

# The use of personality tests as a pre-employment tool: A comparative study

Ahmed Remaida<sup>1,\*</sup>, Aniss Moumen<sup>1</sup>, Youness El Bouzekri El Idrissi<sup>1</sup>, Benyoussef Abdellaoui<sup>1</sup>, and Youssef Harraki<sup>2</sup>

<sup>1</sup>Laboratory of Engineering Sciences, National School of Applied Sciences, Ibn Tofaïl University, Kenitra, Morocco

<sup>2</sup>Laboratory of Electrical Engineering, Informatics and Mathematical Sciences. National School of Applied Sciences, Ibn Tofaïl University, Kenitra, Morocco

**Abstract.** The mechanisms of professional selection of young graduates in the labour market remain an open debate and involve all stakeholders: students, educational system, companies and administrations. These mechanisms play a crucial role in the future performances of an institution or a company, as the selection of the wrong candidate can ruin an organization. In contrast, the right candidate can take the organization to new heights. The interview presents a short interaction that may reflect the candidate knowledge and skills; however, there are many other hidden facets such as personality traits that are difficult to measure only by interviewing. Today, many countries already use personality testing during the recruitment phase. Our objective through this work is to determine the possible links between the personality of future young employees and their performance within the company. To achieve this objective, we carried out a comparative study of the different personality tests used in the recruitment process.

**Résumé.** Les mécanismes de sélection professionnelle des jeunes diplômés dans le marché de travail restent un débat ouvert, et implique toutes les parties prenantes: étudiants, système éducatif, entreprises et administrations. Ces mécanismes jouent un rôle crucial dans les performances futures d'une institution ou d'une entreprise, car la sélection d'un mauvais candidat peut ruiner une organisation tandis que le bon candidat peut porter son organisation vers de nouveaux sommets. L'entretien présente une courte interaction qui peut refléter les connaissances et les compétences du candidat, néanmoins, il existe de nombreuses autres facettes cachées tel que les traits de personnalités. Aujourd'hui, plusieurs pays font déjà recours au test de personnalités lors

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\* Corresponding author: [ahmed.remaida@uit.ac.ma](mailto:ahmed.remaida@uit.ac.ma)

de la phase de recrutement. Notre objectif à travers ce travail, est de déterminer les liens éventuels qui peuvent exister entre la personnalité des futurs jeunes employés et leurs performances au sein de l'entreprise. Pour atteindre cet objectif on a réalisé une étude comparative des différents tests de personnalités utilisées dans le processus de recrutement.

## 1 Introduction

For most companies, the recruitment process demands a significant investment in human resources. In addition to that, experts state that very few causes of failure are related to the technical skills of the hired candidate, and it is often associated with the daily behaviour adopted by the latter. For this reason, personality tests are more widely used when recruiting candidates with specific careers like sales managers or people who will have supervisory functions (Baez, 2013). A great majority of HR professionals concerned with personnel selection, assessment and training, strongly believe in the validity of different personality assessment techniques when used for recruitment. They consider cognitive ability tests as most valid, while interviews as most practical (Furnham, 2008). Historically, the interest in personality testing for candidate selection in employment started in the late 1980s, emerged slowly in the early 1990s, and explodes beginning a few years after two meta-analyses on the validity of personality tests for personnel selection in 1995 (Morgeson *et al.*, 2007). In recent decades, there is more dependency on data mining and machine learning algorithms (MOUMEN, BOUCHAMA and EL BOUZEKRI EL IDIRISSI, 2020) in the pre-employment phase than humans for the personality assessment as a pre-employment tool (Scepora, 2020).

Among the many existing personality tests, MBTI (Myers, 1998), Big Five (Goldberg, 1992), 16PF (Cattell and Mead, 2008), EPQ (Eysenck, 1991), and many other recruiters favour. This paper aims to give a detailed description of those personality tests alongside their validity and limitation.

## 2 Personality tests

There is a large family of personality tests used to refine and finalize the recruitment process. The direct approach and the analysis of the CV remain, in fact, the primary factors in the decision to select a candidate. The use of these tests is not limited only to recruitment. They are also practical tools for monitoring employees, identifying difficulties and advancing employees to greater responsibilities. It isn't easy to summarize all of the findings in employment psychology, nevertheless to cite and describe all the existing tests and inventories developed for more than fifty years. Thus, we will describe only some of the well-known personality tests and inventories used by employers to select the best-suited candidates.

### 2.1 Sixteen Personality Factors (16PF)

The 16PF questionnaire results from years of factor-analytic studies conducted by the statistic Raymond Cattell. It was first published in 1949 and had four major revisions (1956, 1962, 1968, and the 5<sup>th</sup> edition in 1993). The latest edition contains 185 items (multiple choice questions), with three points answers. Each item is a question that asks about daily behaviour, interests, and opinions (Cattell and Mead, 2008). It is an assessment tool that aims to provide a complete picture of the whole person in sixteen personality traits. In

addition to discovering those sixteen personality traits, it identified the five dimensions of the variant personality test known as the Big Five. We describe the sixteen personality traits measured by the 16PF in Table.1 below:

**Table 1.** The sixteen personality traits of the 16PF

<b>Warmth</b>	Being nice to others
<b>Reasoning</b>	To be good at thinking in an abstract way
<b>Emotional stability</b>	The ability to control emotions
<b>Dominance</b>	The assertiveness in social situations
<b>Liveliness</b>	For a person to be full of energy
<b>Rule-consciousness</b>	The authority abiding and low respect
<b>Social boldness</b>	The social confidence of a person
<b>Sensitivity</b>	To be emotionally affected
<b>Vigilance</b>	To be a vigil in some decisive situations
<b>Abstractedness</b>	How imaginative a person could be
<b>Privateness</b>	The honesty about self
<b>Apprehension</b>	How troubled a person could be
<b>Openness to change</b>	To change and not to be stuck in ways
<b>Self-reliance</b>	How contained a person needs are
<b>Perfectionism</b>	To have high standards for self
<b>Tension</b>	To be impatient, driven

## 2.2 Eysenck Personality Questionnaire (EPQ)

Based on the works of Cattell, H. Eysenck stated in 1985 that only two factors were necessary to explain individual differences in personality with the argument of similarities between the proposed 16 traits (Eysenck, 1991). He added a third factor that deals with the predisposition to be psychotic or sociopathic (psychoticism). The developed model was known as the Eysenck Personality Questionnaire (EPQ), also known as the PEN model. Eysenck choice to the three factors limitation seems to be the lack of the greater importance attributed to the linguistic hypothesis stating that most of the aspects of human personality are recorded in the substance of language (van Kampen, 2009). Here in Table. 2 the description of those three factors:

**Table 2.** The three factors of the PEN personality test

<b>Psychoticism vs Normality</b>	higher levels of psychoticism are more likely a sign of engaging in irresponsible or miscalculated behaviour
<b>Extraversion vs Introversion</b>	high levels of extraversion are a sign of more engagement in social activities
<b>Neuroticism vs Emotional Stability</b>	high levels of neuroticism mean a worry about relatively insignificant matters and feeling stressed

### 2.3 Five-Factor Model (FFM)

The Five-Factor Model was firstly proposed by Tupes and Christal in 1961 when they reanalyzed various data sets using bipolar variables constructed by Cattell in 1957. Traditionally, it was numbered and labelled as: Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness (Goldberg, 1992). The Big Five Inventory (BFI) contains 44 items with a scale of 1 to 5 choices with a repartition of 8 to 10 items per factor. Here in Table.3, a detailed description of the five factors:

**Table 3.** The five factors of the Big Five Personality test

<b>Openness</b>	Open people are intellectually curious, appreciate art, and are sensitive to beauty. This factor is also called the intellect factor.
<b>Conscientiousness</b>	Conscientiousness concerns how people tend to control, regulate and direct their impulses. Impulsive people could be fun and easy to be with.
<b>Extraversion</b>	Extraverted people tend to enjoy being with others. This factor marks the pronounced engagement with the external world.
<b>Agreeableness</b>	Agreeable people value getting along with others and tend to be friendly, generous and helpful. They believe in the honesty and trustworthiness of human nature.
<b>Neuroticism</b>	Neuroticism marks mental distress. This factor refers to the tendency to experience anxiety, anger, depression or any negative feelings.

Translated to many other languages like German, French and Spanish, the BFI had become the most well-known used personality test in employment. A further reduction of the BFI items was developed in 2003 by (Gosling, Rentfrow and Swann, 2003), representing a brief and short version with only ten items and having the same approximate results as the standard version.

### 2.4 Myers Briggs Type Indicator (MBTI)

In 1921, Carl G Jung conducted and published his researches about Psychological Types. Noticing similarities between their ideas and the ideas of Carl G Jung, Briggs and Myers developed the theory behind the famous Myers Briggs Type Indicator personality test (*The history of the Myers-Briggs Type Indicator | The Myers-Briggs Company*, no date). It is the most widely used indicator globally, with thousands of tests performed every day; most of them are in the United States. The MBTI determines the psychological type by highlighting a person orientation, way of action and thoughts. There are six forms of the MBTI comprising between 93 and 290 questions, where the candidate has to choose between two alternatives (Myers, 1998). The test identifies sixteen personality types based on two possible preferences on each of the four dimensions described in Table.4 below:

**Table 4.** The four dimensions of the MBTI personality test

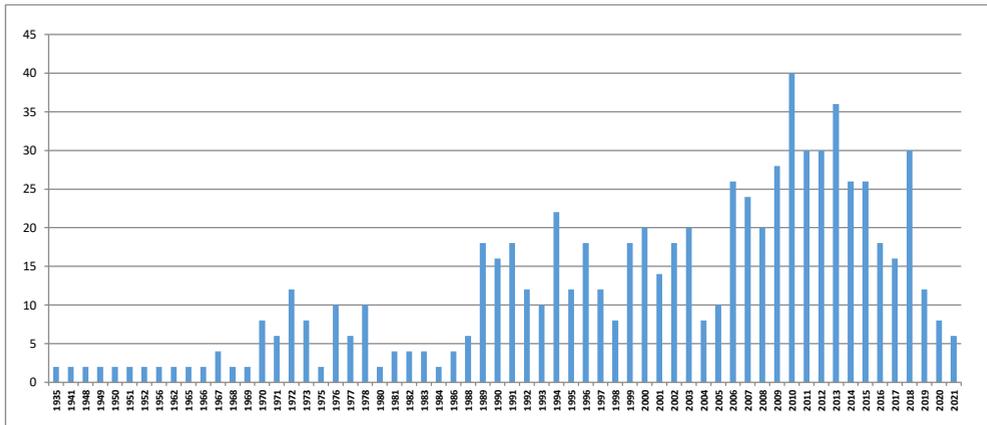
<b>Extroversion &amp; Introversion</b>	An extrovert person can react immediately and objectively in the environment. On the contrary, an introvert person reacts internally and subjectively in the environment.
<b>Sensing &amp; Intuition</b>	A person with a sensing ability relies on his perception and tends to be oriented toward reality. An intuitive person relies more on his non-objective perceptual processes.
<b>Thinking &amp; Feeling</b>	The thinking preference indicates the ability to be logical and rational in making deductions and decisions. However, the feeling preference represents the ability to make subjective decisions with emotional reactions to events.
<b>Judgment &amp; Perception</b>	The preferences of judgment perception are indicators of the ability to be rational or irrational dominance in an interaction with the environment. A judgmental person combines thoughts and feelings to make decisions, whereas a perceptive person uses senses and intuition.

### 3 Discussion

For more insights about this scope of research, we have searched for published articles on personality tests when used in employment with two keywords, “personality tests” and “employment” using the scientific database Scopus. The results are shown in both Figure1 and Table5.

**Table 5.** Published articles on personality tests for employment by journals (top 10)

<b>Journal</b>	<b>Number of published articles</b>
psychological reports	46
journal of applied psychology	42
journal of personality assessment	16
journal of psychology: interdisciplinary and applied	14
journal of affective disorders	12
international journal of environmental research and public health	10
international journal of selection and assessment	10
bmc psychiatry	10
plos one	8
international journal of psychology	8

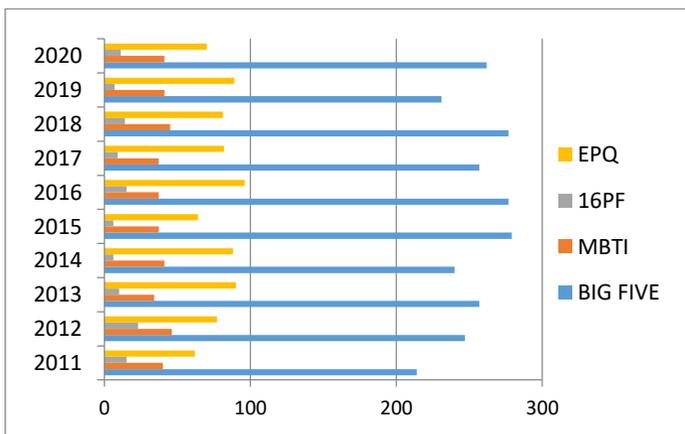


**Fig. 1.** Published articles on personality tests for employment across the years

Here in the following, we give a detailed comparison of all the described personality tests above. Table.6 compares the number of dimensions, items, question types, and time to fill for each of the discussed personality tests. As in Figure.2, we see the difference in the number of published papers during this last decade for each personality test. The most studied one is the Big Five model, and it is getting more interest across the years.

**Table 6.** A descriptive comparison of the personality tests

Personality Test	Dimensions	Number of Items	Question Type
<b>Big Five</b>	5	44	Likert-scale with five choices
<b>EPQ</b>	3	57	Yes / No choices
<b>MBTI</b>	4	93 (MBTI Type1)	Two forced-choices
<b>16PF</b>	16	185	Likert-scale with five choices



**Fig. 2.** Published articles for each personality test during the last decade

## 4 Validity and limitations

The use of personality assessment for personnel selection comes with many problematic issues: appropriateness of linear selection models, personality relation to self-selection effects, multi-dimensionality of personality, scores fake ability, and the legal implication of personality assessment in the employment context (Arthur, Woehr and Graziano, 2001). Some of those issues had already been studied, like the scores fake ability. It was stated that it is not an easy task for a candidate, and there is no explicit agreement as to what to be considered a good or bad response (Furnham, 1990). The legal implication issue seems to be a more significant problem due to many applicants rising number of claims and disappointments. However, the effectiveness of the personality tests remains true (Youngman, 2017).

## 5 Conclusion

In this work, we have summarized and studied some of the well-known personality tests used for pre-employment. Many studies stated that using such tools could be effective for companies for a better personnel selection. To the best of our knowledge, there are no conducted studies under this scope in a Moroccan context. Thus, this paper remains a non-exhaustive study, and the findings could not be generalizing.

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