ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND FINANCE

The Effects Of Personality Traits On Job Performance And The Role Of Gender As A Moderator: The Case Of Company X

A Thesis Submitted in Partial Fulfillment of the Requirements for the Award of Masters of Business Administration

Sabrina Abdulaziz Zurga
October 2019

THE EFFECTS OF PERSONALITY TRAITS ON JOB PERFORMANCE AND THE ROLE OF GENDER AS A MODERATOR: THE CASE OF COMPANY X

By Sabrina Abdulaziz Zurga

Approved by a Board of Examiners:

_____	_____	_____
Name of Advisor	**Signature**	**Date**
_____	_____	_____
Name of Examiner	**Signature**	**Date**
_____	_____	_____
Name of Examiner	**Signature**	**Date**

Declaration

I, the undersigned, declare that this thesis entitled "The effects of personality traits on job performance and the role of gender as a moderator: The case of company x" is my original work, produced under the guidance and suggestion of my research advisor, Gemechu Waktola (PhD), and that all source materials used for the study have been duly acknowledged. It is offered for the partial fulfillment of the degree of Masters of Business Administration. This study has not been submitted for any degree at this or any other university.

Author: Sabrina Abdulaziz Zurga

Signature: _____

Date: _____

Advisor: Gemechu Waktola (PhD)

Signature: _____

Date: _____

Abstract

This paper investigates the nature of the relationship between the Big Five personality traits (agreeableness, conscientiousness, neuroticism and openness to experience) and job performance. Additionally, it also investigates whether said relationship is moderated by gender. While survey data supports a strong relationship between personality and job performance outcomes, the exact mechanisms behind this association remain underexplored. Data was collected from a garment factory in Addis Ababa, Ethiopia where 157 employees were randomly selected from a population of 262 production employees. This data was analyzed using the multiple linear regression model in Stata. The results show that overall more conscientious and the less neurotic individuals perform better at their job. Additionally, women who are more extroverted or more open to new experiences perform worse at their job than their counterparts, while for men higher levels of extraversion and openness resulted in better job performance. These results have implications for the way personality is assessed for hiring purposes.

Keywords: *Job performance, Big Five personality traits, gender*

Acknowledgements

I would like to acknowledge several people who were instrumental in the completion of this thesis. I would like to extend my sincerest gratitude to my advisor, Dr. Gemechu Waktola (PhD) for providing unwavering advice and support during this process. I am also incredibly appreciative of the guidance I was give by Dr. Lakew Alemu (PhD) as it was instrumental to the completion of this thesis. I would also like to thank Company X for offering me access to their employees and their meticulous records, despite requiring anonymity. Finally, I would like to thank my family for supporting me throughout my educational career.

List of Tables

List of Figures

Table of Contents

Chapter One: Introduction

1.1 Background of the Study

Human resource professionals around the world are increasingly turning to personality measures to evaluate the suitability of applicants during the recruitment and selection process (Rothstein and Goffin, 2006). This method of evaluating applicants is especially salient in industries such as garment manufacturing where more than 40 per cent of vacancies in large- and medium-sized firms are expected to be filled by unskilled production workers who are to be trained onsite (Geiger & Moller, 2015). This presents a unique challenge to the human resource managers, as the employee pool is often full of inexperienced workers who cannot be evaluated in conventional ways such as through resumes and school transcripts. Thus, recruiters turn to non-traditional methods of selection such as personality tests.

This study sets to examine the relationship between personality and individual job performance in a garment factory, Company X, located in Addis Ababa, Ethiopia. Company X asked to remain anonymous in this study as identification could jeopardize their foreign business partnerships. This chapter provides the background and motivation for the study as well as the problem statement, research questions, and research objectives. This chapter also includes a discussion of the significance and limitations of the study. Finally, this chapter concludes with a sequence of chapters to the study.

The relationship between personality and job performance has been a frequently studied research topic in organizational psychology (Barrick, Mount, & Judge, 2001; Jude, Klinger, Simon, & Yang, 2008). More recently Brunello and Schlotter (2011) have linked personality to the labour market, effects on job performance and its implications for organizations.

The Big Five or Five Factor Model (FFM) is one of the most highly regarded trait theories

of personality (Saucier and Goldberg, 2002). In this model, variations of personality are explained by five orthogonal factors: extraversion, agreeableness, conscientiousness, emotional stability (or
neuroticism) and openness to experience (Saucier and Goldberg, 2002). Saucier and Goldberg (2002) describe each trait as follows:

- Agreeableness is the willingness to help other people, act in accordance with other people interests and the degree to which an individual is co-operative, warm and agreeable versus cold, disagreeable and antagonistic.

- Conscientiousness is the preference for following rules and schedules, for keeping engagements and the attitude of being hardworking, organized and dependable, as opposed to lazy, disorganized and unreliable.

- Neuroticism encompasses dimensions such as nervous versus relaxed and dependent versus independent, and addresses the degree to which the individual is insecure, anxious, depressed and emotional rather than calm, self-confident and cool.

- Extraversion is the preference for human contacts, empathy, gregariousness, assertiveness and the wish to inspire people.

- Openness measures the degree to which a person needs intellectual stimulation, change, and variety.

However, the same studies that link personality traits to job performance (Barrick, Mount, & Judge, 2001; Jude, Klinger, Simon, & Yang, 2008; Brunello and Schlotter, 2011) do not agree on which specific traits are significant in this relationship. Barrick and Mount (1991) found that conscientiousness was the only FFM trait to display non-zero positive correlations with job performance across different occupational groups and criterion types. In contrast, Tett, Rothstein and Jackson (1991) found that only neuroticism displayed non-zero negative correlations with job performance. On the other hand, in a laboratory setting,

Muller and Schwieren (2012) observe openness to have significant and negative impact on job performance. Similarly, Fletcher (2013) suggests that the overall effect of agreeableness on labour market outcomes is negative while Brunello and Schlotter, (2011) found that extroverts are less vigilant and show more fatigue than introverts during extended tests.

Furthermore, a number of studies have reported differences in the distribution of personality traits by gender. According to Costa Jr, Terracciano and McCrae (2001), women reported themselves to be higher in neuroticism, agreeableness, openness, whereas men were higher in extraversion. Similarly, Schmitt, Realo, Voracek and Allik (2008) found that women reported higher levels of neuroticism, agreeableness, and conscientiousness than did men across most nations. However, when gender is included as a moderator, as shown by Heineck and Anger (2010), only extraversion impacts the job performance of men and women differently. Contrastingly, Cubel et al (2014), find that the effects of openness on job performance are also gender sensitive as openness can result in significantly lower job performance for women while having no effect on men. Thus, there is a lack of consensus in the literature on which personality traits influence job performance in the workplace and the ways that influence can be moderated by gender.

1.2 Problem Statement

The desire to hire the best people has lead recruiters to employ creative methods to asses potential employees. One of these methods is using personality tests to screen for desired traits. (Rothstein and Goffin, 2006). The most popular and widely respected method for assessing personality is the Big Five personality trait theory (Saucier and Goldberg, 2002).

However, the general problem there is no a consensus among academics about which traits significantly affect the job performance of employees. Additionally, not much attention has been paid to the ways gender might be a moderator to these effects. A meta-analysis of studies (Wright et al, 2011) shows there is still a lack of consensus among researchers on which of the Big Five factors have an effect on job performance. Additionally, most of the

literature has not taken into account the moderating effects of gender when coming to a conclusion about which traits are significant for job performance (Cubel et al, 2014).

Overall, this study is attempting to address the problem that personality tests are being used globally as hiring tools even though they are based on a body of literature that has yet to reach a consensus on the impact of the Big Five traits on job performance and is not yet widely considering how the moderating effects of gender may influence the relationship between personality traits and job performance.

1.3 Research Objectives

1.3.1 General Objective

The aim of this study is to investigate if personality impacts job performance and if this impact is moderated by gender.

1.3.2 Specific Objectives

1. To investigate the relationship between each of the Big Five personality traits and job performance in the workplace.
2. To investigate whether the relationship between the Big Five personality traits and job performance are heterogeneous by gender.

1.4 Hypotheses

The following hypotheses are predicted in relation to the research problem based on available literature and extrapolations made to the garment factory context.

Hypothesis 1 The Big Five Personality traits affect job performance

- Hypothesis 1a Neuroticism is negatively associated with job performance.
- Hypothesis 1b Conscientiousness is positively associated with job performance.
- Hypothesis 1c Openness has a negative relationship with job performance.

- Hypothesis 1d Agreeableness is negatively associated with job performance.
- Hypothesis 1e Extraversion has a negative relationship with job performance.

Hypothesis 2 The effects of the Big Five traits on job performance are moderated by gender

- H2a The effect of neuroticism on job performance is moderated by gender.
- H2b The effect of conscientiousness on job performance is not moderated by gender.
- H2c The effect of openness on job performance is moderated by gender.
- H2d The effect of agreeableness on job performance is not moderated by gender.
- H2e The effect of extraversion on job performance is moderated by gender.

1.5 Significance of the Study

The study of the link between personality and job performance is significant for two different reasons: first, employers are interested in a better understanding of this relationship. Anecdotal evidence shows the importance of personality in the workplace. For instance, Brunello and Schlotter (2011) detail that personnel managers find “attitude, motivation and personality" as the most important qualities when hiring. Similarly, the most common sought after worker skill by Ethiopian employers relate to work ethic and commitment (Fasih and Akhlaque, 2014). A reason for the high interest in work ethic and commitment could be that the Ethiopian manufacturing sector is still relatively underdeveloped and not heavily reliant on more technical production. Moreover, assembly line production requires discipline, timeliness, and team coordination (Fasih and Akhlaque, 2014).

Secondly, understanding to what extent personality traits impact labour market outcomes through job performance is key to offer an adequate foundation for early policy interventions. Certain personality traits are more shapeable in childhood than cognitive skills (Borghans et al. 2008). Evidence corroborates that personality is, to a certain extent, impressionable in adolescence and early adulthood (Almlund, Duckworth, Heckman and

Kautz, 2011). A deeper understanding of the impact of personality on job performance can provide policy makers with a wider variety of instruments when designing policies aimed to improve the labour job performance of the workforce as a whole. This is particularly relevant for educational programs targeted to individuals after the age of 10, when cognitive skills are already mostly established but personality is still being formed (Martins, 2010). The moderating affects of gender on the relationship between personality and job performance can inform the way both personality assessments and policy interventions are designed.

1.6 Scope and Delimitations of the Study

The first delimitation of this study is in the theoretical perspective. There are several ways of evaluating personality including the Myers Briggs (Moutafi, Furnham, and Crump, 2003). However, the Big Five theory was chosen for this study because it is the most widely accepted in the field of psychology (Moutafi, Furnham, and Crump, 2003).

Secondly, the choice of using Company X, a garment factory in Addis Ababa, limits the scope of this study. Company X was chosen for this study because of its rich data availability on job performance of its employees and the fact that the textile and garment industry is the fastest growing and most highly prioritized sector in the country, and it has a great potential for employment growth (Geiger & Moller, 2015). However, the results of this study may not be generalizable to other industries in the country.

Thirdly, similar to any organization, garment factories employ different types of employees: from production workers to highly skilled design engineers and managers. The study, however, will only consider production workers for several reasons. Firstly, this is the group of workers that is hard to evaluate using traditional methods such as resumes or academic credentials. Secondly, production workers make up a majority of the workforce in garment factories and thus represent a huge area for potential improvement. Finally, the job performance of production workers is measure by an efficiency ratio and is thus the most objective. Consequently, managerial and other non-production employees are out of the scope of this research

1.7 Limitation of the Study

Ideally, this study would have been conducted as an experimental study on potential employees during a company's recruitment season. After identifying a pool of recruits/ applicants they would be randomly divided into two groups: a control group and a research group. The control group would undergo the company's regular screening and selection process. On the other hand, the research group would be given the Big Five personality assessment and the selection process would take the hypotheses of this study into account by hiring candidates who are more conscientious, less neurotic an less open. The effect of personality on the job performance of individual workers could then be parsed out by comparing the performance of these two groups. This way the study could have avoided the potential of the employees' personality adapting to the company's culture. Unfortunately, the researcher was unable to find a firm willing to participate in such a study and the methodology was changed to adapt to the firms' wishes. Thus the researcher performed the personality assessments on current employees and extrapolated results to potential employees.

1.8 Organization of the Study

Chapter 1 provides a general introduction to the study. It includes the introduction and background and motivation for the study (in order to provide context), the problem statement, research questions and therefore by implication the objectives of the study, as well as the significance of the study, limitations to the study and sequence of the study.

Chapter 2 provides a more extensive background for the following chapters and reviews the range of core theoretical foundations, concepts, characteristics, theories, approaches and classifications necessary to understand and evaluate the relationship between personality and productivity.

Chapter 3 provides the methodology to the study. The data collection procedure and

method, population covered by the study and sampling method are reviewed.

Chapter 4 provides a summary and analysis of the results/findings of the study and along with a discussion of the findings. It deals with the empirical study, analysis and interpretation of the results of the study.

Chapter 5 provides a synthesis of the study including major findings and implications. Conclusions are drawn, based on the findings of the study and proposals are made for possible future research arising from this study.

Chapter Two: Review of Literature

2.1 Introduction

The previous chapter provided a general introduction to the entire study. It included an introduction and background for the study (in order to provide context) the problem statement, research questions and therefore, by implication, the objectives of the study, as well as the significance of the study. It also covered analysis of key concepts, method of data collection, sampling method, data analysis and interpretation, limitations for the study and sequence of the study.

This chapter provides a more extensive background for the following chapters and reviews the range of core theoretical foundations, concepts, characteristics, theories, approaches and classifications necessary to understand and evaluate the relationship between personality and productivity.

2.1 Personality

There is no one unified way to describe personality. The word personality goes back into ancient Greece, where it meant a mask which an actor used in the theater when he played different roles representing different characters (Engler, 2013). Nowadays theorists use more than fifty different definitions of personality each taking a different perspective (Brooks, 2008; Engler, 2013). This study employs personality definition within organizational settings. Thus, personality is "specific characteristics of individuals which may be open or hidden and which may determine either commonality or differences in behavior in an organization" (Brooks, 2008, p. 42). According to Robbins et al. (2013) personality is often described as a set of measurable traits that person exhibits. Trait theories of personality assumes that personality traits are inherent, relatively stable and unchanged throughout a person's life time and determine person's behavior (Brooks, 2008).

Of all available trait theories of personality, The Big Five/ Five Factor Model (FFM) was chosen to conduct the study. In theory some authors distinguish between the Big Five personality traits/dimensions/characteristics and the Five Factor Model (Engler, 2013). This difference originally stems from the history of the research on personality. The Big Five come from the descriptive study of language analyzing adjectives which were used to describe a person. The Five Factor Model origins from the interpretation of the Big Five Factors and claims that individuals can be described by their score on these five broad concepts (Engler, 2013). However, Engler (2013) continues that this distinction is not significant and thus the Big Five and Five Factor Model can be used interchangeably.

2.2 The Big Five Personality Model

The Big Five model is one of the most highly regarded trait theories of personality. In this model, variations of personality are explained by five orthogonal factors: extraversion, agreeableness, conscientiousness, emotional stability (or
neurotism) and openness to experience (Saucier and Goldberg, 2002). The first personality inventory developed to measure especially the FFM was NEO-PI-R by Costa and McCrae in 1985 (Costa et al., 2002). The FFM model is used in this research as the main tool for analyzing personalities. A major contributor to FFM was when five individual personality factors emerged from Goldberg's lexical research in early 1980s (Goldberg, 1981). The final step in the development of the FFM was when Costa and McCrae revised their three-factor model. Costa and McCrea had previously developed a three factor model of personality with the questionnaire approach. The redeveloped model included two additional factors of agreeableness and conscientiousness based on Goldberg's research (Costa et al., 2002).

The general acceptance of the Big Five personality model, combined with results from various meta-analytic studies is indicators of the validity of those measures in order to predict job performance (Wright et al, 2011). The Big Five factors and their prototypical characteristics are: extraversion (sociable, assertive, talkative), agreeableness (trusting, cooperative, good natured), conscientiousness (achievement oriented, responsible,

dependable, persistent), emotional stability (from a negative pole: nervous, tense, insecure), openness to experience (intellectual, artistically sensitive, imaginative) (Barrick and Mount, 1993).

The Big Five approach has become immensely popular for several reasons. First, these personality traits are unlikely to experience ordinal changes (Cobb-Clark and Schurer 2012), particularly after early adulthood. Changes over time in absolute levels are extreme over childhood, but also likely to occur during adulthood (Roberts et al. 2006). However, they seem to be very gradual and determined by biological maturation rather than life experience (Srivastava, John, Gosling and Potter 2003). Moreover, the Big Five is a robust measure both across cultures and samples (Barrick and Mount 1991). For instance, McCrae and Terracciano (2005) report similar differences by gender in cultures with very different gender roles and expectations. Finally, the Big Five personality traits are considered to be largely uncorrelated with cognitive skills, defined as the ability to solve abstract problems (Stankov 2005), although they impact performance in cognitive tests (Almlund et al. 2011). Hence, the Big Five personality traits constitute truly distinct factors in the analysis of job performance.

Within the Big Five personality traits, conscientiousness is the strongest predictor of job performance (Barrick and Mount, 1991; Barrick and Mount, 1993; Judge et al, 1999; Perry et al, 2010). Conscientiousness is connected with the individuals‟ degree of self control, achievement, persistence and the need for order. It is also linked to both retention and attendance (Judge et al, 1999). Employees that perform better than others receive more rewards and recognition, which leads higher levels of job satisfaction (Judge, Thoresen, Bono and Patton, 2001). In Barricks‟ and Mounts‟ (1991) study, conscientiousness relates to all job performance criteria for all occupational groups and attributes closely related to conscientiousness are dependability, honesty, integrity and prudence. O´Neill and Allen (2011) state that conscientiousness and it facets; organization, cognitive structure, achievement and endurance, were the best predictors of team performance, while other Big Five factors had no prediction. The results of Cole et al (2004) study was that conscientiousness is an important factor in jobs that require attention to detail and working

with numbers while extraversion is an important factor for jobs where interpersonal skills are valued highly. The results also indicate that recruiters inferred personality traits to specific types of jobs. Templer (2012) confirmed that conscientiousness, extraversion, emotional stability and agreeableness were all related to job satisfaction. This is contrary to Judge at al. findings from 2002, where agreeableness was not identified as a predictor of job satisfaction. The differences in these results are related to cross cultural differences between the East (Templer) and the West (Judge et al.).

Furthermore, there are other personality factors to consider. Individuals that score high on extraversion tend to be more sociable, impulsive and active than those who score low. Extraverts are more likely to take on leadership roles; they relate to positive emotions and have more close friends (Judge at al., 1999). Barrick and Mount found that extraversion is a valid predictor where social interaction is a significant part of the job, as extraverts have been found to perform better at those kinds of jobs. Their study also revealed that conscientiousness and extraversion were valid predictors of managerial performance, but emotional stability, agreeableness and openness to experience had weak and inconsistent results (1991). Other researches have also revealed relations between extraversion and salary level, career success, career satisfaction and promotions (Seibert and Kraimer, 2001). In a longitudinal study examining the association between innate temperament and the perception of long term work stressors the results showed that a higher negative emotionality and along with lower sociability systematically predicted higher job strain. Activity had no effect on job strain as it related to higher control and higher perceived demands (Hintsanen et al, 2011). These results can easily be generalized as participants were from various occupational as well as educational domains.

Openness towards diversity is an important trait in today's business environment where organizations are increasingly expanding across borders and/or working on international assignments. In order to increase levels of performance, and to minimize the risk of damaged relationships with local employees, customers and suppliers, recruiters should take personality traits into account when recruiting expatriates (Peltokorpi and Froese, 2012) As detailed above, numerous research suggests that personality traits have significant

correlations to both academic achievements and job performance.

2.3 Measuring the Big Five

The Big Five Inventory (BFI) is the most popular way to measure the Big Five traits (John, Donahue, & Kentle, 1991). The BFI is a 44-item measure that yields a score for each of the Big Five personality factors: extraversion (eight items), agreeable-ness (nine items), conscientiousness (nine items), neuroticism(eight items), and openness to experience (10 items). Each item consists of a short statement, and respondents are required to rate the degree to which they agree with each statement on a5-point Likert scale (1 = ‘‘Strongly disagree’’ to 5 = ‘‘Strongly agree’’). The BFI was deemed to be a good choice for the current study, as it can be completed in less than 5 min, and it has strong psychometric properties. For instance, the BFI is known to have clear factor structure, and each subscale has been shown to have satisfactory reliability and validity among respondents (Srivastava, John, Gosling, & Potter, 2003). The test–retest reliability coefficients for each of the five subscales are good, and range between .76 and .83 (Gosling, Rentfrow,& Swann, 2003). The internal consistency coefficients for each of the subscales are also good: extraversion (a= .86), agreeable-ness (a= .79), conscientiousness (a= .82), neuroticism (a= .84),and openness to experience (a= .80) (Srivastava et al., 2003).

2.3.1 Faking in Personality Assessments

As discussed in the previous section, personality measures have proven to be both effective and practical tools in the selection procedure. Concerns have been addressed about applicants using socially desirable responses in personality tests instead of giving answers that fairly describe them. Faking occurs when applicants change their responses to look better in the eyes of the prospective employer and by doing so, try to increase their chances of employment. Even though psychologists and recruiters arm themselves with difficult formats, applicants can alter their answers so they do not justly reflect their true personality (Griffith and McDaniel, 2006). Griffith et al. (2007) suggest that a substantial number of applicants fake their responses on personality tests, but between 30% and 50% of

applicants elevate their scores when taking personality tests. At present, there are several popular guides on how to optimize ones score on personality tests. As a result the practicality of using personality test might fall short because of faking (Rothstein and Goffin, 2006). By choosing to be dishonest on a personality test it might be suggested that the applicant is able to engage in a counterproductive behavior to the organization although no evidence support that position (Griffith and McDaniel, 2006). Some studies suggest faking occurs less when intelligent people are involved even though they have an increased capacity to fake. Whereas other studies suggest that as intelligent people have more capacity to fake they tend to do so. The latter statement was proven in a research that suggested that with higher levels of mental ability, job applicants fake in less detectable, more subtle ways (Levashina, Morgeson and Campion, 2009).

One of the ways to reduce faking on personality tests is to warn participants that a social desirability scale will be embedded in the test. This procedure has been shown to substantially reduce faking, without having any negative consequences when using personality measures (Rothstein and Goffin, 2006). Bartram and Brown (2004) suggest that a lack of supervision has little impact on scale scores when web based administration was compared to a more traditional paper and pencil version of a personality assessment. Though there have been concerns about applicant faking, one study results indicate that there is little evidence to that cheating, on an un-proctored test, when it was followed by a proctored confirmation test (Nye, Do, Drasgow and Fine, 2008). This suggests that the probability of faking is lower when the proctored confirmation test is embedded, than when it has not been embedded. In light of the discussion on faking in personality assessments it is important that recruiters/hiring managers know how to use assessments that are designed to detect faking and their results. It is also critical that the assessments are chosen carefully in regards of their relevance to specific job related requirements.

2.4 Job Performance

Job performance is defined as the total expected value to the organization of the discrete behavioral episodes that an individual carries out over a standard period of time

(Motowildlo, 2003). Traditionally, job performance is limited to the core task activities that are based solely on job analysis (Jex & Britt 2008). The combination of effectiveness and efficiency at performing core job tasks is a reflection of an employee's level of job performance (Stajkovic & Luthans, 1997). For example, in the garment manufacturing context, job performance could be measured by the number of quality products produced in an hour. All types of performance relate to the core duties and responsibilities of a job and are often directly related to the functions listed on a formal job description. Task performance is the most important human output contributing to organizational effectiveness (Stajkovic & Luthans, 1997).

2.5 Personality and Performance

The pursuit to ascertain definite, unambiguous connections between personality and job performance follows an unclear path. In the first period of this quest, results were generally insignificant. Guion and Gouttier (1965) provide a clear example of this. Their finding that personality does not predict job performance led to the conclusion that there is no generalizable evidence that personality measures can be recommended as good or practical tools for employee selection. According to Hogan and Roberts (2001), this is a methodological and theoretical issue. They referred to past studies on personality as "sprawling in conceptual disarray, with no overarching theoretical paradigm and the subject matter was operationalized in large numbers of poorly validated scales with different names". It is understandable, then, that reviewers of the literature drew cynical conclusions regarding the utility of personality measures for employee selection purposes (Kanfer, 1990).

Nevertheless, the systematic investigation of the personality-job performance link began to erode this cynicism when the Five Factor Model (FFM) was discovered. It was revealed that five dimensions, namely extraversion, agreeableness, conscientiousness, neuroticism and openness, are the core aspects of personality (McCrae & Costa, 1999). Digman and Inouye (1986, p. 116) state, "if a large number of rating scales is used and if the scope of the scales is very broad, the domain of personality descriptors is almost completely

accounted for by five robust factors." Researchers were now well on their way to mapping how personality relates to job performance. However, results of studies investigating this relationship were still far from analogous. Even meta reviews (which use data of several studies, thereby increasing sample size and making the test more powerful), report different findings. Barrick et al. (2001) summarize: Barrick and Mount (1991) found that conscientiousness was the only FFM trait to display non-zero correlations with job performance across different occupational groups and criterion types. In contrast, Tett, Rothstein and Jackson (1991) found that only neuroticism displayed non-zero correlations with performance, and two other Big Five traits – agreeableness and openness – displayed higher correlations with performance than conscientiousness. Goldberg (1993, p.31) has described the differences in findings based on a similar body of knowledge as "befuddling".

Furthermore, Salgado (1997) found that two traits from the five-factor model – neuroticism and conscientiousness – displayed non-zero correlations with job performance. Aiming to settle the debate once and for all, Barrick et al. (2001) performed a meta review of meta reviews that aimed to create clarity in the 'befuddling' pile of data. They found that, regarding FFM predictors of overall work performance, only Conscientiousness (ρ=.13) and Neuroticism (ρ=.27) correlated significantly with job performance. In a lab study, Cubel et al (2014) find a robust negative correlation between neuroticism and performance, and a positive correlation between conscientiousness and job performance.

2.6 Gender, Personality and Performance

Gender differences in the personality traits have also caught the consideration researchers. Women were found to have higher scores in neuroticism, agreeableness and openness to experience (Costa, Terracciano and McCrae, 2001). On the other hand, a study conducted by Nguyen, Allen and Fraccastoro (2005) discovered that female students were found to obtain higher in conscientiousness and agreeableness while male students were less neurotic than female students. Feingold (1994) also found that women scored slightly higher in conscientiousness than men.

Contrastingly, a more recent study found no differences in the conscientiousness by gender but rather found women to be more agreeable and neurotic than men (Chapman, B., Duberstein, P., Sorensen, S., and Lyness, J. M., 2007). With regards to openness to experience, Costa et al. (2001) discovered that men scored higher in a few aspects of openness to experience such as openness to ideas while women score higher in other facets of openness to experience such as openness to aesthetic and feelings. Besides, Costa et al. (2001) also found that in a few aspects of extraversion, for example, excitement seeking, men score higher than women while in other extraversion aspects, for example, warmth, women score higher. Thus, the finding from these past investigations indicates that there are gender differences in personality traits between men and women. Although, there is no consensus in the literature on which of the Big Five traits are impacted by gender.

Additionally, there are indications in the literature that the relationship between personality and job performance differs for men and women. Cubel et al (2014) show in a lab experiment that gender may have moderating effects on the relationship between personality and job performance by way of extraversion and neuroticism only and not agreeableness. Heineck and Anger (2010), find that when gender is included as a moderator of the relationship between personality and job performance, only extraversion impacts the job performance of men and women differently. Contrastingly, Cubel et al (2014), also find that the effects of openness on job performance are gender sensitive as openness can result in significantly lower job performance for women while having no effect on men. Thus, gender has a moderating effect on the relationship between personality and job performance although the exact mechanism of this relationship is ambiguous.

2.7 Hypothesis Development

The literature review above forms the basis for the hypotheses developed for this study. The hypotheses in this study will be based on the Big Five personality traits and are detailed below.

Neuroticism

This trait is defined as lack of emotional stability and predictability and by the presence of mood changes. Common facets associated with this trait include being anxious, irritable, depressed, worried and insecure. Neuroticism has been consistently found to hinder job performance. As in the economic literature, psychologists Barrick and Mount (1991) and Salgado (1997) find that emotional stability has a positive effect on job performance across all occupations. Some of the mechanisms at play in labour relations, such as lack of self-confidence, are likely to operate as well in the production floor setting. In addition, it is expected that neuroticism will impair the ability to focus on their task, especially under time pressure. Hence, the hypothesis is that high levels of neuroticism should be correlated with low job performance.

H1a Neuroticism is negatively associated with job performance.

Conscientiousness

This trait measures the extent to which individuals are careful, responsible and hard working. Because it is associated to efficient, organized, achievement-oriented and self-disciplined individuals, conscientiousness shows a consistent positive relation with labour market outcomes. In the Psychology literature, Barrick and Mount (1991), Tett et al. (1991) and Salgado (1997), also find evidence of this link across occupations and criteria (wages, promotions, training). In a similar way, a positive relationship between conscientiousness and job performance is expected in this study, because being careful, efficient and focused should improve accuracy in producing polo shirts.

H1b Conscientiousness is positively associated with job performance.

Openness

Individuals who are open to new experiences are typically imaginative, artistic, curious, creative and intellectually oriented. The effects of this trait are potentially ambiguous. While flexibility and creativity might be helpful in many occupations, they might be a hindrance in others, especially in occupations that penalize autonomy and non-conformity.

Mueller and Plug (2006) find substantial earnings advantages associated to openness, although Heineck and Anger (2010) find that high level of openness are detrimental for males' wages. In a laboratory setting, Muller and Schwieren (2012) observe a negative impact of openness on job performance. A similar result is expected in this study. The researcher conjectures that this result might be driven by creative and artistic individuals who are likely to find the job repetitive and boring. Therefore, a negative net effect of openness on the job performance of garment factory workers is expected.

H1c Openness has a negative relationship with job performance.

Agreeableness

Defined as the tendency to cooperate and help others, agreeableness is associated with altruism, compliance, modesty, sympathy and trust. Survey evidence suggests that the overall effect of agreeableness on labour market outcomes is negative. Even though agreeable individuals may be more successful in teamwork, three mechanisms might counteract this positive effect in the workplace. First, helping others may reduce individual job performance. Second, agreeable people may be less effective when bargaining their wage. Finally, agreeable individuals may enter less-stable, lower paid occupations and are more likely to be unemployed (Fletcher 2013).

Only the first of these potential mechanisms is present in a garment factory setting. High job performance on the production floor relies on employees performing their individual tasks in the least amount of time possible, thus helping others may slow them down. On the other hand, the researcher expects agreeable individuals to be more prone to cooperate with their supervisor, which may improve their job performance. But this desire to perform well might hinder rather than boost their performance if they get too stressed or anxious because of this. Therefore a negative effect of agreeableness on job performance is expected.

H1d Agreeableness is negatively associated with job performance.

Extraversion

This personality trait is defined as an orientation towards the outer world. It is described by facets such as warmth, gregariousness, assertiveness, activity and excitement seeking. Barrick and Mount (1991) suggest that extraversion actually consists of two components, ambition and sociability. Sociability could have a negative impact on job performance as it may lead to excessive time spent mingling with coworkers at the expense of time spent on work. On the other hand, the facets associated to ambition, such as assertiveness or activity, could have a positive impact on performance. Nonetheless, Sternberg and Ruzgis (1994) find that extroverts are less vigilant and show more fatigue than introverts during extended tests. In the context of this study, extraversion is expected to have a negative effect on performance given the hours and the nature of the job.

H1e Extraversion has a negative relationship with job performance.

Gender as a Moderator

A number of studies on gender differences in personality traits (Costa Jr, Terracciano and McCrae 2001, Schmitt, Realo, Voracek and Allik 2008) indicate that women, on average, tend to be more agreeable and neurotic than men. However, Cubel et al (2014) show in a lab experiment that gender may have moderating effects on the relationship between personality and job performance by way of neuroticism, openness, and extraversion only and not agreeableness. Thus, even though the literature is conflicted, there are indications that the relationship between personality and job performance differs for men and women; hence gender may have a moderating effect on personality. Consequently, based on the limited data available, the following hypotheses are formulated.

Hypothesis 2 The effects of the Big Five traits on job performance are moderated by gender

- H2a The effect of neuroticism on job performance is moderated by gender.
- H2b The effect of conscientiousness on job performance is not moderated by gender.
- H2c The effect of openness on job performance is moderated by gender.

- H2d The effect of agreeableness on job performance is not moderated by gender.
- H2e The effect of extraversion on job performance is moderated by gender.

To summarize, the hypotheses that will be tested in this study are:

Hypothesis 1 The Big Five Personality traits affect job performance

- H1a Neuroticism is negatively associated with job performance.
- H1b Conscientiousness is positively associated with job performance.
- H1c Openness has a negative relationship with job performance.
- H1d Agreeableness is negatively associated with job performance.
- H1e Extraversion has a negative relationship with job performance.

Hypothesis 2 The effects of the Big Five traits on job performance are moderated by gender

- H2a The effect of neuroticism on job performance is moderated by gender.
- H2b The effect of conscientiousness on job performance is not moderated by gender.
- H2c The effect of openness on job performance is moderated by gender.
- H2d The effect of agreeableness on job performance is not moderated by gender.
- H2e The effect of extraversion on job performance is moderated by gender.

2.8 Additional Factors that Impact Job Performance

In addition to the personality traits other factors might influence a garment factory worker's job performance. Due to the fact that this study centers on personality it is necessary to control for any other factors besides personality that may affect the job performance of a worker. These factors are approached as control variables and no additional hypotheses are formulated.

Previous research indicates that age, gender, experience, education and training might affect job outcomes (Ahmadi et al., 2012; Geiger & Moller, 2015). Moreover as Sturman (2003) notice, relationship between age/experience and performance is of "critical concern" for both theory and practice. Thus, in addition to the Big Five traits the study also included a total of five control variables.

Training

The first control variable is training. The first construct measured the total days of training the organization had given each production employee. Training is an important component of job performance and is defined by the Manpower Services Commission's (1981, p.62) Glossary of Training Terms as:

> *a planned process to modify attitude, knowledge or skill behavior through learning experience to achieve effective performance in an activity or range of activities. Its purpose, in the work situation, is to develop the abilities of the individual and to satisfy the current and future needs of the organization.*

Consequently, it was necessary to control for training in this study, as the main objective of training is to increase job performance and according to HR records by the company there were variations in the number of days of training received by different employees.

Education

The second control was education level. It has been noted by Geiger & Moller (2015, p.29), "In the manufacturing sector, a one-year increase in the average education of a production worker is associated with an increase of 33 to 41 percent in various measures of labour job performance." Therefore, it was important to control for the education levels of the employees in the sample.

Experience

The third control was years of experience. Experience was selected as a control variable because it has a substantial impact on job performance. The skills and knowledge gained from the previous work experience improve an employee's job performance, the beliefs of

self-efficacy, the response time when faced with work challenges, which lead to the overall increase of job performance (Ahmadi et al., 2012). Experience is measured the total number of years of experience each employee has in the position they are currently in both at the company and at previous workplaces.

Gender

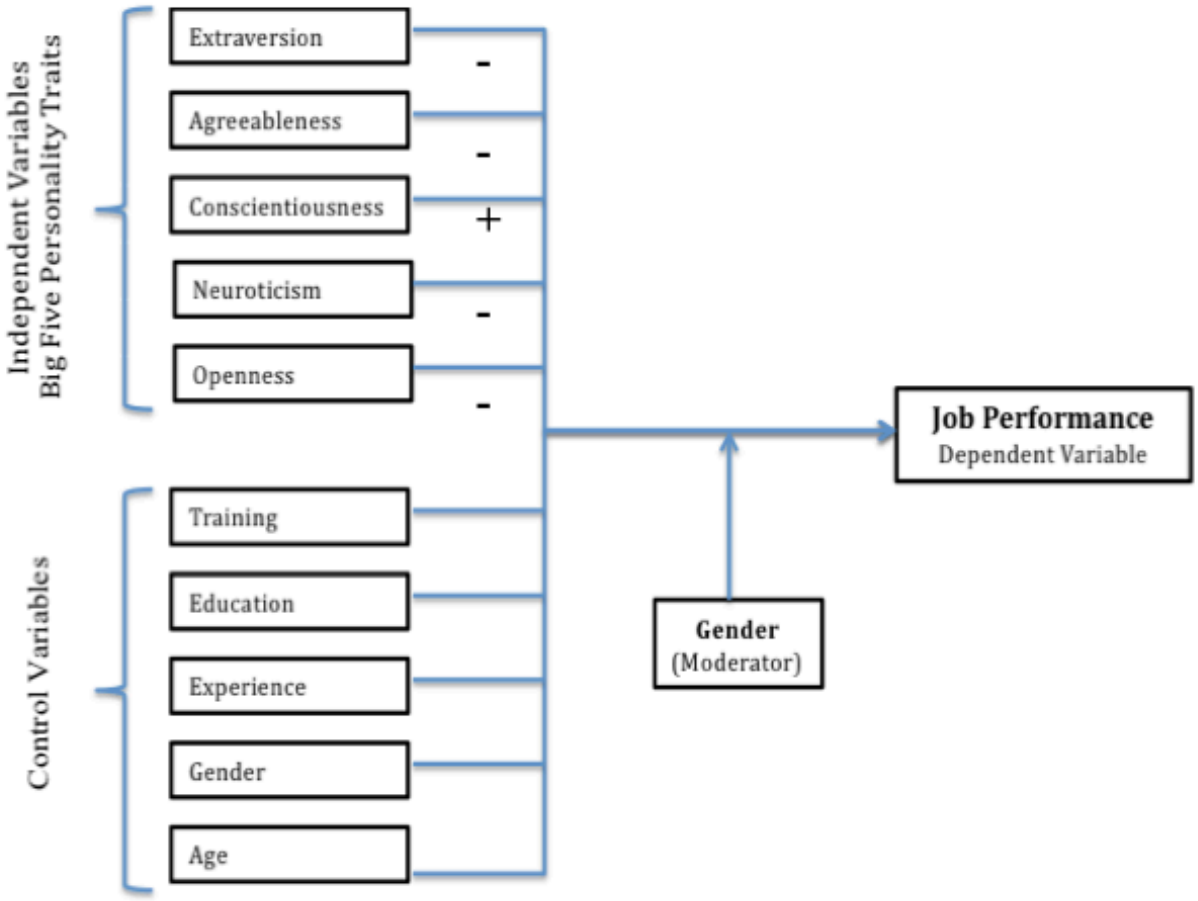
The fourth control was gender. Since gender can be a contributing factor to success at the workplace (McCrae and Terracciano, 2005; Mueller and Plug, 2006), this variable was used to control for the effects of gender on job performance.

Age

The fifth control variable was age. Age was chosen as a control variable because there is evidence to suggest that performance is affected by age. A meta-analysis on the relationship between age and job performance that includes 10 dimensions of job performance: core task performance, creativity, performance in training programs, organizational citizenship behaviors, safety performance, general counterproductive work behaviors, workplace aggression, on-the-job substance use, tardiness, and absenteeism was conducted by (Ng and Feldman, 2008). Results show that although age was largely unrelated to core task performance, creativity, and performance in training programs, it demonstrated stronger relationships with the other 7 performance dimensions. Hence the relationship between Age and Job Performance makes it necessary to control for Age in this study.

2.9 Conceptual Framework

In order to illustrate the theoretical framework that has been used and hypotheses that have been developed and the final interactions among them, a visual presentation of the conceptual framework is presented below.



Source: own review

2.10 Research Gap

The studies reviewed above assert that not only is there a general relationship between personality and job performance but that individual personality traits affect job performance differently. Additionally, there is also some evidence that gender can be a moderator of these effects. However, as shown in the review above, there is no consensus on whether each personality trait effects job performance negatively or positively. Furthermore, the moderating effects of gender are understudied in this field and thus there is no agreement on which personality traits are moderated by gender. This research attempts to contribute to the literature by conducting a study that helps to sway the consensus on both fronts.

Chapter Three: Research Methodology

3.1 Introduction

The previous chapter discussed and reviewed the range of core theoretical foundations, concepts, characteristics, theories, approaches and classifications necessary to understand and evaluate the relationship between personality and job performance.

This chapter describes the research methods applied and data collection techniques used. It also gives a brief explanation of the questionnaire and questionnaire design, explains different sections of the questionnaire and the targeted respondents. Moreover it describes the sampling method employed in this study. This chapter also discusses the reliability and validity of the study and finally limitations to the study.

3.2 Method of Data Collection

The sources of data employed in this study include both primary and secondary sources. Primary data was collected using questionnaires and interviews. Questionnaire was designed to gather data from employees of the organization. The researcher also used structured interviews to collect data from management. The use of questionnaires will be explained in the next section, mainly because it is the main source of data collection that was undertaken by this study. Thus, it is important to provide details in terms of how the questionnaires were used and its importance in this study.

Secondary data was collected through official HR reports of the organization. The HR department has meticulous records on the daily performance of all their employees. Additionally, the HR department was also able to provide information about each employees education level, years of experience and the number of days of training received by each employee as well as their educational level. This is important in order to control for skill and cognitive ability respectively. The information collected form HR on each employee was randomized and coded when cross referenced to the

questionnaire to make sure employees were not identifiable

3.3 Sampling Method

Sampling is the process of selecting observation subjects from a population (Babbie and Mouton, 2001). Probability sampling techniques involving random sampling have been used in this study because they allow the researcher to make relatively few generalizations to a much wider population. These sampling methods also afford participants equal probability of selection and thus avoid bias. Since the sample frame is homogeneous simple random sampling was used. The population for the study included all the production workers in the company. As of July 2018, Company X had 262 production employees. Slovin's formula (Almeda, Capistrano & Sarte, 2010) was used to determine the sample size because nothing is known about the behavior of a population. At 95% confidence level, degree of variability = 0.5 and level of precision/sampling error = 5% the sample size is:

$n=N/ (1+Ne^2)$

$n=262/ (1+262(0.05)^2)$

$n=157$

Where; "n'' is the sample size, "N'' is the population size and "e'' is the level of precision. Thus, using Slovin's formula 157 production employees were selected to participate in the study from the total study population of 262.

3.4 Questionnaire

A questionnaire is a set of written questions and or statements to which the research subjects are to respond in order to provide data, which are relevant to a research topic (Babbie and Mouton, 2001). The main aim of the questionnaire is to identify the personality types of the garment factory employees. For the purpose of this research, a questionnaire was chosen to evaluate the personality types of garment factory employees because a questionnaire is one of the most efficient ways to collect data as it can be administered to a large number of people simultaneously. The questions were

formulated clearly so that all employees could understand them.

3.4.1 Questionnaire Design

The questionnaire is divided into two sections. Section A of the questionnaire collects information about biographical and demographic details of the respondents. It includes the age, gender and education. Section B collects information about the Big Five personality traits using the 44-item Big Five Inventory (John, Donahue and Kentle 1991, John, Naumann and Soto 2008). This mid-sized questionnaire was chosen to ensure an accurate measure of each personality trait without incurring in an excessively long questionnaire, which could induce measurement error. The questionnaire was translated into Amharic in order to accommodate the primary language of the respondents.

Questionnaires contained close-ended questions with a five-point Likert scale and respondents were asked to tick the boxes that apply to them. A total of 157 structured self-administered questionnaires were prepared for employees and 143 (91%) of the questionnaires were received and analyzed. The high response rate was achieved because of the high levels of cooperation given by upper management. Five of the received questionnaires were not filled in to completion and were dropped from the data set resulting in 138 viable questionnaires.

3.5 Reliability of Questionnaires

According to McNabb (2002) scientific research is characterized by two elements, namely reliability and validity. Reliability has to do with the accuracy and precision of a measurement procedure and implies that the same matter that is researched continuously by the same or different persons must render the same result. However, this does not mean that it is valid; it simply means that the measurement instrument does not produce erratic or unpredictable results.

The Big Five Inventory has show high reliability with an average internal consistency

of .85 (Rammstedt & John 2007). Individually, extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience score an internal consistency of .89, .77, .90, .81 and .88 respectively (Rammstedt & John 2007). The results show that there is high internal consistency among the variables, so the dimensions are sufficient to measure the constructs.

3.5.1 Pilot Test

Pilot test refers to a research pre-testing where the questionnaire is tested on a smaller group of respondents in order to identify any unforeseen problems such as the flow and wording of questions (Hertzog, 2008). It was used to test the reliability, validity and sensitivity of the questionnaire. According to Hertzog (2008), for a sample size less than 250, a pilot test should include 25 – 30 questionnaires. Thus, thirty questionnaires were distributed to a selection of garment factory workers for the pilot test. They were picked selected randomly to answer the draft questions to find out whether they have any difficulty in answering the questions. Feedback from the respondents was recorded in order to make improvements on the questionnaire. Upon collection of the questionnaires, Stata was used in order to test the reliability of the questionnaires. The result of the pilot test was shown in the following table:

Table 3.1 Reliability of the questionnaire

Variables	Number of Items	Cronbach's Alpha
Neuroticism	8	0.825
Conscientiousness	9	0.773
Openness	10	0.838
Agreeableness	9	0.731
Extraversion	8	0.704
Gender	1	0.766

Training	1	0.855
Education	1	0.773
Experience	1	0.801
Age	1	0.685
Job Performance	1	0.714

Source: own review

The rule of thumb indicates that an alpha value greater than 0.7 is considered acceptable for a reliable questionnaire (Cronbach, 1951). As shown in Table 3.1 all but one of the variables tested have an alpha value above 0.7. Age has a lower alpha value of 0.685 but was deemed close enough to the 0.7 figure to proceed with this questionnaire design.

3.6 Validity of Questionnaires

McNabb (2002) further states that the second characteristic of scientific research, namely validity, implies that the research should be able to measure that which it is supposed to measure (Babbie & Mouton 2001). Validity is the strength of our conclusions, inferences or propositions. All reasonable measures were taken to ensure internal validity of the research. Leading questions were avoided and the wording of questions was made simple and unambiguous. Control questions were also added in order to determine whether respondents were contradicting themselves.

3.7 Limitations to the Study

This research study was successfully completed. However, the researcher was faced with a number of challenges among others:

- The study was initially aiming to gather data on multiple organizations. However, because of time limitations and privacy concerns from the organizations, the researcher was only able to gain access to one organization.

- In order to establish a direct correlation between personality and job performance the ideal time of experimentation would have been during the recruitment and selection process. This means that an experimental study would have been conducted by assessing the personality traits of potential employees and then hiring those that display desirable personality traits. Then the job performance of these employees would be compared to that of a control group, in order to check for a significant difference between the job performance of the two groups. Unfortunately, no organization was willing/able to participate in this kind of study.

- There may be observation bias present as the performance of employees was measured over a short period of time.

3.8 Data Analysis and Interpretation

Once the data collection has been completed, an in-depth analysis of the data is made by means of data filtering, mind mapping (which can also be used during the process of data collection with a view to eliminate irrelevant data), and the integration of the views of different authors. The results of the returned questionnaires were captured on Microsoft Excel and then exported to STATA for Ordinary Least Squares (OLS) analysis and interpretation. The results of this study are discussed in chapter four.

3.9 Variables

The following section will present the dependent variable, the independent variable and the control variables that were used in the regression model. Why each variable was included and how the variables were operationalized will be emphasized.

3.9.1 Dependent Variable

This study has one dependent variable, the job performance of garment factory workers. This was chosen as the dependent variable because of the importance of employee performance to the effectiveness of any organization (Robbins and Judge, 2013).

This variable was constructed from one item: the efficiency level of each employee. The day-to-day production of each employee is not calculated on an individual basis but rather as a production line. Fortunately, the company had conducted efficiency tests for each employee a month before the researcher requested data from the company. The efficiency of each employee is calculated using the Standard Minute Value (SMV). SMV is defined as the globally accepted time, in seconds, which is allowed to perform a job satisfactorily (How to calculate SMV, 2008). Since Company X is producing garments mainly for export, it is attempting to align its SMV with the global average. Company X calculates the efficiency of each production line worker as follows.

First Company X collects data on how long it takes each worker, in seconds, to complete their assigned tasks. Then this number is divided by the SMV for that task in order to determine the efficiency of each worker. For example, according to the company, an employee whose job it is to attach sleeves is expected to take 29 seconds to complete the task. This is the SMV for attaching sleeves. Thus, if an employee averages 45 seconds to attach sleeves throughout a shift then:

$$29/45 = 0.644$$

$$= 64.4\% \text{ efficiency}$$

Therefore, a percentage is calculated for each employee and is recorded in his or her file. This is the data that was used in this study to represent job performance.

A shift at the company consists of 8 hours with one 30 minute lunch break and two additional 15 minute breaks. This measure was chosen because the most important part of job performance in a garment factory is the speed at which quality items can be produced per shift. The measure chosen has quality built in inherently because the items that are

defective are sent back into the respective employee and will decrease his or her level of efficiency.

3.9.2 Independent Variables

In order to answer the research question of whether personality affects job performance, personality had to be taken as the independent variable. However, the most recognized way to test personality is through the Big Five personality traits: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (Barrick and Mount, 1993). Thus it was necessary to operationalize personality through the five individual traits with each trait as an individual variable. Each of the Big Five personality traits is measured on a five point Likert scale. To allow for an easier interpretation of the estimates, Big Five scores are standardized to have mean zero and standard deviation of one in all reported specifications.

Moreover, a number of studies on gender differences in personality traits (Costa Jr, Terracciano and McCrae 2001, Schmitt, Realo, Voracek and Allik 2008) indicate that women, on average, tend to be more agreeable and neurotic than men. Thus, if the relationship between personality and performance differs for men and women, gender may have a moderating effect on personality.

3.9.3 Control Variables

The study also included a total of six control variables. The first control variable is hours of training. The first construct measured the total hours of training the organization had given each production employee. According to HR records by the company there were variations in the number of days of training received by different employees. The training data was gathered from the records kept by the Human Resource (HR) department of the company.

The second control was education level. Respondents were asked in the questionnaire to tick their highest level of education. Education was measured on a five-point scale and is denominated as Education in the analysis.

The third control was years of experience. Experience is measured the total number of years of experience each employee has in the position they are currently in both at the company and at previous workplaces. Experience data for each employee in the sample set was gathered from HR records. The variable is denominated as Experience in the analysis.

The fourth control was gender. Respondents were asked in the questionnaire to tick either the male or female box depending on their gender. Gender was operationalized as a dummy variable where females were given the value "1" while males were given the value "0". The variable is denominated as Gender in the analysis.

The fifth control variable was age. Respondents were asked in the questionnaire to write down how many years old each respondent was at the time of the questionnaire. The variable is denominated as Age in the analysis.

3.9.4 Moderating Variable

In order to measure the moderating affects of gender on the relationship between personality and job performance, the dummy variable Gender was interacted with each of the Big Five personality traits in a multiple regression model. As it was done in Cubel et al (2014), this was done by multiplying each Big Five personality trait by Gender in the multiple regression equation.

3.10 Research Model

The following Ordinary Least Squares (OLS) specifications are estimated using the variables detailed in the previous section. Variables were added to the regression in a stepwise manner where Model 1 includes only the control variables. Model 2 includes control variables and the Big Five personality traits in order to evaluate the relationship between the Big Five personality traits and job performance (hypothesis 1). Model 3

includes interaction terms between the Big Five traits and Gender and is used to evaluate moderating affects of gender on the relationship between personality and job performance (hypothesis 2).

Model 1

$$Y = \alpha + \text{hours of training} + \text{age} + \text{gender} + \text{experience} + \text{education level} + \varepsilon_i$$

Model 2

$$Y = \alpha + \sum_{k=1}^{5} \beta_k \text{score}_{ki} + \text{hours of training} + \text{age} + \text{gender} + \text{experience} + \text{education level} + \varepsilon_i$$

where Y is the job performance measure, k = 1, …, 5 are each of the Big Five personality traits (extraversion, agreeableness, neuroticism, conscientiousness and openness to experience).

Model 3

$$Y = \alpha + \sum_{k=1}^{5} \beta_k \text{score}_{ki} + \text{extraversion*gender} + \text{agreeableness*gender} + \text{conscientiousness*gender} + \text{neuroticism*gender} + \text{openness* gender} + \text{hours of training} + \text{age} + \text{gender} + \text{experience} + \text{education level} + \varepsilon_i$$

where Y is the job performance measure, k = 1, …, 5 are each of the Big Five personality traits (extraversion, agreeableness, neuroticism, conscientiousness and openness to experience).

Chapter Four: Results

4.1 Introduction

This chapter presents the data gathered via the questionnaire and investigates whether there is a relationship between personality traits and job performance in an attempt to prove the formulated hypotheses. Additionally, it also investigates whether this relationship, if it exists, is heterogeneous across gender. First, preliminary tests will be utilized in order to examine if any variables should be excluded for the final constructs in the analysis. Second, the analysis will look at the predicting powers of the established constructs on the dependent variable using linear regression, and inspect if the established hypotheses in section 3.1 can be confirmed or disconfirmed.

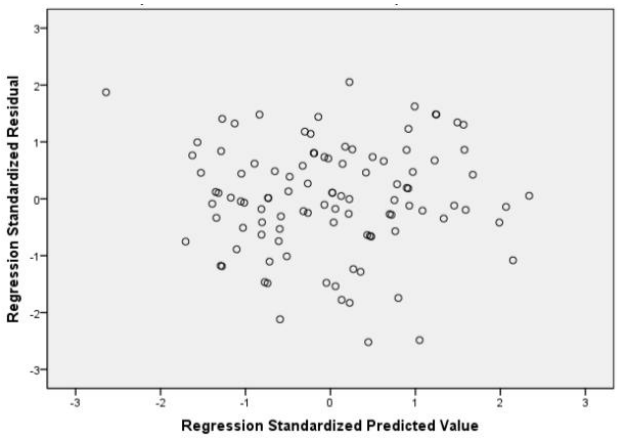
4.2 Preliminary Tests

Preliminary tests were carried out before regression analysis to test if the variables in the model were suited for a linear regression analysis (Ahmad et al., 2013). Before testing the hypotheses with the proposed model, it was important to check the linearity of the relationship between the dependent and independent variables. The researcher tested for non-linearity by analyzing a series of partial plots for each trait, and found no evidence of an alternative specification providing a better fit for the data. After linearity was established, the assumptions of the classic linear regression model had to be tested as well (Brooks, 2014). The assumption that the mean of the disturbance terms will always be zero if the regression has a constant term (Brooks, 2014) was automatically met as all the regressions have a constant term. The assumptions of homoscedasticity, normality, and multicolinearity, were checked and the results are presented below. Autocorrelation was not an issue because cross-sectional data was used.

4.2.1 Homoscedasticity

When using a regression model, it is assumed to have a constant variance of residuals which is known as homoscedasticity (Brooks, 2014). Thus, one has to check if this assumption is met. One way of doing this is to look at the plot in Figure 5.1, which is a scatterplot of standardized residuals against standardized predicted values. The graph should show a random array of dots that are evenly dispersed around zero. If, for example the graph funnels out, there are chances that there is heteroscedasticity in the sample (Greene, 2003). Also, if the graph plots any sort of curve, there are chances that the data have broken the assumption of linearity. In this case however, the graph in Figure 5.1 shows a random dispersion of residuals around zero, and one can conclude that the assumption of homoscedasticity has been met.

Figure 5.1 Homoscedasticity of Job Performance



Source: Own Analysis

4.2.3 Normality

A very important assumption in regression is that the dependent variable is normally distributed. Normality is used to describe a symmetrical, bell-shaped curve, which has the greatest frequency of scores around in the middle combined with smaller frequencies towards the extremes (Brooks, 2014).

One can conduct a simple test whether the frequency distribution of the variable deviates from a normal distribution. This can be done using the Kolmogorov-Smirnow test (Ahmad et al., 2013) and the Shapiro-Wilk test (Brooks, 2014). These tests compare the variable to a normally distributed set of scores with the same mean and standard deviation. If these tests are non-significant ($p > 0.05$), it tells that the distribution in the sample is not significantly different from a normal distribution (Brooks, 2014). As shown in Table 5.1 below, both normality tests are above p=0.05, which means that the variable does not deviate significantly from a normal distribution.

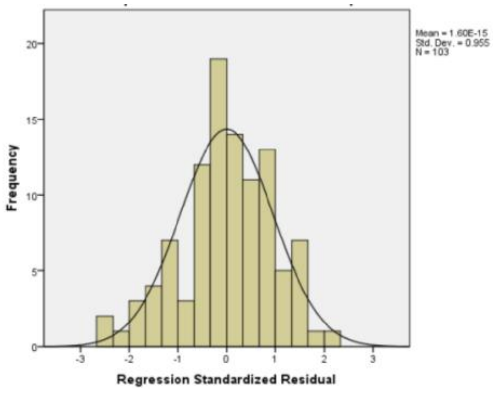
Table 5.1 Normality tests for job performance

N	Mean	Std.dev	Skewness	Shapiro-Wilk	Kolmogorov-Smirnow
138	45.010	13.461	-0.044	0.093	0.068

Source: Own Analysis

It is also necessary to check the normality of residuals. This can be done by looking at the histogram in Figure 5.2. One can see from the histogram that the distribution is rather normal. The mean is also very close to 0. The normality of the standardized residual was also tested, using the Kolmogorow-Smirnow test. This test strongly confirmed the hypotheses of normality ($p>0.250$).

Figure 4.2 Normality of Job Performance



Source: Own Analysis

4.2.4 Multicollinearity

Before engaging in regression analysis, it is necessary to inspect if there are excessive correlations between the variables in the model. The correlation matrix can be used as a tool to identify the presence of multicolinearity between any two variables (Wilcox, 2019). To avoid multicollinearity in the sample, there should be no substantial correlations ($R > 0.9$) between the predictors (Field, 2005). The correlation matrix in Table 4.2 (on next page) shows that there is multicollinearity between Experience and Age of 0.93 which is above the state threshold of 0.9. To remedy this problem age was dropped from the model.

Table 4.2 Correlation matrix of independent variables

Correlation Matrix	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness	Training	Education	Experience	Gender	Age
Extraversion	1.00**									
Agreeableness	.30**	1.00**								
Conscientiousness	-.18	.36*	1.00**							
Neuroticism	-.061	.41	.59*	1.00**						
Openness to Experience	.27**	.57**	.30	.19	1.00**					
Training	.12	-.27	.51*	-.07	.01	1.00**				
Education	.23	.62	.37*	.68*	.09	.57	1.00**			
Experience	.40	.39	.40	.44	.33	.15	.67	1.00**		
Gender	-.55	.69	.25	.29	-.13	.44	-.69	.50	1.00**	
Age	.49	.34	.65	.31	.58	-.03	.81	0.93**	-.12	1.00**

Standard errors are reported in parentheses. *** denotes significance at 1%, ** at 5% and * at 10%.

Source: Own Analysis

4.3 Summary Statistics

Table 4.3 below presents the summary statistics for the study sample. As shown in the table, 71.7% (n=99) of the employees who participated in the study are female while 28.3% (n=39) are male. On average, employees had completed their education up to the tenth grade and received an average of 9 days of onsite training. Additionally, the average employee has a little over 5 years of experience working in the garment industry. However, the relatively high standard deviation of 2.930 indicates that there is high variability in experience levels within the company as employees with less than three years of experience and those with almost 8 years of experience all fall within one standard deviation. Furthermore, it can be seen that the average employee is operating at an efficiency level of 45%.

Table 4.3: Summary statistics

Variable	Mean	St. Dev.	N
Female	.717	0.483	138
Training	9.081	1.144	138
Experience	5.10	2.930	138
Education	2.8	0.301	138
Extraversion	3.090	0.707	138
Agreeableness	3.699	0.519	138
Conscientiousness	3.372	0.620	138
Neuroticism	2.929	0.666	138
Openness	3.469	0.502	138
Job Performance	45.010	13.461	138

Source: Own Analysis

4.4 Multiple Regression Analysis

4.4.1 Baseline Results

The regression is split into two models in a stepwise manner. *Model 1* includes only the control variables, while *Model 2* includes the Big Five personality traits in addition to all the variables in Model 1. Table 4.4 below illustrates estimates of the effect of personality traits on job performance. The table displays the coefficients and standard errors (in brackets) of each predictor. Significant coefficients are marked with signs that are explained at the bottom of the table.

Table 4.4 Big Five personality traits and job performance (OLS)

Variables	**Model 1**	**Model 2**
Intercept	0.133**	0.138**
	(0.040)	(0.042)
Training	0.099*	0.097*
	(0.020)	(0.021)
Gender	-0.006	0.008
	(0.087)	(0.088)
Experience	0.120**	0.121**
	(0.039)	(0.039)
Education	0.115***	0.110***
	(0.083)	(0.082)
Extraversion		0.003
		(0.017)
Agreeableness		-0.026
		(0.017)
Conscientiousness		0.027**
		(0.016)
Neuroticism		-0.030**
		(0.015)
Openness		-0.019
		(0.016)
N	138	138
F-stat (Big Five)		2.710**
F-stat	1.699**	1.874**
R^2	0.571	0.694
R^2 adj.	0.520	0.679
ΔR^2		0.123
F-change		2.158**

Standard errors are reported in parentheses. *** denotes significance at 1%, ** at 5% and * at 10%.

Source: Own Analysis

In Model 1, the four control variables explained 0.520 percent of the variance after R^2 was adjusted. In Model 2, when the Big Five independent variables were included, the adjusted R^2 improved to 0.679 percent. The F-change statistic is significant at 5% indicating that Model 2 is significantly better at explaining the variation in Job performance than Model 1. The control variables Training, Experience and Education, as expected, turned out to show a positive, statistically significant influence on job performance in both models. Gender showed a negative influence on performance, but this control was not significant in any of the models.

4.4.2 Hypothesis 1

H1: The Big Five Personality traits affect job performance

Looking at Model 2, The Big Five personality traits are jointly significant, with an F-stat of 2.71 that is significant at 5%, and the individual scores are largely consistent with the hypotheses. Thus the hypothesis that the Big Five Personality traits affect job performance is confirmed.

H1a Neuroticism is negatively associated with Job performance

Model 2 indicates that Neuroticism, with a coefficient value of -0.030, is significant at 5%. This indicates that more neurotic subjects tend to perform significantly worse at their job: an increase of a standard deviation in the level of neuroticism is associated with a decrease in job performance of 3 percentage points. Thus, the results support the idea that neuroticism contributes to differences in job performance and hypothesis 1a is confirmed.

H1b Conscientiousness is positively associated with Job performance

The hypothesis regarding conscientiousness is also confirmed. There is a positive and significant, effect of conscientiousness on job performance, in line with results obtained in the literature. An increase of a standard deviation in the level of conscientiousness is correlated with an increase of 2.7 percentage points in job performance.

H1c Openness has a negative relationship with job performance

The coefficient of openness is, although insignificant, negative and of sizeable magnitude. The negative effect of openness on job performance was expected given the repetitive nature of the job, which can make the novelty of the job disappear quite rapidly.

H1d Agreeableness is negatively associated with job performance

Similarly to H1c, the coefficient of agreeableness is also, although insignificant, negative and of sizeable magnitude. The result on agreeableness is in line with the one found in the literature. In this setup, the negative coefficient on agreeableness suggests that more agreeable employees might worry in excess about performing well.

H1e Extraversion has a negative relationship with job performance.

Contrary to the literature there is no evidence that the level of extraversion of an individual may be correlated with job performance in this case as the coefficient for extraversion is not significant. Thus, the hypothesis regarding extraversion is not confirmed.

4.4.3 Hypothesis 2

H2: The effects of the Big Five traits on job performance are moderated by gender

As detailed in the literature review, there is some evidence that personality traits may be correlated with job performance differently by subsamples. In particular, the researcher is interested in whether individuals of different gender present differential effects of personality traits on productivity.

Table 4.5 below presents the moderating effects of gender of the relationship between personality and job performance. The baseline results from Model 2 are included for ease of comparison. Model 3 allows the effect of personality traits to vary between men and women by including an interaction term in the regression. Model 3 has a higher R^2 than model 2 and this difference is significant which indicates that moderating the effects of

personality on job performance by gender has added to the explanatory power of the regression.

Table 4.5: Big Five personality traits and productivity by gender (OLS)

Variables	**Model 2**	**Model 3**
Intercept	0.138**	0.140**
	(0.042)	(0.041)
Training	0.097*	0.094*
	(0.021)	(0.020)
Gender	0.008	0.015
	(0.088)	(0.096)
Experience	0.121**	0.119**
	(0.039)	(0.038)
Education	0.110**	0.111**
	(0.082)	(0.082)
Extraversion	0.003	0.044**
	(0.017)	(0.023)
Extraversion*Female		-0.079**
		(0.032)
Agreeableness	-0.026	-0.019
	(0.017)	(0.021)
Agreeableness*Female		-0.006
		(0.033)
Conscientiousness	0.027*	-0.005
	(0.016)	(0.021)
Conscientiousness*Female		0.033
		(0.027)
Neuroticism	-0.030**	-0.041**
	(0.015)	(0.019)
Neuroticism*Female		0.023

		(0.027)
Openness	-0.019	0.016
	(0.016)	(0.020)
Openness*Female		-0.074***
		(0.028)
N	138	138
F-stat	1.874**	2.517**
R^2	0.694	0.744
R^2 adj.	0.679	0.708
ΔR^2		0.050
F-change		3.188***

Standard errors are reported in parentheses. *** denotes significance at 1%, ** at 5% and * at 10%.
Source: Own Analysis

H2a The effect of neuroticism on job performance is moderated by gender.

Neuroticism remained significant in both Model 2 and Model 3, indicating that the job performance of both men and women is negatively impacted by an increase in neuroticism. However, when Neuroticism is interacted with Gender the variable is not significant at any level indicating that contrary to the hypothesis neuroticism is not moderated by gender.

H2b The effect of conscientiousness on job performance is not moderated by gender.

Conscientiousness was significant in model 2 but is not significant in model 3 when it is interacted with Gender. Thus, in accordance with the literature the hypothesis that the effect of conscientiousness on job performance is not moderated by gender is confirmed.

H2c The effect of openness on job performance is moderated by gender.

Openness became significant at 5% in model 3 while it was not significant in model 2.

Female employees who score highly in openness perform significantly worse (point estimate for women -0.058) than their male counterparts. There is no observed relationship between performance and openness in men. Thus, the relationship between openness and job performance is moderated by gender and the hypothesis is confirmed.

H2d The effect of agreeableness on job performance is not moderated by gender.

Agreeableness, which was not significant in model 2, remained not significant after being interacted with Gender in model 3. This indicates that the effect of agreeableness on job performance is not moderated by gender and the hypothesis is confirmed.

H2e The effect of extraversion on job performance is moderated by gender.

As shown in the table above, when the Big Five traits are interacted with Gender Extraversion becomes significant at 5%. Increases in the level of extraversion are positively correlated with job performance for men and negatively correlated for women. A rise of one standard deviation in extraversion increases productivity by 4 percentage points for men and decreases job performance by 3.5 (-0.079 + 0.044) percentage points for women. Thus, the relationship between extraversion and job performance is moderated by gender.

Chapter Five: Summary of Findings, Conclusions and Recommendations

5.1 Summary of Findings

The performance of employees has become a concern to HR managers given the damaging effect low productivity has on an organization. Low performing employees are costly to organizations and destructive to the attainment of organizational goals. The present study sought to identify whether personality traits affect the job performance of employees.

Hypothesis 1

As suggested in Hypothesis 1 this study finds a relationship between personality traits and job performance. More specifically, there is a negative correlation between neuroticism and performance (H1a), and some evidence supporting a positive correlation between conscientiousness and productivity (H1b). Similar effects are present in most of the studies on personality and job performance. Thus, these results support the hypothesis that at least there is an effect of neuroticism and conscientiousness on job performance. On the other hand, this study found only a very weak negative effect of openness to experience (H1c) and agreeableness (H1d) on performance. Similarly, there was no impact of extraversion on job performance (H1e). This suggests that the strong negative correlation between these traits and labour market outcomes observed in the literature is mostly driven by occupational choices, wage bargaining, or by cooperative behavior being penalized in the labour market rather than job performance.

Hypothesis 2

When looking at the moderating effects of gender on the relationship between personality and job performance there are noticeable heterogeneous effects. Increases in traits are correlated with productivity differently for men and women, even in this work environment, where the repetitive nature of the job can abstract from many factors affecting labour market relations.

More extroverted women, for instance, exhibit lower performance, while more extroverted men perform better than their less extroverted counterparts (H2e). The differential effect of extraversion by gender is in line with the results obtained by Heineck and Anger (2010) using survey data, who find a wage penalty of 4% for women and a wage premium of 3% for men. Similarly, Fletcher (2013) obtains a wage premium of extraversion for men. The extraversion factor includes facets that might be correlated with productivity differently, and that are differently salient in men and women. Costa Jr et al. (2001) report that men show larger scores in the facets of extraversion associated with ambition (assertiveness and activity) whereas women score higher in the facets associated with sociability (warmth, gregariousness and positive emotions). These two sets of aspects may have different effects on productivity.

Similarly, more open men are found to perform better that their female counterparts(H2c). Although there are no significant gender differences in the scores of openness in the literature, women score higher in items measuring how much individuals value artistic and aesthetic experiences and the sophistication of their taste in arts and literature (Cubel et al., 2014). Hence, more open women may find the repetitive nature of production work boring and uninteresting, leading them to produce less than more open men.

Interestingly, traits that vary in their distribution by gender (neuroticism, conscientiousness and agreeableness) (Nguyen, Allen and Fraccastoro (2005), Feingold (1994)) do not appear to impact differently male and female job performance (H2a, H2b, and H2d). However, other traits seem to affect productivity differentially by gender, namely extraversion and openness to experience.

5.2 Conclusions

Overall, this research indicates a relationship between personality traits and job performance that is congruent with the hypotheses theorized in previous chapters. It also affirms that gender can have a moderating effect on this relationship through specific traits,

namely, extraversion and openness. An increasing body of literature explores the relationship between personality traits and a wide variety of economic outcomes, such as educational attainment and labour income. Among these traits, the Big Five factor model has gained a seminal role. This research contributes to this literature by illustrating how the Big Five factors correlate with job performance in the context of a gender as a moderator. These results can have implications for the way personality assessments are interpreted. However, further research is needed to achieve a comprehensive understanding of the role played by specific personality traits in productivity particularly in the Ethiopian context. Additionally, this research also provides a basic reference for the company as well as other companies to build a selection tool that can make their hiring process more efficient and effective by taking personality traits as well as gender into consideration.

5.3 Limitations and Recommendations

As discussed in chapter 3, there are limitations to the methodology that was utilized in this study. The ideal method would have included a randomized control trial at the hiring stage. Consequently, while attempting to establish a causal relationship between personality traits and job performance, it is difficult to generalize the results to other contexts.

Another limitation is that the performance of employees at their job is also influenced by cognitive ability. Cognitive and non-cognitive abilities have been shown to interact with each other (Borghans et al. 2008). Therefore, these findings might be simply reflecting that individuals with higher cognitive abilities score higher in certain personality traits like openness and conscientiousness (Almlund et al. 2011). However, all the results shown are robust to including the best available control for cognitive ability, i.e., education level. While this coefficient is highly significant, the inclusion in all the specifications does not affect the coefficient or the precision of the estimates of interest, suggesting that the results do not only reflect differences in cognitive abilities. In order to fully control for the effects of cognitive abilities, a test of cognitive abilities can be administered concurrently to that of personality, as any policy intervention designed to affect non-cognitive skills requires a deeper understanding of their potential impact on productivity across different populations

and sectors.

The final limitation is that the consensus on the validity and usefulness of the Big Five factor model is not universal among psychologists (Almlund et al., 2011). While this study cannot contribute to this debate, it should be kept in mind. As with any branch of the literature of recent development, measures may be unsatisfactory, encompassing too much or too little information on the underlying characteristics that drive the relations reported.

5.4 Future Research Directions

- In order to overcome some limitations and make this study better suited for practical applications in the workplace, this study should be repeated with an experimental research methodology.
- Furthermore, this kind of research should be conducted in various sectors in Ethiopia and including all levels of employees in order to unearth generalizable results.
- Further research should also focus on learning more about the link between personality and job performance by looking inside each trait for the facets of personality relevant to their specific research question. This is especially pertinent when looking at the moderating effects of gender. Detailed examination of which facets of extraversion and openness are creating the gender differential would be invaluable to the field of study.

References

Ahmad, A. R., Idris, M. T. M., & Hashim, M. H. (2013). A study of flexible working hours and motivation. Asian Social Science, 9(3), 208.

Ahmadi, S. A. A., Jalilian, H., Salamzadeh, Y., Saeidpour, B., & Daraei, M. (2012). Intellectual capital and new product development performance in production firms: A case study of Kermanshah production firms. Global Business & Management Research, 4(1).

Almeda, J., Capistrano, T., and Sarte, G. (2010). *Elementary Statistics*. Quezon City: Up Press.

Almlund, M., Duckworth, A. L., Heckman, J., & Kautz, T. (2011). Personality psychology and economics. In Handbook of the Economics of Education (Vol. 4, pp. 1-181). Elsevier.

Atkinson, J. & Storey, D. (1994). *Small Firms and Employment, Employment in the Small Firm and the Labour Market*. London: Routledge.

Babbie, E., & Mouton, J. (2001). *The practice of social research*. Cape Town: Oxford University Press.

Barrick, M. R., and Mount, M. K (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*(1), 1-26.

Barrick, M. R., and Mount, M. K (1993). Autonomy as a moderator of the relationship between the Big Five personality dimensions and job performance. *Journal of Applied Psychology, 78*(1)*,* 111-118.

Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next? *Personality and Performance, 9*, 9-30.

Barrick, M. R., and Mount, M. K (2005). Yes, personality matters: Moving in to more important matters. *Human Performance, 18*(4), 359-372.

Bartram, D., and Brown, A. (2004). Online Testing Mode of Administration and the Stability of OPQ 32i Scores. *International Journal of Selection and Assessment*, *12*(3), 278-284.

Berg, A., Hedric, S. and Russo, B. (2015, August). East Africa: The next hub for apparel sourcing? McKinsey. Retrieved from http://www.mckinsey.com/industries/retail/our-insights/east-africa-the-next-hub-for-apparelsourcing.

Borghans, L., Duckworth, A., Heckman, J., and TerWeel, B. (2008). The economics and psychology of personality traits. *Journal of Human Resources, 43(4),* 972-1059.

Brooks, C. (2014). *Introductory econometrics for finance (3rd ed.)*. New York, NY:

Cambridge University Press.

Brooks, I. (2008). *Organizational behavior: individuals, groups and organization*. New York NY: Pearson Education.

Brunello, G., & Schlotter, M. (2011). Non-cognitive skills and personality traits: Labour market relevance and their development in education & training systems. Retrieved from http://ftp.iza.org/dp5743.pdf

Chapman B. P., Duberstein, P. R., Sorensen, S., & Lyness, J. M. (2007). Gender differences in five factor model personality traits in an elderly cohort: Extension of robust and surprising findings to an older generation. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/18836509

Cobb-Clark, D., and Schurer, S. (2012). The stability of Big Five personality traits. *Economics Letters, 115(1),* 11-15.

Cole, M. S., Field, H. S., Giles, W. F., and Harris, S. G. (2004). Job type and recruiters' inferences of applicant personality drawn from résumé biodata: Their relationships with hiring recommendations. *International Journal of Selection and Assessment, 12*(4), 363-367.

Costa, P., McCrae, R., and Jonsson, F. (2002). Validity and utility of the revised NEO personality inventory: Examples from Europe (pp. 61-77). In Raad, B and Perugini, M. (eds)., Big Five Assessment. Washington, D.C: Hogrefe & Huber Publishers.

Costa, P., Terracciano, A., and McCrae, R. (2001). Gender differences in personality traits across cultures: Robust and surprising findings. *Journal of Personality and Social Psychology, 81(2),* 322.

Cubel, M. Nuevo-Chiquero, A. Sanchez-Pages, S. Vidal-Fernandez, M. (2014). Do personality traits affect productivity? Evidence from the lab. *IZA*, 8308.

Digman, J. M., & Inouye, J. (1986). Further specification of the five robust factors of personality. *Journal of Personality and Social Psychology, 50*, 116-123.

Engler, B. (2013). *Personality theories*. New York NY: Cengage Learning.

Fasih, T. and Akhlaque, A. (2014). Ethiopia Skills for Competitiveness and Growth in the Manufacturing Sector. Washington DC: World Bank Group.

Feingold, A. (1994). Gender differences in personality: A meta-analysis. *Psychological Bulletin, 116*(3), 429-456.

Fletcher, J. (2013). The effects of personality traits on adult labor market outcomes: Evidence from siblings. *Journal of Economic Behavior & Organization, 89*, 122-135.

Gamage, A. S. (2014). Recruitment and selection practices in manufacturing SMEs in Japan:

An analysis of the link with business performance. *Ruhuna Journal of Management and Finance*, 1(1), 37-52.

Geiger, M.T., Moller, L.C. (2015). Fourth Ethiopia economic update: Overcoming constraints in the manufacturing sector. Washington, D.C: World Bank Group.

Goldberg, L. (1981). Language and individual differences: The search for universals in personality lexicons (pp. 141-165). In Wheeler, L. (Ed.), Review of Personality and Social Psychology, Vol. 2, Beverly Hills, CA: Sage.

Gosling, S. D., Rentfrow, P. J., & Swann Jr, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*(6), 504-528.

Greene, W. H. (2003). Econometric analysis. Pearson Education India.

Griffith, R. L., and McDaniel, M. (2006). *The nature of deception and applicant faking behavior.* In R. L. Griffith and M. H. Peterson (Ed.). A closer examination of applicant faking behavior (pp.1-19). Greenwich, CT: Information Age Publishing.

Guion, R. M., & Gottier, R. F. (1965). Validity of personality measures in personnel selection. *Personnel Psychology, 48*, 26-34.

Heineck, G., and Anger, S. (2010). The returns to cognitive abilities and personality traits in Germany. *Labour Economics, 17(3),* 535-546.

Hertzog, M. A. (2008). Considerations in determining sample size for pilot studies. Research in nursing & health, 31(2), 180-191.

Hintsanen, M., Hintsa, T., Widell, A., Kivimäki, A., Raitakari, O. T., and Keltkangas-Järvinen, L. (2011). Negative emotionality, activity, and sociability temperaments predicting long-term job strain and effort-reward imbalance: A 15-year prospective follow-up study. *Journal of Psychosomatic Research, 71*(2)*,* 90-96.

Hogan, R., & Roberts, B. W. (2001). Personality and industrial and organizational psychology. In B. W. Roberts & R. Hogan (Eds.), Personality psychology in the workplace (pp. 3–16). Washington, DC: American Psychological Association.

How to calculate SMV. (2008, June). Retrieved from https://textilemerchandising.com/how-calculate-smv/

Jex, S. M. & Britt, T. W. (2008). *Organizational psychology: A scientist-practitioner approach (2nd ed.).* Hoboken, NJ: Wiley.

John, O., Donahue, E., and Kentle, R. (1991). The big five inventory - versions 4a and 54."

John, O., Naumann, L., and Soto, C. (2008). Paradigm shift to the integrative big five trait taxonomy (pp114-158). In Oliver P John, Richard W Robins, and Lawrence Pervin

eds. Handbook of Personality: Theory and Research, Vol. 3. New York, NY: Guilford Press.

Judge, T. A., Higgins, C. A., Thoresen, C. J., and Barrick, M. R. (1999). The Big Five personality traits, general mental ability and career success across the life span. *Personnel Psychology, 52*(3)*,* 621-652.

Judge, T. A., Klinger, R., Simon, L. S., & Yang, I. W. F. (2008). The contributions of personality to organizational behavior and psychology: Findings, criticisms, and future research directions. *Social and Personality Psychology Compass, 2*, 1982–2000.

Judge, T.A., Thoresen, C.J., Bono, J.E., and Patton, G.K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127*(3)*,* 376-407.

Kanfer, R. (1990). Motivation theory and industrial and organizational psychology. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (pp. 75–170). Palo Alto, CA: Consulting Psychologists Press.

Kazdin A. (2000). *Encyclopedia of psychology*. New York, NY: Oxford University Press.

Kumar, V., Pansari, A. (2015). Measuring the Benefits of Employee Engagement. *MIT Sloan Management Review. 56(4),* 67-72.

Levashina, J., Morgeson, F. P., and Campion M. A. (2009). They don´t do it often, but they do it well: Exploring the relationship between applicant mental abilities and faking. *International Journal of Selection and Assessment, 17*(3)*,* 271-281.

Manpower Services Commission. (1981). Glossary of Training Terms, London: HMSO.

Martins, P. (2010). Can targeted, non-cognitive skills programs improve achievement? Evidence from EPIS. *IZA Discussion Paper No. 5266.*

McCrae, R. R., & Costa, P. T., Jr. (1999). A Five-Factor Theory of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 139 –153). New York: Guilford Press.

McCrae, R. R., and Terracciano, A. (2005). Universal features of personality traits from the observer's perspective: Data from 50 cultures. *Journal of Personality and Social Psychology, 88(3)*, 547-540.

McNabb, DE. (2002). *Research methods in public administration and non-profit organisations: quantitative and qualitative approaches*. Armonk, NY: Sharpe.

Motowildlo, S. J. (2003). *Job Performance*. In Borman, W. C., & Ilgen, D. R, & Klimoski, R. J. (Ed). Handbook of psychology pp. 39-54. Hoboken, NJ: John Wiley & Sons. Inc.

Mueller, G. and Plug, E. (2006). Estimating the effect of personality on male and female

Earnings. *Industrial and Labor Relations Review*, *60(1),* 3-22.

Muller, J., and Schwieren, C. (2012). Can personality explain what is underlying women's unwillingness to compete? *Journal of Economic Psychology, 33(3),* 448-460.

Moutafi, J., Furnham, A., & Crump, J. (2003). Demographic and personality predictors of intelligence: A study using the NEO personality inventory and the Myers–Briggs type indicator. European Journal of Personality, 17(1), 79-94.

Ng, T. W., & Feldman, D. C. (2008). The Relationship of age to ten dimensions of job performance. *Journal of Applied Psychology, 93*(2), 392-423.

Nguyen, N. T., Allen, L. C., & Fraccastoro, K. (2005). Personality predicts academic performance: Exploring the moderating role of gender. *Journal of Higher Education Policy and Management, 27*(1).

Nye, C. D., Do, B., Drasdow, F., and Fine, S. (2008). Two-Step Testing in Employee Selection: Is score inflation a problem? *International Journal of Selection and Assessment, 16*(2), 112-120.

O´Neill, T. A., and Allen, N. J. (2011). Personality and the prediction of team performance. *European Journal of Personality, 25*(1)*,* 31-42.

Peltokorpi, V., and Froese, F. J. (2012). The impact of expatriate personality traits on cross-cultural adjustment: A study with expatriates in Japan. *International Business Review, 21*(4), 734-746.

Perry, S. J., Hunter, E. M., Witt, L. A., and Harris, K. J. (2010). P= *f* (conscientiousness x ability): Examining the facets of conscientiousness. *Human Performance, 23*(4)*,* 343-360.

Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of Research in Personality, 41*(1), 203-212.

Robbins, S. P., & Judge, T. (2013). *Organizational behavior (15th ed.)*. Boston, MA: Pearson.

Roberts, B., Walton, K., and Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: a meta-analysis of longitudinal studies. *Psychological Bulletin, 132(1),* 13-16.

Rothstein, M., and Goffin, R. (2006). The use of personality measures in personnel selection: What does current research support? *Human Resource Management Review, 16*(2), 155-180.

Salgado, J. F. (1997). The five factor model of personality and job performance in the European Community. *Journal of Applied Psychology*, *82*, 30-43.

Saucier, G. and Goldberg, L. (2002). Assessing the Big Five: Applications of 10 psychometric criteria to the development of marker scales. (pp. 29-58). In Raad, B and Perugini, M. (eds)., Big Five Assessment. Washington, D.C: Hogrefe & Huber Publishers.

Schmitt, D., Realo, A., Voracek, M., and Allik, J. (2008). Why can't a man be more like a woman? Sex differences in Big Five personality traits across 55 cultures. *Journal of Personality and Social Psychology, 94(1),* 168.

Seibert, S.E., and Kraimer, M.L. (2001). The five factor model of personality and career success. *Journal of Vocational Behavior, 58*(1), 1-21.

Soto, C.J., Gosling, S.D., John, O.P., & Potter, J. (2011). Age differences in personality traits from 10 to 65: Big Five domains and facets in a large cross-sectional sample. *Journal of Personality and Social Psychology, 100 (2),* 330-348.

Srivastava, S, John, O., Gosling, S., and Potter, J. (2003). Development of personality in early and middle adulthood: Set like plaster or persistent change? *Journal of Personality and Social Psychology, 84(5),* 1041-1045.

Stajkovic, A., and Luthans, F. (1997). A meta-analysis of the effects of organizational behavior modification on task performance. *Academy of Management Journal, 40(5),* 1122–1149.

Stankov, L. (2005). *G factor: Issues of design and interpretation*. In Oliver Wilhelm and Randall W. Engle (Ed.) Handbook of understanding and measuring intelligence, vol. 279. Thousand Oaks, CA: SAGE Publications.

Sternberg, R., and Ruzgis, P. (1994). *Personality and intelligence*. Cambridge: Cambridge University Press.

Sturman, M. C. (2003). Searching for the inverted u-shaped relationship between time and performance: Meta-analyses of the experience/performance, tenure/performance, and age/performance relationships. Retrieved from https://scholarship.sha.cornell.edu/articles/119/

Templer, K.J. (2012). Five-Factor model of personality and job satisfaction: The importance of agreeableness in a tight and collectivistic Asian society. *Applied Psychology: An International Review, 61* (1), 114-129.

Teracciano, A., McCrae, R.R., Brant, L.J., & Costa, P.T. Jr. (2005). Hierarchical linear modelling analyses of the NEO-PI-R scale in the Baltimore longitudinal study of aging. *Psychology and Aging, 20*, 493-506.

Tett, R. P., Jackson, D. N., & Rothstein, M. (1991). Personality measures as predictors of job performance: A meta-analytic review. *Personnel Psychology*, *44*, 703-742.

Teixeira, A. (2002). On the link between human capital and firm performance; A theoretical and empirical survey. *FEP Working Paper no. 121*, 1-38.

Wilcox, R. R. (2019). Multicolinearity and ridge regression: results on type I errors, power and heteroscedasticity. Journal of Applied Statistics, 46(5), 946-957.

Wright, E., Domagalski, T., and Collins, R. (2011). Improving employee selection with a revised résumé format. *Business Communication Quarterly, 74*(3), 272-286.

Appendix 1: Questionnaire

Code _____

Big Five Personality Test

Thank you for taking the time to respond to this survey. Please answer the questions as honestly as possible. Do not write your name on the questionnaire. Your answers will not be shared with the upper management of the company. If you have any questions/concerns please talk to the researcher.

Please make sure to complete all three pages of the questionnaire.

Section A

1. Please write your age _____

2. What is your Gender? Circle one F / M

3. What is the highest level of education you have completed? Tick one box.

- ☐ Less than 10th grade
- ☐ Finished 10th grade
- ☐ High school diploma
- ☐ Some college
- ☐ TVET diploma

Please turn over

Section B

The Big Five Inventory (BFI)

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree Strongly
1	2	3	4	5

I see Myself as Someone Who...

____1. Is talkative

____2. Tends to find fault with others

____3. Does a thorough job

____4. Is depressed, blue

____5. Is original, comes up with new ideas

____6. Is reserved

____7. Is helpful and unselfish with others

____8. Can be somewhat careless

____9. Is relaxed, handles stress well

____10. Is curious about many different things

____11. Is full of energy

____12. Starts quarrels with others

____13. Is a reliable worker

____14. Can be tense

____15. Is ingenious, a deep thinker

____23. Tends to be lazy

____24. Is emotionally stable, not easily upset

____25. Is inventive

____26. Has an assertive personality

____27. Can be cold and aloof

____28. Perseveres until the task is finished

____29. Can be moody

____30. Values artistic, aesthetic experiences

____31. Is sometimes shy, inhibited

____32. Is considerate and kind to almost everyone

____33. Does things efficiently

____34. Remains calm in tense situations

____35. Prefers work that is routine

____36. Is outgoing, sociable

____37. Is sometimes rude to others

____16. Generates a lot of enthusiasm

____17. Has a forgiving nature

____18. Tends to be disorganized

____19. Worries a lot

____20. Has an active imagination

____21. Tends to be quiet

____22. Is generally trusting

____38. Makes plans and follows through with them

____39. Gets nervous easily

____40. Likes to reflect, play with ideas

____41. Has few artistic interests

____42. Likes to cooperate with others

____43. Is easily distracted

____44. Is sophisticated in art, music, or literature

Appendix 2: Job Performance Data

Employee code	Efficiency Rate
E001	44.36
E002	35.29
E003	45.03
E004	46.29
E005	59.89
E006	19.96
E007	36.3
E008	32.42
E009	39.09
E010	54.51
E011	21.14
E012	47.14
E013	21.75
E014	41.49
E015	44.42
E016	31.9
E017	58.59
E018	31.61
E019	68.19
E020	43.19
E021	28.8
E022	54.8
E023	39.65
E024	54.23
E025	58.32
E026	49.51
E027	42.43
E028	36.51
E029	55.61
E030	49.19
E031	45.04
E032	41.58
E033	46.03
E034	41.55
E035	39.36
E036	39.97
E03	42.8
E038	38.49
E039	45.42
E040	21.82
E041	50.56
E042	41.48
E043	64.26
E044	45.51
E045	36.23
E046	29.11
E047	41.43
E048	38.96
E049	41.11

E050	19.19
E051	50.47
E052	46.42
E053	47.35
E054	56.83
E055	46.79
E056	42.09
E057	31.66
E058	50.98
E059	39.23
E060	40.03
E061	48.82
E062	61.43
E063	38.81
E064	48.7
E065	39.97
E066	69.44
E067	57.84
E068	63.06
E069	31.17
E070	61.21
E071	51.5
E072	29.99
E073	37.12
E074	42.29
E075	38.86
E076	35.37

E077	52.96
E078	52.51
E079	32.72
E080	52.68
E081	43.33
E082	58.43
E083	38.57
E084	66.5
E085	42.68
E086	40.67
E087	52.87
E088	41.23
E089	47.69
E090	38.75
E091	38.64
E092	46.97
E093	73.05
E094	65.75
E095	54.99
E096	54.86
E097	54.06
E098	59.99
E099	27.68
E100	78.23
E101	56.09
E102	52.61
E103	38.24

E104	62.63
E105	67.85
E106	29.7
E107	22.21
E108	52.67
E109	41.5
E110	51.47
E111	39.45
E112	23.66
E113	47.36
E114	51.05
E115	38.66
E116	54.89
E117	26.02
E118	58.04
E119	51.2
E120	23.98
E121	40.81
E122	44.26
E123	41.84
E124	59.19
E125	56.08
E126	46.35
E127	41.15
E128	53.67
E129	38.41
E130	65.93

E131	65.76
E132	43.4
E133	29.24
E134	63.81
E135	30.96
E136	45.68
E137	38.64
E138	48.62
E139	45.89
E140	77.27
E141	37.14
E142	54.15
E143	45.57
E144	68.01
E145	42.16
E146	30.44
E147	55.02
E148	34.87
E149	24.3
E150	63.67
E151	29.85
E152	41.27
E153	26.96
E154	41.9
E155	63.94
E156	24.8
E157	54.63