000

```
FACTOR
  /VARIABLES C1R TO A10
  /MISSING LISTWISE
  /ANALYSIS C1R TO A10
  /PRINT KMO
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,914
Bartlett's Test of Sphericity	Approx. Chi-Square	1177,373
	df	190
	Sig.	,000

```
**MAIN REGRESSION ANALYSES.
BOOTSTRAP
  /SAMPLING METHOD=SIMPLE
  /VARIABLES TARGET=COGNITIVE INPUT=  E_TOTAL N_TOTAL C_TOTAL A_TOTAL
I_TOTAL
  /CRITERIA CILEVEL=95 CITYPE=BCA  NSAMPLES=1000
  /MISSING USERMISSING=EXCLUDE.
```

Bootstrap

Bootstrap Specifications	
Sampling Method	Simple
Number of Samples	1000
Confidence Interval Level	95,0%
Confidence Interval Type	Bias-corrected and accelerated (BCa)

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT COGNITIVE
  /METHOD=ENTER E_TOTAL N_TOTAL C_TOTAL A_TOTAL I_TOTAL.
```

Regression

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	I_TOTAL, A_TOTAL, N_TOTAL, E_TOTAL, C_TOTAL[b]	.	Enter

a. Dependent Variable: COGNITIVE

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,367[a]	,135	,091	8,13821

a. Predictors: (Constant), I_TOTAL, A_TOTAL, N_TOTAL, E_TOTAL, C_TOTAL

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1011,570	5	202,314	3,055	,013[b]
	Residual	6490,584	98	66,230		
	Total	7502,154	103			

a. Dependent Variable: COGNITIVE

b. Predictors: (Constant), I_TOTAL, A_TOTAL, N_TOTAL, E_TOTAL, C_TOTAL

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	30,496	6,916		4,410	,000
	E_TOTAL	,427	,298	,137	1,433	,155
	N_TOTAL	-1,119	,328	-,335	-3,413	,001
	C_TOTAL	,045	,375	,012	,120	,904
	A_TOTAL	-,077	,368	-,020	-,208	,836
	I_TOTAL	,180	,396	,044	,456	,650

a. Dependent Variable: COGNITIVE

Bootstrap for Coefficients							
			Bootstrap[a]				
						BCa 95% Confidence Interval	
Model		B	Bias	Std. Error	Sig. (2-tailed)	Lower	Upper
1	(Constant)	30,496	,306	7,209	,001	15,516	45,956
	E_TOTAL	,427	,021	,304	,159	-,144	1,063
	N_TOTAL	-1,119	-,053	,336	,002	-1,742	-,578
	C_TOTAL	,045	-,003	,417	,892	-,807	,958
	A_TOTAL	-,077	,022	,356	,813	-,777	,675
	I_TOTAL	,180	-,017	,374	,642	-,525	,886

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

```
BOOTSTRAP
  /SAMPLING METHOD=SIMPLE
  /VARIABLES TARGET=AFFECTIVE INPUT=  E_TOTAL N_TOTAL C_TOTAL A_TOTAL
I_TOTAL
  /CRITERIA CILEVEL=95 CITYPE=BCA  NSAMPLES=1000
  /MISSING USERMISSING=EXCLUDE.
```

Bootstrap

Bootstrap Specifications	
Sampling Method	Simple
Number of Samples	1000
Confidence Interval Level	95,0%
Confidence Interval Type	Bias-corrected and accelerated (BCa)

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT AFFECTIVE
  /METHOD=ENTER E_TOTAL N_TOTAL C_TOTAL A_TOTAL I_TOTAL.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	I_TOTAL, A_TOTAL, N_TOTAL, E_TOTAL, C_TOTAL[b]	.	Enter

a. Dependent Variable: AFFECTIVE

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,454[a]	,206	,166	6,81431

a. Predictors: (Constant), I_TOTAL, A_TOTAL, N_TOTAL, E_TOTAL, C_TOTAL

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1182,374	5	236,475	5,093	,000[b]
	Residual	4550,617	98	46,435		
	Total	5732,990	103			

a. Dependent Variable: AFFECTIVE

b. Predictors: (Constant), I_TOTAL, A_TOTAL, N_TOTAL, E_TOTAL, C_TOTAL

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	34,104	5,791		5,890	,000
	E_TOTAL	,274	,250	,101	1,097	,275
	N_TOTAL	-1,274	,274	-,436	-4,642	,000
	C_TOTAL	,219	,314	,067	,697	,488
	A_TOTAL	-,285	,308	-,086	-,925	,357
	I_TOTAL	,094	,332	,026	,284	,777

a. Dependent Variable: AFFECTIVE

Bootstrap for Coefficients							
Model			Bootstrap[a]				
		B	Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
						Lower	Upper
1	(Constant)	34,104	,311	5,767	,001	22,106	48,355
	E_TOTAL	,274	,029	,280	,344	-,289	,929
	N_TOTAL	-1,274	-,037	,306	,001	-1,887	-,790
	C_TOTAL	,219	-,006	,396	,563	-,584	,973
	A_TOTAL	-,285	,004	,323	,406	-,847	,370
	I_TOTAL	,094	-,019	,289	,737	-,493	,596

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

```
BOOTSTRAP
  /SAMPLING METHOD=SIMPLE
  /VARIABLES TARGET=BIS INPUT=  E_TOTAL N_TOTAL C_TOTAL A_TOTAL I_TOTAL
  /CRITERIA CILEVEL=95 CITYPE=BCA  NSAMPLES=1000
  /MISSING USERMISSING=EXCLUDE.
```

Bootstrap

Bootstrap Specifications	
Sampling Method	Simple
Number of Samples	1000
Confidence Interval Level	95,0%
Confidence Interval Type	Bias-corrected and accelerated (BCa)

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT BIS
  /METHOD=ENTER E_TOTAL N_TOTAL C_TOTAL A_TOTAL I_TOTAL.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	I_TOTAL, A_TOTAL, N_TOTAL, E_TOTAL, C_TOTAL[b]	.	Enter

a. Dependent Variable: BIS

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,441[a]	,195	,154	13,49720

a. Predictors: (Constant), I_TOTAL, A_TOTAL, N_TOTAL, E_TOTAL, C_TOTAL

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4319,658	5	863,932	4,742	,001[b]
	Residual	17853,102	98	182,175		
	Total	22172,760	103			

a. Dependent Variable: BIS

b. Predictors: (Constant), I_TOTAL, A_TOTAL, N_TOTAL, E_TOTAL, C_TOTAL

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	64,599	11,469		5,632	,000
	E_TOTAL	,701	,495	,131	1,418	,159
	N_TOTAL	-2,392	,544	-,417	-4,402	,000
	C_TOTAL	,264	,622	,041	,424	,672
	A_TOTAL	-,362	,611	-,056	-,593	,555
	I_TOTAL	,275	,657	,039	,418	,677

a. Dependent Variable: BIS

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
						Lower	Upper
1	(Constant)	64,599	1,181	12,071	,001	38,021	93,219
	E_TOTAL	,701	,016	,536	,198	-,381	1,748
	N_TOTAL	-2,392	-,045	,543	,001	-3,405	-1,496
	C_TOTAL	,264	-,052	,746	,718	-,979	1,554
	A_TOTAL	-,362	,023	,606	,536	-1,468	,930
	I_TOTAL	,275	-,050	,594	,654	-,914	1,310

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

```
**COMPARING DEMOGRAPHIC GROUPS.
BOOTSTRAP
  /SAMPLING METHOD=SIMPLE
  /VARIABLES TARGET=BIS INPUT=AGE
  /CRITERIA CILEVEL=95 CITYPE=BCA  NSAMPLES=1000
  /MISSING USERMISSING=EXCLUDE.
```

Bootstrap

Bootstrap Specifications	
Sampling Method	Simple
Number of Samples	1000
Confidence Interval Level	95,0%
Confidence Interval Type	Bias-corrected and accelerated (BCa)

```
UNIANOVA BIS BY AGE
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /EMMEANS=TABLES(AGE) COMPARE ADJ(BONFERRONI)
  /PRINT=ETASQ DESCRIPTIVE
  /CRITERIA=ALPHA(.05)
  /DESIGN=AGE.
```

Univariate Analysis of Variance

Between-Subjects Factors			
		Value Label	N
AGE	1	18-24 years old	17
	2	25-34 years old	18
	3	35-44 years old	29
	4	45-54 years old	29
	5	55-64 years old	10
	6	65-74 years old	1

Descriptive Statistics

Dependent Variable: BIS

AGE		Statistic	Bootstrap[a]			
			Bias	Std. Error	BCa 95% Confidence Interval	
					Lower	Upper
18-24 years old	Mean	58,8235	,1420	3,6594	51,8542	66,3511
	Std. Deviation	15,22430	-,60989	2,31377	11,41746	17,96640
	N	17	0	4	10	24
25-34 years old	Mean	58,6667	-,2184	3,7767	51,2327	65,8072
	Std. Deviation	16,39584	-,80101	2,59946	12,01586	19,12933
	N	18	0	4	12	24
35-44 years old	Mean	49,6552	-,0164	2,2735	45,2627	54,0941
	Std. Deviation	12,10748	-,26046	1,51347	9,17829	14,26336
	N	29	0	5	21	37
45-54 years old	Mean	43,3448	,1561	1,8922	39,5948	47,7371
	Std. Deviation	10,42756	-,22471	1,52839	7,46716	12,70887
	N	29	0	5	22	37
55-64 years old	Mean	39,8000	-,1632	4,2263	32,0000	48,1398
	Std. Deviation	13,76630	-1,02881	3,07094	7,84906	16,71202
	N	10	0	3	6	14
65-74 years old	Mean	44,0000	,0000[b]	,0000[b]	44,0000[b,c]	44,0000[b]
	Std. Deviation	.	∞[d]	,00000[d]	,00000[c,d]	,00000[d]
	N	1	1[b]	1[b]	1[b,c]	4[b]
Total	Mean	49,9519	,0329	1,4522	47,0680	52,7722
	Std. Deviation	14,67207	-,10522	1,02370	12,88962	16,31274
	N	104	0	0	.	.

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

b. Based on 602 samples

c. Some results could not be computed from jackknife samples, so this confidence interval is computed by the percentile method rather than the BCa method.

d. Based on 231 samples

Tests of Between-Subjects Effects						
Dependent Variable: BIS						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5039,586[a]	5	1007,917	5,765	,000	,227
Intercept	67485,163	1	67485,163	386,008	,000	,798
AGE	5039,586	5	1007,917	5,765	,000	,227
Error	17133,174	98	174,828			
Total	281673,000	104				
Corrected Total	22172,760	103				

a. R Squared = ,227 (Adjusted R Squared = ,188)

Estimated Marginal Means

AGE

Estimates						
Dependent Variable: BIS						
			95% Confidence Interval		Bootstrap for Mean[a]	
AGE	Mean	Std. Error	Lower Bound	Upper Bound	Bias	Std. Error
18-24 years old	58,824	3,207	52,460	65,187	,142	3,659
25-34 years old	58,667	3,117	52,482	64,851	-,218	3,777
35-44 years old	49,655	2,455	44,783	54,528	-,016	2,273
45-54 years old	43,345	2,455	38,472	48,217	,156	1,892
55-64 years old	39,800	4,181	31,502	48,098	-,163	4,226
65-74 years old	44,000	13,222	17,761	70,239	1,990E-13[b]	1,555E-13[b]

Estimates

Dependent Variable: BIS

AGE	Bootstrap for Mean BCa 95% Confidence Interval	
	Lower	Upper
18-24 years old	51,892	66,317
25-34 years old	51,231	65,811
35-44 years old	45,263	54,094
45-54 years old	39,595	47,737
55-64 years old	31,948	48,157
65-74 years old	44,000[b,c]	44,000[b]

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

b. Based on 602 samples

c. Some results could not be computed from jackknife samples, so this confidence interval is computed by the percentile method rather than the BCa method.

Pairwise Comparisons

Dependent Variable: BIS

(I) AGE	(J) AGE	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
18-24 years old	25-34 years old	,157	4,472	1,000	-13,298	13,612
	35-44 years old	9,168	4,039	,381	-2,984	21,321
	45-54 years old	15,479*	4,039	,003	3,326	27,631
	55-64 years old	19,024*	5,269	,007	3,169	34,878
	65-74 years old	14,824	13,606	1,000	-26,114	55,761
25-34 years old	18-24 years old	-,157	4,472	1,000	-13,612	13,298
	35-44 years old	9,011	3,968	,380	-2,926	20,949
	45-54 years old	15,322*	3,968	,003	3,384	27,260
	55-64 years old	18,867*	5,215	,007	3,176	34,558
	65-74 years old	14,667	13,585	1,000	-26,207	55,541
35-44 years old	18-24 years old	-9,168	4,039	,381	-21,321	2,984
	25-34 years old	-9,011	3,968	,380	-20,949	2,926
	45-54 years old	6,310	3,472	1,000	-4,137	16,758
	55-64 years old	9,855	4,849	,672	-4,734	24,445
	65-74 years old	5,655	13,448	1,000	-34,809	46,119
45-54 years old	18-24 years old	-15,479*	4,039	,003	-27,631	-3,326
	25-34 years old	-15,322*	3,968	,003	-27,260	-3,384
	35-44 years old	-6,310	3,472	1,000	-16,758	4,137
	55-64 years old	3,545	4,849	1,000	-11,045	18,134
	65-74 years old	-,655	13,448	1,000	-41,119	39,809
55-64 years old	18-24 years old	-19,024*	5,269	,007	-34,878	-3,169
	25-34 years old	-18,867*	5,215	,007	-34,558	-3,176
	35-44 years old	-9,855	4,849	,672	-24,445	4,734
	45-54 years old	-3,545	4,849	1,000	-18,134	11,045
	65-74 years old	-4,200	13,868	1,000	-45,926	37,526
65-74 years old	18-24 years old	-14,824	13,606	1,000	-55,761	26,114
	25-34 years old	-14,667	13,585	1,000	-55,541	26,207
	35-44 years old	-5,655	13,448	1,000	-46,119	34,809
	45-54 years old	,655	13,448	1,000	-39,809	41,119
	55-64 years old	4,200	13,868	1,000	-37,526	45,926

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Bootstrap for Pairwise Comparisons

Dependent Variable: BIS

(I) AGE	(J) AGE	Mean Difference (I-J)	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
						Lower	Upper
18-24 years old	25-34 years old	,157	,360	5,219	,975	-10,275	10,877
	35-44 years old	9,168	,158	4,156	,029	1,079	17,713
	45-54 years old	15,479	-,014	4,118	,003	8,300	22,965
	55-64 years old	19,024	,305	5,611	,003	7,876	31,113
	65-74 years old	14,824	,178[b]	3,711[b]	,007[b]	7,742[b,c]	22,196[b]
25-34 years old	18-24 years old	-,157	-,360	5,219	,975	-10,472	9,644
	35-44 years old	9,011	-,202	4,414	,049	,378	17,293
	45-54 years old	15,322	-,374	4,106	,001	7,800	22,153
	55-64 years old	18,867	-,055	5,772	,001	7,504	30,182
	65-74 years old	14,667	-,171[b]	3,822[b]	,003[b]	6,801[b,c]	21,846[b]
35-44 years old	18-24 years old	-9,168	-,158	4,156	,029	-17,250	-2,065
	25-34 years old	-9,011	,202	4,414	,049	-17,903	,016
	45-54 years old	6,310	-,173	2,979	,043	,611	11,534
	55-64 years old	9,855	,147	4,806	,046	-,768	19,432
	65-74 years old	5,655	,061[b]	2,272[b]	,046[b]	1,410[b,c]	10,139[b]
45-54 years old	18-24 years old	-15,479	,014	4,118	,003	-24,471	-7,039
	25-34 years old	-15,322	,374	4,106	,001	-23,786	-6,278
	35-44 years old	-6,310	,173	2,979	,043	-12,178	,560
	55-64 years old	3,545	,319	4,596	,450	-7,452	13,278
	65-74 years old	-,655	,171[b]	1,951[b]	,756[b]	-4,245[b,c]	3,723[b]
55-64 years old	18-24 years old	-19,024	-,305	5,611	,003	-30,151	-8,669
	25-34 years old	-18,867	,055	5,772	,001	-30,673	-6,543
	35-44 years old	-9,855	-,147	4,806	,046	-18,723	-,412
	45-54 years old	-3,545	-,319	4,596	,450	-11,519	4,504
	65-74 years old	-4,200	-,158[b]	4,324[b]	,406[b]	-12,166[b,c]	4,781[b]
65-74 years old	18-24 years old	-14,824	-,178[b]	3,711[b]	,007[b]	-22,196[b,c]	-7,742[b]
	25-34 years old	-14,667	,171[b]	3,822[b]	,003[b]	-21,846[b,c]	-6,801[b]
	35-44 years old	-5,655	-,061[b]	2,272[b]	,046[b]	-10,139[b,c]	-1,410[b]
	45-54 years old	,655	-,171[b]	1,951[b]	,756[b]	-3,723[b,c]	4,245[b]
	55-64 years old	4,200	,158[b]	4,324[b]	,406[b]	-4,781[b,c]	12,166[b]

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

b. Based on 602 samples

c. Some results could not be computed from jackknife samples, so this confidence interval is computed by the percentile method rather than the BCa method.

Univariate Tests						
Dependent Variable: BIS						
	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	5039,586	5	1007,917	5,765	,000	,227
Error	17133,174	98	174,828			

The F tests the effect of AGE. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

```
BOOTSTRAP
  /SAMPLING METHOD=SIMPLE
  /VARIABLES TARGET=BIS INPUT=GENDER
  /CRITERIA CILEVEL=95 CITYPE=BCA  NSAMPLES=1000
  /MISSING USERMISSING=EXCLUDE.
```

Bootstrap

Bootstrap Specifications	
Sampling Method	Simple
Number of Samples	1000
Confidence Interval Level	95,0%
Confidence Interval Type	Bias-corrected and accelerated (BCa)

```
UNIANOVA BIS BY GENDER
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /EMMEANS=TABLES(GENDER) COMPARE ADJ(BONFERRONI)
  /PRINT=ETASQ DESCRIPTIVE
  /CRITERIA=ALPHA(.05)
  /DESIGN=GENDER.
```

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
GENDER	1	Female	64
	2	Male	40

Descriptive Statistics

Dependent Variable: BIS

GENDER		Statistic	Bootstrap[a]			
			Bias	Std. Error	BCa 95% Confidence Interval	
					Lower	Upper
Female	Mean	54,2344	,0359	1,7579	51,0328	58,0237
	Std. Deviation	14,26700	-,22157	1,30322	11,87881	16,32980
	N	64	0	5	55	72
Male	Mean	43,1000	-,0326	1,9703	39,5312	47,0000
	Std. Deviation	12,70736	-,22072	1,40777	9,98144	14,81971
	N	40	0	5	31	50
Total	Mean	49,9519	,0038	1,3991	47,1605	52,8269
	Std. Deviation	14,67207	-,11726	1,02743	12,76427	16,38753
	N	104	0	0	.	.

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Tests of Between-Subjects Effects

Dependent Variable: BIS

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3051,675[a]	1	3051,675	16,279	,000	,138
Intercept	233205,675	1	233205,675	1244,018	,000	,924
GENDER	3051,675	1	3051,675	16,279	,000	,138
Error	19121,084	102	187,462			
Total	281673,000	104				
Corrected Total	22172,760	103				

a. R Squared = ,138 (Adjusted R Squared = ,129)

Estimated Marginal Means

GENDER

Estimates

Dependent Variable: BIS

GENDER	Mean	Std. Error	95% Confidence Interval		Bootstrap for Mean[a]		
			Lower Bound	Upper Bound	Bias	Std. Error	BCa 95% Confidence Interval Lower
Female	54,234	1,711	50,840	57,629	,036	1,758	51,033
Male	43,100	2,165	38,806	47,394	-,033	1,970	39,543

Estimates

Dependent Variable: BIS

GENDER	Bootstrap for Mean
	BCa 95% Confidence Interval
	Upper
Female	58,024
Male	47,000

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Pairwise Comparisons

Dependent Variable: BIS

(I) GENDER	(J) GENDER	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
Female	Male	11,134*	2,760	,000	5,661	16,608
Male	Female	-11,134*	2,760	,000	-16,608	-5,661

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Bootstrap for Pairwise Comparisons

Dependent Variable: BIS

(I) GENDER	(J) GENDER	Mean Difference (I-J)	Bootstrap[a]			
			Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval
						Lower
Female	Male	11,134	,069	2,681	,001	5,800
Male	Female	-11,134	-,069	2,681	,001	-16,098

Bootstrap for Pairwise Comparisons

Dependent Variable: BIS

(I) GENDER	(J) GENDER	Bootstrap
		BCa 95% Confidence Interval
		Upper
Female	Male	16,395
Male	Female	-6,144

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Univariate Tests

Dependent Variable: BIS

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	3051,675	1	3051,675	16,279	,000	,138
Error	19121,084	102	187,462			

The F tests the effect of GENDER. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

```
BOOTSTRAP
  /SAMPLING METHOD=SIMPLE
  /VARIABLES TARGET=BIS INPUT=FREQUENCY
  /CRITERIA CILEVEL=95 CITYPE=BCA  NSAMPLES=1000
  /MISSING USERMISSING=EXCLUDE.
```

Bootstrap

Bootstrap Specifications	
Sampling Method	Simple
Number of Samples	1000
Confidence Interval Level	95,0%
Confidence Interval Type	Bias-corrected and accelerated (BCa)

```
UNIANOVA BIS BY FREQUENCY
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /EMMEANS=TABLES(FREQUENCY) COMPARE ADJ(BONFERRONI)
  /PRINT=ETASQ DESCRIPTIVE
  /CRITERIA=ALPHA(.05)
  /DESIGN=FREQUENCY.
```

Univariate Analysis of Variance

Between-Subjects Factors			
		Value Label	N
FREQUENCY	1	1-3 times per year	16
	2	4-6 times per year	12
	3	7-12 times per year	15
	4	Once or more per month	44
	5	At least once a week	17

Descriptive Statistics

Dependent Variable: BIS

FREQUENCY		Statistic	Bootstrap[a]		
			Bias	Std. Error	BCa 95% Confidence Interval Lower
1-3 times per year	Mean	41,7500	-,0284	2,0887	37,9367
	Std. Deviation	8,57516	-,43397	1,53303	6,07710
	N	16	0	4	10
4-6 times per year	Mean	44,9167	-,0030	2,6685	40,2176
	Std. Deviation	9,33671	-,75151	2,53999	4,74906
	N	12	0	3	7
7-12 times per year	Mean	46,1333	-,1435	2,8317	41,0000
	Std. Deviation	11,18588	-,49371	1,45518	8,88726
	N	15	0	4	9
Once or more per month	Mean	51,9318	-,0225	2,2576	47,6618
	Std. Deviation	14,85652	-,20596	1,15152	12,94178
	N	44	0	5	35
At least once a week	Mean	59,4706	-,1498	4,4935	51,7915
	Std. Deviation	18,63504	-,83755	2,59951	14,54713
	N	17	0	4	11
Total	Mean	49,9519	-,0787	1,5246	47,1990
	Std. Deviation	14,67207	-,14805	1,04165	12,91191
	N	104	0	0	.

Descriptive Statistics

Dependent Variable: BIS

FREQUENCY		Bootstrap BCa 95% Confidence Interval Upper
1-3 times per year	Mean	45,8392
	Std. Deviation	10,19787
	N	23
4-6 times per year	Mean	50,1491
	Std. Deviation	12,26024
	N	18
7-12 times per year	Mean	51,0000
	Std. Deviation	12,48864
	N	20
Once or more per month	Mean	56,3387
	Std. Deviation	16,45728
	N	53
At least once a week	Mean	68,0794
	Std. Deviation	20,92291
	N	23
Total	Mean	52,7231
	Std. Deviation	16,25140
	N	.

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Tests of Between-Subjects Effects

Dependent Variable: BIS

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3312,079[a]	4	828,020	4,346	,003	,149
Intercept	202804,464	1	202804,464	1064,524	,000	,915
FREQUENCY	3312,079	4	828,020	4,346	,003	,149
Error	18860,681	99	190,512			
Total	281673,000	104				
Corrected Total	22172,760	103				

a. R Squared = ,149 (Adjusted R Squared = ,115)

Estimated Marginal Means

FREQUENCY

Estimates						
Dependent Variable: BIS						
			95% Confidence Interval		Bootstrap for Mean[a]	
FREQUENCY	Mean	Std. Error	Lower Bound	Upper Bound	Bias	Std. Error
1-3 times per year	41,750	3,451	34,903	48,597	-,028	2,089
4-6 times per year	44,917	3,984	37,011	52,823	-,003	2,668
7-12 times per year	46,133	3,564	39,062	53,205	-,143	2,832
Once or more per month	51,932	2,081	47,803	56,061	-,023	2,258
At least once a week	59,471	3,348	52,828	66,113	-,150	4,494

Estimates		
Dependent Variable: BIS		
	Bootstrap for Mean	
	BCa 95% Confidence Interval	
FREQUENCY	Lower	Upper
1-3 times per year	37,937	45,839
4-6 times per year	40,218	50,149
7-12 times per year	41,000	51,000
Once or more per month	47,662	56,339
At least once a week	51,792	68,079

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Pairwise Comparisons

Dependent Variable: BIS

(I) FREQUENCY	(J) FREQUENCY	Mean Difference (I-J)	Std. Error	Sig.[b]
1-3 times per year	4-6 times per year	-3,167	5,271	1,000
	7-12 times per year	-4,383	4,961	1,000
	Once or more per month	-10,182	4,029	,131
	At least once a week	-17,721*	4,808	,004
4-6 times per year	1-3 times per year	3,167	5,271	1,000
	7-12 times per year	-1,217	5,346	1,000
	Once or more per month	-7,015	4,495	1,000
	At least once a week	-14,554	5,204	,062
7-12 times per year	1-3 times per year	4,383	4,961	1,000
	4-6 times per year	1,217	5,346	1,000
	Once or more per month	-5,798	4,127	1,000
	At least once a week	-13,337	4,890	,075
Once or more per month	1-3 times per year	10,182	4,029	,131
	4-6 times per year	7,015	4,495	1,000
	7-12 times per year	5,798	4,127	1,000
	At least once a week	-7,539	3,942	,587
At least once a week	1-3 times per year	17,721*	4,808	,004
	4-6 times per year	14,554	5,204	,062
	7-12 times per year	13,337	4,890	,075
	Once or more per month	7,539	3,942	,587

Pairwise Comparisons			
Dependent Variable: BIS			
		95% Confidence Interval for Difference[b]	
(I) FREQUENCY	(J) FREQUENCY	Lower Bound	Upper Bound
1-3 times per year	4-6 times per year	-18,301	11,968
	7-12 times per year	-18,627	9,860
	Once or more per month	-21,752	1,388
	At least once a week	-31,525	-3,916
4-6 times per year	1-3 times per year	-11,968	18,301
	7-12 times per year	-16,566	14,133
	Once or more per month	-19,922	5,892
	At least once a week	-29,496	,389
7-12 times per year	1-3 times per year	-9,860	18,627
	4-6 times per year	-14,133	16,566
	Once or more per month	-17,648	6,051
	At least once a week	-27,377	,702
Once or more per month	1-3 times per year	-1,388	21,752
	4-6 times per year	-5,892	19,922
	7-12 times per year	-6,051	17,648
	At least once a week	-18,856	3,779
At least once a week	1-3 times per year	3,916	31,525
	4-6 times per year	-,389	29,496
	7-12 times per year	-,702	27,377
	Once or more per month	-3,779	18,856

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Bootstrap for Pairwise Comparisons

Dependent Variable: BIS

(I) FREQUENCY	(J) FREQUENCY	Mean Difference (I-J)	Bootstrap[a]	
			Bias	Std. Error
1-3 times per year	4-6 times per year	-3,167	-,025	3,426
	7-12 times per year	-4,383	,115	3,527
	Once or more per month	-10,182	-,006	3,064
	At least once a week	-17,721	,121	4,826
4-6 times per year	1-3 times per year	3,167	,025	3,426
	7-12 times per year	-1,217	,140	3,770
	Once or more per month	-7,015	,019	3,421
	At least once a week	-14,554	,147	5,102
7-12 times per year	1-3 times per year	4,383	-,115	3,527
	4-6 times per year	1,217	-,140	3,770
	Once or more per month	-5,798	-,121	3,611
	At least once a week	-13,337	,006	5,254
Once or more per month	1-3 times per year	10,182	,006	3,064
	4-6 times per year	7,015	-,019	3,421
	7-12 times per year	5,798	,121	3,611
	At least once a week	-7,539	,127	4,910
At least once a week	1-3 times per year	17,721	-,121	4,826
	4-6 times per year	14,554	-,147	5,102
	7-12 times per year	13,337	-,006	5,254
	Once or more per month	7,539	-,127	4,910

Bootstrap for Pairwise Comparisons

Dependent Variable: BIS

(I) FREQUENCY	(J) FREQUENCY	Bootstrap		
			BCa 95% Confidence Interval	
		Sig. (2-tailed)	Lower	Upper
1-3 times per year	4-6 times per year	,347	-10,135	3,435
	7-12 times per year	,208	-10,850	2,625
	Once or more per month	,002	-16,354	-3,488
	At least once a week	,001	-27,362	-8,099
4-6 times per year	1-3 times per year	,347	-3,316	10,040
	7-12 times per year	,746	-8,388	6,401
	Once or more per month	,040	-13,723	-,189
	At least once a week	,010	-25,893	-3,180
7-12 times per year	1-3 times per year	,208	-2,806	11,134
	4-6 times per year	,746	-6,240	8,172
	Once or more per month	,110	-12,929	1,160
	At least once a week	,014	-24,729	-3,331
Once or more per month	1-3 times per year	,002	4,218	16,108
	4-6 times per year	,040	,548	13,545
	7-12 times per year	,110	-1,150	12,910
	At least once a week	,128	-18,623	1,927
At least once a week	1-3 times per year	,001	8,844	26,864
	4-6 times per year	,010	5,409	24,041
	7-12 times per year	,014	3,918	23,996
	Once or more per month	,128	-1,034	17,194

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Univariate Tests

Dependent Variable: BIS

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	3312,079	4	828,020	4,346	,003	,149
Error	18860,681	99	190,512			

The F tests the effect of FREQUENCY. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Appendix D

DEPARTMENT OF TECHNOLOGY AND PSYCHOLOGY
ETHICAL APPROVAL FORM A

Title of project A quantitative study of personality traits as predictors of online shopping outcomes and behaviors.

Name of researcher Philip Nartey

Email contact N00104650@student.iadt.ie

Name of supervisor Dr. Dean McDonnell

		Yes	No	N/A
1	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	√		
2	Will you tell participants that their participation is voluntary?	√		
3	Will you obtain written consent for participation (through a signed or 'ticked' consent form)?	√		
4	If the research is observational, will you ask participants for their consent to being observed?			√
5	Will you tell participants that they may withdraw from the research at any time and for any reason?	√		
6	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	√		
7	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	√		
8	Will you debrief participants at the end of their participation (i.e., give them a brief explanation of the study)?	√		
9	If your study involves people between 16 and 18 years, will you ensure that passive consent is obtained from parents/guardians, with active consent obtained from both the child and their school/organisation?			√
10	If your study involves people under 16 years, will you ensure that active consent is obtained from parents/guardians and that a parent/guardian or their nominee (such as a teacher) will be present throughout the data collection period?			√
11*	Does your study involve an external agency (e.g. for recruitment)?	√		
12	Is there any realistic risk of any participants experiencing either physical or psychological distress or discomfort?		√	
13	Does your project involve work with animals?		√	
14	Do you plan to give individual feedback to participants regarding their scores on any task or scale?		√	
15	Does your study examine any sensitive topics (such as, but not limited to, religion, sexuality, alcohol, crime, drugs, mental health, physical health)		√	
16	Is your study designed to change the mental state of participants in any negative way (such as inducing aggression, frustration, etc.)		√	
17	Will your project involve deliberately misleading participants in any way?		√	

18	Do participants fall into any of the following special groups?	People with learning or communication difficulties		√	
		Patients (either inpatient or outpatient)		√	
		People in custody		√	

If you have ticked **No** to any of questions 1 to 11, or **Yes** to any of questions 12 to 18 you should refer to the PSI Code of Professional Ethics and BPS Guidelines and consult with your supervisor without delay. You will need to fill in Ethical Approval Form B and submit it to the Department of Technology and Psychology Ethics Committee (DTPEC) in place of this form.

There is an obligation on the researcher to bring to the attention of the DTPEC any issues with ethical implications not clearly covered by the above checklist.

I consider that this project has **no** significant ethical implications to be brought before the DTPEC. I have read and understood the specific guidelines for completion of Ethics Application Forms. I am familiar with the PSI Code of Professional Ethics and BPS Guidelines (and have discussed them with my supervisor).

Signed _____ Print Name Philip Nartey Date 9th October 2018.
Applicant

I have discussed this project with my student, and I agree that it has no significant ethical implications to be brought before the DTPEC.

Signed _____ Print Name Dr. Dean McDonnell Date 9th October 2018.
Supervisor

* If you are dealing with an external agency, you must submit a letter from that agency with the form A. The letter must provide contact details, and must show that they have agreed for you to carry out your research in their organization.

Ethics Form A - N001004650 - Submission

REPLYREPLY ALLFORWARD
Mark as read

Sinead Meade

Wed 09/05/2018 14:31
Inbox
To:
Philip Nartey;
Cc:
Hannah Barton;

Dear Philip,

Your application for ethical approval for your MSc Cyberpsychology project has been approved by the Department of Technology and Psychology Ethics Committee.

We wish you the very best with your research.

Best wishes,
Sinéad Meade

Assistant Lecturer in Applied Psychology,
Department of Technology & Psychology,
Dun Laoghaire Institute of Art, Design and Technology (IADT),
Kill Avenue,
Dun Laoghaire,
Co. Dublin.

Appendix E

Research Information Overview

Study Title:

A quantitative study of personality traits as predictors of online shopping outcomes and behaviours.

Purpose of the Research:

The general purpose of this research paper is to determine the influence that personality traits has on the consumers' online shopping performance and their perceptions of the overall online shopping experience.

Invitation:

You are being invited to consider taking part in this research study. This project is being undertaken by N00104650 and the study is being conducted as my Master's thesis in Cyberpsychology in IADT, Dun Laoire, Co. Dublin. Before you decide whether or not you wish to take part, it is important for you to understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with friends and relatives if you wish. Ask us if there is anything that is unclear or if you would like more information, please contact me at N00104650@student.iadt. This study has been approved by the IADT Institute Research Ethics Committee.

Do I have to take part?

You are free to decide whether you wish to take part or not. If you do decide to take part you will be asked to indicate your consent through completion of a short form. You are free to withdraw from this study at any time and without giving reasons.

If I take part, what do I have to do?

The research procedure is based on a Survey Questionnaire. You will be asked to complete a web-based questionnaire which we estimate will take you 5 minutes. All responses will be kept strictly confidential.

What are the benefits and risks (if any) of taking part?

There are no known risks taking part in this study, the research has been approved by IADT. The study will offer an insight in to future research methods and developments in online shopping behaviours and motivations.

How will information about me be used and who will have access to it?

All data is collected anonymously, and will be used for gathering results in this research project. The data maybe retained for future reference, however it will not be sold, given or distributed to third parties without written prior consent and solely for research purposes only. You are free at any time to request a copy of our research and/or the removal of your data. We will treat all data in the fullest confidence at all times.

Data will be stored on encrypted hard drive(s), and no reference from the results to the participants will be stored on the same device. The level of identification will coded, and retained for a maximum of 12 months (unless written consent is received to extend this period), after this date all data will be destroyed and a destruction certificate will be available to inspect once destroyed.

What if there is a problem?

If you have a concern about any aspect of this study, you may wish to speak to the researcher(s) who will do their best to answer your questions. You should contact N00104650, N00104650@student.iadt, or the project administrator Dr. Dean McDonnell at IADT, Dun Laoire, Co. Dublin; dean.mcdonnell@iadt.ie.

Thank you

Appendix F

Research Ethics Information

Who can I contact if you have a problem?

If you wish to comment, raise concerns over any aspect of this research you can contact me on email at: N00104650@student.iadt.ie or my Thesis supervisor Dr. Dean McDonnell on email at*: dean.mcdonnell@iadt.ie.* All research proposals have been strictly vetted and approved by IADT ethics committee and all work is over seen by IADT lecturers.

Further contact information:

- IADT, Kill Ave, Kill of the Grange, Dublin, A96 KH79.
    - Tel: (01) 239 4000
    - Email: info@iadt.ie
    - Web: http://www.iadt.ie
- Researcher:
    - N00104650@student.iadt.ie

Appendix G

Participant Information Sheet

Dún Laoghaire Institute of Art, Design and Technology.

Master Thesis.

A quantitative study exploring the impact of personality traits on online impulsive shopping behaviours.

Introduction:

This research project is being conducted as part of a project for Philip Nartey's Master's Degree in Cyberpsychology (MSc) at Dún Laoghaire Institute of Art, Design and Technology. If you require further information please contact Philip at email: N00104650@student.iadt.ie

What is the purpose of this research?

The scope of this research is to collect first-hand information to determine the influences that personality traits has on the consumers' online shopping behaviours.

Do I have to take part?

The online survey will ask participants a series of questions about their online shopping behaviours and what influences their choices to purchase when online. It is up to you to decide whether or not to take part, if you decide to part-take in this study you will be allowed to keep a copy of this Participant Information Sheet, The Consent Form and The Overview Document. You can withdraw from the research at any time you wish.

What happens to me if I take part?

You will be asked to complete a web based questionnaire which will take approximately 20 minutes, you can choose to skip any questions you do not wish to respond to.

What are the potential risks to you taking part?

Any information provided during the questionnaire will be treated in the strictest confidence, no personal details will be shared with 3rd parties. Participating in the research is not anticipated to cause harm or discomfort. If however you do feel distress please stop the questionnaire and seek professional help or guidance.

Will my taking part in this project be kept confidential?

All the information that is collected during the research will be kept strictly confidential, you or your data will not be identified or be identifiable in any reports or documentation. Any data collected will be stored on encrypted hard drive(s), and no reference from the results to the participants will be stored on the same device. The level of identification will coded, and retained for a maximum of 12 months (unless written consent is received to extend this period), after this date all data will be destroyed and a destruction certificate will be available to inspect once destroyed.

What type of information is being collected?

The questionnaire will ask you about your online shopping behaviours, experiences and habits, and general information such as age, gender, internet usage etc.

Research Ethics:

Who can I contact if you have a problem?

If you wish to comment, raise concerns over any aspect of this research you can contact me on email at: N00104650@student.iadt.ie or my Thesis supervisor on email at: dean.mcdonnell@iadt.ie. All research proposals have been strictly vetted and approved by IADT ethics committee and all work is over seen by IADT lecturers.

Further contact information:

- IADT, Kill Ave, Kill of the Grange, Dublin, A96 KH79.
    - Tel: (01) 239 4000
    - Email: info@iadt.ie
    - Web: http://www.iadt.ie
- Researcher:
    - N00104650@student.iadt.ie

Appendix H

Consent Form

I have read the above information about an insight into “Online Shopping Behaviours” and have been given an opportunity by the researcher to ask questions. By signing this, I agree to participate in this study and I have been given a copy of this signed consent document for my own records. I understand that I can change my mind and withdraw my consent at any time. By signing this consent form I understand that I am not giving up any legal rights. I am 18 years or older.

_____

Participant's Signature and Date

Name of Researcher.
Philip Nartey

Name of Supervisor.
Dr. Dean McDonnell

Appendix I

Debriefing Form

Study Title: A quantitative study of personality traits as predictors of online shopping outcomes and behaviours.

Thank you for agreeing to participate in this study. The general purpose of this research paper is to determine the influence that personality traits has on the consumers' online shopping performance, behaviours, and individual's perceptions of the overall online shopping experience.

If you feel especially concerned about this study or any information gather through the online questionnaire please feel free to contact myself at N00104650@student.iadt.ie, the research supervisor is also available should you so require on email dean.mcdonnell@iadt.ie

We thank you sincerely for contributing and assure you that your data is confidential and anonymous, and if published the data will not be in any way identifiable as yours.

Researcher Name:

Philip Nartey