Use of Psychometric Tests in The Process Of Recruitment in Human Resource Management

Author: *Minhaaj Rehman*

Supervisor: *Kifle Mariam Hamde*

Student
Umeå School of Business and Economics
Autumn semester 2012
Master thesis, two-year, 30 hp

Table of Contents

1. INTRODUCTION 1

1.1 Background of the study 1
1.2 Problem Definition and Research Question 3
1.3 Thesis Purpose and Significance 6
1.4 Delimitation and Scope of the Study 6
1.5 Outline of the thesis 7

2. RESEARCH AND METHODOLOGY FRAMEWORK 8

2.1 Choice of Subject 8
2.2 Researchers Preconceptions 8
2.3 Philosophy of Science 9
2.4 Scientific Approach Adopted 12
2.5 Nature of the Study 13
2.6 Research Strategy 14
2.7 Research Design 14
2.8 Sampling Techniques 15
2.8.1 Choice of Companies 16
2.8.2 Choice of Individuals 16
2.9 Size of Research Sample 17
2.10 Data collection 18
2.10.1 Primary/Secondary Sources 18
2.10.2 Semi-structured Interview 19
2.10.3 Triangulation 19
2.10.4 Interview Guide 19
2.10.5 Data organizing 20
2.10.6 Data Analysis 20
2.10.7 Ethical Considerations 23
2.10.8 Description of the Research Process. 24
2.11 Summary of the Research and Theoretical Framework 25

3. THEORY OF PSYCHOMETRICS 26

3.1 Myer-Briggs Type Inventory 29
Introversion 32
Extraversion 32
Sensing 32

INTUITIVE 33
THINKING 33
FEELING 34
PERCEIVING 34
JUDGMENTAL 34
3.1.2 ISTJ - INTROVERT, SENSING, THINKING AND JUDGMENTAL 35
3.1.3 ISTP - INTROVERT, SENSING, THINKING AND PERCEPTUAL 36
3.1.4 ESTP - EXTROVERT, SENSING, THINKING AND PERCEPTUAL 37
3.1.5 ESTJ - EXTROVERT, SENSING, THINKING, AND JUDGMENTAL 38
3.1.6 ISFJ - INTROVERT, SENSING, FEELING AND JUDGMENTAL 38
3.1.7 ISFP - INTROVERT, SENSING, FEELING, AND PERCEPTUAL 39
3.1.8 ESFP - EXTROVERT, SENSING, FEELING AND PERCEPTUAL 40
3.1.9 ESFJ - EXTROVERT, SENSING, FEELING AND JUDGING 40
3.1.10 INFJ - INTROVERT, INTUITIVE, FEELING AND JUDGMENTAL 41
3.1.11 INFP - INTROVERT, INTUITIVE, FEELING AND PERCEPTUAL 42
3.1.12 ENFP - EXTROVERT, INTUITIVE, FEELING AND PERCEPTUAL 43
3.1.13 ENFJ - EXTROVERT, INTUITIVE, FEELING AND JUDGMENTAL 43
3.1.14 INTJ - INTROVERT, INTUITIVE, THINKING AND JUDGMENTAL 44
3.1.15 INTP - INTROVERT, INTUITIVE, THINKING AND PERCEPTUAL 45
3.1.16 ENTP - EXTROVERT, INTUITION, THINKING AND PERCEPTUAL 45
3.1.17 ENTJ - EXTROVERT, INTUITIVE, THINKING AND JUDGMENTAL 46
3.2 KEIRSEY TEMPERAMENT SORTER 47
3.2.1 FOUR GROUPS OF KEIRSEY TEMPERAMENT SORTER 48
3.2.2 WORD USAGE OF DIFFERENT GROUPS 52
3.2.3 LOGISTICS, TACTICS, STRATEGY AND DIPLOMACY 52
3.2.4 SUMMARY OF THEORETICAL FRAMEWORK 53

4. EMPIRICAL FINDINGS 54

4.1 ASSESSIO 54
4.1.1 CLIENT NEEDS 56
4.1.2 RECRUITMENT 56
4.1.3 TOUCHSTONES FOR EFFECTIVENESS 57
4.1.4 TYPE RELEVANCY FOR JOB PERFORMANCE 58
4.1.5 PSYCHOMETRICS AS DECISIVE FACTOR 58
4.1.6 CONCLUDING REMARKS 59
4.2 CAPT – CENTER FOR APPLICATIONS OF PSYCHOLOGICAL TYPES 59
4.2.1 RECRUITMENT 60
4.2.2 BENEFITS OF MBTI 60
4.2.3 TYPE RELEVANCE WITH JOB PERFORMANCE 60
4.2.4 WEAKNESSES IN THE TEST 61

4.2.5 Concluding Remarks 62

5 ANALYSIS OF EMPIRICAL FINDINGS 63

5.1 Assessio 63
5.1.1 Client needs 63
5.1.2 Recruitment 65
5.1.3 Touchstones for effectiveness 66
5.1.4 Type relevancy for job performance 67
5.1.5 Psychometrics as decisive factor 68
5.2 CAPT – Centre for Applications of Psychological Types 69
5.2.1 Recruitment 70
5.2.2 Benefits of MBTI 71
5.2.3 Type Relevance with Job Performance 71
5.2.4 Weaknesses in the Test 72

6 CROSS-CASE ANALYSIS 73

6.1 Assessio and CAPT 73
6.2 Aftermath of the two approaches to psychometrics 74

7 CONCLUDING IDEAS 75

7.1 Conclusion 75
7.2 Contributions 76
7.2.1 Theoretical contributions 76
7.2.2 Practical and Managerial contributions 77
7.3 Recommendations for future research 78

8 RESEARCH TRUSTWORTHINESS 79

8.1 Introduction 79
8.1.1 Credibility of the study 79
8.1.2 Transferability Issues 80
8.1.3 Dependability 80
8.1.4 Confirmability 80

REFERENCES: 81

List of Figures 87

LIST OF TABLES **88**
APPENDIX I **89**
APPENDIX II **90**

Acknowledgment

I would like to graciously acknowledge the inputs of several people during the process of research and writing of the thesis. I would like to begin with the most important of them all, Dr. Kifle Mariam Hamde for both his patience and guidance throughout the vicissitudes of research. Without his scholarly inputs and constructive criticisms this research would never have been completed. Respondents who chose to be part of this study have been very kind to me and I would like to thank them for their precious insights and encouragement. This gratitude extends to their organizations and everyone who made it possible to arrange interviews.

At large I am thankful to Umeå University for the years I have studied here for the resources and for the opportunities I have been able to avail through its existence. I have made wonderful friends, found tutelage of erudite professors and have learned things that have shaped a part of me. Even the non-academic personnel, librarians, student office administrators, student counselors and janitors have contributed to what I would take with me from here. There are some people that I would like to mention by name for their indirect contributions which made it possible for me to complete this project. I am utterly thankful to Ishrat Awan, Ferdinand Geib, Shujaat Samandar, Najeeb Rehman, Afraz Shabbir, Shovon Chowdhury, Arsalan Amin, Qamar Masood, Farhan Iqbal, Awais Ahsan, Ali Moaz, Aaron Swartz and Linnea Johansson for their unwavering support at times when I needed it most.

Finally I would like to dedicate this research to my late mother who has always been present without her corporeal existence through her teachings. Thanks for the hope, belief and prayers that you instilled in me.

Minhaaj Rehman

Abstract

With industrial revolution, the structure of today's organization has changed and it calls for dynamic changes in processes. Highly specialized workforce and skilled nature of work has put increased demands on finding appropriate talent. Finding suitable candidates have always been one of the challenges for employers and many different approaches have been taken to attract, screen, train and retain skillful employees. One of the recent developments in recruitment of qualified candidates is psychometrics. Psychological testing systems identify desired qualities and try to screen candidates through psychometric tests. Such testing systems have existed for centuries in various forms and have been used with various degrees of success.

Literature on the use of psychometrics for recruitment has been scarce at its best and fails to address major developments in the field. Current study is aimed to add to the body of literature focusing on the applications of psychometrics in recruitment. A particular emphasis is put on the construction of psychometrics and its correlation with job performance predictability. Through an extensive literature review it is found that study of such a nature has not done previously. Study is executed by adopting qualitative research method, using a semi-structured, open-ended questionnaire interviewing three highly specialized psychometric professionals in two companies across two continents. The findings are subsequently examined using grounded theory.

Categories were earmarked with relevant coding, helpful in the analysis of interview records. It has been concluded that psychometrics as a field has huge potential and its performance in recruitment spheres is promising. Its mainstream adoption however is a gradual process and its theoretical assumptions and practical demonstrations are areas that need much research before it can be relied on as independent recruitment tool. Moreover in its present form it can be used as a recruitment aid at its best and using it as an autonomous and decisive instrument is discouraged.

Keywords: Psychometrics, Recruitment, Human Resource Management, MBTI, Type Inventory, Job Performance.

1. Introduction

"Haste still pays haste, and leisure answers leisure, like doth quite like, and Measure still for Measure"

Shakespeare, Measure for Measure, Act 5, Scene 1

The idea of study is inspired by the human resource management domain and its processes of planning, organizing, leading and coordinating. The purpose of study is to analyze the tools used for hiring of personnel. In this chapter numerous rubrics aiding in the processes of screening to hiring will be discussed and the goal is to highlight the background and purpose of the study. At the end of the chapter, there is an outline for the coming chapters to give a comprehensible overview of the research.

1.1 Background of the study

Historically human resource management and its sub-functions can be traced back to industrial revolution starting from 1750 (Ashton, 1997, p64). It can also be argued that invention of the wheel in itself implied a change in future of industries and hence need for careful recruitment of skillful people (Drucker, 1974). Need for identifying the talent in available markets, attracting their attention, screening the right candidate and training them had been vital functions of HR that can be traced to early of times. Construction of better roads, highways and canals has given boast to trades and subsequently to the influx of population from countryside to cities and industrial hubs. World in general has moved from more agriculture-based economies to machine-based manufacturing. Electric power generation gave further momentum to industrialization processes and required more work-force specialization than ever. Along the road human right movements, workplace rights and environmental issues helped develop what we now know as fundamentals of human resource management (Drucker, 1974). That term broadly includes industrial and labor relations, inclusion and diversity questions. Introduction of acts like OSHA (Occupational Safety and Healthy Act) in 1970 have been the milestones in Labor relations and workplace safety.

Even before the industrialization, project management and human resource management had existed in the beginning of times. Wonders like Egyptian pyramids, the Colosseum and Transcontinental Railroad have been a fascinating example of human resource management (Kozak-Holland, 2011). To be able to execute projects of such huge magnitude human capital identification was a basic component of project management.

The functions of contemporary HR functions were loosely followed in those gigantic projects also. Different authors have contributed to the literature emphasizing on the importance of Human Resource functions in organizations. Peter Drucker has laid down the founding basis of both management and its human capital sub-category (Wartzman, 2011). Frederick Taylor's lean manufacturing drew attention to the need of skillful employees and retaining them. Taylorism was one of the first theories that lead to workforce productivity theories leading to increased focus on human capital management (Waring, 1991b). Taylor, also known as father of scientific management was first to state the differences in productivity and efficiency of different workers based on intelligence, talents and skills. He further used the studies on time and motion to suggest that scientifically a process can be broken into its basic sub-steps and one best way of performing a task can be designed (1991a).

A way in which minimal effort and time is consumed with maximal efficiency and productivity. Hawthorne studies conducted by Elton Mayo beginning in 1924 added further to the body of knowledge in human resource domain (Sonnenfield, 1985). Test was conducted on two groups of workers working in separate rooms studied over the period of 5 years through change of rules in the workplace. Changes consisted of 5-minute breaks, early end of the day and meal break variations. The effects were highly variable and an explanation of the data was crucial in understanding the changes in workplace that are still being used in books of organizational behavior. Maslow's hierarchy sketched out a layout for basic human needs and its relevance to work environment (Maslow et al., 1970). Maslow suggested a pyramid of human needs that affects their motivation and performance in workplace. Bottom level consists of basic physiological needs like breath, food, water, homeostasis and excretion. Next level is known as safety needs to feel secure, employed, morally responsible, family oriented and healthy. Love and belonging is a higher level need that relates to the health of friendships, family and intimacy.

Esteem part comprises of confidence, achievement, respect for others and self-esteem. Highest level, on the pyramid is the self-actualization which deals with the ideological questions like morality, acceptance of facts, creativity and spontaneity. Kurt Lewin introduced a 3 stage change model further adding to the literature (Weick&Quinn, 1999, p424). The process by which an organizational change can be introduced in a workplace is categorized in three essential stages by Lewin. First stage is unfreezing, which denotes the bypassing of 'status quo' and current mindset to introduce openness towards change. Second change is to introduce the planned change systematically and final stage is 'freezing' when the introduced change becomes status quo.

Max Weber was the first one to broaden the scope of the discussion and relating it to its political and class origins and put forward three-component theory of stratification (Weber&Parsons, 1964). Social class, social status and political party in his opinion were determining factors for human lives, equally impacting their work lives and opportunities. Frederick Herzberg states job satisfaction and job dissatisfaction a function of motivational and hygienic factors at work which are intrinsic and extrinsic respectively (Nelson&Quick, 2009, p160).

Need of achievement, power and affiliation are some needs that have to be met in order for a person to be satisfied at his workplace according to Need theory of David McClelland (McClelland, 1985). It can thereby be construed from the literature above that the need for human resource management as a discipline itself is inevitable. The need for executing all stages of recruitment satisfactorily results in effective performance and achieved goals.

1.2 Problem Definition and Research Question

Human Resource Management has been broken down by academics into its essential components and functions namely candidate attraction, selection, training, assessment, feedback, rewarding of employees and appraisals (Armstrong, 1999). It plays a critical role in organizational leadership and corporate culture. The job of complying with the regulatory laws about employment and labor is also performed by the Human Resource departments in organizations. To be able to perform these jobs accurately, professionals in these departments undergo rigorous personal and technological training learning tools like HRIS (Human Resource Information Software) and account software to ensure smooth functionality (HRFocus, 2009). Our focus on will be to analyze the tools used for recruitment.

Recruitment is a broader category that comprises of sub-functions as attraction, selection, training, and retention of appropriate candidates (Jackson&Spo, 2010). The screening process to identify eligible candidates for further stages includes several tests based on job description to assess the mental aptitude of candidates. Numerous tests have been used depending on different contexts. One of the approach taken towards screening through specifically developed tests is psychometrics (Van der Merwe, 2002). It is a field of study that deals with the theory and practice of psychological measurement of knowledge, attitudes, abilities, personality traits and skills. This end is met through construction and validation of measurement techniques like questionnaires, personality assessments and tests (Groenen&Andries van der Ark, 2006). It has been argued vehemently by human resource professionals that the need for predicting the behavior of an employee through the use of psychological instruments is of absolute importance.

This not only serves the purpose of career planning but also justifies the costs of recruitment and training. Edenborough (2005, p5) considers improvement of accuracy, employee retention, avoiding financial and personal costs, optimization of personal performance through personal developmental programs, and matching of organizational opportunities to individual aspirations as benefits of using psychometric evaluations. He agrees amiably to the criticism of psychometric tests however by stating that the causality part of the competence must be linked to relevant behavior (McCrae&Costa, 1989, p11).

For example he argues that academic qualifications might be one of the variables in causal chain to grasp the complexity and learn new facts at workplace, which can have positive effect on assessment scores but might not be relevant to job description (1989, p11). Moreover it should not be used solely without the help of other recruitment criteria (Coe, 1992).

Initial stage consists of construction of instruments and procedures for assessment and finally development and refinement of theoretical approaches to that assessment (Groth-Marnat, 2003). Professionals who conduct these tests are called psychometricians and have educational background in psychology, human resources and education (Campion et al., 1993). Psychometric tests have been spoken for and against historically by numerous authors. Testing systems are not new and can be dated back 4000 ago when Chinese had established testing services for civil service recruitment (Kaplan&Saccuzzo, 2008). Similar instances can be traced in near past when British introduced testing systems in all its colonies for civil service. France and Germany also have rigorous testing systems in place. Civil service commissions are authorities known for conducting these tests and can be found in India, Pakistan and United States among others. Sir Francis Galton is considered to be the father of the psychometrics based on his work on human survival and his magnus opus 'Hereditary Genius' (Galton, 1869).

Even though majority of these tests were designed to gauge human intelligence, these tests have now been extended in many disciplines. Galton's work on anthropometry and Herbart's work on mathematical models to understand human consciousness are some of the breaking points which lead to research into psychometrics used for other purposes than measurement of intelligence (Kaplan&Saccuzzo, 2008). Georg Rasch contributed significantly to this domain introducing the Rasch test to measure abilities, personality traits and attitudes (Andrich, 1988). Item response theory was his phenomenal work which today is used in conducting tests like Graduate Record Examination and Graduate Management Aptitude Test, perceived by many as relatively harder than school examinations (Chih-Ming et al., 2005). Trait theory is also one of the notable works on human personality trait assessment and its repercussions (Pervin, 1994).

These tests are based upon the principle of progressive difficulty of the questions with each right answer. It is opposed to the theory of classical testing which is based on the answers of an examinee (Chih-Ming et al., 2005). One of the earliest attempts to use psychometrics for intelligence testing is done by Alfred Binet, a French psychologist who started working on 'mental retardation' in French schools. His work was further developed by Lewis Terman in Stanford university which is now in its fifth version known as SB5 (DiStefano&Dombrowski, 2006). One of the most used and standardized test in psychometrics is Minnesota Multiphasic Personality Inventory used for gauging mental health and well-being a subject (Groth-Marnat, 2003, p233). Tests have been widely acclaimed and are used to issue Secret and Top Secret security clearances in departments like US Department of Defense, Central Intelligence Agency and Federal Aviation Administration.

Another approach to human personality description is the Big Five Personality traits. These traits are namely Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism.

An appropriate measurement of these traits can be helpful in personality match with the job description (Barrick&Mount, 1991). All factors are given a percentage based on the choice of respondents and then a summary of skills, attitudes and description of personality can be made based on the responses. Some of tests based on five factor model are Matrigma, Hogans Type inventory, PJP and MINT.

Another personality assessment test is Personality and Preference Inventory designed by Max Kostick in early 60s. It is based on 10 given roles and 10 given Needs and based on answers the Needs are matched with roles and results are described. This was probably one of the first attempt to analyze personality type based on character traits which would clearly suggest the inclinations of a respondent towards a specific matching job (Johnson et al., 2011).

Myer-Briggs type inventory is one of the more contemporary used psychometric tests based on the work of famous psychologist Carl Gustav Jung on typology (Ahmed et al., 2012). Personality test divides people into 16 types based on four personality traits namely Introversion/Extraversion, Intuition/Sensing, Feeling/Thinking, and Perceiving/Judgmental (McClure&Werther Jr, 1993). Results are given in four letter personality type and further description about characteristic traits of relative personality type. Various tests have been based on the earlier work of Carl Jung such as Socionics personality inventory which is a result of combining Jung's work with Antoni Kepinski's theory of information metabolism (Stern, 2007). Myers Briggs Type Inventory is another test developed using the assumptions of Carl Jung's archetypes (Myers&Myers, 1995). An alter ego based on MBTI is Keirsey Temperament Sorter which parts with MBTI on its theoretical and practical assumptions on associated descriptions of personality types. It was introduced in his famous work on personality types and its understanding called 'Please Understand

Research Question

How can the human resource departments use psychometric tests in recruitment using results on personality types and matching it with the job description?

Me' (Keirsey&Bates, 1984b).

Above mentioned studies however have more or less focused on developing tools to measure human intelligence, personality traits, and less on its incumbent effects on human behavior. This is important however from a point of view of Human Resource professionals to be able to explore its application in organizational recruitment (Herget, 2011). How can it be useful for an organization in attracting, screening and training of eligible candidates for the jobs? Can it be used at all? The motivation for testing people ipso facto comes from the ability to predict human behavior based on their personality inclinations as argued by authors above.

The gap between the theoretical underpinnings of psychometric tests is challenging to the author of this study and an attempt to fill this gap through exploring the applications of psychometric test in Human Resource Management will be made.

1.3 Thesis Purpose and Significance

With astronomical increase in the jobs that require specific skills and qualifications, it has become inevitable to recruit efficiently in order to save costs and capitalize on human capital of an organization. Purpose of the research is to do an exploratory research into the psychometric tools that are used for ensuring efficient screening and recruitment of appropriate candidates in an organization. It will also seek the answer of the research question using both inductive and deductive approaches which will be explained further in 2. Research and Methodology Framework.

1.4 Delimitation and Scope of the Study

Research will be de-limited to Recruitment in organizations without focusing too much on the existential criticism on psychometric tests which shall distract the research focus. Furthermore, a discussion on the normative construction of psychometric test is beyond the topic of research and serves no purpose in answering the research. MBTI and Keirsey Temperament Sorter theories will be used for the research because of its widespread adoption and professional certifications. Other theories mentioned above are of interest also but it is believed that MBTI and Keirsey Temperament Sorter theories are more relevant to my research question and are more developed in comparison with other theories. Delimitation is made while studying organizational view on psychometric tests and not focusing on the candidate view on psychometric tests. Another assumption at the outset is the ethicality of the psychometric tests. Criticism on standardized tests and psychometric tests like every other topic are out there to discuss but roiling in those criticisms ad nauseum in this study will only take focus away from the research question and serves no purpose. Furthermore it's beyond the scope of the topic and leaves less room for important questions to be answered in the study.

1.5 Outline of the thesis

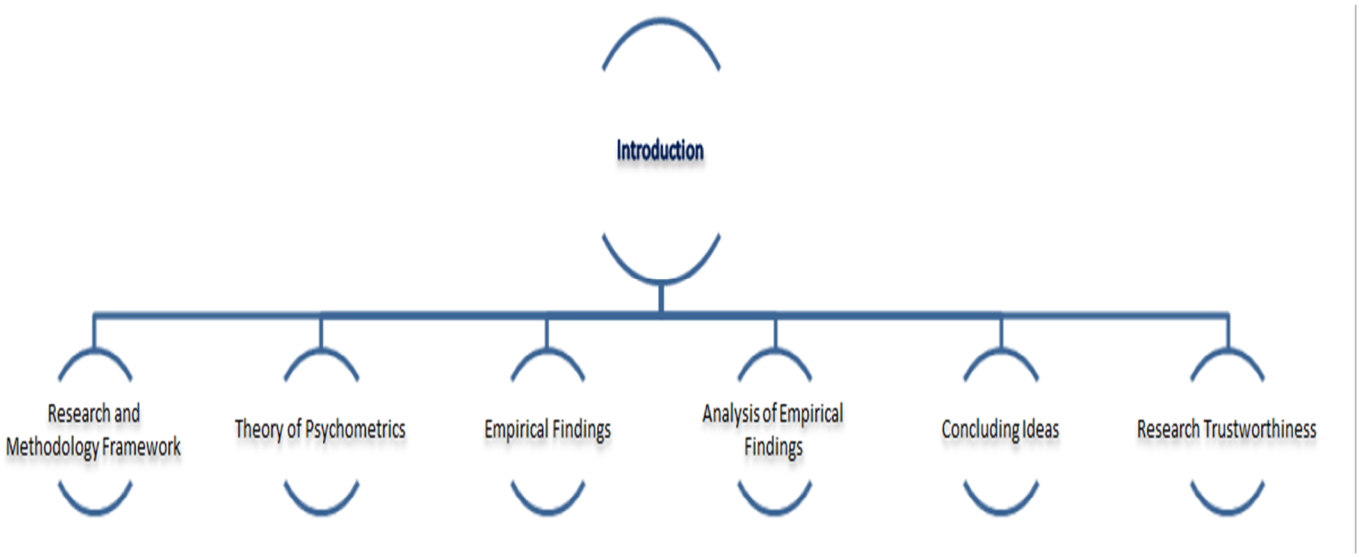


Figure 1 Source: Author. Outline of the thesis

2. Research and Methodology Framework

In this chapter outline of the research method will be briefly given and rationale for this study. It would outline the choice of subject and its background, the preconceptions, the sociological perspective of the knowledge that is intended to be gained from the topic, an outline of the scientific method chosen, nature, strategy and design of the topic. Furthermore the sampling techniques have been listed that will be used in the empirical part, size of the sample, a comprehensive literature review on the subject matter and a description of the whole process in a nutshell.

2.1 Choice of Subject

Choice of subject is made due to previous degree in HRM and personal inclinations. It was noticed that arbitrary writings on the topic and lack of much needed literature on psychometric tests especially in recruitment domain. The ability to predict human behavior based on personality traits has stirred the curiosity about the use of tests in recruiting purposes. This is much needed research in an exponentially growing HR sector where necessity to hire appropriate candidates with motivation to work within a specific industry is becoming significant day by day. Motivation is a sub-function of inclination of a person towards a specific activity or brain function, thereby making them more interested towards one job than others (Keirsey&Bates, 1984a). This causality is evident in many walks of life when people communicate with each other and based on tangible and intangible information and artifacts make decisions among their choices. The preliminary research to identify the research gap and possible insights lead the author through academic journals and EBSCO database to be able to come abreast the contemporary issues in recruitment and the tools used by organizations. Surprisingly it was found that more or less none of the researches approached the topic with the recruitment point of view. Research has been made in fields like hereditary patterns, civil service and measurement of intelligence but scant research has been made from the standpoint of an employer aiming to employ appropriate candidates with natural propensity towards a specific job. This caused the curiosity and made it a viable topic of research which still to a larger degree remains terra incognita.

2.2 Researchers Preconceptions

There is a universal truth in saying that human upbringing, previous knowledge, experiences, attitudes and personality traits have a deep impact on how an individual view the world around it (Guba, 1981). This has absolute veracity in the choice of topic.

Author has a Master's degree in Management with Human Resource Management as specialization previously and is deeply interested in processes of human brain, motivation, their cultural aspects and workplace psychology.

He has previously studied courses in Organizational Behavior, Organizational Development, Strategic Management, Human Resource Development, Change Management and International Business Culture and Communication.

Furthermore having worked in a number of Multinational corporations author has encountered invaluable observations on human behavior. Author has also had the opportunity to travel extensively and learn different languages which have helped him understand the world better. It is thereby believed that abovementioned will assist the author in making a contribution in this field. Moreover this will help him professionally in his future career with the understanding author will gain through the process of studying expected and appropriate behaviors in an organization.

2.3 Philosophy of Science

The importance of research philosophy among academics cannot be stressed enough. It is no doubt, the root from which argumentation and logical processes stem from (Saunders et al 2009, p108). Choice of research philosophy lies with the researcher himself and the purpose of choosing a certain methodology must be defined and justified. The subject therefore in this equation is researcher himself and being a human being influenced by its environment and preconceptions, researchers are also influenced by their worldview (Patton, 1980, p97). This phenomenon significantly impacts the research itself and therefore the process of choosing research philosophy is of supreme importance in academics (Berg, 2001). It ergo must be documented for readers to see the departure points and to offer their constructive criticisms. Since the research aims to explore the applications of psychometric testing systems in Human Resources, it's important to understand how this affects the current study. There are two beliefs that dominate the research paradigms in philosophy of science. Ontology and Epistemology are the domains in a research philosophy that must be crystal clear for a researcher from the outset (Ponterotto, 2002).

Ontology concerns with the nature of reality, being and existence. It also deals with the categories of being, e.g. physical objects, minds, properties, space and time and propositions (Long et al., 2000, p190). Classically ontology is a part of a branch of philosophy dealing with metaphysics. It is however quite broad in its domain and is used in scientific research to explain the philosophical basis of the research. Ontology must explain the words used by researcher for entities and which cannot be used (Berg, 2001). It then further answers the questions of why and what. For example, the ontological view of energy, happiness, space, and satisfaction require an author to put light on the words based on his perception of these words.

What exists, what doesn't, what are the meanings, what are the disparate modes of being are some of the question, ontological view of research answers. There are contrasting schools namely, subjectivism, objectivism and relativism however two dominant schools are objectivism and constructionism (Long et al., 2000, p192).

TABLE 1: Research Paradigms and Philosophy of Science

	Positivism/Postpositivism	*Constructivism*	*Critical Theory*
Ontology (the nature of reality)	one true reality either apprehendable (positivism) or approximal (postpositivism)	multiple, equally valid and socially constructed realities	apprehendable reality shaped by political, social, and economic factors; a reality marked by oppression and unearned privilege
Epistemology (the relationship between the researcher and research participant)	researcher and participant are independent of one another (dualism); detached and objective researcher role	interactive, symbiotic researcher-participant roles; potency of interaction uncovers deeper meaning and insight in participant's erlebnis, or lived experiences	interactive and proactive researcher role seeking transformation and emancipation
Axiology (the role of values in the research process)	researcher values have no place in research; must be carefully controlled and kept in check to not bias the study	researcher value biases are inevitable and should be discussed at length and bracketed	researcher values are central to the inquiry as participant empowerment and emancipation are research goals
Rhetorial Structure (the language and presentation of the research)	3rd person, objective and scientific; detached and unemotional prose	1st person; relying extensively on participant voices; emotive prose	1st person; relying extensively on participant voices; emotive prose
Method (the process and procedures of research)	experimental and quasi-experimental; field research (postpositivism); chiefly quantitative methods	naturalistic, highly interactive; uncovering embedded meaning through words and text (hermeneutical); qualitative	naturalistic, highly interactive; creating transformation (dialectic) through transactional discourse (dialogic); qualitative

Figure 2 Source: Adapted from (Ponteretto 2002, p397)

Objectivism is an ontological position that argues that social phenomenon around us can be objectively identified and discussed with tangible rules (Flick, 2009, p350). Organizations for example can be studied objectively. They have rules, regulations, procedures, methods, resources, division of labor and a mission statement. There are also seemingly unpronounced rules in organizations as appropriate behavior, code of conduct and informal practices that put pressure on employees to mold their behaviors accordingly which can be objectively studied through analysis of its components (Bryman et al., 2011, p27). This approach can be adapted to almost all apparent subjective issues like feelings and cultures. Cultures have certain rules members should abide by and they can be objectively studied by breaking it down to pieces and studying the mechanisms and corrective actions by the law enforcers in different cultures (Phillips&Brown, 1993). These features may vary from one organization to other but underlying principle that organizations can be studied objectively is the core standpoint of this ontological position.

Constructionism on the contrary challenges the assertions of objectivism in its fundamental idea of stringent categorization. Constructionist position argues that the current phenomenon and meanings are in a state of ad infinitum change and are a result of pre-negotiated social contracts (Ponterotto, 2002, p398). For example, rules of a culture today are a result of previous negotiations and understandings between its members and are subject to change.

Current situation is a transition from previous situation and will be obsolete in future because of the continuous change happening around us (Bryman et al., 2011). This approach challenges the 'status quo' more vehemently without being judgmental and proves itself liberal in research capacity. Recent developments have indicated that researchers' view on the concept of reality itself is construction. This phenomenon as known as Postmodernism (Rosenau, 1991, p9).

The nature of study being conducted calls for a more objective and analytical approach and therefore chosen approach is objectivism as the ontological position for the research. Psychological testing and personality assessment itself stems from the concept of objectivism and its ability to

> ***"From job interviews to qualifications and background checks, all activities fall in objective domain. Argument can be made about the ethicality of assessment tests ad nauseum but it is essentially an employer's decision to employ people based on certain traits which is a person decision that does require certain degree of objectivism and de facto mindset (Jones, 2012)"***

predict human behavior. Any research that attempts to study its usefulness in other fields, must also be guided by objectivistic guidelines (Ary et al., 2009, p207). Widespread adoption of screening tests and other standardized tests have clearly demonstrated its importance and need for further research into the field (Ary et al., 2009, p207). It is also argued that objectivism should be the choice of paradigm when conducting assessment-based researches.

Epistemology in research philosophy addresses the issue of the formulation and validity of knowledge (Alvesson&Sköldberg, 2000, p40). It has two perspectives namely Positivism and Interpretivism. The literature defines positivism as epistemological position that uses the methods of natural science research for the study of social reality (Bryman et al., 2011, p15). Moreover it argues that knowledge confirmed by senses can only be justified as credible knowledge. Hermeneutics is an inevitable part of social research (Kinsella, 2006). Gathering of facts is then the basis of laws formulated. Moreover, positivism has elements of both deductive and inductive approach which gives a research room for both of the inspection methods of reality. This approach is found more appropriate to the research in which the applications are explored and assessed objectively and how personality descriptions correlate to recruitment function.

There has to be objective rules in order to assess the suitability of a candidate (Van der Merwe, 2002). Without objective rubrics, it is impossible for employers to screen interesting candidates for further stages. From job interviews to qualifications and background checks, all activities fall in objective domain.

Argument can be made about the ethicality of assessment tests ad nauseum but it is essentially an employer's decision to employ people based on subjective intuition and available facts which is a personal decision that does require certain degree of objectivism and de facto mindset (Jones, 2012).

Furthermore the concept of ethicality has little relevance to the question because assessment is a basic need even beyond business spheres. There is a common fallacy about interpretation of positivism that it has been associated with scientific and quantitative research paradigm. It does not withstand the cross-examination of the scientific fact that pigeonholing positivism with quantitative method stems from ipso facto misunderstandings (Bryman et al., 2011).

On the contrary Interpretivism accepts the differences in opinions and reality constructs so liberally that it leaves reader with a lengthy discourse on the topic and no concrete criticism. Weber's idea of 'Verstehen' and symbolic interactionism are too vague and subjective terminologies to be used in a research focused on assessing people for the appropriate jobs.

2.4 Scientific Approach Adopted

It is of utter importance that researchers are clear about the scientific approach adopted to support their research design. It is the scientific approach that leads the congruence between theoretical and empirical parts of a research. There are two approaches namely inductive approach and deductive approach. Inductive approach relies on the available information and variables to build hypothesis and theories upon them and finally come to a generalization about them (Bryman et al., 2011, p11). Deductive approach on the contrary focuses on a fact or established theory as its starting point and then dissects it for validity and ramifications (Saunders et al., 2009, p11). There is a possibility of combining both approaches to suit the research design and it gives more credibility to facts as they have been subjected to dual criteria of examination. It is decided to use this approach for the research given the nature of psychological assessment and its HR applications.

To delve further into the topic, it is shown in theoretical portion of my research that established theories of psychometrics and personality traits call for a deductive approach to put them together and elicit information pertinent to my research. Information deduction is an important step in formulating hypothesis later to be testified by use of mental faculties like reasoning and juxta positioning. It also sets the playground for the further inductive endeavors by clearly point out the assumptions or theories that research is built upon and gives the freedom of inductive examination of pre-agreed tenets.

As previously mentioned, research is based on exploration of applications of psychological assessment in HR sector; it requires both an analysis of theoretical data and how it can be applied to recruitment of talent. (Patton, 1990, p4) argues that combination of these two approaches are found to be widely used when evaluator is open to available data and emerging patterns and dimensions as they delve further into research.

Finally, the empirical part of the research will fit seamlessly into the theoretical questions of how with its addition of answers to the questions of what and why. A combination of method is therefore seems to be the most logical choice of approach in my case.

2.5 Nature of the Study

Research being done calls for an explorative approach owing to its basic focus on 'what' and 'why'. Objectivistic approach here seems to correspond to the exploratory orientation that has been adopted in this research. The purpose of an exploratory research is to use secondary data, literature, informal questionnaires, focus groups, projective methods, pilot studies and in-depth interviews to formulate a more precise problem or develop hypothesis. It draws conclusive results with meticulousness that is concrete in its nature. It has been shown that when new insights and gaining familiarity with a recent phenomenon is concerned, exploratory research is the best approach (Berg, 2001). One of the characteristics of exploratory research is to give enough information about a topic to be able to aid into making decisions but it doesn't make decisive comments on a topic (Gerring, 2007, p40). It is also not generalizable and is primarily focused on exploring one issue. The purpose in itself is to understand the situation and explain it in layman's terms to the reader.

These traits make this model very useful for the research as it intends to explore the applications of psychological testing in Human Resource settings. It is aimed not only to understand, summarize and further explore the issue but also to find the answer of my research question. Furthermore it is perfectly aligned with both theoretical and empirical part of my research. Its profundity and capacity to assimilate the data that will be collected makes it the best approach that could have been taken. It can be agreed on that there are vast number of studies relating to psychological testing, assessment and its subtle uses, however, there is a visible lack of relevant research that has considered its applications in Recruiting function of Human Resource Management (Van der Merwe, 2002). This very gap becomes the raison d'être for the research. The intention here for adopting this approach is to have voluminous space for exploration rather than relying on prevalent research and findings based on authority rather than scrutiny. This is also critical considering the data collection portion that will follow in empirical part as data will be collected in exploratory manner than its rigid close-ended form.

Table 1 Research Design Summary

Qualitative Research
Exploratory Nature
Deductive and Inductive
Objectivism as Ontological Stance
Positivism as Epistemological Stance

2.6 Research Strategy

Research strategy denotes a method of conducting research that can be categorized in two alternatives namely Quantitative and Qualitative research (Tashakkori&Teddlie, 2003). The nomenclature itself explains the nature of these research models as quantitative research methods and further places emphasis on quantification in data collection and analysis, while qualitative research refers to the descriptive nature of a problem resorting to explanation and problematization of intangible entities like events, situations, people and behaviors among others. Abovementioned decision to choose exploratory approach was made in order to be able to explore the usage of psychological assessment in recruitment. Qualitative approach turns out to be the logical choice for such studies. Since current study deals largely with intangible variables and personality traits e.g. introversion, feelings, sensing, it is naturally in line with the qualitative research.

This approach also allows digging deep into the rationales of job matching with personality types and sheds light into the process of screening through inputs from personality assessment. Flexibility of this mode is very much needed for the type of research being done to be able to collect the theoretical perspectives and its consequences in recruitment. The intention to present raw data from empirical part in appendices for readers to be able to draw their conclusions goes hand in hand with its exploratory nature and qualitative methods. It opens the door for more open discussion based on its factual brevity which can always be questioned.

2.7 Research Design

The purpose of Research design of a study is to determine the objective of the research and the usefulness of empirical findings for the study. It has been previously determined that the nature of this study will be qualitative case study.

Case study method is considered to be appropriate while answering exploratory, descriptive and explanatory questions focused on single or multiple case studies. Exploratory research delves into the in-depth understanding of the question being asked and hence calls for a case study design to completely understand the social contextual meanings (Gerring, 2007, p38). It also is appropriate when researchers aim to explore a particular phenomenon. This research intends to understand a less explored area of recruitment based on personality assessment and hence case study design which aids in conceptualization of new functions and theories is a perfect match. Some of the characteristics of case study method are its focus on 'why' questions, lack of influence on respondent behavior and responsiveness towards current phenomenon. These criteria make it more relevant to the research which requires abovementioned characteristics within itself to be reliable. It is thereby believed that the personality traits themselves are subjective phenomenon and assessments based on them require in-depth understanding which can only be gained through case study method.

2.8 Sampling Techniques

One of the most crucial steps after research design decision is the sampling technique. In most studies, considering the whole population as research sample is quasi useless. Appropriate sampling is of crux in a research study to be able to identify the target group which would be beneficial in answering research question and qualify the criteria of sampling (Flick, 2009, p115). This study adopts an interpretative, multiple case-study method and it falls under the domain of a qualitative research. Research topic falls in the domain of social sciences where psychology and human resource management overlap and this leads to the choice of convenience sampling because of the limited amount of organizations that have activities which are apposite to my research (Gravetter&Forzano, 2009, p151). It is therefore planned to contact organizations that conduct certification programs and recruitment consulting in psychometric testing for their feedback and views on incorporation of the programs into HR departments. These organizations deal with numerous HR professionals and management consultants on regular basis and are seasoned in their business sphere. Strict criteria for interviewees narrow down the options and difficulty in finding suitable organizations make the process slower. Furthermore, access to these organizations and response rate will also determine the choices and thereby making non-probability, convenience sampling method a good choice.

A brief description of the alternatives that could have been used under non-probability sampling relates to the other two options namely: judgmental and theoretical sampling. Quote and snowball sampling are also some of the techniques that could have been used but an in-depth analysis of the methods have revealed little relevance to the current research and therefore are left for the better option.

2.8.1 Choice of Companies

The decision to choose companies for the study has always been a tough one and requires meticulous selection and justifiable reason for the selection. An important step is to determine the criteria that a company must follow in order to qualify for the sample that one is looking for. The sampling technique that is being used is convenience sampling and screening criteria has been developed to ensure the quality level of an organization to make results more reliable (Gravetter&Forzano, 2009, p151). Convenience sampling is deemed to be appropriate for case-specific research (Walliman, 2006). Following is the table with the criteria that an organization must meet in order to be selected as a potential candidate for the study.

Table 2 Selection Criteria for Companies

Criteria	Rationale
Selected companies must have activities relating to Psychometric testing	Validity of the research is incumbent on an organization's ability to demonstrate its activity in psychometric testing and standardized tests. Among larger services an organization as a whole has to offer, psychometric testing must be their main service.
Selected companies must have previous experience in helping organizations implement Psychometric testing	This condition ensures the reliability of an organization as an authentic organization that has previous experience and background in psychometric testing implementation in organizations. It would ensure the authenticity of an organization as a reliable service provider in the sector.
Selected companies must have qualified personnel for conducting psychometric tests.	It is an obligatory condition as testing individuals should have relevant qualifications and training in order to be able to conduct tests and undergo subsequent analysis and evaluation based on the data they receive.

2.8.2 Choice of Individuals

Sampling techniques within sampling techniques can be used in case study methods to reach the right candidates (Gravetter&Forzano, 2009, p150). In qualitative research it is not unheard of that samples are more intentional and purposeful than random. This fits verbatim with my sampling method. The idea of using nested sampling methods stemmed from the qualitative nature of my study which gives the depth for me to narrow down the sample for better results.

The appropriateness of an individual within an organization was however my personal decision. Author has tried to be professional choosing the respondents to ensure the research purpose, question and relevance of it to the individual. Criteria mentioned above for the choice of company can roughly be translated to the choice of individuals also e.g. the qualification of an individual to be able to conduct tests and present its results. A criterion for respondents has been created according to which they have to qualify the requirements in order to be a potential respondent.

The customer service departments of these organizations were contacted with the request of an interview. The criteria were listed down and purpose of research was explained so that they are able to find suitable person that matches that given criteria. The people willing to participate in the study were subsequently contacted and a suitable time and method of interview was arranged. A letter of consent was also signed by both parties and a brief description of interview process was given before interviews.

Table 3 Selection Criteria for Respondents

Criteria	Rationale
Respondent must have enough authority and information on the subject.	This criterion ensures that the respondents have enough degree of confidence in the information they are providing and have enough organizational privileges simultaneously to divulge the information.
Respondent must be comfortable speaking English or Swedish	A common language is an inevitable part of any conversation, let alone the discussion regarding research and development. A language that both interviewer and interviewees are confident communicating in is a natural criterion.

2.9 Size of Research Sample

Sampling methodology leads further to the point where the size of research sample for the study was to be determination. It is a self-explanatory fact that the size of research sample should always be large enough to ensure reliability and concise enough to quickly contribute to saturation point (Gravetter&Forzano, 2009, p142). Saturation point is defined as the point where additional information becomes redundant and adds very little to the body of knowledge rendering the research superfluous. In this particular study the choices are already quite limited and qualifying sample criteria are demanding enough.

An appropriate size for qualitative research is between 4 to 25 until it reaches the saturation point (2009, p142). Furthermore questionnaire is based on semi-structured open-ended questions and it would only add to useful content until a specific threshold point after which information would be repetition of the same content and phenomenon. In essence, the number of respondents is intuitively decided based on the data threshold principle.

The specific nature of research in this case required highly specialized interviewees and experience level, which made it possible to reach threshold with 3 interviews. Limited number of options even in the interviewee selection process showed at the very outset that rather than quantity, eliciting relevant information and authentic opinions from industry leaders is essential. It is fruitful to interview highly specialized individuals than lots of people with less experience. The amount of experience interviewees had in the study in comparison with their position in organization was sufficient enough to rely on their information. Attempts were however made to contact other organizations also but due to time limitations and lack of response current interviews were used for analysis. There are no indications that not doing further interviews has comprised the integrity and credibility of the research. Furthermore very little information could be added to the information already obtained and benefits of not doing further interviews outweighed the benefits of doing them. Some of the various additions and viewpoints by which future research can be done are given in 7.3 Recommendations for future research

2.10 Data collection

2.10.1 Primary/Secondary Sources

Collection of data and its sources are crucial for any study. To establish the sources of the data that has been gathered the sources of the data should be identified. Sources can be divided into two larger categories, Primary and Secondary sources. Primary sources are directly taken from the publishing authorities. E.g. Published by the organization itself, legal papers, personal documents etc. (David&Sutton, 2010, p326).

Secondary sources on the split side are sources which are 'gathered by third-party for the purpose of research etc. A mix of both is employed to ensure credibility and cross-examination. Academic databases that have been used for the purpose include EBSCO, Scopus and Web of Knowledge, Numerous journals on psychology; industrial relations, workplace management, human resource management and organizational development. Moreover books on similar topics have been used within and outside the library facilities. At times library in Umeå city has also been consulted in addition to university library.

Newspaper articles and visual outputs on Youtube and Vimeo have been considered. Help had also been sought from professionals on professional networking forums e.g. LinkedIn and Plaxo. Social media has also been used to gather information from personal contacts working in the HR industry. Business reviews like Harvard Review, The Economist and Financial times have also been used for relevant articles.

Statistical were taken from Swedish statistics bureau and United Nations Statistics department websites. Access to the resources of interviewed organizations had also been granted and their publications were consulted.

2.10.2 Semi-structured Interview

To ensure the synergy of every stage of data collection with the overall purpose and research question it is important to individually justify the use of all methods (Keats, 1999, p75). One of the touchstones for a data gathering instrument is its capacity and ability to answer the research question. The positivistic epistemology of the research allows draping of the meanings in a deterministic fashion to the sources of knowledge acquisition. This entails that search for concrete and explanatory answers to the research question through asking both structured and open-ended questions to elicit information on the application of psychometric testing in HR domain is being performed. Moreover the qualitative analysis to be made is based on the information received, that calls for semi-structured, in-depth interviews as to how psychometric tests are designed and incorporated in HR sector to ensure appropriate candidate screening and hiring. Understanding is a pre-condition to analyzing the processes and semi-structured interviews drive the point further home with its copious capacity to acquire information required to understand the phenomenon (Keats, 1999, p87). It further provides the opportunity to adjust and re-phrase questions, having freedom to ask questions, delete questions and add follow-up questions for clarity. It is therefore believed to be the right choice for the research design in question.

2.10.3 Triangulation

The hindsight of using case study method is its robust ability to cross-examine the information from other sources to give the study credibility it should have. This principle is also known as triangulation (Jick, 1979). The sources used to collect data e.g. interviews, primary and secondary resources, company description and literature review help cross-examine the validity of factual information as well as the veracity of statements. Furthermore results are open to readers for constructive criticism adding to the body of knowledge. Furthermore the empirical and theoretical part passim the research seeks agreement with each other and discussion subsequently becomes profound and credible.

2.10.4 Interview Guide

An interview guide is a rough guidebook for the interview process. A guide was developed to ensure that all interviews are consistent with the research question and they elicit information relevant to research purpose and analysis (Turner, 2010, p755). It also ensured that all relevant questions have been asked and none of the information required has been overlooked and ignored during conversation.

Order of questions was shuffled depending on the respondent and the flow of discussion but all points were clarified and mutual understanding was ascertained.

Interview guideline was prepared in English and focused on asking the mechanism of psychometric tests to begin with. The purpose of the research per se is to explore the applications of the test. Interview started with the general questions about psychometric tests, the services provided by organization and their experience with incorporation of programs in HR departments. Based on the answers, questions were adjusted further to inquire about the connections of psychometric tests with behavioral faculties of employees and how it helps to identify and recruit appropriate employees. Questions were aimed to get an understanding of the whole process trying to get as much information as one could get simultaneously cross-checking it with the primary and secondary sources gathered. The interview was done over Skype with video recording and the facial expressions and body language of respondents were particularly noticed and taken into consideration.

2.10.5 Data organizing

In this section description of the information database will be given that has been created in order to gather helpful information that would guide through the interview aftermath and data organization. The qualitative nature and semi-structured interview method allows the use of following components for the database.

- Case-Study Folder. In this repository, pdf files including primary and secondary sources, articles, research papers and third-party publications are included. It is useful to have them handy in case a cross-examination is needed.

- Research Annotations: During the interview process, notes on the paper were taken to highlight the important points and issues to ensure back up in case recording instruments didn't work. They were also used to describe intangible aspects of interview as body language and tonal vicissitudes.

2.10.6 Data Analysis

After the execution of interviews with the respondents, data was organized into usable information for the analysis. Interviews were held over Skype with the video facility. All information along with the verbal gestures had been recorded to make subsequent interpretations of meanings. Video records of the interviews helped save these impressions. Interviews were replayed numerous times to make sure that they have been understood as they were meant to be understood.

In some cases clarifying questions were asked to make sure that both parties are on the same page. Head nods, pauses, smiles and lifting of eyebrows were also used to construe the meanings and degree of agreement of a respondent with an idea. Code assignment system was used to assign a code to a case and respondents to easily identify the respondent and case being analyzed.

For example, X1 is used for the first company and X1.1 was the code given to the first respondent from first company. Similarly Y2 was the code for second company and the first respondent of that company was given the code name Y2.1. Respondents were given the interview records to respond to any statements they would like to disown or rephrase.

This was due to the ethical and moral obligations as a researcher. In accordance with the methodology chosen for the study, it is found that Grounded theory method is the most appropriate choice for the data analysis. Grounded theory, also known as constant comparative method states that instead of traditional creation of a hypothesis and testing it subsequently, in social science research, data is collected primarily and then it is categorized into concepts and categories. They are given codes and data is assigned to these categories for further analysis. Grounded theory uses a combination of both inductive and deductive approaches which makes it suitable choice for the research in question. The first step in the process was coding and categorizations. It is important for the following analysis as it arranges the data into discernible categories for the relevant and quick access to information collected. Nearly every sentence in the interview was categorized in a relevant category. The changes and adjustment of codes and categories was a consistent process which helped in ensuring right allocation of category.

Statements and observations relating to each other were put in same category to create relation and obtain comprehensible information from the synthesis of the two. For instance following chart will give you an idea of how the response, its code and category were organized. Consistent emergence of new categories and codes enforced continual adjustments. All this was done with the purpose in mind that raw data should be categorized for increased understanding.

Figure 3 Process of assigning codes to excerpts from the interview.

Above model illustrates the process adopted to apply the categorizations to interviewees. The coding was used to assign them all into categorizes and then repeat this process to whole interview to assign everything in the interview with relevant categories.

Table 4 Interview categories

Main Categories
Client needs
Recruitment
Touchstones for effectiveness
Type relevancy for job performance
Psychometrics as decisive factor
Sub-Categories
Areas of improvement
Justification of purpose

2.10.7 Ethical Considerations

Ethical concerns are central to any research done. Merriam-Webster dictionary defines ethics as "The discipline dealing with what is good and bad and with the discipline dealing with what is good and bad and with moral duty and obligation moral duty and obligation." (Webster, 2013) Particular attention was given to the ethical principles while conducting research in a professional and responsible manner. Some important parts in research ethics are 'Confidentiality, Informed consent, anonymity, protection from harm and privacy (Keats, 1999, p29). Informed consent can be defined as obtaining consent from respondents to record their views and make sure they are not responding through pressure, duress, obligation, manipulation or fraud. The letter of informed consent made was designed solely for this purpose and making sure that respondents are informed and are willing to be part of the research. They knew beforehand that their confidentiality is of utter importance to the research and the information will be dealt with utmost care (Keats, 1999, p31). Permission was sought to take notes and record the interviews. Format and time of interview was also communicated in advance. Following steps were also taken to ensure there is no 'invasion of privacy'.

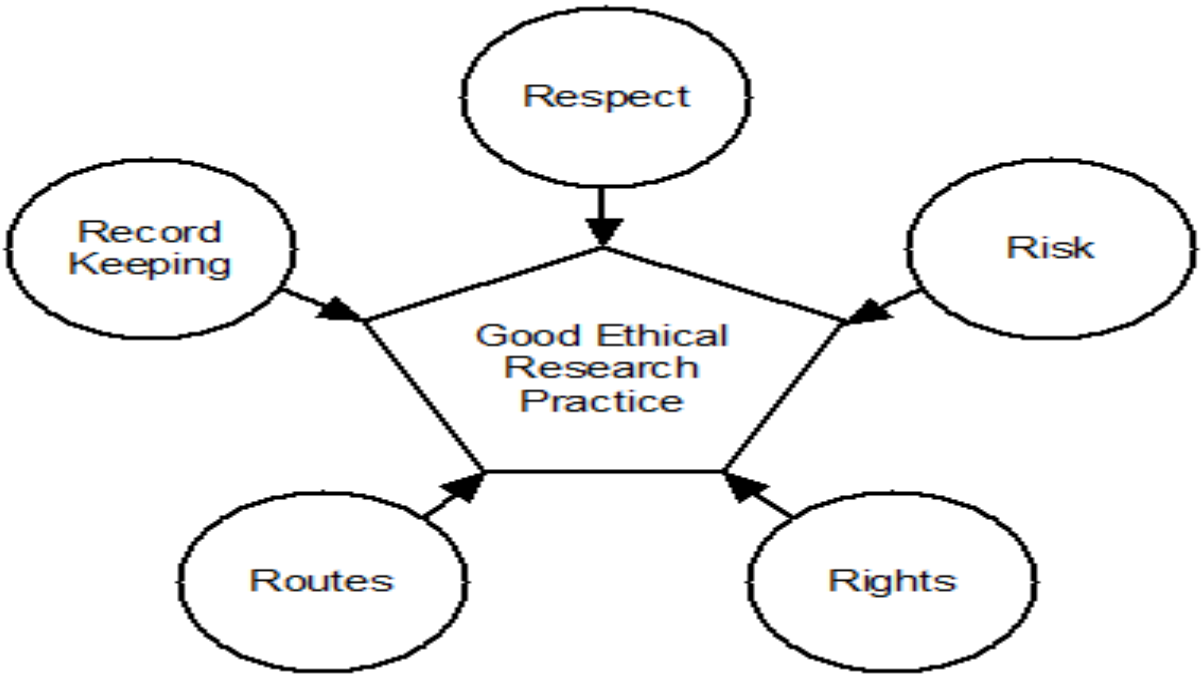


Figure 4 Source: http://ethics.coventry.ac.uk/images/content/about/rember1.png

1. Letter of request asking for an interview with concomitant details of interview. 'To whom it may concern' approach was adopted to make sure it does not point to a specific person.

2. A follow-up call was made to check on the progress.
3. Email with the contents of interview was sent after receiving initial approval.
4. A letter of informed consent was mutually agreed on and signed by both parties.
5. To ensure subjective misunderstandings interview was record for future reference.
6. Information was backed up to ensure privacy and anonymity of respondents in a safe place.

2.10.8 Description of the Research Process.

This part will give reader an overview of the research process that has been followed to get the conclusion. As depicted by the diagram under, researchers in qualitative research start from the research idea. Preliminary research is carried out by reading literature already written on the topic to gain in-depth knowledge about the topic. After in-depth knowledge a research gap is discovered.

The theoretical formulation of the research question is performed keeping in mind the research idea and knowledge gap. Empirical research questions are formulated and operationalized. A research design optimal for the research is then chosen. Data collection is performed subsequently after which the analysis is performed on the data collected. The empirical questions are then answered with the help of the data acquired and analysis performed. The theoretical results and interpretations are then presented. It is further argued how research made a significant contribution to the field and is comparable to previous research to add credibility to the research. In last stage conclusion is made to finalize the research process.

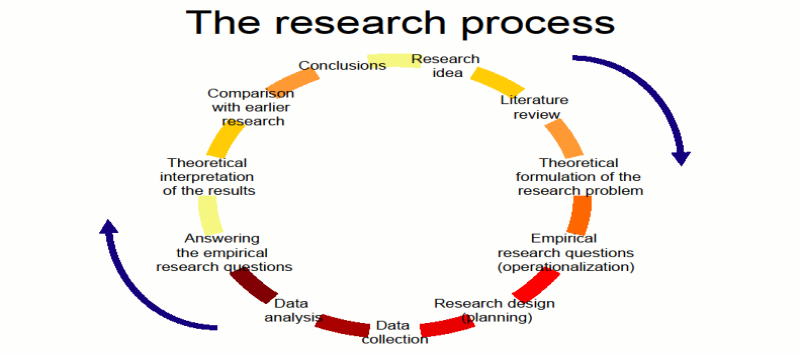


Figure 5 Source: Adapted from Bryman & Bell (2011, p390)

2.11 Summary of the Research and Theoretical Framework

In this lengthy chapter the issues of designing research were discussed along with its theoretical assumptions and appropriate methods of conducting it. Briefly going over the researcher's preconceptions, a framework for the research choices had been laid down and justified in regards with the nature of the study. In the end data collection methods along with its justification were discussed. This outlines the whole paradigm of research that has been adopted for this study.

3. THEORY OF PSYCHOMETRICS

"It is not our differences that divide us. It is our inability to recognize, accept, and celebrate those differences" - Audrey Lord

Concept of the psychometrics has its roots in the notion of quantifying and objectively measuring the dimensions previously believed to be subjective domain (Coaley, 2010). This includes human behavior, attitudes, motivation, feelings and beliefs. Its measurement consists of two parts largely defined as the quantitative representation of the phenomenon and the classification itself. For example from a scale of 1 to 10 how emotional a person has two essential measurement variables. The degree of intensity quantified by the subject itself through a numerical value and the emotions that are being quantified e.g. love, happiness, pain. In psychology most of the time objects to be measured are people (Digman, 1990, p419). There are rules to it however like every other subject. The quantifying measures have to be explained and constructed thoroughly and they should be able to match current and emerging scientific criticism (Bartram, 1996). An additional problem that occurs in psychological measurement is the type of quantification you can do (Rettig, 2010). Most of the time, you have to quantify e.g. intelligence in numerical value instead of comparing objects to each other in their behavior. Psychologists have therefore created some basic rules to address this issue.

Literature reviewed on the topic so far has been from a methodological and constructionist point of view with very little documented work on the applications of psychometric tests in human resource management (Van der Merwe, 2002). Even though it has been widely used in public and private sector, publications on it are scarce and it is believed that this research would make a significant contribution in the field. Originality of the work comes from the fact that study is being executed about psychometric tests not from the point of view of its construction and validation but its applications in Human Resource management especially in recruitment function. The results are aimed to help human resource practitioners understand the purpose of testing and its relevance to human resource management.

Of foremost importance is the clarity of rules in measurement process. Its practical applicability and ease of comprehension follows. It is also imperative that administrators of the test themselves have no impact on the results. Standardizations in tests are the outcome of adhering to aforementioned rules (Pittenger, 1994). It ensures that given specific instruments, users should be able to obtain similar results, putting principle of replicability to use. Standardization also sets criteria for the assessment of universal principles.

For example, to discern difference between B's and D's in written letters children must be able to understand the underlying meanings attached to the alphabet and the sound attributed to the shape on paper.

For a child with sensing priorities whose primary way of collecting information is through senses as opposed to intuition, B's and D's are two distinct shapes with no meanings attached to them unless they are taught the sounds attached to them (Myers&Myers, 1995). They continue to see letters as shapes determined by their senses. Intuitive children on the other hand view these shapes attached to specific meanings and are intrigued by the possibilities of interchanging them to form new words and sounds. Standardization makes sure that the universal a priori definitions of these letters and words are understood by the test takers. It ensures a common understanding. Abovementioned fact however does not imply that antithetic ways of obtaining information from the outer world are good or bad (Varvel et al., 2004). It's the dominant brain function that determines the method of collecting information and processing it which shapes our understanding of the outer world.

These processes of gaining information from the outer worlds and process it in the brain itself have divided people into various categories based on their propensity to use one process more efficiently than others (Myers&Myers, 1995). Ivan Pavlov considered human behavior as mere responses of an individual to its environment. His experiments on dogs with stimulus are subsequently theorized in his famous theory of classical conditioning. He then used the same inferences for motivation in human workplace. This was one of the early theories on behaviorism (Pawlik, 1997). John Watson created a process to shape a child into whatever form he wanted given the possession of a child was given to him in infancy (Watson, 1970). Sigmund Freud's psychoanalysis based on the concepts of motivation for doing things and differences in expression is of critical value also.

In Second World War, US Office of Strategic Services has come up with screening tests to identify potential soldiers from rest of the population to respond to the acute need of army personnel. Once screened out as potential candidates, these soldiers were further assigned to a special group based on their indicated talents on the test results (Hildreth, 1949). Some were assigned to espionage others to intelligence gathering. The qualities they were assessed for were social relations building, leadership, emotional stability and security. This was one of the first practical usages of testing for recruitment purposes. Even though post-test validation have been criticized for its organizational orientation rather than research orientation, it was no doubt the first mass usage of testing principle (Hildreth, 1949).

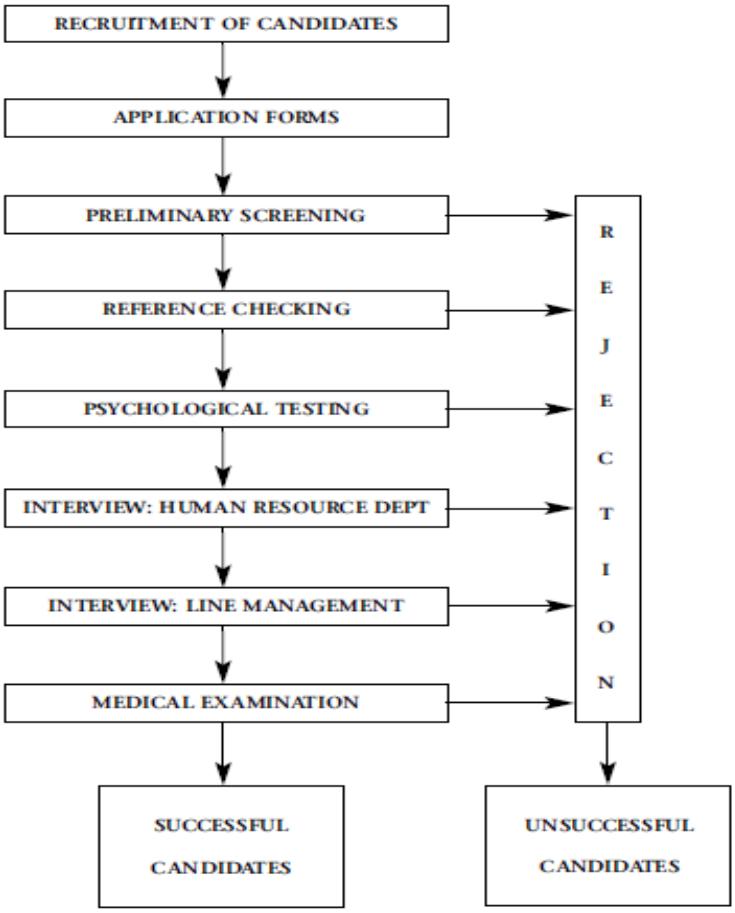


Figure 6 Source: (Van der Merwe, 2002, p72)

Theory of psychological testing however preceded this practical implementation by couple of decades when the first authentic and pioneering work on psychological tests was written by Swiss psychologist Carl Gustav Jung. Jung published his Magnus opus named 'Psychologische Typen' in German which was translated in English in 1923 as 'The psychological types'. Almost all subsequent typology testing is based on Jung's work of type description. Typology is a branch of psychology where human beings are categorized in different types based on their usage of human brain processes e.g. Intuition, sensing, Feeling and Thinking (Jung, 1989). Together they shape a human being's interactions and understandings of the environment around him. The unique way of eliciting information from others, screening information for processing, the way how humans interpret same information diametrically and react on it creates the personality types (Schneider, 2006). Some of the tests that have utilized Jungian principles to develop the personality descriptions and subsequent interpretations of behavior are Myer-Briggs Type Inventory and Keirsey Temperament Sorter. It has been decided to use these tests to explore its usage in recruitment for its usage and formulation.

Intensive publications on its applications in diverse fields have been published and tests run on its construction and structure has improved its quality and reliability in previous decades.

3.1 Myer-Briggs Type Inventory

In 1921, after the publishing of Jung's work 'Psychological types', the tome had gained fame in the academic circles for its practical implications in clinical psychology. It was translated in 1923 in English. Katharine Cook Briggs and Isabelle Briggs Myers, mother and daughter from US became keenly interested in the concept of psychological assessment of human beings to understand their gifts, after encountering Jung's work (Myers&Myers, 1995). Both Katharine and Isabelle were ordinary human beings with a penchant for psychology and had no formal training as psychologist or statistician (McCaulley&Martin, 1995). Their passion however for psychology had persuaded them to understand the inner workings of human brain for decades. They had for 30 years worked in order to understand, fitting all pieces of puzzle in Jungian typology to develop a more understandable and applicable version of personality test. Jung's work was written in a very heavy clinical psychology terminology with intricate German phrases and pathological context which was hard for average human being to understand (Myers&Myers, 1995).

Moreover it was more from a pathological point of view aimed at understanding personalities to help cure the psychological diseases and incongruences inside. Katharine and Isabelle had initially worked with women in World War II who had recently come out of homes in industry with no idea how to take over men's work. They tried to understand their personality types and assign them to jobs that would use their in-born talents and gifts (Tan&Tiong, 1999). Isabelle created a paper survey to assess human type to assist them in finding their 'best fit job' and to discover their talents. This paper survey along with the contributions of thousands of others with their feedback developed into 21st century's leading personality assessment test known as Myer-Briggs Type Inventory. In 1980 their book 'Differing Gifts: Understanding Personality Type' was published posthumously. It became best-seller immediately and became a typology bible for counselors, life coaches, psychologists and typology professionals (Kuipers, 2009). Derivative works have been published since then with practical manuals and measurement guidebooks. Today two-and-a-half million people take MBTI each year. Fortune 500 companies are using this tool (Wu et al., 2011).

Jung wrote about four basic characteristics of a personality, Sensation, Intuition, Feeling and Thinking (Jung, 1989). Furthermore he mentions two directions in which these feelings characteristics can develop namely Introversion and Extraversion. He breaks them down further in following pairs to give us more permutations based on a combination of above.

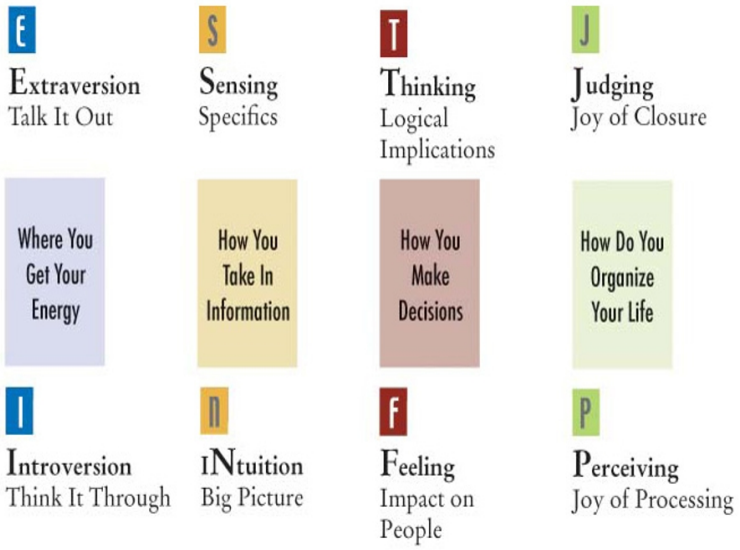
- Extraverted sensation
- Introverted sensation
- Extraverted intuition
- Introverted intuition

- Extraverted thinking
- Introverted thinking
- Extraverted feeling
- Introverted feeling

Together Isabelle and Katharine were able to add one more dimension to above dimensions. They called it the perceptual or judgmental preference of a human being. With its addition, total number of choices became four with everyone having one of the following alternative functions: Introvert/Extrovert, Intuitive/Sensing, Thinking/Feeling and Perceptual/Judgmental. Based on these four choices, all possible combinations amount to 16 distinct types of human beings (Gardner&Martinko, 1996). For example an introvert using sensing preference for input from his environment can use his thinking to evaluate the information and then use judgmental attitude to make decisions based on the analysis done. This process will take place quietly inside owing to the introversion of his character. The character that MBTI assigns to such a person is ISTJ. Moreover, in every human being there is a dominant process that takes most of the control over human personality and there is auxiliary process that stays in the background only to serve the dominant function when needed. In abovementioned personality type, dominant function is sensing, thinking and Judgment with introversion as propensity.

Other dimensions as Extraversion, Intuition, Feeling and Perception are auxiliary processes that are less used or are very undeveloped depending on personality development stage of an individual (Hawkins, 1997). The symbols that Katharine and Isabelle assigned to the characteristics are as followed:

- Introversion - I
- Extroversion- E
- Intuition - N
- Sensing - S
- Thinking - T
- Feeling - F
- Perception - P
- Judgmental - J



A mix of four of these letters is assigned to define a person's MBTI type. For a person with propensity towards extroversion, intuition, thinking and perception, personality type code will be ENTP. Similarly someone found to use dominant functions of Introversion, Sensing, Feeling and Perception will have a personality code of ISFP (Myers&Myers, 1995). A chart with all 16 types and their letter codes follows. The propensity towards a specific trait is determined by a questionnaire with questions on preference in a particular situation. Respondents choose an alternative between close ended questions, and in the end based on their responses their tendency to use a brain function more than others determines their dominant function. Even though these characteristics are self-explanatory in terms of its linguistic understanding, definition of its psychological understanding from the outset will be clarified to make sure readers find the concepts relevant and mutually agreed on in following pages.

Order of Preferences

ISTJ 1. Sensing 2. Thinking 3. Feeling 4. Intuition	**ISFJ** 1. Sensing 2. Feeling 3. Thinking 4. Intuition	**INFJ** 1. Intuition 2. Feeling 3. Thinking 4. Sensing	**INTJ** 1. Intuition 2. Thinking 3. Feeling 4. Sensing
ISTP 1. Thinking 2. Sensing 3. Intuition 4. Feeling	**ISFP** 1. Feeling 2. Sensing 3. Intuition 4. Thinking	**INFP** 1. Feeling 2. Intuition 3. Sensing 4. Thinking	**INTP** 1. Thinking 2. Intuition 3. Sensing 4. Feeling
ESTP 1. Sensing 2. Thinking 3. Feeling 4. Intuition	**ESFP** 1. Sensing 2. Feeling 3. Thinking 4. Intuition	**ENFP** 1. Intuition 2. Feeling 3. Thinking 4. Sensing	**ENTP** 1. Intuition 2. Thinking 3. Feeling 4. Sensing
ESTJ 1. Thinking 2. Sensing 3. Intuition 4. Feeling	**ESFJ** 1. Feeling 2. Sensing 3. Intuition 4. Thinking	**ENFJ** 1. Feeling 2. Intuition 3. Sensing 4. Thinking	**ENTJ** 1. Thinking 2. Intuition 3. Sensing 4. Feeling

Figure 5 Adapted from (Hirsch & Kise, 2000)

Introversion:

Introversion is the propensity of a person when dealing with his outer environment to be quiet, reserved and shy. An introvert is more inclined to process information internally and gain energy from understanding and solving the issues inside (Digman, 1990). They have a natural propensity to process information thoroughly before communicating it to outer world (Hirsh&Kise, 2000). They are foreseers of an occurring in terms of its principles. They tend to be engrossed in themselves with intense powers of concentration and introspection. They have a cultural acme and are both doers and considerers. For them underlying principles, theories, reasons and subjective issues of ontology are more important than tangible realities (Myers&Myers, 1995). They fear roiling too much in external affairs as a self-defense mechanism for the wholeness of their inner world. They tend to watchfully guard their emotions and keep to themselves for the obvious reasons of their thoroughness and intensity of emotions. Their intellectuality and consummate attitude however render them impractical at times and more than often they need a well-developed auxiliary process to make up for it. Jung himself was an introvert to begin with.

Extraversion:

Extraversion is the propensity of a person when dealing with his outer environment to be talkative, energetic, outgoing and tireless (Thorne, 1987). This is of course in comparison with their introvert counterparts and degree of their deviation cannot be quantified and is simply relative. They tend to learn and process information as they speak (Higgs, 2001). Extroverts tend to process information by practical involvement, finding out and learning from the outcome, Good or Bad. The fun for an extrovert is living life and understanding things by doing it. They are risk-taking and relaxed sometimes at the expense of being naive. Their world deals with the objective realities, happenings and immediate environment. They tend to be loaded with practical tools to wade through the obstacles. They like to keep things straight and objective. They are extremely fond of tangible cum lauds and lavish claims (Bushe, 1990). They tend to talk about their emotions more often and thereby are less intense than introverts who like to pile up. Their need for acceptance and appreciation however can push them to the intellectual superficiality if that is needed for making a point and impression. They need a well-balanced auxiliary process of introversion to bolster their energy. Some of the extroverts were Freud and Darwin (Keirsey&Bates, 1998).

Sensing:

People with sensing preference tend to obtain information with the use of their five senses, Sight, Hearing, Taste, Smell and Touch. They see things as they are based on hard facts and appearance. Their orientation towards 'here and now' make them life-loving and enjoyment loving people (Higgs, 2001). They tend to be more observant and vigilant than imaginative. They are big consumers, pleasure lovers and view luxury as a prize (Keirsey&Bates, 1998).

They tend to be very contented with their lives. They crave for possessions, what others have, what others do and how others live.

For them oppression of senses is extreme torture and future is something that should be sacrificed for today. Their support to art, luxury, fame and recreation is the largest among all. They can be immature and superficial unless a well-balanced judging is applied to their conduct.

> *"Intuitive people tend to find the underlying meanings behind appearances and possibilities a given situation has to offer".*
>
> *(Jung, 1989)*

Intuitive:

They are attracted by 'what is not there'. Their curiosity is fueled by things that are not present rather than things that can be sensed. They feed on inspiration (Jung, 1989). They tend to be imaginative and use consciousness as information gaining tool instead of sensing. They take things by the crux and are initiators, inventors and reformers. Restlessness and novelty is their general state. They live largely in their own worlds playing with the possibilities and ideas that are unique to them almost independent of other people's views on their ideas (Keirsey&Bates, 1984a). They are not particular lovers of luxury and are extremely unhappy in situations where their creativity and imagination has no role to play and reliance on senses is enforced. Their future orientation makes them misfits for the present. They love to contribute to humanity with their understanding, help and ideas for a better world. Their persistence can be questioned however as their future orientations push them towards novel and new (Myers&Myers, 1995). They require a well-balanced judging process to cope with their restlessness.

Thinking:

People with thinking tendency as their dominant function make impersonal and logical decisions based on hard facts and realities. They use an analytical process to take into considerations scientific facts with very less human element to their decisions. They rate logic above sentiments. Their emphasize tends to be more on things than human beings (Higgs, 2001). They are logical to such an extent that they start viewing human beings as simplified objects. They would rather choose truthfulness over tactfulness in situations which calls for a decision. They are found more in executive sectors than social arts (Ahmed et al., 2012). They are more likely to question other people based on the theoretical principle of their behavior. They can be very short and to the point. They don't perceive it as unfriendly behavior even though others might perceive it very professional. They like to put things in chronological order with a comprehensible structure in a very concise manner (Keirsey&Bates, 1998). Redundancy is a waste of expression for them. They develop mechanisms for ignoring, suppressing and disdaining feelings that hamper the rational processes.

Their support of science, logic and structure is marked with their intellectual criticism on society's habits, customs, beliefs and shortcomings which adds to the welfare of society through solutions. Statistics have shown the presence of thinking types more in males than females (Schaubhut&Thompson, 2008).

Feeling:

Feeling types have huge need of finding human element in their communication with the outer world. They want to harmonize world around them in a universal bond and make sure decisions have a human element in them. Extremely sentimental, they consider feelings enough of a reason to ignore a logic (Myers&Myers, 1995). They are more people-oriented than things. They would rather be tactful than truthful in situations where a decision between them is enforced. They have a larger share in social arts than business activity. They are more likely to agree with people to harmonize. They consider it extremely important to be friendly and gregarious. They find it hard to organize their communication at times resulting in repetition and redundancies. They tend to ignore thinking faculties if it can hurt someone's feelings. They contribute to society by their support of welfare, charity and initiatives towards improvement of Morales. These types are more common in females than men (Keirsey&Bates, 1998).

Perceiving:

The mode of decision making for some people is perceptual. These people tend to be open to subtle ways of doing things, obtaining information and keeping things open for a better solution. They perceive things to be an on-going process of understanding (Higgs, 2001). Their curiosity is way more developed than their decisive abilities. Their improvisational capacities are huge and they can easily adapt to their environment (Mann, 1959). They are good at handling unplanned events but maybe not equally good at choosing between life opportunities. Their openness to new experiences and everything new gives them more opportunities than they can handle. Their lack of confidence about their information makes them keep doors open without making decisions until they deadlines (Keirsey&Bates, 1998). They like to keep up with other people's lives and projects. Their love of everything new feeds them until the novelty is gone.

Judgmental:

People with judgmental function as their dominant function tend to finalize matters at hand. They don't like to leave things open and want deadlines and decisions on every aspect of their lives. To them closure is very important and things have to be in order (Myers&Myers, 1995). They are planners, organized, and custom oriented. They are good at choosing between life's possibilities but can be bad at coping with the unexpected. They tend to be very protective and rational to secure themselves from unwanted experiences. They have a huge need of making decisions, settle down things once and for all, and be filled in on how things are progressing.

They are proactive in telling other people what they need to know based on their assumption that they know what other people are doing and thinking. They get satisfaction from completing things. They organize themselves, strive for the best and have a self-righteous attitude (Higgs, 2001).

This categorization was a huge step in understanding human behavior and its causes. This causal effect between dominant processes of brains with the external behaviors of human can be used to explain and predict human behaviors in many situations. It can also be inferred ergo that the knowledge of these types and their dominant brain functions can lead to better utilization of individual talents and gifts based on the understanding of their types (Keirsey&Bates, 1998). All these characteristics are distinct; their ways of approaching realities and reacting to different situations is unique. The beauty of humankind is however in its very subtleness and psychological typology is an honest attempt to explore and appreciate these differences. Understanding promotes respect and better utilitarian efforts to provide for these unique people. Different personality types will be individually explained in following sections.

3.1.2 ISTJ - Introvert, Sensing, Thinking and Judgmental

An ISTJ personality type is formed with a combination of dominant characteristics of introversion, Sensing, Thinking and Judging. Their primary direction is inwards and lots of information tends to stay in their brains without expression. They take information from their environment through their five senses in a matter-of-fact manner (Myers&Myers, 1995). The thinking preference processes that information further on the basis of strict criteria of logic and structure. Based on the data gathered, analytics are performed and the process of making decision is executed through judging preference. The process of extraversion, intuition, feeling and perception are also present but they are auxiliary process and are somewhat ignored by the tendency to use dominant processes (Keirsey&Bates, 1998).

Combinations of these characteristics shape a personality character that tends to be quiet, reserved and vigilant about its surroundings. They are interested in taking things at face value and ensuring security and serenity. Their sense of duty come from observable facts and rational thinking and gives them the motivation to complete tasks in objective manner. Given proper instructions they know how to get things done (Myers&Myers, 1995). They are highly dependable and loyal people. Their commitments to the society, family, and friends are authentic and they are known as good citizens. Even with their serious attitude and business-like manner at work they can be fun in circles of close friends and family. They are the true proponents of laws, traditions, and procedures.

Their compliance with the given process is well-established and they are uncomfortable questioning the laws. Their weaker sides tend to be adaption and intuitive process, without which they can be seriously disturbed and without orientation.

They need security, plans and tools to work with. They need things in order to understand and work (Keirsey&Bates, 1998). Unexpected situations and lots of change can put them outside their comfort zone. They are averse to impractical people and ideas.

Their strengths are augmented best when they work alone on their own pace in peace but they are equally good at working with others if they understand their behaviors. Their sensing preference makes them a vault of immense amount of facts and their respect and love for facts make them highly precise in their work.

They can be hard-nosed if confronted with ideas largely diametric than their own. Ideas have to be structured with facts and logic to convince them of the importance of those seemingly daunting ideas (Myers&Myers, 1995). Once they are convinced of the ideas, they become loyal crusaders of the cause. ISTJ's thinking preference causes them to be incongruent to other people and their own feeling. Their emotional side is less developed and they find it hard to see the human element in communication. They can objectify people to be perfectionist and get things done which to a feel type is ultimate sin. They don't know in general how to support and empathize with people around them emotionally. They are gifted in taking jobs, defining it, breaking it into deliverables and do it. They are very down to earth people. They are spenders and like to have luxurious homes and possessions. Owing to their personality traits and their preferences and behaviors in life they are more likely to perform better at some jobs than others. They tend to be perfect cut-out for Business Executives, Managers, Accountants, Stock Market Analysts, Police Officers, Detectives, Lawyers, Dentists, Doctors, Judges, Computer Programmers and Military Leaders (Keirsey&Bates, 1998). Their impersonal attitude and commitment to precision make them very precise and hence are highly appreciated in roles where their gifts are utilized (Schloemer&Schloemer, 1997).

3.1.3 ISTP - Introvert, Sensing, Thinking and Perceptual

An ISTP personality is a mixture of Introversion, Sensing, Thinking and Perceptual preferences. They are primarily concerned with self, focusing on inner process of their brains and lost in their own world. They gain information using their five senses from their environment and analyze it with their thinking faculties. The result of the information they have and analysis they have done however stays in a very open and liberal state in their brains (Keirsey&Bates, 1998). They like to keep things open for additional information, stay neutral and pluralistic. They tend to gather information and accept its plurality unlike the judging types. They find it hard to make and enforce a decision. They use impartial analysis with impersonal attitude and are usually data bank within themselves. They are highly curious and try to understand things better, craving for more information. Like all thinkers they have strong powers of rationality but they don't like to play with theoretical principles and tend to consider hard facts. ISTPs are known to be adventure loving and outgoing people often involved in daunting sports like surfing, sky diving and racing (Schaubhut&Thompson, 2008).

Their adventurous nature can make them inconsistent when the novelty wears out. They have a specific code for personal ethics and behavior but they are strongly against encroachment on other people's rights (Myers&Myers, 1995).

They need time alone to charge their batteries like all introverts, to be able to synthesize the immense amount of data they collect and understand things better. They like to do things, actively searching information they need. They live in present and make full use of the time. They have their share of disagreements with the feelers when they are unable to understand feelers' grudge based on their unconscious brevity. They are extremely disturbed by stressful situations and can have emotional outbursts very unusual for their type. They don't force others and don't like to be forced. They are good athletes and like to actively follow through their projects. Like their judgmental cousins ISTJs, they are good at police and detective work using their logical faculties. In addition they are commonly found in engineering, carpentry, mechanics, automobiles and entrepreneurship (Schaubhut&Thompson, 2008).

3.1.4 ESTP - Extrovert, Sensing, Thinking and Perceptual

An ESTP is dominated by their functions of Extraversion, Sensing, Thinking and Perception. They are primarily outgoing and oriented towards their environments. They have a huge need of communicating with people around them and are considered talkative and energetic (Myers&Myers, 1995). They use their five senses to gain information from their environment, further processed by the thinking process. However information they have, organizes itself like pieces of puzzle that helps them understand the bigger picture and they consider it an on-going process and consider judging a negative trait. They are not only logical and coherent in their speech; they are straight-to-the-point. Their extraverted energy with excitement makes them the doers that they are.

They learn from doing things and want to experience everything, good or bad (Edmondson, 1998). Their perceptual processes keep them from judging something harshly so that they remain open to experiences. They like other perceptual types dislike complex theories and like to consider facts, decide what is there to be done and do it. Their sensing abilities make them very observant of body language and unnoticed gestures. They inherently understand people’s motivations and attitudes. They hold laws and rules in high esteem like other thinking and sensing types. Their matter of factness with their outgoing attitude gets them what they want (Keirsey&Bates, 1998). Their liberalism however doesn't affect their personal belief system and they have a strong sense of morality and judgment. Their excitement and energy sometimes make them dramatic and stylish. Their story telling with factual inputs make them very charming and interesting people to be around. They can run into disagreement with feelers because of their propensity to keep things strictly logical without taking into consideration the feelings involved in the matter. They are the graspers of processes but are quiet bad with theoretical problems.

Their excitement can be addictive and they suck-in others to the experience making them very good salespeople. They tend to make very good marketers, Paramedics, PC Technicians, Technical support personnel and entrepreneurs (Schaubhut&Thompson, 2008).

3.1.5 ESTJ - Extrovert, Sensing, Thinking, and Judgmental

ESTJs are individuals directed outwards to the environment using sensing, thinking and judgment as dominant processes. They are outspoken advocates of rationality and logic in decisions making. Not only they gather information from their senses and analyze it using impersonal logic they are enforcers who make judgments and get things done. They are surrounded by facts and they love collecting them. Clarity and shape is important for them and worldly laws are of supreme importance to them (Keirsey&Bates, 1998). They like to keep an eye on progress at work and make sure that things are proceeding as planned. They have strong standards for themselves and others and any non-compliance is noticed and criticized severely. They like to make decisions both for themselves and others. They almost single handedly make plans, identify resources, structure the steps and ensure completion. They can be very demanding and critical. Their extraversion and coldness make them a consistent challenge for feelers. They have a strong need of communicating criticism and making impersonal decisions (Mitroff&Kilmann, 2011). They can be heart throbs in the public gatherings and take the stage immediately. They value security and social order and like all sensing people, love harmony and status quo. Their strengths make them very good accountants, Sales representatives, Teachers, Managers and Military personnel (Schaubhut&Thompson, 2008).

3.1.6 ISFJ - Introvert, Sensing, Feeling and Judgmental

An ISFJ personality type is marked by its dominant processes of Introversion, Sensing, Feeling and Judgment. They are inward directed, quiet and shy people who use their sense to obtain information from their surroundings. They value feeling more than thinking and analyze information based on its subjective humanity and harmonizing effects. They eventually make decisions based on judgment upon the information they have analyzed (Myers&Myers, 1995). Feeling types like ISFJs are dedicated to keep kindness and peace in the world. They tend to be warm and radiating people always ready to help others. They take information about their environment based on their feelings and store it in their memory. They are emotionally so attuned with others that they tend to remember body language and expressions of others after years they have met them. They are idealist in their respect for the laws, traditions, human rights and universal ways of doing things.

They favor status quo because of its very presence. They are averse to bookish knowledge like other sensing types and like to learn through implementation of ideas. The pedagogies needed to teach a sensing type should be more practical than theoretical in nature. They are possession lovers and like to consume (Myers&Myers, 1995). Their feeling tendency makes them very close and lavishing friends. Their introversion combined with feeling tendency however can be hurting sometimes for themselves when they bottle up the negative feelings they have about things that bother them. They have hard time saying 'no'. This can add a lot of unwanted burden to them and they are always busy with tasks that they didn't choose for themselves.

They need a positive self-image and become discouraged by criticisms. They make very good interior designers, nurses, administrators, social workers, religious workers, shopkeepers and home economists (Schaubhut&Thompson, 2008).

They like the freedom to work towards the materialization of their deeply held beliefs. They can strongly protest in situations that compromise this freedom (Myers&Myers, 1995)

3.1.7 ISFP - Introvert, Sensing, Feeling, and Perceptual

ISFPs are characterized by their dominant functions of Introversion, Sensing, Feeling and Perception. They are deeply engrossed in the well-being of internal world. They obtain information from their five senses and analyze them based on their subjective human appeal. They collect the data and use it to better understand the world without strongly judging. World for them is a place with unlimited possibilities and opportunities. They love arts especially the ones that make use of their sensing gifts. Photography, visual arts and music are their hobbies. They have strong personal values that they want to comply with most of their lives. They like the freedom to work towards the materialization of their deeply held beliefs. They can strongly protest in situations that compromise this freedom (Myers&Myers, 1995). They are strong guardians of their secrets and rarely open up except to their close and entrusted friends. They need their personal space for processing information they gather and charge their batteries before they set out to explore more. They like others who are patient with them and encourage ISFPs steps towards fulfillment of their desires. Like other sensing types they are averse to theories and like doing things with practical usages. They themselves are very caring, patient, tolerant and lenient people and like others to be the same way. They tend to be highly down towards earth and humble. They tend to be artists, designers, child care professionals, social workers, psychologists, musicians and pediatricians (Schaubhut&Thompson, 2008).

3.1.8 ESFP - Extrovert, Sensing, Feeling and Perceptual

An ESFP utilize the dominant functions of an extravert, sensing of a sensor, feeling of a feeler and Perceptual organizing of the information. They are social, outgoing and talkative people. They gather information from their five senses to analyze that information based on their own subjective feelings (Goby&Lewis, 2000). The results are saved in subconscious and are piled up systematically to be able to understand the phenomenon completely (Keirsey&Bates, 1998). They dislike using judgment unless they completely understand the situation. They see their environment as potential world of possible paths. They like experiences and believe in indulging in them. They learn through experience rather than intuition. Their orientation is present and whatever is available now and have little concern for future possibilities. They have very well developed communication skills and serve as intermediary in many situations. They are more likely to identify with other people based on their feeling propensity than their ST (Sensing, Thinking) cousins. They are genuinely interested in other people's welfare and peace.

They can be very impulsive, taken away by their feelings and pleasure-oriented outlook. They are prone to succumbing into immediate gratification in the absence of a well-developed thinking and judgment process. They depend largely on public acceptance and acknowledgement and will do things to please people (Myers&Myers, 1995). They have a 'bed or roses' attitude towards life viewing everything as an opportunity for celebration. They can become irrational at times swayed away by their feeling tendencies. They can easily become stressed by thinking type's bringing them back to reality attitude.

They are at odds with complex theoretical principles and love to do things with their own hands. They love possessions like all other sensing types and have an eye for beauty and aesthetics. They being friends of everyone don't like to cause problems and go at great lengths to get along with everyone at work which they generally do. They are more common in occupations like Performing, Acting, Social work, Child care, Fashion Designing, Consulting and Photography (Schaubhut&Thompson, 2008).

3.1.9 ESFJ - Extrovert, Sensing, Feeling and Judging

ESFJs are extroverts who use sensing, feeling and judging as dominant process to communicate with the world outside. Exciting and energetic ESFJs are focused towards their environment and gain information about their surroundings through their literal five senses. They use their feeling process to make subjective analysis on the information they receive and then apply their judgment based on their analysis. They are all about people and they enjoy being out with them. They use their sensing to get information about other people's emotional and mental state and are very good judges of human behavior (Keirsey&Bates, 1998). They have strong need to be liked and they like others in general. They are so good at people that other people continuously feel good about themselves because of ESFPs consistent applaud for them.

They have hard time understanding why others are unkind to them and don't see the reason for impersonal behavior. Extremely sensitive in nature they often deny seeing a hard fact about people they care.

They have personal values but they are always open to other people's feedback on that and can at times change their values in deference to society's wishes. Their dependence on community and altruistic love for people make them one of the most kind and sacrificing people of all types. They can hence be quiet dangerous also when they can manipulate others for the sake of societal acknowledgment. Their kindness and earned trust makes it easier for them to manipulate people. They are good at being systematic and thorough. They are against using novel ways of doing things and cling hardly with established procedures. This tendency along with their kindness can make them quiet gullible. They work best as Child care practitioners, office managers, social workers, teachers and nurses (Schaubhut&Thompson, 2008).

3.1.10 INFJ - Introvert, Intuitive, Feeling and Judgmental

INFJs are highly introverted people using their intuition to collect information from their surroundings, doing subjective analysis of the information obtained through their feelings and then applying judgmental based on the analysis. They live in their ivory towers and almost have no need for societal acceptance (Myers&Myers, 1995). They tend to work independently for long periods of times with little or no encouragement at all. They are extremely complex and intuitive individuals with the wealth of kindness and care for others. They are the rarest people among population comprising roughly one percent of the population (Schaubhut&Thompson, 2008).

> *"Despite being extremely private people, they love people close to them and have a very deep bond with them. People of all types are attracted to them because of their wide range of exceptional gifts."*
> *(Keirsey & Bates, 1984)*

They are big organizers and want everything systematic and in order. They continuously indulge in the process of finding best way of doing things to the point of perfection and meanwhile constantly dismantling and re-assembling established understandings. They have such a strong intuition that they know things without having so much knowledge about it almost at psychic levels. They tend to be right in most situations. They know their potentials and have strong faith in their abilities. They have a deep schism between inner and outer worlds sometimes astonishing themselves. This makes them disorganized in comparison with other judging types.

INFJs have mysterious insight into human beings and are natural clairvoyants. They get the 'feeling' about something being right or wrong and it almost always turns out to be that. They sometimes themselves cannot explain in words, their hunches and thereby reporting incidents of psychic nature. They protect their inner world as explosives because of their intensity and are generally very hard to understand (Keirsey&Bates, 1984b). Despite being extremely private people, they love people close to them and have a very deep bond with them. People of all types are attracted to them because of their wide range of exceptional gifts. They are bad at dealing with conflicts and disagreements and tend to internalize the problems resulting in health problems. They can be very stubborn because of their unshakable faith in their quasi perfect intuition and can be very hard to deal with at times. They are rarely at peace with themselves and want to improve things. They are the most hard-nosed perfectionists of all types. They have very strong value systems and don't believe in compromising on value systems. They can become very good musicians, Clergy, Teachers, Doctors, Psychologists, Photographers and Psychiatrists (Schaubhut&Thompson, 2008).

3.1.11 INFP - Introvert, Intuitive, Feeling and Perceptual

An INFP uses his dominant functions of introversion, intuition, feeling and perception to communicate with his outer world. They are very private people lost in their own worlds using their intuition to gather information from their environment. They further use feeling analysis on the information and organize it in memory to be able to understand the bigger picture of the matter at hand. They have a strong ability to make things better and promote peace in the world through their human perception and understanding of difference between humanity (Myers&Myers, 1995).

They often deal with the questions about the purpose of life and meaning in it. They are perfectionists and consistent in their journey towards the truth. They want to put all the information they have gathered in a nutshell to explain them the ontological questions about universe and how it can be unified. They avoid conflict and deal it with their subjective understanding of it when forced into making decisions. They are however natural healers and put other people at ease (Kennedy&Kennedy, 2004). They are quite inattentive to the physical realities and can be quiet untidy. Being so human oriented they often have shortage of facts and logics and can be short on suitable words talking about reality. Their perfectionism can be a problem for them at times working with other people who tend to become content with much less standard of work than theirs. They are good writers, counselors, teachers, psychologists and musicians.

3.1.12 ENFP - Extrovert, Intuitive, Feeling and Perceptual

ENFP use their dominant functions of Extraversion, intuition, feeling and perception to communicate with the external world. They are very talkative, charming, enthusiastic and passionate people. They use their intuition to gather information from their environment and use their subjective feeling to analyze it. Subsequently they try to make sense out of the information they have analyzed to understand the world better. They live in a universe of possibilities that keep them motivated and enthusiastic about experiencing everything that can be experienced. They are good at intellectualizing in and out of situations and have a cogito ergo sum attitude. (Keirsey&Bates, 1998). They value life as a gift and want to live it to the fullest. They are generally very bright and talented and have many sides. They are prone to changing careers and drift from one interest to others. They have strong value systems however that they want to adhere to in their life. They have a strong need to understand life and fathom the meanings behind every occurrence. Nothing happens without a reason for them and it has to be decrypted.

They are very intense people and emotional excitement is their inevitable need. ENFP unlike other extroverts need time alone to bring them back to what matters most to them and centralize their life. That does not happen as often as they like though caused by their disorientation from a project they started. That makes them generally less achieving than what they are capable of achieving. They are very oblivious to per diem needs and have very disorganized rooms. ENFPs can be very good at manipulating however because of their gift of gab. They generally don't abuse it. They can often make serious errors in judgment because of their intense desire to experience everything without thoughtful consideration. They don't like controlling others and don't like being controlled. They make exceptional consultants, psychologists, Actors, Journalists, Counselors, Artists and Diplomats (Schaubhut&Thompson, 2008).

3.1.13 ENFJ - Extrovert, Intuitive, Feeling and Judgmental

ENFJs have dominant functions of Extraversion, Intuition, Feeling and Judgment. They are very talkative and out-going people who learn from their environment through intuition and analyze the information based on their feelings. Based on that information they use judgment process to make a decision about it. They like to attend to people and keep socializing (Myers&Myers, 1995). They have exceptional people skills and usually have large circles of friends and acquaintances. They bring the best out of people around them and have the required tools for that. They are lovers of nice time and good companionship (Rosswurm et al., 2007).

They like to make change and revel in their efforts towards this end. They have such keen abilities to get real information from people that they can make them do almost whatever they want. They don't misuse their gifts generally.

They are so social that they sometime forget the need of being alone and take a break. Their intense relation with their environment and community makes them prone to societal pressure however and they risk living their lives according to established expectations rather than their own value systems. They are surprisingly contrasting from other extroverts in their reservations about completely opening themselves to others. They believe that it would interfere with their efforts of bringing best out of others. They are likely to become very lonely and depressed if left alone. They are very organizing and orderly in their conduct and households. They love being center of attraction. They have low tolerance for impersonal reasoning and detest strict thinking types. They jump on possibilities and get excited without consideration to their practicality. They are best used as facilitators, teachers, sales representatives, managers, coordinators and consultants (Schaubhut&Thompson, 2008).

3.1.14 INTJ - Introvert, Intuitive, Thinking and Judgmental

INTJs are dominated by their well-developed functions of Introversion, Intuition, Thinking and Judgment. They are quiet and reserved people who get information about their surroundings through their intuition subsequently applying thinking analysis to it. Results help them apply judgment to the understandings that they have reached. They are natural planners and strategists. They are highly intelligent people who merit knowledge, competence and high standards (Keirsey&Bates, 1998). They are quick to grasp the meanings of a new idea and to think about its implementation. They try to get information necessary to make a decision about the practical implementation of the concept rather than continuous gathering of information to make decisions easier like perceptual types.

Their penchant for complex logical principles and rational arguments make them very good scientists. They have such complex, analyzed ideas that it is hard for them to express it to others in comprehensible manner (Myers&Myers, 1995). An average person nearly finds them incomprehensible. They try their best however to make their highly systematic ideas digestible.

Their introversion makes them work in the background but they are natural leaders gaining power from their abilities to foresee situations and make master plans. They truly live in their heads and have little concern about world around them. INTJs are mistaken to be cold and rigid.

They are quick to grasp the meanings of a new idea and to think about its implementation. They try to get information necessary to make a decision about the practical implementation of the concept rather than continuous gathering of information to make decisions easier like perceptual types.

That however comes from their inability to express their long-ranged, well thought-out ideas which are too complex for average human being. Their inability to translate them to lingua franca makes them an outcast at times. They are perfect scientists, engineers, medical doctors, corporate strategists, lawyers, judges and system analysts (Schaubhut&Thompson, 2008).

3.1.15 INTP - Introvert, Intuitive, Thinking and Perceptual

INTP uses his dominant processes of Introversion, Intuition, Thinking and Perception. Their focus on internal worlds makes them the thinker types. They use their intuition to gather information from their ambiance and analyze it with thinking faculties. The result is then used to create a collage of understandings to form an opinion about the issue. They are logical thinkers who live in possibilities of the theories (Myers&Myers, 1995). They like to play with the ideas and find out its potential. They are very good with mind analysis, pattern recognition and solving intricate problems. They are ingrained in scientific theories and are intelligence fanatics. Scientific geniuses are often found out to be INTPs. They are totally ignorant of external worlds.

They spend their lives solving problems in their heads. They have academic skepticism; questioning and re-questioning established procedures and coming up with new explanations of things. They like to find explanations for things other people hardly consider worth explaining. They are enthralled by the opportunity to discuss their theories with no regards to its application. They consider it menial work for others to do. Their main job is to come up with the phenomenal idea and then move on to the next one. They are very tolerant and liberal people in general and keep to themselves. They have almost no touch with feelings and simply don't understand their existence or place in their world. They are truly intelligent and outstanding people and knowledge of that without regards to other people's feeling might make them narcissistic in some ways. They are extremely unconventional and selfless people and live for the sake of understanding. They are best as scientists, strategic planners, mathematicians, forensic researchers, attorneys and technical writers (Schaubhut&Thompson, 2008).

3.1.16 ENTP - Extrovert, Intuition, Thinking and Perceptual

ENTPs use dominant functions of Extraversion, Intuition, Thinking and Perception. They are talkative people who use their intuition to gather data about their surroundings and use thinking process to analyze it. Results are then compared with each other to start an on-going process of data collection and new understandings of perception. They have strong need of understanding the world they live in.

They continuously scan their environment for information that help them understand the situations and realities (Keirsey&Bates, 1998). They are social scientists to be precise. They can cope with changing situations very effectively and have deep insights into people and society.

They are talented and have well-rounded skills. They can easily become excited by an idea and spread their excitement to people gaining their support in the process. They are more idea people than implementing people. Their enthusiasm comes from the novelty of an idea rather than its routine implementation. They are very bad at following through their projects however and in absence of a well-developed judgment process they are likely to drift between uncompleted projects. They are conversational professionals and love the argument arguendo to add spice to the experience. They like to use linguistic gimmicks to spin the situation in their favor which can give them a reputation of a manipulator. They are quite impersonal in their dealings and can be a hard nut to crack for feeling types. They make adept lawyers, psychologists, scientists, actors, marketing personnel and consultants (Schaubhut&Thompson, 2008).

3.1.17 ENTJ - Extrovert, Intuitive, Thinking and Judgmental

ENTJ is formed by its stronger faculties of extraversion, intuition, thinking and judgment. They are outgoing people who gain their energy from discussing their ideas and interacting with their environments (Culp&Smith, 2001). They use their intuition to gain information from their environment and logically analyze it with their thinking abilities. The results are then used to make decisions based on judgment. They are known as the executive types (Furnham&Stringfield, 1993).

They find things challenging in general and make it a responsibility to take those challenges. They love being leaders and make decisions (Myers&Myers, 1995). They have the natural aptitude to obtain impersonal information and make logical decisions using them. They like long-term planning and are a cut-out for corporate careers and strategic positions. They are very good at utilizing resources and mobilizing efforts. They are obsessed by predicting the direction of an organization and controlling it to right path which makes them born executives. They are unrelenting towards mistakes and repetition of errors.

They are highly impersonal and utilitarian and can become extremely cold and harsh when forced into situations involving condoning shortcomings. They have high standards and have no connection with feelings of others and can be very controlling. They have hard time seeing other people as independent thinkers and disagreeing with them. They have personal authenticity and influence which they use to lead people around them. They are purely fascinated with lively and challenging discussion with someone who confronts them. They are self-confident and like to tussle with similar people. It is not easy however to face ENTJs because of their extreme faculties of thinking and powerful presence. Even though they are natural corporate executives, they can be good at entrepreneurship, law, business administration and university teaching (Schaubhut&Thompson, 2008).

3.2 Keirsey Temperament Sorter

Keirsey Temperament sorter was developed as a result of further development of Myer-Briggs Type Inventory by Professor David Keirsey. He came across the book by Myers called 'The Myers-Briggs Type Indicator' and was first introduced to their work in 1956. According to type analysis he was identified as an INTP self who tend to be very good researchers.

He later discovered that all of his close friends and acquaintances are ad idem types (Keirsey&Bates, 1998). He also understood the reasons behind different types of people and why are they more suitable for some professions than others (Keirsey, 2013b). In decades of research after his first encounter with their work, he explored the historical development of personology and human type research.

> *Keirsey is known as a brand in more than 170 countries in 20 languages. Two third of the fortune 500 companies have used it. It is widely used in consulting, training and coaching throughout the world (Keirsey, 2013b)*

He published his best seller 'Please Understand ME II' in 1978 (Keirsey&Bates, 1998). 17 million people have taken the instrument via the website until now. Theory has been used by major corporations, government institutions and educational organizations worldwide. 4 million copies of Please Understand Me II have been sold in more than 12 languages. Keirsey has been known as a brand in more than 170 countries in 20 languages. Two third of the fortune 500 companies have used it. It is widely used in consulting, training and coaching throughout the world (Keirsey, 2013b). He delved into theories which aided in developing personality types. He noticed that Hippocrates in the beginning of times had introduced four humors: Cheerful, somber, enthusiastic and Calm. He denoted them with Blood, Black Bile, Yellow Bile and phlegm.

Date	Author	Artisan temperament	Guardian temperament	Idealist temperament	Rational temperament
c. 590 BC	Ezekiel's four living creatures	lion (bold)	ox (sturdy)	eagle (far-seeing)	man (independent)
c. 400 BC	Hippocrates' four humours	cheerful (blood)	somber (black bile)	enthusiastic (yellow bile)	calm (phlegm)
c. 340 BC	Plato's four characters	artistic (*iconic*)	sensible (*pistic*)	intuitive (*noetic*)	reasoning (*dianoetic*)
c. 325 BC	Aristotle's four sources of happiness	sensual (*hedone*)	material (*propraietari*)	ethical (*ethikos*)	logical (*dialogike*)
c. 185 AD	Irenaeus' four temperaments	spontaneous	historical	spiritual	scholarly
c. 190	Galen's four temperaments	sanguine	melancholic	choleric	phlegmatic
c. 1550	Paracelsus' four totem spirits	changeable salamanders	industrious gnomes	inspired nymphs	curious sylphs
c. 1905	Adickes' four world views	innovative	traditional	doctrinaire	skeptical
c. 1912	Dreikurs'/Adler's four mistaken goals	retaliation	service	recognition	power
c. 1914	Spränger's four* value attitudes	artistic	economic	religious	theoretic
c. 1920	Kretschmer's four character styles	manic (hypomanic)	depressive	oversensitive (hyperesthetic)	insensitive (anesthetic)
c. 1947	Fromm's four orientations	exploitative	hoarding	receptive	marketing
c. 1958	Myers' Jungian types	SP (sensing perceiving)	SJ (sensing judging)	NF (intuitive feeling)	NT (intuitive thinking)
c. 1978	Keirsey/Bates four temperaments (old)	Dionysian (artful)	Epimethean (dutiful)	Apollonian (soulful)	Promethean (technological)
c. 1988	Keirsey's four temperaments	Artisan	Guardian	Idealist	Rational

Figure 6 Source: (Keirsey&Bates, 1998)

It was the first categorization of human personality traits in some ways. Plato around circa 340 BC introduced the four characters: Artistic, sensible, intuitive and reasoning. He referred them as iconic, pistic, noetic and dianoetic (Keirsey&Bates, 1998). Aristotle found four sources of happiness to be sensual, material, ethical and logical. Irenaeus divided people based on four temperaments called spontaneous, historical, spiritual and scholarly. Galen's four temperaments however comprised of sanguine, melancholic, choleric and phlegmatic. Four totems of Paracelsus were changeable salamanders, industrious gnomes, inspired nymphs and curious slyphs. Adickes's four views of world were innovative, traditional, doctrinaire and skeptical. Dreikus considered retaliation, service, recognition and power as four mistaken goals of human beings. Spränger listed four fundamental value attitudes as artistic, economic religious and theoretic. Kretschmer refers manic, depressive, oversensitive and insensitive as four character styles. Fromm divides people into four categories based on their orientations as exploitative, hoarding, receptive and marketing. He then writes about MBTI and based his four categories on MBTI's 16 types (Keirsey, 2013a).

3.2.1 Four Groups of Keirsey Temperament Sorter

Keirsey divides groups based on their 2 factor combination. **SPs (Artisans)** tend to be party lovers and hedonistic in their lifestyles (Keirsey&Bates, 1998). They can be different based on their orientation towards Introversion/extroversion, and thinking/feeling preference but they are very open and easy going people with strong grasp on realities. Artisans are known for their interests in art and crafts, technical work and equipment. They live in a present of hedonism.

They are future oriented and optimistic. They view past as somewhat cynical. They are true believers in carpe diem. They view themselves as artistic, audacious and adaptable. They get excited and follow their impulses. They want to see the impact of their work and seek stimulation. They are generous and aspire to be a virtuoso. They are liberating parents and leading negotiators.

He considers **SJs (Guardians)** as organized and vigilant community members dedicated to goals, commitments and routines. They may have different dominant functions based on Introversion or Extraversion and Thinking or Feeling preference but they tend to be responsible citizens. Guardians use very concrete language which is associative in its nature. They like to be imperative in their reference, comparative in their syntax and orthodox in their rhetorical expression. They have strong logistical abilities make them stringent administrators. They are highly involved with commerce, concerned about morality and material. They have an orientation towards present which can be classified as stoicism (Keirsey&Bates, 1984a). They view future as pessimistic, past as fatalistic and generally view present as the best time. They are highly dependable, beneficent and respectable. They are concerned, authority loving, belonging, security driven, filled with gratitude and executive role oriented. They make very good socializers and stabilizers.

They like to be imperative in their reference, comparative in their syntax and orthodox in their rhetorical expression. They have strong logistical abilities making them stringent administrators. They are highly involved with commerce, concerned about morality and material. They have an orientation towards present which can be classified as stoicism (Keirsey&Bates, 1984a)

NFs (Idealists) on the other hand are the idealists and torch-bearers of new and the unseen. Despite their propensity towards Introversion or Extraversion, and Thinking or Feeling, they are deep feelers and change makers**.** Idealists are feelers who use cooperative tools with abstract communication. They are highly inductive in their language, use interpretation as reference, use metaphors in syntax and hyperbolic in their rhetoric (Keirsey&Bates, 1984a). They are natural mentors, teachers, counselors and champions. They are engrossed with all their mental faculties in humanities, morality and people. They are altruistic, credible, mystics, and are future oriented. They have a very empathic self-image and are benevolent and authentic. They are enthusiastic, have strong intuition, tend to be romantics, search for an identity, like recognition and are seen as sages. They are the harmonizers and catalysts in leading roles.

NTs (Rationals) are the rational thinkers with brief, calculated and impersonal attitudes (Wethayanugoon, 1994). They can have a combination of Introversion or Extraversion and Thinking or Feeling preference but they tend to be very precise and practical in assessing their environment.

Rationalists use concrete and abstract communication patterns and are highly deductive in their reasoning. They are categorical, subjunctive and technical. They like strategies and often make good field marshals, engineers, inventors and architects (Keirsey, 2013a). They have a gift for science, technology and systems. Their worldview is of pragmatism, skepticism, and relativism with positive orientations. They like to see time as intervals arranged chronologically. They are very ingenious, autonomous and resolute. They tend to remain calm and reasonable. They like achievements and are knowledge oriented. They are individuating and visionaries in their conduct of others. He further divides them in what he considers to be the best roles for them. He views ESTPs as promoters of a cause, ISTPs as crafters, ESFPs as performers and ISFPs as composers. Together he refers them as artisans of our worlds who harmonize the world with their unique abilities.

His categorization defines ESTJs as supervisor types, ISTJs as inspector types, ESFJ as providers and ISFJ as protectors. These four make up a group of people known as guardians of our world. Their unique gifts make them the ones who establish order. ENFJ is stated to be teacher type, INFJs as counselors, ENFPs as champions and INFPs as healers. Their power of feeling and inspiration make them the soul of the world and bring positive changes to the world. They are known as idealists. The Rational types are made up of ENTJ the field marshal, INTJ the mastermind, ENTP the inventor and INTP the architect. They bring the power of rationality logic and science to the world with their strong mental abilities.

The Traits of Temperament and Character

Communication	Concrete		Abstract	
Implementation	Utilitarian	Cooperative	Cooperative	Utilitarian
Character	Artisan	Guardian	Idealist	Rational
Language	**Harmonic**	**Associative**	**Inductive**	**Deductive**
Referential	**Indicative**	Imperative	Interpretive	Categorical
Syntactical	**Descriptive**	Comparative	Metaphoric	Subjunctive
Rhetorical	**Heterodox**	Orthodox	Hyperbolic	Technical
Intellect	**Tactical**	**Logistical**	**Diplomatic**	**Strategic**
Directive Role	**Operator**	Administrator	Mentor	Coordinator
• Expressive Role	**• Promoter**	• Supervisor	• Teacher	• Fieldmarshal
• Reserved Role	**• Crafter**	• Inspector	• Counselor	• Mastermind
Informative Role	**Entertainer**	Conservator	Advocate	Engineer
• Expressive Role	**• Performer**	• Provider	• Champion	• Inventor
• Reserved Role	**• Composer**	• Protector	• Healer	• Architect
Interest				
Education	**Artcraft**	Commerce	Humanities	Sciences
Preoccupation	**Technique**	Morality	Morale	Technology
Vocation	**Equipment**	Materiel	Personnel	Systems
Orientation				
Present	**Hedonism**	Stoicism	Altruism	Pragmatism
Future	**Optimism**	Pessimism	Credulism	Skepticism
Past	**Cynicism**	Fatalism	Mysticism	Relativism
Place	**Here**	Gateways	Pathways	Intersections
Time	**Now**	Yesterday	Tomorrow	Intervals
Self-Image				
Self-Esteem	**Artistic**	Dependable	Empathic	Ingenious
Self-Respect	**Audacious**	Beneficent	Benevolent	Autonomous
Self-Confidence	**Adaptable**	Respectable	Authentic	Resolute
Value				
Being	**Excited**	Concerned	Enthusiastic	Calm
Trusting	**Impulse**	Authority	Intuition	Reason
Yearning	**Impact**	Belonging	Romance	Achievement
Seeking	**Stimulation**	Security	Identity	Knowledge
Prizing	**Generosity**	Gratitude	Recognition	Deference
Aspiring	**Virtuoso**	Executive	Sage	Wizard
Social Role				
Mating	**Playmate**	Helpmate	Soulmate	Mindmate
Parenting	**Liberator**	Socializer	Harmonizer	Individuator
Leading	**Negotiator**	Stabilizer	Catalyst	Visionary

Figure 7 Source: (Keirsey&Bates, 1998)

3.2.2 Word Usage of Different Groups

Keirsey argued that the usage of the words varies from subtle preferences of functions. People with assorted aptitude tend to use specific language in specific situations. Their understanding and expression of information is categorized into a tabular format (Keirsey&Bates, 1998). He argues that SJs the fact-based people tend to be very concrete and cooperative in their communication with others. The tool they use is cooperative and their expression of it is concrete and precise. They use definitive words and want to make sure they are on same page as others in terms of understandings. NFs the ideal types are more abstract in their word usage and tend to use complex terms and terminologies. Their tool is cooperation with others. SPs tend to be concrete like sensing types and use decisive words and strict meanings. They tend to be utilitarian however in their tools and tend to objectify people in decisions. Same goes for the rational group who uses an abstract vocabulary with utilitarian orientation.

3.2.3 Logistics, Tactics, Strategy and Diplomacy

Keirsey states tactics, logistics, strategy and diplomacy as four qualities of a character that varies from one type to others. Every type has these qualities; some are more developed than others. The natural tendency to lean towards one quality because of the personality traits is natural. One quality is the dominant strength and others are there as background processes or less stronger sides (Keirsey&Bates, 1998). He notices that SPs have a very strong capability of using tactics as their dominant strength. Their less developed quality is logistics. Strategy follows after it and they are least comfortable with diplomacy. NFs on the contrary are best at diplomacy. Their strategizing capabilities are second best and logistics comes up on third position. They have least tactical abilities as compared to other types. NTs the rationals are particularly good at strategizing. They use diplomacy as their second best and tactics as third. Logistics seem to be their weaker side. SJs are noted to be very good at logistics. They support it with their auxiliary process of using tactics. Diplomacy is their third best and they are quiet inept at using strategy.

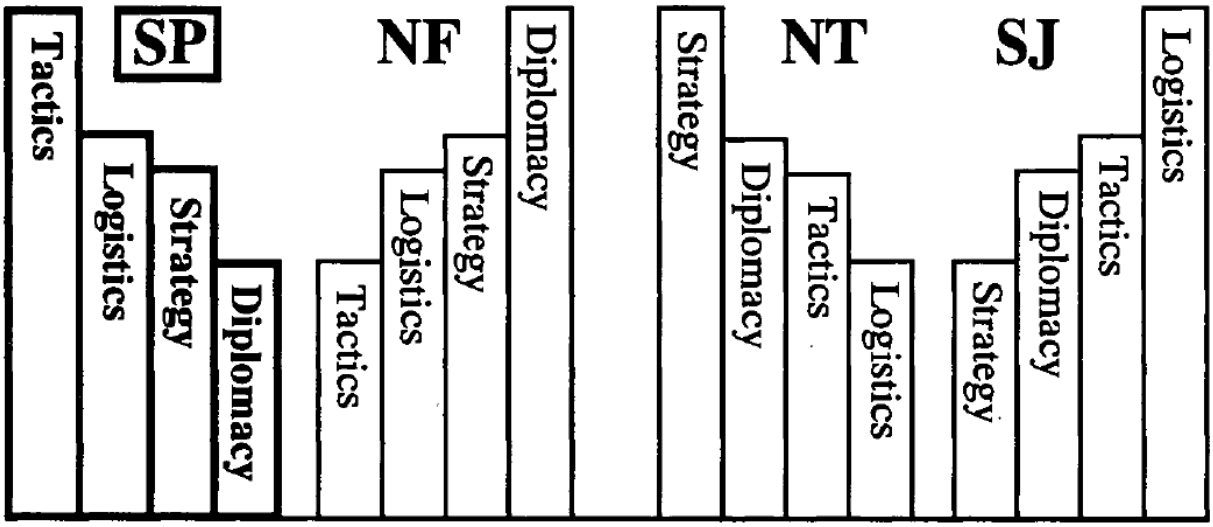


Figure 8 Source: (Keirsey&Bates, 1998)

3.2.4 Summary of Theoretical Framework

The background and early developments of psychometric testing systems and the motivation behind them is extensively explained in the chapter. Further development of the tool for usage in different fields has led to more research into psychometrics. MBTI instrument and Keirsey temperament sorter are one of the leading theories of personality type inventory and are based on Jungian typology and its description of personality types. Their subsequent meanings in practical life and occupational sector are further developed by aforementioned. This summarizes the theoretical portion in which an overview is given for the readers to understand the theoretical underpinnings of the model. In next chapter, discussion on the empirical section of the study will be made.

4. Empirical Findings

The two companies interviewed, a Swedish Management Consultant and An American psychological assessment center will be introduced here. The findings from the interviews that have been conducted will be provided here. After the findings have been presented, a subsequent analysis will be made upon them.

4.1 Assessio

Assessio is the largest consultant in the field of psychometric assessment and providers of commercial solutions to recruitment. They have a unique standing not only in Scandinavia but also in Europe (Assessio, 2013m). It was started in 1954 by the Swedish Psychological society who specialized in the publication and research of the psychometric testing system. For 40 years it has worked independently to develop testing systems and its applications. In 1991, company was acquired by Professor Hunter Mabon who teaches Personnel Economics at Stockholm University (Assessio, 2013e). The idea of acquisition was motivated by the practical applications and commercial usage of the developed assessment theories. Applications were developed based on the solid scientific knowledge and demonstrated in commercial sector to aid executive recruiting and second opinion requests (Assessio, 2013j).

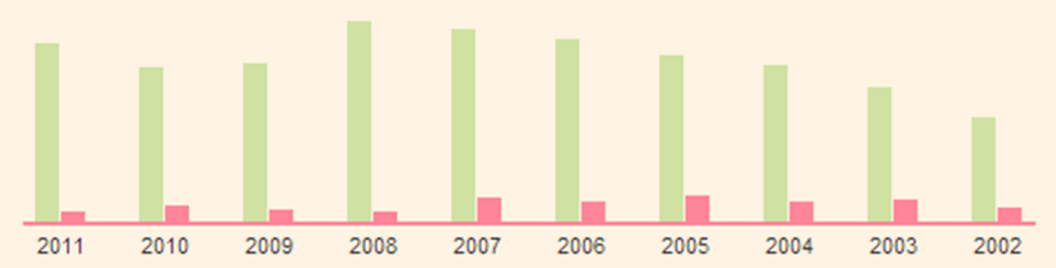


Figure 7 Assessio Growth Rate. Net sales/Net Income

Source: http://www.allabolag.se/5560474255/bokslut

Assessio has emerged as leading management consultant in human capital management after 20 years and its tests are available in 30 countries in many languages. In the beginning the company worked with all kinds of testing solutions including clinical psychological assessments, school assessments, and I/O psychology also known as Industrial and organizational psychology (Assessio, 2013f) . In 2008 Assessio sold the rights of clinical and pedagogical psychological assessment to Högrefe, a German company based in Göttingen, Germany.

Table 5 Interviewee Profile X1

Interviewee Code	Gender	Interview Duration	Position
X1.1	Female	1:12	Head of International Operations
X1.2	Male	1:12	Consultant Psychologist

Company works with almost all major psychometric and behavioral tests e.g. MBTI, Big Five Factor, MINT, PJP and Matrigma (Assessio, 2013j). Company not only offers help in recruitment decisions based on client needs, it also does the need analysis, appropriate testing model identification and their execution. Second opinion tests are also conducted and training programs for executive recruitment and team building are also provided. Company has developed its own psychological assessment tests and have successfully implemented in some of the highly critical areas in Sweden e.g. example, Swedish National Employment, Trafikverket, Polisen, Stadium, Statoil, and Försvarets materielverk, the Swedish Security services. Some of them have highly sensitive recruitment decisions to make which can have decisive effects on national issues and others need very high level of precision in predicting the personality type and CWB, Counter productive work-behavior.

Assessio provides them with the reliable information with demonstrations and scientific proofs based on peer-reviewed academic literature. Some of the instances are for example, Stadium, one the largest sport product providers in Sweden. They were one of the partners in Assessio's PJP, Predicting Job Performance test development. PJP measures the cognitive ability and personality traits of a candidate (Assessio, 2013j). Statoil is using Assessio's ServiceFirst web-based recruitment portal and automatically administers the test for someone who applies for a sales job (Assessio, 2013g). Upon successful execution it flags the candidate with a yellow, red or green light to indicate the probability of success which is used by recruitment managers as an aid in making decisions. During the interviews, following themes have emerged.

4.1.1 Client Needs

One of the categories that have emerged from the interview is Client Needs, category. It has been mentioned repeatedly and the importance has been stressed from time to time. Tests are a product of client's needs and requirements. X1.1 mentioned that *'Fritids Resor, a chartered travel company uses our matrices to screen the employees who would work abroad at remote destinations independently. Problem was that such people were more interested in partying and travelling lifestyle instead of work and we helped them find more service minded and responsible people*'. Similar thoughts were stated by X1.2 when she was explaining the client needs, *'Psychometrics is a method developed to help in recruitment decisions and most of the time clients don't know what it is. We have to tell them what it is and demonstrate how it works. Most of the time instead of telling the statistical process we just show them what it does and how can it help them*'. I noticed from their body language and facial expression that they find it hard job to convince clients of the usefulness of the tool even when they have largely been successful in getting clients. In a later part Interviewee X1.1 accepted the difficulty which they have to face in order to demonstrate it to clients by saying *'One of the challenges for us in the market is to show that psychometrics work and it is not easy most of time'*.

4.1.2 Recruitment

One of the categories that were formed by interviewee responses is Recruitment. The correlation between overall psychometric and assessment theories with the recruitment aid was discussed throughout the test and respondents had enlightening responses to its relation. X1.1 responded to the question about recruitment decisions based on psychometrics as follows. *'Usage of psychometric assessment in recruitment depends on the case and varies respective to client's needs. In some cases they are used to screen clients and in other cases they are used as second opinions usually in executive recruitment decisions. So it is really a relative decision to use recruitment process. It is very hard to see its benefits and yet it is very popular tool and companies ask for it'*. Interviewee X1.2 was of same opinion when she said *'Lot of companies think that it will not be beneficial for them but in the long run it is because they look on candidates CVs and conduct semi-structured interviews and make decisions based on it without having a solid scientific reason for it and then they are making decisions solely on gut feeling and they get back to starting point because then they have no justifiable reason for making a decision other than intuition.*

On the other hand if they go through the screening process then all candidates have to go through the test and qualify it to go to next levels which are also beneficial for the employers so that they can focus on the qualified candidates rather than everyone. They are given the same opportunity and no one is eliminated on the basis of their name, qualification or background.'

In follow up questions it came out that X1.1 agrees that it again depends on the type of recruitment. He said *'In psychometric tests it is also beneficial to see if they are efficient and helpful. If you have large number of applicants then it is beneficial to screen out the best candidates but if you have few candidates and you have time to get to know them personally, then it does not add much value to conduct the test'.*

> *'Lot of companies think that it will not be beneficial for them but in the long run it is because they look on candidates CVs and conduct semi-structured interviews and make decisions based on it without having a solid scientific reason for it and then they are making decisions solely on gut feeling and they get back to starting point because then they have no justifiable reason for making a decision other than intuition.*

4.1.3 Touchstones for effectiveness

After the discussion on the recruitment aids through psychometrics another interesting development followed when the theme of touchstones of effectiveness emerged as a category in conversation. Proper usage of psychometrics must demonstrate its benefits and the indices that we can use to see that it works should be demonstrated.

X1.1 stated that *'Cost of recruitment process needs to be justified by the output of the tests. The main touchstones for it are the ability of gathering information about a candidate in an efficient way. It can also be seen through work performance. Employee turnover is another measure of it. If you are able to figure out the personality traits, you can see what traits correlate with the high probability of an incidence. You can subsequently pinpoint the high-risk employees based on their propensities*.' It was also an impression that X1.1 had reservations most probably coming from the realization that it might sound too judgmental. He views all these as indices of effective employee recruitment and efficiency however.

4.1.4 Type relevancy for job performance

In reference to discussion on MBTI interview X1.1 mentioned that '*There are two ways of looking at the personality types and its relation to job performance. MBTI is constructed to give personal disposition e.g. Introversion or Extroversion. It is not designed to compare me with interview X1.2. It only tells me my disposition towards a trait. It helps me understand myself.*' He added moreover that '*Five factor tests are largely similar to MBTI with regards to personalities but it is constructed in a different way so it is possible to make comparisons based on Five Factors Mode with a certain degree of precision*'.

Furthermore MBTI at Assessio is used for team development, team building and executive trainings instead of recruitment decisions because it is viewed as helpful tool rather than decision making test. He mentioned that '*Five Factor Model based tests are designed statistically to quantify the personality traits and making decisions based on it. Examples of test based on it are NEO Personality Inventory, first complete Swedish based personality test MAP which stands for Measuring and Assessing individual Potential and PJP, Predicting job performance test. We also have Hogan's Personality Inventory which is partially based on five factor model'*

4.1.5 Psychometrics as decisive factor

The question where the ethical and scientific appropriateness of psychometrics was discussed, an intriguing theme of psychometrics as decisive factor in recruitment decisions emerged. Should the psychometrics be the sole factor in decision making? X1.1 responded it like this '*It really depends in the end what you are looking for. If you are looking for a sales person who will sell products it is really important to use psychometrics because problem is that they are very talkative and are very good at selling themselves. It necessarily doesn't mean that they are good at selling products also.*

There is of course a correlation between one trait with job performance but it doesn't mean it will always be like that. There are other factors to be considered. On the other hand if you are looking for a CEO for his personality and potential to fill the row sometimes you recruit not for his/her potential but because of his connections. It is more because of his market experience and last name and not because of his potential as CEO. X1.2 stated the same as '*Some people are bad at selling themselves and showing their qualifications but through these tests they can show they have more qualifications than shown on CV. They get a better opportunity to show their potential through the tests'*. X1.1 further added that '*In our experience when Swedish Police department Polisen, asked for our help they wanted to change their leadership culture and they wanted the current leadership behavior to change. They wanted more open, analytical and creative people. They wanted specific personality traits in their leadership and we helped them identify and implement a program for that. In FritidsResor we helped them move towards more independent to dependent people in remote locations who would ask the headquarters for help if they have a problem, which in long run is beneficial for them'*

4.1.6 Concluding Remarks

From the discussions five categories have emerged under which all the points have been gathered. The code assignment and categorical adjustments are done throughout the process and in analysis chapter information will be used from these categories.

4.2 CAPT – Center for Applications of Psychological Types

Center for applications of psychological type, CAPT was co-founded by Isabel Briggs Myers and Dr. Mary McCauley in 1975. They met in 1968 (CAPT, 2013a). Mary McCauley was a psychologist in University of Florida at the department of Clinical Psychology and came across the MBTI instrument during her work in Buros Mental Measurements Yearbook. She found it intriguing and started working on its development and application on students and clients. The collaboration started between them and they together developed the first computer scoring program for the MBTI instrument and conducted research study on 3000 students (CAPT, 2013a). Through years of their work and amount of information they had collected led them to co-find the center for applications of psychological types which would continue researching and become an independent not-for-profit organization. CAPT has been located in Gainesville, Florida.

MBTI instrument was initially published by ETS, the famous educational testing service that conducts other prestigious standardized tests like TOEFL, GRE and GMAT. Aforementioned are obligatory tests for prestigious schools in ivy leagues (Kohn, 2000). When it decided to no longer publish the test it went over to a sister organization of CAPT called CPP which was a publishing company started by a Stanford psychologist Jack Black. CAPT holds more than a million records from people who have taken the test. MBTI bibliography has more than 10,000 entries and the library at CAPT has the largest collection on MBTI publications dissertations and theses in the world (CAPT, 2013a).

Table 6 Interviewee Profile Y1

Interviewee Code	Gender	Interview Duration	Position
Y2.1	Male	58 min	Director of Research

4.2.1 Recruitment

The discussion about recruitment help that can be taken from MBTI led to the creation of recruitment category in company Y2. It was from the outset clear that Y2.1 suggested against using MBTI in its present form for recruitment purposes. He stated "*our primary service is training HR people, trainers and counselors. HR departments with enough people to manage ask for our help to assist them in training programs. We publish books on MBTI. We have also published a children's measurement of psychological type for age 7-18. We have done quite some research on archetypal themes in people's lives (CAPT, 2013c). We demonstrate the reliability, validity and improved theoretical assertions of the theory and its applications for clients. We have at one point worked with 91% of Fortune 100 companies. We have done intensive work with Microsoft and Google. Numerous government organizations use our help*.' On subsequent questions Y2.1 responded that 'MBTI *is not designed for recruitment decisions in its current form and both for legal and ethical reasons it is strongly suggested against such use. This misunderstanding that it can be used for recruitment decisions is fostered by lots of initial research on what type of personalities are represented in specific industries which is of course helpful but it is not designed for it. It can be used for career development and career transition phase but it cannot be used as recruitment tool per se. There are some areas like team building where communication is extremely important and understanding individual differences can help however.*'

4.2.2 Benefits of MBTI

From the conversation it can be elicited that MBTI is the largest tool for personal help. This led to the creation of this category. Y2.1 stated that '1000 *or so people yearly are certified in MBTI instrument. We offer trainings in all three steps of MBTI namely Step I, II and III. A book published by National Research Council states MBTI as the most memorable instrument and the most beneficial tool for the people who have taken the psychometric tests. There are tons of studies on employee productivity that shows that when employees are matched with jobs that require personality traits that they naturally are gifted with, they tend to be more engaged and motivated which results in financial benefits for the organization. It is still hard to pin down with preciseness as to what degree this trait match is beneficial but trends are so huge and consistent that its almost dramatic (CAPT, 2013b).*

4.2.3 Type Relevance with Job Performance

In relation to the question about personality type's connection with job performance Y2.1 answered '*Common personality types in certain work areas is a complex question. It is more fruitful to ask the question if there is a difference in distribution of certain personality types in certain occupations or organizations. We have published a book called MBTI Type table for occupation and if I may quote from it, in this survey where 935 bank tellers were surveyed and disproportionate number of ESTPs and ESTJs are represented in this sector.*

When you think about it, you can justify it based on the personality traits. EST, the Extrovert, Sensing and Thinking traits help them interact with people and sensing preference enable them to make systematic and step by step decisions about the loans.

You don't make a decision of giving loans on personal vibe. You have of course bought into their personal hunches but there are risk factors to be analyzed and other criteria to be met. Only 2.2% in this sample are INFJs which are the least. They are less likely to show up as loan officers. Bear in mind however that in population at large INFJs are the rarest kind and in any sample they are likely to be only very little number. Fast food restaurants normally have very strict procedures on how things have to be done but it doesn't stop you from thinking about a better way to get it done.' He also gave a personal example and stated '*People like me who are INTPs, (Introvert, intuitive, thinking and perceptual) tend to be scientists, university professors and researchers, where they have solitary opportunity to deal with questions of depth and logic to keep them puzzled*.'

You don't make a decision of giving loans on personal vibe. You have of course bought into their personal hunches but there are risk factors to be analyzed and other criteria to be met. Only 2.2% in this sample are INFJs which are the least. They are less likely to show up as loan officers. Bear in mind however that in population at large INFJs are the rarest kind and in any sample they are likely to be only very little number

4.2.4 Weaknesses in the test

Mentioning the possible weaknesses of the test Y2.1 mentioned '*People might read the question erroneously and don't understand the question at all. This phenomenon can also be called social presentation social bizzarility [sic]. Sometimes people even if people know who they are and what they believe they still might know how to answer the question and if you don't know how to answer that, how do I know for sure my personality type? A favorite example of mine is the extrovert example. Extroverts are generally full of confidence and are self-affirming and self-aggrandizing. If you ask them are you self-aware, they will say they are. On a scale of 1 to 10 they would rate themselves 10. Introverts as a rule will rate them lower.*

When you ask others about extroverts however, if they are self-aware, they might not necessarily agree with that. If I think I am self-aware but I am not, what can you do about it? I maybe self-aware, may not be, but how do you know you that? There are lots of stakes, errors in judgment and mistakes in the test and it's far from infallible. It's far from perfect correlation'. On further questioning about what can be changed about the correlational measures of tests he added '*There is a test called implicit association test, IAT, which is hosted on Harvard servers.*

It tries to get answers of questions objectively free from personal biases based on word association. It is created by Brian Nosek at Virginia University, Mahzarin Banaji at Harvard and Tony Greenwald at University of Washington. I suggest you go to the webpage and take this test yourself.'

4.2.5 Concluding Remarks

Out of the interview material from Y2, four categories have emerged which have been appropriately codified and assigned a category for further analysis in the following chapter.

5 Analysis of Empirical Findings

In this chapter an analysis of the information from both companies will be made for its factuality and relevance to the research topic. Research question will be answered in this section based on the insights from the interview and an attempt will be made to create relations to the theories discussed in literature review. Each company's findings will be discussed separately and will be analyzed in its own rite.

5.1 Assessio

This part begins with the in-depth analysis of Assessio's views on the questions being asked categorically and as they have been arranged and presented in previous chapter. Interpretations from the answers and excerpts will be discussed in detail to come up with solid understanding of the meanings.

5.1.1 Client needs

It seems to be a mutual understanding that the need for the identification of client's needs is of utmost important to Assessio as a company. From its inception, Assessio had been a research based organization and after its acquisition by Hunter Mabon it went through a significant structural change. The new changes led company to provide more practice-based solutions of the theoretical underpinnings and make it a profitable commercial tool than an applied psychological research. Edenborough (2005) argues that there has to be scientifically proven application of psychometric tests in order to gain benefits from it. Company further developed the tests and its widespread execution and marketing took place. Keeping in view their mission, Assessio finds it of ultimate importance that clients are placed first (Assessio, 2013l).

Table 7 Interview Excerpt

Interview Excerpt	
X1.1	*'Fritids Resor, a charted travel company uses our matrices to screen the employees who would work abroad at remote destinations independently. Problem was that such people were more interested in partying and travelling lifestyle instead of work and we helped them find more service minded and responsible people'*
X1.2	*'Psychometrics is a method developed to help in recruitment decisions and most of the time clients don't know what it is. We have to tell them what it is and demonstrate how it works. Most of the time instead of telling the statistical process we just show them what it does and how can it help them*
X1.1	*'One of the challenges for us in the market is to show that psychometrics work and it is not easy most of time'*

In line with the excerpts from transcription in previous chapter it is obvious that Assessio finds that clients have different needs in terms of their size, culture and purpose and psychometric tests and other services have to be tailored in order to match the clients' needs. FritidsResor for example wanted a more dependent, responsible and conscientious work structure where employees at remote locations would be more dedicated to work and are more engaged and motivated to complete task in absence of local supervision. Culp&Smith (2001) argues that the use of personality type is crucial in enhancing the team performance. This encouraged Assessio's candidate screening program to identify the kind of personality types which have desirable traits. Certain personality traits are therefore desired more in a certain profession and are over represented in a specific occupation than others. In a sample of personality types in a specific occupation the likelihood of the presence of personality types inclined to that kind of work is very high. (Myers&Myers, 1995) Similarly when Polisen wanted to change their leadership behavior, Assessio recognized their needs and identified a plan to bring about the desired change which called for a more creative, analytical and open approach towards work. They wanted to avoid repeated leadership behavior that was emerging and hence promoted people with unusual sets of personality traits to introduce the change (Assessio, 2013f).

Highly sensitive departments like Trafikverket needed security clearances on high levels and had low tolerance for wrong recruitments and they asked for help to identify people with high risks of incidences. This was done through a series of tests to pinpoint the personality traits that were correlated to incidences and bad work behavior. It can therefore be deduced that client need is supreme in determining the appropriate solution for them.

5.1.2 Recruitment

It can also be elicited from the text that Assessio is confident and positive about the level of certainty with which their tests can be used to recruit efficiently with huge benefits. From the excerpts of interviews it can be seen that different services are provided to clients depending on their needs and level of involvement with the tests. Screening services are used more often than others but it is very common to be asked for second opinions. It also correlates with the position in organization that we are hiring for. In executive recruitment its mostly second opinion and organizations with large number of candidates use screening test to save time. It seemed that recruitment process through psychometrics is seen skeptically until demonstrations have been made to show the benefits of it. Culp&Smith (2001) argues that the decisions can only be made after there is sufficient evidence of its effects. The rationality of saving time on huge number of semi-structured interviews and CV reviewing adds weight to the argument. One of the contemporary requirements for ethical recruiting and selection is non-discrimination and psychometric tests give equal opportunity to everyone without taking into consideration, their names, ethnical background and qualifications.

Table 8 Interview Excerpt

	Interview Excerpt
X1.1	*'Usage of psychometric assessment in recruitment depends on the case and varies respective to client's needs. In some cases they are used to screen candidates and in other cases they are used as second opinions usually in executive recruitment decisions. So it is really a relative decision to use recruitment process. It is very hard to see it benefits and yet it is very popular tool and companies ask for it'*
X1.2	*'Lot of companies think that it will not be beneficial for them but in the long run it is because they look on candidates CVs and conduct semi-structured interviews and make decisions on it without having a solid scientific reason for it and then they are making decisions solely on gut feeling and they get back to starting point because then they have no justifiable reason for making a decision other than gut feeling.'*
X1.1	*'In psychometric tests it is also beneficial to see if they are efficient and helpful. If you have large number of applicants than it is beneficial to screen out the best candidates but if you have few candidates and you have time to get to know them personally, then it does not add much value to conduct the test.'*

5.1.3 Touchstones for effectiveness

One of the corollaries that have emerged from the interview analysis is the touchstone of effectiveness of a recruitment process when psychometrics is put in place. It can be confidently stated both from the analysis of interview records and client satisfaction that the investment made on psychometric tests in recruitment process have paid off and have been beneficial in the long run. Some of the criterion mentioned in the interview to measure effectiveness of the process is low turnover, work productivity, harmonious work environment and motivated employees. Campion et al. (1993) concludes that work group characteristics have implications on team performance and hence should be given meticulous consideration. Even though touchstones are hard to precisely calculate and measure, a comparison with past recruitments and organizational culture makes it evident that new recruitment has been beneficial for the workplace. Moreover, by reducing the number of high risk candidates it is also ensured that workplace incidences are minimized and bad work behavior is not displayed.

They are deemed undesirable behaviors in any organization and it is clear that measures needed to prevent them should be scientifically proven and results should be seen. From clients feedback to Assessio it is also clear that such behaviors have not been found in employees selected through psychometric processes. There is ample evidence to support that claim but a degree of preciseness to these claims have always been grey area as it is with all behavioral studies (Assessio, 2013k).

Table 9 Interview Excerpt

Interview Excerpt	
X1.1	*"Cost of recruitment process needs to be justified by the output of the tests. The main touchstones for it are the ability of gather information about a client in an efficient way. It can also be seen through work performance. Employee turnover is another measure of it. If you are able to figure out the personality traits, you can see what traits correlate with the high probability of an incidence. You can subsequently pinpoint the high-risk employees based on their propensities.*

5.1.4 Type relevancy for job performance

It has also been observed that type relevancy to job performance in a workplace can be demonstrated by huge number of surveys done on the topic. Thousands of studies done in different occupational settings in regards with type have been done and results have supported the premises of type relevancy over and over again. Certain occupations have overrepresentation of certain personality types based on natural inclinations and it has been seen through research done on the topic (Schaubhut&Thompson, 2008). However it has been noted that MBTI in theory has not been designed to make decisions on job relevancy based on personality types.

Even though there is data to support the type theory there are other tests which are more statistically valid to make inferences based on the question inventory e.g. Five Factor Model. MBTI in essence is used to understand oneself and others and the way we communicate with the world (Assessio, 2013d). It cannot be used to compare people to each other and make decisions based on it. So it is strongly suggested that MBTI not be used as recruitment test in its entirety. It is not designed for this purpose. It has also been noticed that Assessio was not at all familiar with Keirsey Temperament Sorter and they have no services regarding it. It was questioned and interviewees seemed relatively unaware of its popularity and adaption.

Despite being seen as popular helping tool and career development tool Assessio has not looked into it from a potential point of view. It can be understood from the perspective of its relatively high level of abstraction which can be present it in vague terms rather than quantifiable tool assisting in recruitment decisions.

Table 10 Interview Excerpt

Interview Excerpt	
X1.1	*There are two ways of looking at the personality types and its relation to job performance. MBTI is constructed to given personal disposition e.g. Introversion or Extroversion. It is not designed to compare me with interview X1.2. It only tells me my disposition towards a trait. It helps me understand myself*.' He added moreover that '*Five factor tests are largely similar to MBTI with regards to personalities but it is constructed in a different way so it is possible to make comparisons based on Five Factors Model*'.
X1.1	*Five Factor Model based tests are designed statistically to quantify the personality traits and make decisions based on it. Examples of test based on it are NEO Personality Inventory, first complete Swedish based personality test MAP which stands for Measuring and Assessing individual Potential and PJP, Predicting job performance test. We also have Hogan's Personality Inventory which is partially based on five factor model'*

5.1.5 Psychometrics as decisive factor

There is profuse evidence from the interview records that Assessio does not use MBTI as decisive recruitment tool and view it as inappropriate use of the tool. MBTI is more beneficial in team building, team development and counseling. It relates to interpersonal and inter-group mechanisms which help everyone understand their co-workers and promote harmony during the process. There is no scientific evidence to substantiate recruitment decisions based on MBTI and it should be avoided both for professional and ethical reasons (Coe, 1992). It can be at its best used to predict workplace adaptability but making comparisons and selections is not what it is designed for.

Table 11 Interview Excerpt

	Interview Excerpt
X1.1	*It really depends in the end what you are looking for. If you are looking for a sales person who will sell products it is really important to use psychometrics because problem is that they are very talkative and are very good at selling themselves. It necessarily doesn't mean that they are good at selling products also. There is of course a correlation between one kinds of trait with job performance but it doesn't mean it will always be like that. There are other factors to be considered. On the other hand if you are looking for a CEO for his personality and potential to fill the row sometimes you recruit not for his/her potential but because of his connections. It is more because of his market experience and last name and not because of his potential as CEO.*
X1.2	*Some people are bad at selling themselves and showing their qualifications but through these tests they can show they have more qualifications than shown on CV. They get a better opportunity to show their potential through the tests'*
X1.1	*In our experience when Swedish Police department Polisen, asked for our help they wanted to change their leadership culture and they want the current leadership behavior to change. They wanted more open, analytical and creative people. They wanted specific personality traits in their leadership and we helped them identify and implement a program for that. In FritidsResor we helped them move towards more independent to dependent people in remote locations who would ask the headquarters for help if they have a problem, which in long run is beneficial for them'*

5.2 CAPT – Centre for Applications of Psychological Types

An analysis based on the data available from interviews from respondent Y2.1 at Centre for applications of psychological types will now be made. Each category will be discussed in detail and findings will be discussed for deduction of meanings.

5.2.1 Recruitment

An analysis of the interview records from Y2.1 makes it very clear that organization founded by Isabelle Myers Briggs herself has the largest database of texts on MBTI and publishes new research on it on a large scale. Owing to their basic service, which is training the trainers in different organizations they have a deep insight into workings of MBTI. It was made clear from the very outset that the hypotheses MBTI makes on personality types and its repercussions on human behavior can be scientifically proven but with all the facts at hand, it is still not designed to make recruitment decisions. It is also noted that being an organization research in the domain of MBTI, respondent Y2.1 had no hands-on experience with Keirsey Temperament Sorter. Respondent however had researched the topic and believes that the level of abstraction of Keirsey Temperament Sorter and its different assumptions make it subtle for MBTI. Y2.1 however felt not qualified enough to respond to the question of its applications.

Table 12 Interview Excerpt

	Interview Excerpt
X1.1	*'Our primary service is training HR people, trainers and counselors. HR departments with enough people to manage ask for our help to assist them in training programs. We publish books on MBTI. We have also published a children's measurement of psychological type for age 7-18. We have done quite some research on archetypal themes in people's lives. We demonstrate the reliability, validity and improved theoretical assertions of the theory and its applications for clients. We have at one point worked with 91% of Fortune 100 companies. We have done lots of work with Microsoft and Google'*

Publications by CAPT around the world make it very clear that even though MBTI can be used for predicting the workplace adaptability it is mere subjective judgment without any authentic correlation and statistical validity. CAPT has worked with 91% of fortune 100 companies and this adds further practical evidence to their statements. Many governmental sector organizations have used their services and they would not have been able to do that without convincing arguments on its scientific usability. MBTI is plainly used for coaching, counseling and team building purposes and this is how it should be used without any deterministic utilization of the instrument (Coe, 1992).

5.2.2 Benefits of MBTI

It has also become vivid from the interview record analysis that benefits of using MBTI for personal and team development are huge. An understanding of self and your co-workers bring dramatic changes in adaptability and harmony in a workplace. Scientific evidence also shows that there is a positive correlation between personality type and career choices (Schaubhut&Thompson, 2008). There is evidence to suggest that a person with specific personality traits matched with a job that requires those specific traits in order to be successful at work is more likely to be motivated and engaged in workplace than others with different personality aptitudes (Pittenger, 1994). It leads with the logical progression that it can be used to help people identify right career choices and occupations for them in order to reduce work-related stress and inefficiency in personal and work life (Keirsey&Bates, 1984a).

Table 13 Interview Excerpt

	Interview Excerpt
X1.1	*'1000 or so people yearly are certified in MBTI instrument. We offer trainings in all three steps of MBTI namely Step I, II and III. A book published by National Research Council states MBTI as the most memorable instrument and the most beneficial tool for the people who have taken the psychometric tests. There are tons of studies on employee productivity that shows that when employees are matched with jobs that required personality traits that they naturally are gifted with, they tend to be more engaged and motivated which results in financial benefits for the organization. It is still hard to pin down with preciseness as to what degree this trait match is beneficial but trends are so huge and consistent that its almost dramatic.'*

5.2.3 Type Relevance with Job Performance

It is also crystal clear from the data that we have to see that there are over representations of specific type of personalities in certain occupations than others. It can be construed that certain personality traits make them more likely to succeed at workplace than others and hence identifying those traits and finding relevant jobs can be of huge benefit for careers (Myers&Myers, 1995). Again it is for personal use and development and cannot be used as decision making instrument for recruiters. It is legally inappropriate and professionally fallacious to exclude someone from candidate bank based on their test results, especially a test that is not designed for the purpose. Psychometric testing for objective selection is however slowly becoming a part of legislation to ensure fairness (Van der Merwe, 2002).

Table 14 Interview Excerpt

	Interview Excerpt
X1.1	*'Common personality types in certain jobs areas are complex questions. It is more fruitful to ask the question if there is a difference in distribution of certain personality types in certain occupations or organizations. We have published a book called MBTI Type table for occupation and if I may quote from it, in this survey where 935 bank tellers were surveyed a disproportionate number of ESTPs and ESTJs are present in this sector. When you think about it, you can justify it based on the personality traits. EST, the Extrovert, Sensing and Thinking traits help them interact with people and sensing preference enable them to make systematic and step by step decisions about the loans*

5.2.4 Weaknesses in the Test

The interpretation one can make from the interview records about weaknesses in the MBTI is not from the perspectives of the test makers rather it is more the inability of the test-takers to understand that no test can tell them about themselves and determine their career choices precisely (Kennedy&Kennedy, 2004). It is designed as an aid to understand self and by no means is a precise and definite judgment on their personality type (CAPT, 2013d). There are numerous pitfalls like the inability of a test-take to understand the question, social pressure to answer in a certain way and the inability to work out the language of the test etc. In addition it is dangerous to use as recruitment tool because in order to get jobs people might answer as someone more likely to get the job instead of answering for themselves. In important test that calculates this deviance from actual behavior to socially desirable behavior is Implicit association test hosted Harvard university servers to calculate this incongruence in behavior (Harvard, 2013).

Table 15 Interview Excerpt

	Interview Excerpt
X1.1	*'People might read the question erroneously and they don't understand the question that all. This phenomenon can also be called social presentation social bizzarility [sic]. Sometimes people even if people know who they are and what they believe they still might know how to answer the question and if you don't know how to answer that, how do I know for sure my personality type?'*

6 CROSS-CASE ANALYSIS

Building on the previous chapter which propounded on the empirical findings of the two organizations, it is time now to make a cross case analysis based on the information to answer the research question. It comprises of the relation between theory and empirical findings and what can be construed from that, which is helpful in order to answer the research question. Consequently it will be explained why companies adapt the approach to psychometrics that they do and what are the underlying theoretical underpinnings of that.

6.1 Assessio and CAPT

Based on the findings and correlation of the data from two organizations it is clear that the way these organizations use the psychometrics tests is subtle in its nature. Assessio uses a very commercial, practical, deterministic kind of approach towards psychometrics and the need for the instruments to predict workplace adaptability and suitability is huge. Their business relies on their scientific predictability of human behaviors and workplace change management and they take a very analytical and stringent approach to it. CAPT on the contrary is a non-profit research and development organization which aims to add new insights and developments in the field. Their primary goal is to increase awareness and understanding of the MBTI instrument specifically to promote human understanding of self and the world at large. They have less financial obligations to perform than most commercial organizations do.

Their approach subsequently is very different and varies hugely as to what is appropriate and what is not and they answered the questions from their own perspectives on psychometrics. There are points of mutual understanding and divergence however in their views on psychometrics but even when they seem to disagree, there seems to be an agreement over theoretical stances and I believe that the disagreement stems from the personal experiences and the nature of work which only concerns with the applicability of the research. Both seem to agree on the fact that MBTI should not be used for recruitment and it's more beneficial for team building and coaching. They are of the view that it is not designed for recruitment decisions and is only a helping instrument to understand oneself and its environment. They also have no experience working with Keirsey Temperament Sorter and had little to add to this type inventory.

It is noteworthy at this point however that CAPT doubts the capability of psychometrics tests as decisive tool for recruitment decisions in general. Their primary concern is its development and improved statistical validity. Making objective decisions on its basis seems to be an activity which can be questioned in its opinion.

Assessio however is dedicated to use psychometrics as instruments which can to a certain degree be used as decision making tool based on evidence backed theories and premises. Both of them however agree that 100% preciseness and accuracy in inferring results from the test is impossible. They disagree; it seems as to how it affects the applicability of the instruments per se and if it is better or worse as compared to other conventional tools of recruitment e.g. semi-structured interviews, role playing, and background checks.

6.2 Aftermath of the two approaches to psychometrics

From a careful analysis of the two companies it becomes evident that research question regarding applications of psychometrics in recruitment sector turns into a relative question with a certain degree of both fact and intuition to it. Employee turnover rates, workplace efficiency, friendliness, engagement and motivation are some of the indices that have proved the effects of psychometrics in recruitment however. Theoretical underpinnings of the successful practical results seem to lack convincing evidence for a majority of organizations and psychologists themselves simultaneously (Jones, 2012). It may just be a matter of time as noted by one of the respondents that new developments in the field will add to the credibility of the tests but as for now it is a tool that has practical implications and yet little theoretical preciseness to explain the phenomenon.

It's a quandary however to see the demonstrations for the tests and its results on the workplace in comparison with the complexity of the underlying assumptions ipso facto. This has been a challenge aspect especially for Assessio who finds it hard to convince the clients at least for the first time of the validity and appropriateness of the instruments they use. Psychometrics at large is viewed as a tool to judge and evaluate others and receive negative connotations however it is far from its common perception (Groenen&Andries van der Ark, 2006). Some view it as an interesting field of development yet unripe for the practical usage and others are confident of its assumptions and validity and have successfully used it with a mixed degree of success.

7 CONCLUDING IDEAS

In this chapter conclusions from the findings of the theoretical and empirical section will be made to justify the research purpose and subsequently answer the research question. A general overview on the theoretical contributions of the research along with the practical and managerial contributions it has made will also be given. Finally a suggestive section on recommendations for future research is included.

7.1 Conclusion

The study began with the theory of psychometrics and its evolution into a concept that could be employed in human resource management. The aim of the study was to find the applications of psychometrics in recruitment and the approach deemed appropriate was the qualitative approach. As a reminder study attempted to answer following research question,

"How can the human resource departments use psychometric tests in recruitment using results on personality types and matching it with the job description?"

Throughout this study a focus has been made on presenting 1.1 Background of the study. A subsequent attempt to find an appropriate methodology for the study and explanation of its mechanics is given in the 2. Research and Methodology Framework. An extensive literature review was then furnished in 3. THEORY OF PSYCHOMETRICS section to pin down the important developments in the field. Subsequently 4. Empirical Findings were presented. The data collected from the interviewees and its 5 Analysis of Empirical Findings later has added to the database of information that correlates to each other chronologically and was helpful in doing the

6 CROSS-CASE ANALYSIS. The understanding gained about psychometrics, its flaws, its strengths and its applications in recruitment has clearly shown that it is a very potent and reliable instrument that assists but should not totally be relied on for recruitment purposes.

There is rife support for the theory and its practical success has gained it credibility among organizations that utilize the tools but it is as yet not a tool for making judgments and decisions independently. Both its structural and ethical ramifications are in development and it is pre-mature to pin psychometrics down as a promising tool with a measure of certainty. It is found that it might only be lack of awareness and information about the test that curtails its wide scale adoption in recruitment and counseling areas. It is thereby the marketing efforts that lack along with the threatening perception of the term 'psychometrics' in the minds of people not aware with its construction that accounts for its relative under representation in recruitment.

Another reason to oppose research and development in such areas is found to be vested interests of top levels of an organization to maintain status quo and current organizational culture. Change based on openness, clarity and understanding is much needed in organizations and it is self-fulfilling prophecy that the process of introducing change is quite uncomfortable for majority. Yet it is beneficial in the long run for both employees and the organizations and results in significant enhancement in productivity and motivation of employees. A difference in approach towards research and implementation of psychometric instruments has been noticed however by comparing two organizations that have been interviewed in the study. The research-based view is more open to its theoretical development and applied view takes into consideration the interpretations that can be inferred from theory and can be applied to practical settings. Both of them however complement each other in a unique way and without one other would have no significance.

7.2 Contributions

It would be beneficial at this point to mention that research has significantly added to the body of studies we have now on psychometrics and its applications in recruitment and human resource management. Based on the 3. THEORY OF PSYCHOMETRICS section of this study it was aimed to approach topic from the perspective of human resource management and specifically in the domain of recruitment. An augmented focus is put on understanding the need and applications of psychometrics in recruitment activities.

7.2.1 Theoretical contributions

The study has made contributions in the area of psychometrics and recruitment hence adding to the field of human resource management. It is surprising to a degree that previous researches have focused on the construction and implications of psychometrics in fields other than management but it can also be clearly seen that management being an inter-disciplinary and relatively new field is still in the process of development and psychometrics itself is struggling to gain popularity in different sectors. The development of both fields and their inter-relation is significantly but slowly on its way.

Some of the previous studies which have had some impact and relation to recruitment and psychometrics that this study has contributed will now be discussed. Pittenger (1994) argued about the test validity and have come to conclusions that the validity of the MBTI cannot be supported by sufficient evidence. Kennedy&Kennedy (2004) concludes in his paper that limitations on the utilization of the test and ethical reservations are present but it is beneficial in career counselling.

Gardner&Martinko (1996) found out that limitations of using MBTI to study managers do exist however it does not preclude its importance and usability. Van der Merwe (2002) does an extensive review of exploratory research on psychometrics and sums up the conclusions in his paper and noticed the shortcomings and weaknesses in the test validity. Results of aforementioned studies are in line with this study however with a broader discussion and level of abstraction. Some other studies which have dealt with the issue are (Cohen&Swerdlik, 2009) (Edmondson, 1998) (Higgs, 2001) (McClure&Werther Jr, 1993) (McCaulley&Martin, 1995) (Kleiner, 1983) (Kuipers, 2009) (Hildreth, 1949) (Wu et al., 2011).

Using theoretical models and the abovementioned research the gap between the theory and practice of psychometrics in recruitment sector has been minimized. It is thereby believed that this study has given a well-rounded theoretical summary of state of psychometrics in recruitment function.

7.2.2 Practical and Managerial contributions

This study provides organizations looking to find creative and credible ways to recruit potential candidates that match the job description with an overview of the success and promises of psychometrics. Human resource managers can utilize it for the needs of an organization and can do certifications in the conducting of different psychometrics instruments. It will also help in effective counseling and coaching in organizations once the personality types of employees and their communication styles are known. It will also promote understanding, communication and efficiency.

Findings also claim that psychometrics is non-discriminatory instruments that can promote equality and fairness in recruitment process. Furthermore it can be beneficial for executive development and organizational change management in the sense that it brings the much needed change by focusing on the leadership and desirable traits. It can instill a certain degree of self-awareness and control in employees which results in much needed self-confidence and satisfaction.

7.3 Recommendations for future research

Study has approached the topic from a management perspective specifically in recruitment domain. Moreover the focus had been on the organizations that have hands-on experience as service providers to other organizations. It is suggested therefore that studies focusing on client side of the picture are much needed to see the reception of psychometrics from a client perspective. The interviewees in this study belonged to Europe and USA and it would be interesting to see if professionals working in field of psychometrics vary in their views on its usages in other parts of the world.

More quantitative studies on the satisfaction, reception and execution from the client perspective will also add to the credibility of theoretical body of knowledge. Of course there are many quantitative studies on types tables and occupations but more studies will make research more replicable (Schaubhut&Thompson, 2008).

8 RESEARCH TRUSTWORTHINESS

In this chapter a presentation on evaluation of the study in terms of its quality will be made. It will round up the credibility, transferability, dependability and confirmability issues according to the criterion of academic assessment. It will justify the case of the qualitative appropriateness of the thesis.

8.1 Introduction

Research evaluation criteria set by academics is its content's validity and reliability (Guba, 1981). An additional concern is the compliance with research ethics and morality. Scholars have deemed the process of evaluating a qualitative research on the basis of its trustworthiness quite an arduous task and have outlined number of tests that it needs to qualify in order to be viewed as trustworthy research (Berg, 2001). Some of the measures by which a qualitative research can be evaluated are credibility, transferability, dependability and confirmability of the study (Bryman et al., 2011). The nature of qualitative research differs from the quantitative one where issues of validity and objectivity are of main concern. In following sections these issues will be addressed discretely.

8.1.1 Credibility of the study

Credibility refers to the internal consistence and degree of trustworthiness within the domain (Hovland&Weiss, 1951). It can remotely be related to quantitative equivalent where the validity of internal statements are integral and incongruence and contradictions are not found (Phillips&Brown, 1993). Its main purpose is to show through logical and evidence backed statements that research method and its relevance to the study being conducted is appropriate. The use of triangulation, cross-case analysis, negative case analysis and member checks gives the study credibility it needs in order to be deemed as trustworthy. Particular focus is given to minute details in interviewing process like hand gestures, face expressions, body language and head nods. A friendly relationship was built with interviewees even when prolong engagement was not possible and a common trust was developed in order to facilitate an open discussion. A consent letter was signed only after complete briefing on research purpose and confidentiality clauses were explained.

8.1.2 Transferability Issues

Transferability issues of a research deal with the ability of a study to be generalized across the board and how it stands the test of variations in settings of research. It determines how far the research lies from general principle or observations and how the two correlate (Krefting, 1991). It seems to be a mutual agreement among scholars who have research qualitative research methods that the generalizability of a qualitative research is a irrelevant term because of the attempt of the researchers to study a specific phenomenon using a given sample size.

6 CROSS-CASE ANALYSIS was used to gain insights from more than one source of information and hence trying to improve the transferability of the research but the results of the study by no means can be applied to other organizations. An appropriate sampling technique, along with multiple case studies and in depth information has made study reasonably transferable and the results can be replicated given the same conditions.

8.1.3 Dependability

Dependability of a research concerns with the amount of trust that lies with the sources of information, methods of data collection, and the phenomenon being studied (Krefting, 1991). To stand the test of dependability research has to be reliable throughout and internal inconsistencies should be removed through the logical linkages of concepts. I believe the logical structure of the research and step by step explanation of the concepts has made research dependable. An overview of research methodology can be read in chapter 2.

8.1.4 Confirmability

Confirmability refers to the extent by which research separates itself from the preconceptions of the research and presents the method and findings of the study in an objective manner for the cross examination (Guba, 1981). It accentuates the importance of being neutral and objective in research process. The ability of a researcher to establish inertness of research content gives a study the necessarily confirmability (Krefting, 1991). Author has stated his point of view and background in 2.2 Researchers Preconceptions section in the very beginning and any personal biases coming

from its dint are easily discernible by the readers. This makes research very transparent and confirmable.

References:

AHMED, A., HASNAIN, N. & VENKATESAN, M. 2012. Decision Making in Relation to Personality Types and Cognitive Styles of Business Students. *IUP Journal of Management Research,* 11**,** 20-29.

ALVESSON, M. & SKÖLDBERG, K. 2000. *Reflexive methodology : new vistas for qualitative research,* London; Thousand Oaks, Calif., SAGE.

ANDRICH, D. 1988. *Rasch models for measurement,* Newbury Park, Sage Publications.

ARMSTRONG, M. 1999. *A handbook of human resource management practice* [Online]. London; Dover, N.H.: Kogan Page. Available: http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=62884.

ARY, D., JACOBS, L. C., RAZAVIEH, A. & SORENSEN, C. 2009. *Introduction to Research in Education*, Cengage Learning.

ASHTON, T. S. 1997. *The industrial revolution, 1760-1830,* London; New York, Oxford University Press.

ASSESSIO. 2013a. *Karriärplanering - Assessio* [Online]. Available: http://www.assessio.se/Produktportfolj/Karriarplanering/.

ASSESSIO. 2013b. *Ledarutveckling - Assessio* [Online]. Available: http://www.assessio.se/Produktportfolj/Ledarutveckling/.

ASSESSIO. 2013c. *Matrigma - Assessio* [Online]. Available: http://www.assessio.se/Produktportfolj/Urval/Matrigma/.

ASSESSIO. 2013d. *MBTI - Assessio* [Online]. Available: http://www.assessio.se/Produktportfolj/Ledarutveckling/MBTI/.

ASSESSIO. 2013e. *Om oss - Assessio* [Online]. Available: http://www.assessio.se/Om-Assessio/.

ASSESSIO. 2013f. *Organisationsutveckling - Assessio* [Online]. Available: http://www.assessio.se/Produktportfolj/Organisationsutveckling/.

ASSESSIO. 2013g. *Service First - Assessio* [Online]. Available: http://www.assessio.se/Produktportfolj/Urval/Service-F/.

ASSESSIO. 2013h. *Stress och utbrändhet - Assessio* [Online]. Available: http://www.assessio.se/Produktportfolj/Stress-och-utbrandhet/.

ASSESSIO. 2013i. *Teambuilding - Assessio* [Online]. Available: http://www.assessio.se/Produktportfolj/Teambuilding/.

ASSESSIO. 2013j. *Test & Metod - Assessio* [Online]. Available: http://www.assessio.se/Produktportfolj/.

ASSESSIO. 2013k. *Utmaningar - Assessio* [Online]. Available: http://www.assessio.se/Utmaningar/.
ASSESSIO. 2013l. *Vad vi gör - Assessio* [Online]. Available: http://www.assessio.se/Vad-vi-gor/.
ASSESSIO. 2013m. *Våra partners - Assessio* [Online]. Available: http://www.assessio.se/Om-Assessio/Partners/.
BARRICK, M. R. & MOUNT, M. K. 1991. *The big five personality dimensions and job performance : a meta-analysis,* Houston, Personnel Psychology.
BARTRAM, D. 1996. The relationship between ipsatized and normative measures of personality. *Journal of occupational and organizational psychology.,* 69**,** 25.
BERG, B. L. 2001. Qualitative research methods for the social sciences.
BRYMAN, A., MILLS, A. J. & BELL, E. 2011. *Business Research Methods*, Oxford University Press.
BUSHE, G. R. 1990. Predicting Organization Development Consulting Competence from the Myers-Briggs Type Indicator and Stage of Ego Development. *The Journal of Applied Behavioral Science The Journal of Applied Behavioral Science,* 26**,** 337-357.
CAMPION, M. A., MEDSKER, G. J. & HIGGS, A. C. 1993. *Relations between work group characteristics and effectiveness : implications for designing effective work groups,* West Lafayette, Ind., Purdue University, Krannert Graduate School of Management.
CAPT. 2013a. *History and Mission - CAPT.org* [Online]. Available: http://www.capt.org/about-capt/history-mission.htm.
CAPT. 2013b. *The Reliability and Validity of the Myers-Briggs Type Indicator Instrument - CAPT.org* [Online]. Available: http://www.capt.org/mbti-assessment/reliability-validity.htm.
CAPT. 2013c. *What Are Archetypes - CAPT.org* [Online]. Available: http://www.capt.org/discover-your-archetypes/about-archetypes.htm.
CAPT. 2013d. *Workplace and Careers - CAPT.org* [Online]. Available: http://www.capt.org/using-type/workplace.htm.
CHIH-MING, C., LEE, H.-M. & CHEN, Y.-H. 2005. Personalized E-Learning System Using Item Response Theory. *Computers and Education,* 44**,** 237-255.
COALEY, K. 2010. *An introduction to psychological assessment and psychometrics* [Online]. London: SAGE. Available: http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=396532.
COE, C. K. 1992. The MBTI: Potential Uses and Misuses in Personnel Administration. *Public Personnel Management,* 21**,** 511-522.
COHEN, R. J. & SWERDLIK, M. E. 2009. *Psychological Testing and Assessment: An Introduction to Tests and Measurement*, McGraw-Hill.
CULP, G. & SMITH, A. 2001. Understanding Psychological Type to Improve Project Team Performance. *J. Manage. Eng. Journal of Management in Engineering,* 17**,** 24-33.
DAVID, M. & SUTTON, C. D. 2010. *Social research : an introduction,* London, SAGE.
DIGMAN, J. M. 1990. Personality structure: Emergence of the five-factor model. *Annual review of psychology,* 41**,** 417-440.
DISTEFANO, C. & DOMBROWSKI, S. C. 2006. Investigating the Theoretical Structure of the Stanford-Binet-Fifth Edition. *Journal of Psychoeducational Assessment,* 24**,** 123-136.

DRUCKER, P. F. 1974. *Management : tasks, responsibilities, practices,* New York, Harper & Row.
EDENBOROUGH, R. 2005. *Assessment methods in recruitment, selection & performance a manager's guide to psychometric testing, interviews and assessment centres* [Online]. London; Sterling, VA: Kogan Page. Available: http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=137378.
EDMONDSON, A. C. 1998. *Psychological safety and learning behavior in work teams,* [Boston], Division of Research, Harvard Business School.
FLICK, U. 2009. *An Introduction to Qualitative Research*, SAGE.
FURNHAM, A. & STRINGFIELD, P. 1993. Personality and Occupational Behavior: Meyers-Briggs Type Indicator Correlates of Managerial Practices in Two Cultures. *Human Relations,* 46**,** 827-848.
GALTON, S. F. 1869. *Hereditary genius*, Macmillan and Company.
GARDNER, W. L. & MARTINKO, M. J. 1996. Using the Myers-Briggs Type Indicator to Study Managers: A Literature Review and Research Agenda. *Journal of management.,* 22**,** 45.
GERRING, J. 2007. *Case study research: principles and practices*, Cambridge University Press Cambridge.
GOBY, V. P. & LEWIS, J. H. 2000. Using experiential learning theory and the Myers-Briggs type indicator in teaching business communication. *Business Communication Quarterly,* 63**,** 39-48.
GRAVETTER, F. J. & FORZANO, L. A. B. 2009. *Research methods for the behavioral sciences*, Wadsworth Publishing Company.
GROENEN, P. J. F. & ANDRIES VAN DER ARK, L. 2006. Visions of 70 years of psychometrics: the past, present, and future. *Statistica Neerlandica,* 60**,** 135-144.
GROTH-MARNAT, G. 2003. *Handbook of psychological assessment,* Hoboken, N.J., John Wiley & Sons.
GUBA, E. G. 1981. Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Technology Research and Development,* 29**,** 75-91.
HARVARD, U. 2013. *Project Implicit* [Online]. Available: https://implicit.harvard.edu/implicit/backgroundinformation.html [Accessed 02-01-2013 2013].
HAWKINS, J. 1997. Giftedness and psychological type. *Prufrock Journal,* 9**,** 57-67.
HERGET, D. 2011. *Testverfahren im Rahmen der Personalbeschaffung*, GRIN Verlag.
HIGGS, M. 2001. Is there a relationship between the Myers-Briggs type indicator and emotional intelligence? *Journal of Managerial Psychology,* 16**,** 509-533.
HILDRETH, H. M. 1949. Assessment of Men: Selection of Personnel for the Office of Strategic Services. *American Journal of Psychiatry,* 105**,** 799-a-800.
HIRSH, S. K. & KISE, J. A. G. 2000. *Introduction to Type and Coaching: A Dynamic Guide for Individual Development*, Consulting Psychologist's Press.
HOVLAND, C. I. & WEISS, W. 1951. The influence of source credibility on communication effectiveness. *Public opinion quarterly,* 15**,** 635-650.
HRFOCUS 2009. What Are the Latest Trends in HR Applications Adoption? *HR Focus,* 86**,** 10-11.

JACKSON, C. R. K. & SPO, K. J. 2010. *Human Resource Management: The Key Concepts*, Taylor & Francis.
JICK, T. D. 1979. Mixing qualitative and quantitative methods: Triangulation in action. *Administrative science quarterly,* 24**,** 602-611.
JOHNSON, C. E., WOOD, R. & BLINKHORN, S. 2011. Spuriouser and spuriouser: The use of ipsative personality tests. *Journal of Occupational Psychology,* 61**,** 153-162.
JONES, S. 2012. *Uses and Limitations of Psychometric Assessment Tests and Questionnaires For Organisational Decision-Making* [Online]. Available: http://www.articlesbase.com/human-resources-articles/uses-and-limitations-of-psychometric-assessment-tests-and-questionnaires-for-organisational-decision-making-6094200.html.
JUNG, C. G. 1989. *Psychological types*, Routledge.
KAPLAN, R. M. & SACCUZZO, D. P. 2008. *Psychological testing: Principles, applications, and issues*, Wadsworth Publishing Company.
KEATS, D. M. 1999. *Interviewing: A practical guide for students and professionals*, University of New South Wales.
KEIRSEY. 2013a. *Keirsey' PersonalityZone - Temperament and Your Career* [Online]. Available: http://www.keirsey.com/personalityzone/wz7.asp.
KEIRSEY. 2013b. *Keirsey Temperament Website David* [Online]. Available: http://www.keirsey.com/drdavidkeirsey.aspx.
KEIRSEY, D. & BATES, M. 1998. *Please understand me: Temperament, character, intelligence*, Del Mar, CA: Prometheus Nemesis Book Company.
KEIRSEY, D. & BATES, M. M. 1984a. *Please understand me: Character & temperament types*, Prometheus Nemesis Michigan.
KEIRSEY, D. & BATES, M. M. 1984b. *Please understand me: character & temperament types*, Prometheus Nemesis.
KENNEDY, R. B. & KENNEDY, D. A. 2004. Using the myers-briggs type indicator® in career counseling. *Journal of employment counseling,* 41**,** 38-43.
KINSELLA, E. A. Hermeneutics and critical hermeneutics: Exploring possibilities within the art of interpretation. Forum Qualitative Sozialforschung/Forum: Qualitative Social Research, 2006.
KLEINER, B. H. 1983. The interrelationship of Jungian modes of mental functioning with organizational factors: Implications for management development. *Human Relations,* 36**,** 997-1012.
KOHN, A. 2000. Standardized testing and its victims. *Education Week,* 20**,** 46-47.
KOZAK-HOLLAND, M. 2011. *The history of project management,* Lakefield, Ont., Multi-Media Publications.
KREFTING, L. 1991. Rigor in qualitative research: The assessment of trustworthiness. *The American journal of occupational therapy,* 45**,** 214-222.
KUIPERS, B. 2009. *The Influence of Myers-Briggs type Indicator profiles on team development processes An empirical study in the manufacturing industry,* Rotterdam; Rotterdam, Erasmus Research Institute of Management, Erasmus University ; Erasmus University [Host].
LONG, R., WHITE, M., FRIEDMAN, W. & BRAZEAL, D. 2000. The `Qualitative' Versus `Quantitative' Research Debate: A Question of Metaphorical Assumptions? *International Journal of Value-Based Management,* 13**,** 189-197.

MANN, R. D. 1959. A review of the relationships between personality and performance in small groups. *Psychological Bulletin,* 56**,** 241.
MASLOW, A. H., FRAGER, R. & FADIMAN, J. 1970. *Motivation and personality*, Harper & Row New York.
MCCAULLEY, M. H. & MARTIN, C. R. 1995. Career assessment and the Myers-Briggs type indicator. *Journal of Career Assessment,* 3**,** 219-239.
MCCLELLAND, D. C. 1985. *Human motivation,* Glenview, Ill., Scott, Foresman.
MCCLURE, L. & WERTHER JR, W. B. 1993. Personality variables in management development interventions. *Journal of Management Development,* 12**,** 39-47.
MCCRAE, R. R. & COSTA, P. T. 1989. Reinterpreting the Myers-Briggs Type Indicator From the Perspective of the Five-Factor Model of Personality. *Journal of personality,* 57**,** 17-40.
MITROFF, I. I. & KILMANN, R. H. 2011. Stories managers tell: a new tool for organizational problem solving. *Management Review,* 64**,** 18-28.
MYERS, I. B. & MYERS, P. 1995. *Gifts differing: Understanding personality types*.
NELSON, D. L. & QUICK, J. C. 2009. *Organizational behavior : science, the real world, and you,* Mason, OH, USA, South-Western Cengage Learning.
PATTON, M. Q. 1980. *Qualitative evaluation methods*, Sage Publications.
PATTON, M. Q. 1990. *Qualitative evaluation methods*, Sage publications Beverly Hills, CA.
PAWLIK, K. 1997. To the memory of Ivan Petrovich Pavlov (1849-1936). *European Psychologist,* 2**,** 91-96.
PERVIN, L. A. 1994. A critical analysis of current trait theory. *Psychological Inquiry,* 5**,** 103-113.
PHILLIPS, N. & BROWN, J. L. 1993. ANALYZING COMMUNICATION IN AND AROUND ORGANIZATIONS: A CRITICAL HERMENEUTIC APPROACH. *Academy of Management Journal,* 36**,** 1547-1576.
PITTENGER, D. J. 1994. The utility of the Myers-Briggs type indicator. *Review of Educational Research,* 63**,** 467-488.
PONTEROTTO, J. G. 2002. Qualitative Research Methods The Fifth Force in Psychology. *The Counseling Psychologist,* 30**,** 394-406.
RETTIG, A. 2010. *Die richtigen Mitarbeiter finden Testverfahren im Rahmen der Personalbeschaffung* [Online]. München: GRIN Verlag GmbH. Available: http://nbn-resolving.de/urn:nbn:de:101:1-201011191140.
ROSENAU, P. M. 1991. *Post-modernism and the social sciences: Insights, inroads, and intrusions*, Princeton University Press.
ROSSWURM, A. R., PIERSON, B. R. & WOODWARD, L. E. 2007. The Relationship Between MBTI Personality Types and Attachment Styles of Adults. *Psychology Journal,* 4**,** 109-127.
SAUNDERS, M. N. K., LEWIS, P. & THORNHILL, A. 2009. *Research methods for business students*, Pearson.
SCHAUBHUT, N. A. & THOMPSON, R. C. 2008. *MBTI type tables for occupations*, CPP.
SCHLOEMER, P. G. & SCHLOEMER, M. S. 1997. The Personality Types and Preferences of CPA Firm Professionals: An Analysis of Changes in the Profession. *ACCOUNTING HORIZONS,* 11**,** 24-39.
SCHNEIDER, B. 2006. The people make the place. *Personnel psychology,* 40**,** 437-453.

SONNENFIELD, J. 1985. *Shedding light on the Hawthorne studies. J. Occupational Behaviour, 6, pp. 111-130.*
STERN, S. 2007. *Socionics Demystified: A New Social Psychology for Understanding Relationships*, Lulu. com.
TAN, V. & TIONG, T. 1999. Personality type and the Singapore manager: Research findings based on the MBTI. *Singapore Management Review,* 21**,** 15-31.
TASHAKKORI, A. & TEDDLIE, C. 2003. *Handbook of mixed methods in social & behavioral research*, Sage Publications, Incorporated.
THORNE, A. 1987. The press of personality: A study of conversations between introverts and extraverts. *Journal of Personality and Social Psychology,* 53**,** 718.
TURNER, D. W. 2010. Qualitative interview design: A practical guide for novice investigators. *The qualitative report,* 15**,** 754-760.
VAN DER MERWE, R. P. 2002. Psychometric testing and Human Resource Management. *SA Journal of Industrial Psychology,* 28.
VARVEL, T., ADAMS, S. G., PRIDIE, S. J. & ULLOA, B. C. R. 2004. Team effectiveness and individual Myers-Briggs personality dimensions. *Journal of management in Engineering,* 20**,** 141-146.
WALLIMAN, N. 2006. *Social research methods*, Sage Publications Limited.
WARING, S. P. 1991a. *Taylorism transformed: scientific management theory since 1945*, University of North Carolina Press.
WARING, S. P. 1991b. *Taylorism transformed: Scientific management theory since 1945*, University of North Carolina Press.
WARTZMAN, R. 2011. *What Would Drucker Do Now?: Solutions to Today's Toughest Challenges from the Father of Modern Management*, McGraw Hill Professional.
WATSON, J. B. 1970. *Behaviorism*, Transaction Pub.
WEBER, M. & PARSONS, T. 1964. *The theory of social and economic organization,* New York, Free Press.
WEBSTER, M. 2013. *http://www.merriam-webster.com/dictionary/ethic* [Online]. Available: http://www.merriam-webster.com/dictionary/ethic [Accessed 09-01 2013].
WEICK, K. E. & QUINN, R. E. 1999. Organizational change and development. *Annual review of psychology,* 50**,** 361-386.
WETHAYANUGOON, A. 1994. The use of the myers-briggs type indicator for team building in schools. *EDUCATION-INDIANAPOLIS-,* 115**,** 258-258.
WU, L., ZHOU, Z. & CHEN, B. The application of MBTI personality type theory in the Bank management. Information Technology and Artificial Intelligence Conference (ITAIC), 2011 6th IEEE Joint International, 2011. IEEE, 455-458.

List of Figures

Figure 1 Source: Author. Outline of the thesis 7

Figure 2 Source: Adapted from (Ponteretto 2002, p397) 10

Figure 3 Process of assigning codes to excerpts from the interview. 22

Figure 4 Source: http://ethics.coventry.ac.uk/images/content/about/rember1.png 23

Figure 5 Source: Adapted from Bryman & Bell (2011, p390) 24

Figure 6 Source: (Van der Merwe, 2002, p72) 28

Figure 7 Assessio Growth Rate. Net sales/Net Income 54

List of Tables

Table 1 Research Design Summary 14

Table 2 Selection Criteria for Companies 16

Table 3 Selection Criteria for Respondents 17

Table 4 Interview categories 22

Table 5 Interviewee Profile X1 55

Table 6 Interviewee Profile Y1 59

Table 7 Interview Excerpt 64

Table 8 Interview Excerpt 66

Table 9 Interview Excerpt 67

Table 10 Interview Excerpt 68

Table 11 Interview Excerpt 69

Table 12 Interview Excerpt 70

Table 13 Interview Excerpt 71

Table 14 Interview Excerpt 72

Table 15 Interview Excerpt 72

Appendix I

All questions are designed in order to get information to be able to answer the research question and relate to the purpose of the research. Following are some of the questions but not all of the questions I intend to ask during the interview. Depending on the situation these questions might not at all be asked or other questions be asked. These are general guidelines however to make sure all the aspects of the required information have been covered. Letter of informed consent and confidentiality will also be send to the organization.

Research Purpose:

Purpose of the research is to do an exploratory research into the tools that are used for ensuring efficient screening and recruitment of appropriate candidates in an organization.

Research Question:

How can the human resource departments use psychometric tests in recruitment using results on personality types and matching it with the job description?

- **Please introduce yourself and your role in organization?**
- **Can you please describe the services of the organization?**
- **Could you please mention some of your clients?**
- **How do you view the use of psychometrics in Recruitment?**
- **Has it been beneficial for your clients?**
- **Does the cost of employing psychometrics justify its purpose?**
- **What are some of the touchstones by which we can measure the effectiveness of psychometrics?**
- **Do you conduct MBTI Step I and II? Do you offer Keirsey temperament Sorter?**
- **How do you see types relevant to job performance?**
- **Is personality type the decisive factor in recruitment decisions?**
- **What types are common in organizations? Do they vary from industry to industry?**
- **How do you suggest MBTI be used in different sectors?**
- **Do you see weaknesses in psychometric processes and its applications?**
- **Where do you think it can be improved?**
- **Is there anything you would like to add?**

Appendix II

University of Umeå

Date: 2012-12-10

Dear ***Participants:***

This letter is an invitation to consider participating in a study I am conducting as part of my Master's degree in the Department of ***Business and Economics*** at the University of Umeå, Sweden under the supervision of Professor ***Kifle Hamde***. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part.

This study will focus on use of psychometrics in recruitment function in human resource management. Your services are not only well known and authentic in this sector and therefore, I would like to include your organization as one of several organizations to be involved in my study. I believe that because you are actively involved in the management and operation of your organization, you are best suited to speak to the various issues, such as ***MBTI and its applications***.

Participation in this study is voluntary. It will involve an interview of approximately ***2 hours (approximately)*** in length to take place on Skype. You may decline to answer any of the interview questions if you so wish. Further, you may decide to withdraw from this study at any time without any negative consequences by advising the researcher. With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for analysis. Shortly after the interview has been completed, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of our conversation and to add or clarify any points that you wish.

All information you provide is considered completely confidential. Your name will not appear in any thesis or report resulting from this study, however, with your permission anonymous quotations may be used. Data collected during this study will be retained for ***atleast 3 months***. Only researchers associated with this project will have access. There are no known or anticipated risks to you as a participant in this study.

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me at ***0735545722*** or by email at ***miur0002@student.umu.se***. You can also contact my supervisor, Professor ***Kifle Hamde*** at 90 786 61 49 or email **kifle.hamde@usbe.umu.se**

I would like to assure you that this study has been reviewed and received ethics clearance at the University of Umeå. However, the final decision about participation is yours. If you have any comments or concerns resulting from your participation in this study, please contact Dr. Kifle Hamde on abovementioned contact details.

I hope that the results of my study will be of benefit to those organizations directly involved in the study, other voluntary recreation organizations not directly involved in the study, as well as to the broader research community.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours Sincerely,

Minhaaj Rehman

Student Investigator

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

I have read the information presented in the information letter about a study being conducted by Minhaaj Rehman of the Department of Business and Economics at the University of Umeå, Sweden. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This project has been reviewed by, and received ethics clearance through Professor Kifle Hamde, University of Umeå. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Professor Kifle Hamde.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

☐YES ☐NO

I agree to have my interview audio recorded.

☐YES ☐NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this research.

☐YES ☐NO

Participant Name: Minhaaj Rehman

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Date: _____