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Personality assessment in the corporate environment: the case of the Brikman method

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INTRODUCTION

Understanding the nuances of personality traits has become critical in today's fast-paced corporate landscape for effective talent management, personnel selection, and career development. This thesis takes a comprehensive look at personality assessment, focusing on its critical role in the corporate setting.

Personality is a commonly used term with a meaning that most of us readily comprehend, and yet it is an elusive concept to fully describe or quantify. Broadly defined, it is the combination of an individual's cognitive, emotional, attitudinal, and behavioural response patterns (Angler, 2009; McAdams, 2009).

It has been studied since antiquity, with Hippocrates being among the first to describe personality by dividing individuals into temperaments that related to characteristics or types (Hippocrates, 1923).

Over time, numerous theories and instruments have attempted to unravel and measure personality differences.

In today's fiercely competitive corporate environment, assessing employees' personalities has become vital. Recognizing and comprehending individuals' defining traits and qualities enables employers to not only select the best-suited candidates but also to foster effective teams and promote a healthier, more productive work environment.

The first chapter provides an overview of personality traits and their significance. It emphasizes the importance of understanding these characteristics and how they influence behavior, thoughts, and emotions. The chapter also goes over the evaluation criteria for personality assessments, such as assessment format, instrument length, and scale reliability. It then delves deeper into the methods used to assess personal traits, such as self-report questionnaires and short self-report scales, while addressing common issues with these assessment methods.

The second chapter delves into well-known personality tests used in the business world. It begins by examining the Big Five Model, then, it assesses the Myers-Briggs Type Indicator (MBTI), and the DISC Personality Test. The Birkman Method is discussed extensively in the chapter, including its scales, components, and strengths in assessing personality traits. There are real-world examples of organizations that have successfully integrated personality assessments into their recruitment processes. The chapter also discusses implementation challenges, such as employee resistance and potential legal issues.

The third chapter focuses on integrating personality tests into management software systems such as Microsoft Dynamics and Zoho, specifically for HR and talent management. It thoroughly examines the advantages of using these tools, as well as the role of AI. The chapter investigates how personality tests can be seamlessly integrated into these software systems and offers insights into the future potential of AI in conjunction with personality assessments in organizations. It also includes interviews with industry experts, including Michelangelo Aquino, to supplement the discussion of practical implementation.

CHAPTER I: PERSONALITY CHARACTERISTICS AND AN OVERVIEW OF PERSONALITY TESTS

1.1. PERSONALITY CHARACTERISTICS: AN OVERVIEW

In the field of personality psychology, personality is defined as the psychological system of traits, emotions, motivation, behaviour, and thought patterns that characterize individuals and distinguish them from each other (Miloš Kankaraš, 2017).

Among the various personality attributes, personality characteristics occupy a central position in the personality conceptual system. Personality traits are described as “relatively enduring patterns of thoughts, feelings, and behaviours that reflect the tendency to respond in certain ways under certain circumstances” (Roberts, 2009).

Since they are “relatively permanent patterns”, it means that these traits tend to be consistent characteristics of an individual’s personality, but they are also not set in stone, and they may be affected to some changes. They also reflect a tendency to react in certain ways under certain conditions, and this indicates that their influence on behavior is not absolute and certain, but rather that behavior is simultaneously influenced by actions that are simultaneously shaped by the other personality and the situational factors (Miloš Kankaraš, 2017).

Besides personality traits and temperament, many other personality traits are important determinants of human behaviour and life outcomes. These include motivations, interests, self-image, cognitive and socio-emotional skills, attitudes, values, and beliefs.

Personality characteristics are sometimes called “non-cognitive abilities” representing personal attributes that are not part of a wide range of cognitive abilities. Cognitive skills are usually defined as the ability to process information (linguistic, numeric, graphical, or analytical) and solve (abstract) problems.

In the narrow sense of information processing, these abilities are often seen as a form of intelligence and are measured by various forms of intelligence tests, while

the broader perspective, is assessed through “performance tests” in specific academic areas such as reading, math, and science. In this way also acquired knowledge, and related attitudes are included.

Non-cognitive skills are thus most easily defined as those that cannot be measured by achievement or IQ (intelligence quotient) tests (Miloš Kankaraš, 2017).

However, in addition to being both “too broad to be useful” and yet incomplete, the term implies the absence of cognitive activities although every aspect of mental functioning is based on some form of information processing and cognition (Duckworth and Yeager, 2015). For example, social competences, one of the prime examples of a non-cognitive skill, are so fundamentally dependent on perception, memory, and reasoning abilities that they are often conceptualized as a form of intelligence (e.g., Marlowe, 1986; Murphy and Hall, 2011).

Alternatively, personality characteristics are sometimes also called by terms such as “character”, “character skills” or “virtues” (Berkowitz, 2012; Tough, 2013; Kristjansson, 2013). These phrases have some moral overtones that many academics and policy experts would want to avoid, which is one of the criticisms leveled against them. Therefore, non-cognitive talents are referred to as “socio-emotional skills” in economic research and applied policy contexts, highlighting the significance of their social and emotional components, or “soft skills”, as opposed to the “hard skills” represented by cognitive ability (Brunello and Schlotter, 2011; Kautz, et al., 2014; Heckman and Kautz, 2012).

Personality characteristics represent a very broad set of personality attributes that comprise a wide range of personality constructs, and they differ in their nature, determinants, mode of action, development, adaptability, and also in the range and type of behaviour they affect, and their development and malleability (Miloš Kankaraš, 2017).

Figure 1 presents some of the most important domains of personality and individual differences.

FIGURE 1: DOMAINS OF PERSONALITY



SOURCE: Personality matters: Relevance and assessment of personality characteristics (Miloš Kankaraš, 2017).

The most important aspects which influence personality can be divided into these groups:

- *MOTIVES* is a special class of psychological attributes that are important determinants of human behaviour. They have a profound impact on people's life choices and outcomes because they provide reasons for people's actions, feelings, needs, and guides and drives their actions. Motives can be intrinsic or extrinsic, and they can drive to seek or avoid certain outcomes. There are several types of needs, from basic physiological needs such as eating and sleeping to fairly complex goals such as self-actualization and fulfilling one's potential.
- *INTEREST* is another driving force of human behaviour: it is one of the main determinants of intellectual development and general knowledge acquisition, as it influences how and to what extent people utilize their intellectual potential. Interests represent a personal evaluation of professional, leisure, or general intellectual activities and influence people to find an environment in which they can use their abilities and skills. The

match between a person's interests and the characteristics of their environment has a great impact on their well-being and overall well-being.

- *SELF-CONCEPT* (also self-perspective or self-construction) is a cognitive and descriptive representation of ourselves that embodies answers to the following questions: "Who am I?" thus incorporates components of gender and social status roles, academic and professional performance, and ethnic and racial identity. It is basically a collection of beliefs, feelings, and knowledge about us that shapes our feelings, thoughts, and actions. Since self-concept describes how people perceive themselves, there are different perceptions and abilities: for example, the capacity to restrain one's emotions, objectives, and actions in the face of outside pressures necessary to maintain normal social functioning is known as self-control or self-regulation, while the degree or strength of one's confidence in their capacity to complete activities and reach objectives is known as self-efficacy. People's perceptions of their ability to control events have an impact on both their ability to act and handle issues skillfully as well as whether (or not) they are prepared to confront the challenge in the first place. It is a crucial skill for achieving objectives and avoiding unpleasant feelings or circumstances. Another similar concept is self-esteem, which refers to a person's total subjective and emotional assessment of their value. It is a verdict on oneself as well as an attitude. A similar concept called "locus of control" describes how much people think they influence the things that happen to them. While people with a high external locus of control feel that situational or random variables mostly affect their lives, those with a strong internal locus of control believe that they can control their own lives.
- *PERSONALITY CHARACTERISTICS* explains how people relate to and interact with others.
- *SOCIAL COMPETENCIES* are a complex set of social, emotional, cognitive, motivational, and behavioural skills that shape the way people interact with their social environment. It reflects the ability to take the perspective of

others, assess and understand social situations effectively, regulate emotions and goals, and act effectively and socially appropriately.

- *EMOTIONS* represent states of feeling or mood that provoke physical and psychological reactions and influence behaviour. Certain kinds of emotions are more common in certain temperaments and personality types. Emotions, whether positive or negative, are also thought to influence motivation. The degree to which people can control and regulate their emotions is an important individual difference (Miloš Kankaraš, 2017). This is represented in the recently introduced concept of emotional intelligence, which is defined as the capacity to identify one's own and other people's feelings and to utilize those feelings to influence one's own and other people's decisions and behaviour (Goleman, 1998).
- *ATTITUDES AND VALUES* are a different group of personality traits that have a significant impact on how people behave. Attitudes can be defined as "the evaluation of a certain thing with a degree of favour or disfavour" (Eagly and Chaiken, 1993). The common consensus is that attitudes are far less durable and permanent than other psychological qualities like traits or temperament. Attitudes may be acquired and modified. By definition, personal values are "core conceptions of the desirable within every individual and society" (Rokeach, 1979). Due to their broad character, they impact the creation of more specialized beliefs, attitudes, and views and have long-lasting repercussions on behaviour. They reveal a person's sense of right and wrong, goals, and ideals.

1.1.1. THE IMPORTANCE OF PERSONAL CHARACTERISTICS

Since personality traits are one of the main determinants of human behavior, they have a significant impact on various life events and outcomes and overall personal and social well-being (Miloš Kankaraš, 2017). Although they are generally more difficult to assess than cognitive ability and their effects are more difficult to decipher, there is ample empirical evidence to support their role and relative

importance to other factors. In other words, people with certain personality traits are more likely to achieve certain life outcomes, even when other factors such as cognitive ability are considered.

For example, people who are more disciplined, persistent, and intellectually curious will be better off in school, while people who are more trustworthy, hardworking, and organized are more likely to get jobs and progress at work.

People who manage better their emotions and stress live healthier and longer. People with higher self-efficacy and interpersonal skills make better leaders, while more empathetic, agreeable, and loving people are better as professional or informal caregivers. Simultaneously, people with low self-control and conscientiousness are more likely to commit crimes and engage in unproductive workplace behavior. Workers whose job interests do not correspond to their responsibilities are less productive and dissatisfied (Miloš Kankaraš, 2017).

Moreover, the effects of personality traits on life events also occur indirectly through their cumulative effects on other personality traits and intermediate life events. Academic performance has long been recognized as a major determinant of many important life outcomes, but it is strongly influenced by many personality traits. This also applies to cognitive abilities themselves. Curiosity, an open mind, and a positive approach to learning are important prerequisites for developing and continuously improving an individual's innate cognitive abilities.

Despite being the subject of extensive social science research, personality traits have long been neglected in social and educational policy.

However, this situation has changed in recent decades as policy attention has shifted from a traditional focus on cognitive and academic performance to examining the role of different personality traits.

This trend has gained momentum in recent years due to the proliferation of new assessment tools, both new or modified self-report scales and other innovative formats. These can be referred to as situational assessment tests, or anchor vignettes, which are intended to overcome some of the well-documented limitations of self-report (Miloš Kankaraš, 2017).

This has prompted policy frameworks and intervention programs aimed at more effectively preparing people for the challenges they will face in various life situations.

Schools can incorporate knowledge of the impact of different personality traits and skill development into classroom practice. Intellectual curiosity and intrinsic motivation to learn should be critical factors in any educational activity.

More attention can be paid to the development of self-regulated behaviours in students and their ability to organize and direct their learning activities. Employers may transform workplaces to encourage employees to leverage existing competencies and develop new ones. It can encourage greater personal initiative and enable more opportunities for learning and growth.

A substantial body of evidence suggests that such changes in work organization practices could significantly improve both organizational productivity and employee well-being (Miloš Kankaraš, 2017).

Policymakers should promote traits and skills that would enhance social cohesion and social well-being, like collaboration, determination, tolerance, empathy, solidarity, integrity, and fairness.

However, when considering the policy relevance of personality traits, it is important to recognize the complexity of the relationship between personality traits and outcomes.

First, the basis for influencing personality traits in one direction is less clear than it is for cognitive abilities. While it is difficult to argue against the positive effects of improving cognitive skills in general or specific academic achievements and knowledge, the picture for many personality traits is much more complex. Indeed, the foremost alluring characteristics from an individual and social point of view, such as suitability, and self-control, can possibly have a negative effect beneath certain circumstances.

For example, more agreeable people tend to have lower earnings, a fact that is often contributed by the tendency of agreeable persons to work in the customer service industry, which is generally characterised by lower pay (Nyhus and Pons, 2005). Likewise, conscientiousness, especially some of its facets such as rule-following,

risk aversion, and dutifulness, are found to be negatively correlated with creativity (Barron and Harrington, 1981; Reiter-Palmon, Illies and Kobe-Cross, 2009). Moreover, over the top self-control can lead to less suddenness, flatter emotions, and in, a few cases, even serious mental issues (Miloš Kankaraš, 2017).

On the other hand, characteristics that are usually considered less socially desirable may be critically important for some goals. For example, risk-taking, which is a negative facet of conscientiousness and self-control, is one of the primary personality correlates of entrepreneurship (e.g., Palich and Bagby, 1995). Furthermore, specific personality traits are not appropriate in all situations and can be harmful in certain cases. An example can be grit when someone maintains the effort and interest over years in the face of adversities.

This aspect can have several benefits in any situation where the task is well-defined and requires long-term dedication, like Military experience (MacNamara, Hambrick and Oswald, 2014).

When tasks are unique or uncertain and call for creativity, flexibility, and a willingness to give up on the erroneous techniques, it can even be a detrimental feature (Credé et al., 2016). The value of certain identity characteristics may also differ across professions or job positions (Miloš Kankaraš, 2017).

For instance, agreeableness is found to be negatively correlated with leadership capabilities but is found to be beneficial in service-sector occupations and teamwork settings (e.g., Graziano et al., 2007). In reality, people's aims and preferences are continually changing, along with the social context in which they live (Schoon, 2009), therefore desirable personal traits may in some ways be movable targets. When assessing the importance of various personality traits, it is also important to consider the selection of criteria for determining their importance.

Academic success and financial status are the most commonly used benchmarks.¹ However, studies on quality of life and life satisfaction have offered a much deeper perspective on the diversity of factors that influence individual happiness. They

¹ Apart from their importance for individual well-being, their frequent use is motivated by the fact that they are relatively easy to measure and quantify (Miloš Kankaraš, 2017).

indicate that individuals' general state of health; positive and negative affect; senses of purpose, mastery, and autonomy; personal growth; connectedness with important others; social acceptance; social integration, and other factors are all important determinants of their overall well-being (Keyes, 2007; Gallagher, Lopez and Preacher, 2009). Hence, it is important to take this broader perspective into account when assessing the value of individual personality characteristics (Pfeffer, 2016). This is particularly relevant since the strength and direction of the relationship among a specific personality trait and different life outcomes can vary greatly (Miloš Kankaraš, 2017). Recent research, for example, has discovered that so-called "externalizing" behavior, characterized by hyperactivity, aggression, and delinquency, has a negative impact on school achievement but a positive impact on earnings (Papageorge, Ronda, and Zheng, 2015).

Based on these results, the authors argue that schools should stop punishing such behaviour, a solution that raises certain ethical dilemmas.

Judgments concerning the value of personality characteristics and the criteria used to evaluate them are inevitably dependent on the broader ideology and values promoted in each society. What are the measures of success in each society? Are economic outcomes more important than social ones? Placing an excessive focus on the role of personality characteristics also implicitly emphasises individual responsibility for life outcomes and may lead to the role of broader economic, social, and political contexts and existing structural constraints that influence individual success being overlooked (Camfield, 2015). For example, working conditions that promote employee autonomy, learning opportunities, involvement in decision-making, performance-based reward schemes, etc. do not necessarily only show inadequacies on the part of the employees, but can also reveal inadequacies in the current working mechanism in these employing organizations. Employees in organizations that encourage these work schemes are more enthusiastic, involved, collaborative, and fulfilled. They are distinguished by lower absenteeism and counterproductive work behaviors, as well as longer tenures (Miloš Kankaraš, 2017).

When seen from this perspective, the results of numerous employers' surveys in which employers commonly state that they need more reliable, communicative, engaged employees with better social and teamwork skills and abilities to work independently, can be seen as ambiguous. They do not necessarily just indicate insufficiencies on the part of employees but may also point to inadequacies in the existing work arrangements in those employers' organisations.

Cross-cultural differences are another important issue to consider. What is important and valuable in one culture is not necessarily respected and promoted equally in another culture. In collectivist cultures, personality traits such as agreeableness, humility, and good manners are valued more highly than in individualist societies, which are more likely to encourage self-esteem, independence, and assertiveness (Markus and Kitayama, 1991). Thus, cultural and social contexts modify the impact of individual characteristics on life outcomes.

Businesspeople in Germany, the United Kingdom, and the United States, for example, scored high on extraversion and conscientiousness and low on agreeableness, whereas businesspeople in South Africa and Uganda scored lower on extroversion and conscientiousness and higher on agreeableness (Miloš Kankaraš, 2017). The impact of self-control is also observed to vary according to socioeconomic class. While self-control has clear beneficial effects for children of high socioeconomic status, its effects on children of lower status are mixed, increasing achievement studies but at the cost of negative health effects (Miller et al., 2015; Brody et al., 2013).

1.2. CRITERIA EVALUATION OF PERSONALITY TEST: THE ASSESSMENT FORMAT

Depending on the nature of a particular study, researchers must choose from a variety of assessment options including self-reports, reports by others, proficiency testing, and biodata. The choice of assessment format depends on the research topic and research objectives, respondent type, sample size, available scales and measurement options, budget constraints, etc.

Due to their high efficiency, relatively low cost, and ease of use, self-reported measurements are the preferred choice in most situations. They are usually used for large-scale international surveys, where there are tight constraints on time and there is the need to standardize the testing situation.

Moreover, self-report measures are accessible for almost all personality characteristics and are in many cases the only standardised tools for some constructs.

In other situations, where alternative measures exist, another type of assessment can lead to a better quality of information. It is better to use other assessment formats, like performance tests or, where possible, observation is a much more valid technique for assessing communication, teamwork, or negotiation skills than self-reports.

Even if two scales have the same or similar set of items, they may differ from one another in terms of cognitive load and the amount of time, effort, and knowledge required to respond (Miloš Kankaraš, 2017). The cognitive load imposed by the test device should be appropriate for the target group, therefore, it is important to evaluate effort on specific scales in favour of scales that are easier for respondents to complete. This not only reduces test time, but also reduces non-response rates, and the potential for various response biases, improving the overall quality of the data.

1.2.1. LENGTH OF ASSESSMENT INSTRUMENTS

The length of an instrument is an important aspect to consider, especially in large-scale evaluations where test time must be used as efficiently as possible.

Short self-report scales are the most efficient form of assessment (they allow to obtain the greatest amount of information per unit of time) and are the easiest to administer. They reduce the burden of respondents, and thus potentially improve the quality of data, which can be an important consideration in the case of extensive assessment frameworks, like the one used in the PIAAC study.²

At the same time, short scales have poorer measurement properties, are less reliable and less effective than longer scales, due to their limited number of questions. In addition, where scales use only one or two items per domain it would not be possible to identify any internal structures, which would prevent assumed latent structures and their relations with other constructs from being examined.³

On the other hand, studies with smaller sample sizes and fewer measured variables can use a wider range of instruments, allowing for more detailed analysis of specific traits and increased confidence in the measurements.

Thus, the specific traits and objectives of a study determine the right balance between efficiency and the quality and scope of information.

1.2.2. SCALE RELIABILITY

Instrument reliability indicates the extent to which the instrument provides stable and consistent results. There are four important varieties of reliability:

- *Test-retest reliability* (Consistency of results between tests run at two different times).
- *Inter-rater reliability* (consensus of two or more rates) is used to observe or rate others.

² In PIAAC, assessment of literacy, numeracy and problem solving takes around 1 hour of testing time. On top of this, respondents are interviewed for additional 30-45 minutes with questions from the background questionnaire (Miloš Kankaraš, 2017).

³ In the case of multidimensional scales, such as those assessing the Big Five model, latent structures could be assessed already with two items per construct (Miloš Kankaraš, 2017).

- *Parallel-forms reliability* (score consistency across different test formats).
- *Internal consistency or alpha reliability* (Score consistency across test items).
Internal consistency coefficients are the most commonly used indicators of a persona questionnaire's reliability, followed by test-retest reliability (with varying time intervals between the two administrations of the test).

The more reliable an instrument, the smaller its measurement error and the more accurate its estimate of an individual's true score for a given trait.

Reliability estimates range from 0 to 1, with higher values indicating higher levels of reliability; this depends on how the scale is used. When test results are taken into account to make crucial decisions (such as career choices), a reliability coefficient of 0.90 is preferred, with a minimum reliability coefficient of 0.80 required (Miloš Kankaraš, 2017). However, when the interest is in comparing groups using large representative samples (as in the PIAAC study), reliability coefficients of at least 0.60 used to be considered acceptable (Hudson, 1982). Today, however, a reliability coefficient below 0.70 would be problematic, even in this type of research context (Abell, Spriner, and Kamata, 2009).

1.3. HOW TO MEASURE PERSONALITY TRAITS AND COMMON ISSUES

Measuring personality traits has a long history in both academic and practical settings, and a variety of instruments and assessment techniques have been developed to that end (Miloš Kankaraš, 2017).

However, the measurement of personality characteristics has still not reached the quality levels achieved for cognitive abilities (Heckman and Kautz, 2012).

Indeed, the lower quality of personality measures may be one of the main reasons for their absence from relevant policy discussions (Brunello and Schlotter, 2011). This is not unexpected due to the fact that personality concepts have been shown to be more complex than cognitive abilities at all stages of measurement. They are more difficult to define or distinguish from similar concepts, and they are also far more difficult to observe through similar or related behavior (Miloš Kankaraš,

2017). It is more difficult to establish hypothetical relationships between components and different concepts.

Different measurement approaches are used to assess personality traits. This includes self, colleague, teacher, parent, behavioural observation, performance task, biographical data, and other reports. Most personality measures are based on self-report questionnaires where respondents are asked to rate and report their own (typical) behaviour.

The most important approaches used are quite heterogeneous in scope, size, measurement properties, empirical verification, cross-cultural validity, and other important characteristics.

1.3.1. SELF- REPORT ASSESSMENT

Self-report questionnaires provide a relatively easy and efficient way of gathering important information about large groups of people, or even whole nations (if representative samples are used). They are low-cost and simple to administer, produce consistent results, and in many cases offer impressive approximations of objective measures (Miloš Kankaraš, 2017).

Moreover, a huge body of literature in the social sciences indicates that people generally react reasonably well to questionnaires and are in general able to describe their typical behaviour in the intended way (Heine, Buchtel, and Norenzayan, 2008; Krosnick, 1999).

From a practical point of view, these are virtually the only forms of measurement that can be used in large-scale international surveys. Nonetheless, these kinds of questionnaires have several drawbacks that can seriously affect the quality and usefulness of measurements based on them.

These include respondents' lack of knowledge or misunderstanding, socially desirable responses and susceptibility to manipulation, differences in response styles, and memory distortions. When these scales are used in cross-cultural contexts, additional potential measurement biases such as reference distortion and measurement inequality enter the picture (Miloš Kankaraš, 2017).

1.3.2. SHORT SELF- REPORT SCALE

Large-scale surveys are mostly limited to the use of self-reported measures of personality traits. However, the situation is further complicated by the fact that standard items on personality tests are often too long for these surveys and need to be shortened. In practice, this often means that long personality tests with hundreds of questions are reduced to very brief assessments of each personality trait or aspect with only a few questions (Miloš Kankaraš, 2017).

This situation has led to the recent proliferation of numerous abbreviated versions of existing personality scales, as well as research such as the World Values Survey International, which examines the Big Five and other psychological traits in cross-cultural and large-scale contexts.

Apart from being cheaper and more efficient to administer, short scales (which have one to five elements per domain scale), have additional advantages (Credé et al., 2012). They reduce the burden on respondents and the feeling of boredom or fatigue, which in turn may increase the quality of respondents' answers (Burisch, 1984).

Respondents may also find short surveys more meaningful than long surveys with many seemingly redundant items. From a psychometric perspective, it has been found that significantly reducing the length of the questionnaire does not unduly affect the measurement properties of the instrument in most cases.

Burisch (1984), for example, discovered that short scales have comparable levels of criterion validity to longer scales measuring the same construct.⁴

Some studies found comparable evidence for the criteria used to determine validity of short scales (Miloš Kankaraš, 2017).

Other studies indicate that shorter scales are also satisfactory for properties such as test-retest reliability and convergence validity (Gosling et al., 2003; Robins et al., 2001).

⁴ Whether an outcome is measured now (concurrent validity) or in the future (predictive validity), the degree to which a measure is connected to an outcome is referred to as criterion validity (Miloš Kankaraš, 2017).

However, the use of short scales comes with costs in the form of increased measurement error and reduced content validity (Credé et al., 2012). Shorter scales tend to have lower reliability and predictive validity and consequently increased rates of type 1 and type 2 errors.⁵ These are the reasons short scales are not recommended for individual diagnostic use.

Very brief measures (with only one or two items per scale) are less suitable for statistical identification of underlying (latent) structures of scales since at least three items per construct are needed to identify latent structures (Gagné and Hancock, 2006). The study of latent structures is important for several reasons, including methodological (like excluding measurement errors from individual evaluations) and substantive considerations (for example identifying relationships between internal structures and components).

⁵ Type 1 mistakes take place when a researcher incorrectly decides that a particular effect exists, whereas type 2 errors refer to the opposite scenario, when a researcher incorrectly concludes that a particular effect does not exist. Type 2 mistakes may occur, for instance, when researchers assert that a specific Big Five dimension has no impact on behaviour or wellbeing when employing quick measurements. Similar to the previous example, type 2 mistakes may result from claiming the discriminant validity of a particular measure based on its weak connection with relatively brief tests of the Big Five features. On the other side, type 1 mistakes may be exaggerated when researchers use short measures of the Big Five scales to demonstrate the incremental validity of a particular measure above and beyond the Big Five dimensions. Due to the use of short scales in this case, the amount of variation accounted for by the Big Five characteristics in an outcome criteria may be lowered, which creates the conditions for finding new scales with incremental predictive potential in circumstances where this does not already exist (Credé et al., 2012).

1.3.3. MEASUREMENT ISSUES WITH SELF – REPORT QUESTIONNAIRE

There are some issues in measuring personality characteristics, like:

- *Misinterpretation*: respondents provide answers depending on their interpretation of the question, which may or may not be the same as the question's intended meaning. This could be a result of the use of challenging or unclear terms or formulations, the load or exhaustion of the responders, or both.
- *Lack of information*: respondents could not have enough knowledge to adequately react to a question, in which case they might opt for a socially acceptable response, a neutral response, or they can choose to ignore the issue completely.
- *Memory bias*: Additionally, they might not always accurately reflect their inner selves, including their emotions and motivations.
- *Social desirability*: the propensity of respondents to answer questions in a way they think would be well-received by others. This propensity might cause “undesirable” behavior to be minimized or “desirable” behavior to be inflated. Indeed, people sometimes exaggerate their academic accomplishments or kind and humanitarian acts while downplaying aggressive or unlawful behavior. Additionally, they tend to either increase or decrease incomes, self-worth, physical attractiveness, and other factors. For various groups, prejudice may take different forms. According to divergent societal standards, males frequently claim to have more sexual partners than women do, for instance. It is challenging to separate social desirability from the substantive meanings of the scale. In high-stakes individual diagnostic circumstances, such as job selection or clinical screening, when responders may attempt to present themselves in the best possible light, it is an extremely crucial problem. Questions must be phrased neutrally, avoiding unduly favorable phrases, and balancing the

attractiveness of competing response possibilities to prevent or lessen the impacts of social desirability.

- *Response styles*: Whenever the so-called Likert scales are employed, thus when respondents are asked to rate the degree of agreement with a specific statement using typically five answer alternatives from “strongly agree” to “strongly disagree”, responses are prone to numerous response-style biases.
- *Reference bias*: Reference bias is a situation in which individuals from various nations respond to the same question using various sets of references. Particularly, a response to the statement “I see myself as someone who tends to be lazy” (found on the conscientiousness scale of a Big Five questionnaire) may vary based on a person's criteria or reference points for what constitutes laziness. As a result, national rankings on the Big Five scale of conscientiousness may not correlate with factual measures like average working hours (Miloš Kankaraš, 2017). When comparing individual scores within the same culture, reference bias does not exist, but it does when compare aggregate data between cultures.

The role of personality tests in the business world will be examined in the following chapters, as well as how corporations can use them to improve their overall outcomes. Several types of tests will be described, along with their advantages and disadvantages.

CHAPTER II: PERSONALITY TESTS IN THE CORPORATE ENVIRONMENT

Not just in the study of psychology but also in daily life and culture, a range of psychological features are employed to explain human behavior and define an individual's personality. Personality psychologists have made an effort to whittle down this variability and reach the core elements of personality using the so-called "lexical approach".⁶

The lexical approach assumes that language contains the most significant psychological qualities. Therefore, the terminology that is employed to describe people is the first step in a thorough investigation of personality. Then, related personality traits are grouped using the statistical method known as component analysis to pinpoint some of the most widespread and fundamental features of personality.⁷

Thus, over the last three decades, the field of personality psychology has made significant progress in identifying some of the fundamental dimensions or factors that can be used to describe the wide range of personality traits (Miloš Kankaraš, 2017).

This chapter will analyse some of the most important and widespread personality assessments, like the Big Five, the MBTI, the DiSC test, and the Birkman method.

2.1. THE BIG FIVE MODEL

The Big Five personality model is an extensively researched and widely accepted model that identifies five fundamental personality traits:

1. Emotional Stability or *NEUROTICISM* (calm, secure, and non-anxious).
2. *EXTROVERSION* (sociable, talkative, assertive, ambitious, and active).

⁶ Kankaraš, M. (2017). Personality matters: Relevance and assessment of personality characteristics.

⁷ Principal Component Analysis (PCA) is a statistical technique used for reducing the dimensionality of data while retaining as much of its original variability as possible, achieved by transforming the data into a new coordinate system represented by orthogonal principal components (Jolliffe, I. T. (2002). Principal component analysis for special types of data. Springer New York.)

3. *OPENNESS TO EXPERIENCE* (imaginative, artistically sensitive, and intellectual).
4. *AGREEABLENESS* (good-natured, cooperative, and trusting).
5. *CONSCIENTIOUSNESS* (responsible, dependable, organized, persistent, and achievement-oriented).

Each of these five dimensions represents a group of interrelated personality traits or aspects. For example, conscientiousness includes traits such as self-discipline, perseverance, a sense of duty, and a desire to achieve.

The five-factor structure of personality traits has been discovered by several research teams, and this consistency in results has contributed to the model's general adoption (John, Naumann, and Soto, 2008).

The model itself is the outcome of separate research streams that used somewhat different lexical approach iterations to get the same conclusions (Tupes and Christal, 1958; Norman, 1963; Goldberg, 1982; McCrae and Costa, 1985). Not just in Western civilizations, but also in many other nations throughout the world, similar personality patterns have been found (McCrae and Costa, 2006).

TABLE 1: DESCRIPTION OF THE BIG FIVE MODEL

Factors	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness to experience
Main sub-domains (facets)	Energy Sociability Assertiveness	Empathy/warmth Altruism Trust	Self-control Responsibility Achievement orientation	Anxiety/nervousness Negative emotionality Emotional volatility	Curiosity Originality Open-mindedness
Conceptual definition	Indicates drive towards others and ambition for dominance/withdrawal in social situations.	Determines the quality of relationship with others, with warmth, benevolence and co-operation on one side and hostility, coldness and mistrust on the other.	Represents degree to which individuals control and channel their impulses in socially prescribed way.	Describes the typical emotional responses to reality, i.e. their quality and quantity of their changes.	Indicates the degree to which person appreciates new experiences as opposed to which he/she values old routines.
Behavioural examples	Loves to go to social gatherings; is leader of informal groups; is withdrawn in a school class or in a meeting (R); gets easily tired (R).	Trust people even when do not know them well; finds faults with everyone (R); tends to agree with people; wants to help people in trouble; sympathise with people in need.	Organise their day and living space; is never late on appointments; persist in tasks until they are finished; is ambitious and determined; tends to follow school or company's rules.	Is worried about most of daily tasks, even those less important; has hard time dealing with critic; tend to fall into darker mood; is optimistic (R).	Loves to read; enjoys art exhibitions; has many interests; enjoys philosophical discussions; does not like change of daily routines (R).
Related life outcomes	<i>High:</i> Wider circle of friends and acquaintances; more likely to occupy leadership positions. Better job satisfaction in fast-paced work environments. <i>Low:</i> Can easier adjust to school environment, social network is constrained to selected few; have poorer health.	<i>High:</i> More likely to work in customer care industries and in larger teams. Higher life satisfaction. Prone to disappointments. <i>Low:</i> Delinquency, anti-social behaviours, more likely to have higher income.	<i>High:</i> Better educational achievement and job performance; more likely to live longer. <i>Low:</i> Difficulties at school and work; delinquency and substance abuse; more creative.	<i>High:</i> Lower school and work achievements; more likely to suffer from depression and other emotional problems; problems in relationships; lower life satisfaction. <i>Low:</i> Better quality of life; more fulfilling relationships; improved health.	<i>High:</i> Better educational attainment; more likely to create original and artistic works; broader knowledge of different fields; more likely to learn foreign languages. <i>Low:</i> Tends to vote conservative; has fewer out-of-group friends; less likely to consume recreational drugs.

SOURCES: Personality matters; Relevance and assessment of personality characteristics, 2017.

Numerous studies and meta-analyses have discovered that the "Big Five" personality traits are related to academic and job performance, health, and criminality, though the correlations are typically small (Miloš Kankaraš, 2017).

Of the individual dimensions, conscientiousness, the tendency to be diligent, prudent, and organised, seems to have the greatest predictive power (Hogan and Holland, 2003). Conscientiousness, openness to experience, and agreeableness, appear to be the most important personality traits for academic success. It directly and indirectly influences school performance through its effects on learning styles, teacher perceptions, etc. These personality qualities have repeatedly been linked to a range of successful job outcomes:

- Job Performance: Studies have found that conscientiousness is positively related to job performance, as individuals high in conscientiousness tend to be more reliable, responsible, and diligent in their work tasks.
- Job Satisfaction: Personality traits, particularly extraversion and emotional stability, have been linked to higher levels of job satisfaction, as extroverted people are more likely to enjoy the social aspects of their jobs and emotionally stable people are less likely to feel depressed about their work.
- Organizational Commitment: Agreeableness and emotional stability have shown positive correlations with organizational commitment, indicating that individuals who are cooperative and emotionally stable are more likely to be committed to their organization. (Barrick, M. R., & Mount, M. K. (1991); Hertz, G. M., & Donovan, J. J. (2000)).

2.1.1. CRITICISMS OF THE BIG FIVE MODEL

Despite their widespread acceptance and use, or maybe because of it, the Big Five and other similar models that use the lexical approach have received significant criticisms (Miloš Kankaraš, 2017).

First, from a conceptual point of view, it is not clear to what extent the dimensions are related to each other and how to interpret their empirical interrelationships.

In addition, although these models claim to offer a comprehensive representation of the entirety of human personality, they do not include important attributes such as motivation, masculinity/femininity, egotism, humorousness, risk-taking, and, in the case of the Big Five, honesty and manipulateness (Block, 2010).

The usefulness of these dimensions is also questionable due to their relatively low correlation with various life outcomes. From a methodological point of view, the model has been criticized for being atheoretical, data-driven, and overly dependent on the application of factor analysis, resulting in the lack of objective criteria for factor selection and interpretation.

They are largely self-reported; thus, they tend to be subject to tacit biases and social desirability and they are also susceptible to intentional falsification of responses, all of which are difficult to detect in the analysis of results (Miloš Kankaraš, 2017). Thus, it can be difficult to know whether observed differences represent true underlying differences in personality traits or differences in pretense, desirability, and self-reported tendencies.

In cross-cultural comparisons, reference bias (the tendency to use different standards/reference systems when deciding to what degree a person is characterized by a certain attribute), represents an additional cause of concern that can severely influence results and reduce the comparability of data (Heine, Buchtel and Norenzayan, 2008). As with any survey that uses a Likert rating scale, responses are prone to various biases in answer style. The Big Five scale is not equally relevant to all cultures. According to some research, openness to experience can be particularly difficult to identify in Asian cultures (Miloš Kankaraš, 2017).

In other cultures, different variants of the lexical approach have led to modified or completely new factors (Szirmak and De Raad, 1994).

2.2. MYER - BRIGGS TYPE INDICATOR

The MBTI (Myers & Briggs, 1943/1976), can be described as a self-report questionnaire through which people can understand better themselves: what are their natural strengths, motivations, and potential for growth (Myers, 1998). According to the manual "Introduction to Type" (Briggs Myers, 1998; Myers, Kirby, & Briggs Meyers, 2015), which was published initially in 1970 and now there is its seventh edition, the main aim of this tool is to foster self-understanding, increase learning and communication, help in handle conflict management, and enhance relationships.

The Myer Briggs Type Indicator is widely used in the management of human resources but is common also in higher education research and counseling (Hojat, Erdmann, & Gonnella, 2013). Its application is quite varied and includes different studies of how certain preferences affect decision-making (Pretz & Folse, 2011) and how knowledge of an individual's type can enhance communication (Eksteen & Basson, 2015).

In the early 1900s, Carl G. Jung, a psychiatrist, explored the concept of personality types and preferences. He observed that individuals have mental or psychological preferences for certain tasks, similar to physical preferences like a dominant eye. Jung recognized that there are unconscious mental processes that influence various choices and personal traits, such as study habits or modes of relaxation. ⁸ He worked with his patients and students to develop his theory of personality preferences.

According to Jung, people's behavior is associated with the personality "type" they belong to. He believed that personality differences were not random but rather

⁸ Kennedy, R. B., & Kennedy, D. A. (2004). Using the Myers Briggs type indicator® in career counseling. *Journal of employment counseling*, 41(1).

systematic and consistent. To categorize personalities, he divided them into innate “types”.

Jung's theory identified two primary orientations: extraversion and introversion. He further organized personalities into four paired “functions”: Sensing vs. Intuition (perceptual preferences) and Feeling vs. Thinking (deciding preferences). Some years later, in the 1940s, two students of Jung’s work, Kathrine Cook Briggs and her daughter Isabel Briggs Myers researched how to measure personality preferences and they added a fourth dimension: *JUDGING VS. PERCEIVING* (Quenk, 2009). In this dimension is it possible to distinguish people who prefer planning or people who prefer spontaneity.

TABLE 2: DIMENSIONS OF THE MYER-BRIGGS TYPE INDICATOR

<p>Extroverts:</p> <ul style="list-style-type: none"> • Talk more than listen • Think out loud • Act, then think • Like to be around others • Prefer to do many things simultaneously • Be attuned to their external environment • Learn best through doing or discussing 	<p>Introverts:</p> <ul style="list-style-type: none"> • Listen more than talk • Think inside their head • Think, then act • Feel comfortable being alone • Prefer to focus on one thing at a time • Not take action • Be attuned to their inner world • Prefer to communicate in writing
<p>Sensors:</p> <ul style="list-style-type: none"> • Focus on details and specifics • Admire practical solutions • Notice details and remember facts • Live in the here-and-now • Trust actual experiences • Like step-by-step instructions • Work at a steady pace 	<p>Intuitives:</p> <ul style="list-style-type: none"> • Focus on the big picture and possibilities • Admire creative ideas • Notice things that are new or different • Trust their instincts • Prefer to learn new skills • Like to figure things out for themselves • Work in bursts of energy
<p>Thinkers:</p> <ul style="list-style-type: none"> • Make decisions based on logic and evidence • Be direct • Appear to be reserved • Be convinced by rational arguments • Value honesty and fairness • Take few things personally • Be motivated by achievement 	<p>Feelers:</p> <ul style="list-style-type: none"> • Make decisions based on their values and feelings • Appear to be friendly • Be convinced by how they feel • Be tactful • Value harmony and compassion • Take things personally • Compliment others
<p>Judgers:</p> <ul style="list-style-type: none"> • Make decisions easily • Pay attention to time • Finish projects • Work first and play later • See the need for rules • Make a plan and stick to it • Find comfort in schedules 	<p>Perceivers:</p> <ul style="list-style-type: none"> • Have difficulty making decisions • Be less aware of time • Start projects • Play first, work later • Keep their options open • Question the need for many rules • Keep plans flexible • Be spontaneous

SOURCES: Butler, C. (2014). A Framework for Evaluating the Effectiveness of Gamification Techniques by Personality Type.

2.2.1. RELIABILITY AND VALIDITY OF MBTI

Since the 1940s, numerous studies have been conducted to analyze the validity and reliability of the MBTI. Reviews of the literature, including research conducted by the publishers themselves, have questioned the validity of the MBTI about Jung's original theory (Carlson, 1985; Carlyn, 1977; Gardner & Martinko, 1996; Murray, 1990; Pittenger, 1993). Validity and reliability are fundamental aspects of assessment instruments like the MBTI.

Validity refers to the degree to which evidence and theory support the interpretations of test scores, while reliability, on the other hand, refers to the consistency of scores across repeated administrations of the test (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 2014).

The MBTI also faces a testability problem due to its tendency to cover specific preferences in human behavior. There are debates about whether preferred functions and attitudes should be expressed in behavior over time (Briggs Myers et al., 1998) and whether preference scores truly indicate the strength of preference for a specific dichotomy (Briggs Myers et al., 1998).

The prevalence of the 16 personality types proposed by the MBTI is also a topic of discussion, as the distribution of dichotomous scores does not exhibit the expected bimodal distribution.⁹ The newest version of this assessment tool applies item response theory (IRT); thus, it is more difficult to get scores at the midpoint of each dimensional score (Briggs Myers et al., 1998, Bess & Harvey, 2002).

Item Response Theory (IRT) is a statistical and psychometric framework for examining the connections between test-taker responses and underlying latent characteristics or skills. It offers a way to represent the relationship between an individual's level of the latent characteristic being tested and the likelihood that they will respond correctly to an item. In educational and psychological measurement, IRT is frequently used to design, calibrate, and score exams as well as to assess the value of individual items (Embretson, S. E., & Reise, S. P. (2000). *Item Response Theory for Psychologists*. Mahwah, NJ: Lawrence Erlbaum Associates).

⁹ A bimodal distribution will have two modes. That is, two values which will occur the most frequently in your data set. A bimodal distribution indicates you may have combined two distinct groups of data. This may impact the conclusions and interpretation if your two groups should be analyzed separately (Rendón-Macías, M. E., Villasís-Keever, M. Á., & Miranda-Novales, M. G. (2016). Descriptive statistics. *Revista Alergia de Mexico*, 63(4)).

2.2.2. ISSUES RELATED TO THE MBTI

The main criticism of the MBTI is its dichotomous nature, where continuous scale scores are translated into nominal preference categories. Indeed, the forced-choice format doesn't allow respondents to select a neutral or middle-ground response (Barbuto, 1997). They must choose one preference over the other (such as Extraversion or Introversion, Sensing or Intuition, Thinking or Feeling, Judging or Perceiving).

The test reveals a “type” represented by a four-letter code, which forms the basis of the 16 personality types, which can be defined as the interaction of the subconscious preferences of a person (Stein, R., & Swan, A. B., 2019).

For example, ENFP stands for Extraversion, Intuition, Feeling, and Perceiving (Schaubhut, N. A., Herk, N. A., & Thompson, R. C. (2009). MBTI® Form M manual supplement. Retrieved May 15, 2010).

While individuals may exhibit characteristics of both ends of the spectrum, they usually prefer one pole over the other. The letter indicates the preference, while the percentage reflects its extent.

Stromberg & Caswell (2015) have also highlighted an additional concern regarding the vague and positive nature of MBTI-type descriptions, which could potentially lead to the Forer effect (Forer, 1949). The Forer effect refers to the tendency for individuals to perceive general or ambiguous statements about themselves as highly accurate or personally relevant. This means that some of the MBTI descriptions may appear accurate to individuals due to their broad and positive nature.

Moreover, the MBTI primarily measures preferences for each dichotomy rather than tendencies or abilities. This makes it challenging to make strong predictions about an individual's personality type.

However, from a customer service standpoint, it is easy to justify this approach since it grants individuals control over the outcome of the process.

Nonetheless, it remains unclear how individuals ultimately determine, other than through uninformed intuition, whether the type they believe fits them is the “true” type.

2.3. DISC PERSONALITY TEST

Disc is a personal evaluation technique used to boost communication, leadership, sales, and workplace efficiency, and nowadays, a lot of companies use DISC to find employees who can deliver on their promises and help the company reach its objectives. Completed by more than 10 million individuals annually in team building, coaching, and personal development, the DiSC evaluation helps workers pinpoint their areas for improvement and provides the closest thing to precise findings (Sharmila Sinha, 2020).

DiSC evaluates behavioral and personality traits, and it consists of four equally significant components, according to Freeman (2011). It does not assess intelligence, talent, mental health, or values.

This tool focuses less on identifying a candidate's particular personality characteristics and more on their behavioral patterns and associated inclinations (Andrej Kovaevi, 2020).

Kevin Kruse claims that *“The DiSC assessment is the personality test that can unlock your potential as a leader, improve your communication at work and home, and lead you to unlock the deeper insights of self-awareness”*.¹⁰

Many behavioral models concentrate on what is wrong with an individual to diagnose “personality disorders”, instead, the DISC model is based on typical behavior.

The DiSC model was initially described by psychologist William Mouton Marston, in his 1928 book “Emotions of Normal People”. Dr. Marston created this study to explain how a person's emotions may result in various group interactions and how these may evolve over time. He intended to teach individuals how to control their

¹⁰ <https://leadx.org/articles/the-ultimate-guide-to-the-disc-assessment-and-personality-test/#:~:text=The%20DiSC%20assessment%20is%20the%20personality%20test%20that,you%20to%20unlock%20the%20deeper%20insights%20of%20self-awareness.>

behavior patterns and how it influenced how they interacted with others in a group.

The four main personality traits that Marson identified as Dominance, Inducement, Submission, and Compliance were first developed in this manner.

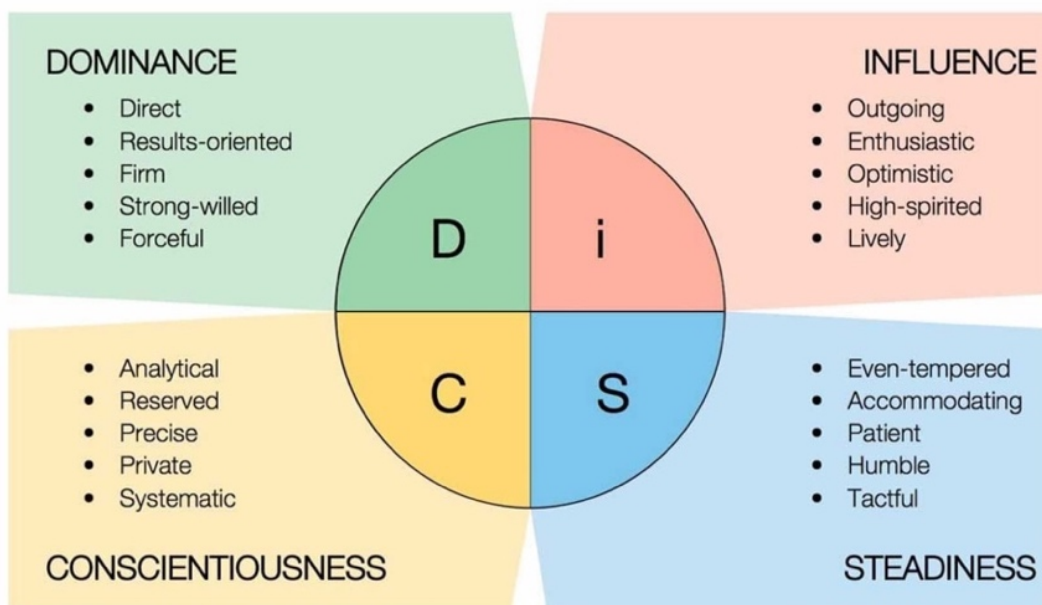
In the 1950s, industrial psychologist Walter V. Clarke developed the DiSC method into a personality test. The first evaluation process was archaic; candidates had to choose the words that best defined them before responding to a series of yes-or-no questions. DISC test is now a brief, forced-choice questionnaire style based on four core factors:

- *Dominance*: “Ego-emotion”, “aggression”, “self-assertion”, “initiative”, “determination”, “courage”, and “boldness” are terms used to describe dominant emotions. People with dominating personalities like taking charge of their surroundings. They have a strong sense of task orientation and goal focus. They have a strong will, they are competitive, straightforward, and results oriented. They work quickly and do the tasks right away. They enjoy difficulties and multitasking. They dislike the routine and wish to bring about change. The inclination to act assertively, firmly, and confidently is a component of the personality attribute dominance (Buss & Craik, 1980; Gough, 1987; Wiggins, 1979).
- *Inducement*: People who have this trait as their most prominent attribute find it simple to persuade people and use their charm to further their goals. They have what can be called a likeable personality. Because you can easily talk about a variety of themes that are relevant to people, it can have an impact on the people around you.
- *Steadiness*: These people value cooperation, are trustworthy, and have no issue meeting others' needs. They often don't cause difficulties for others and want to avoid disputes at all costs, which makes them popular with others around them. They are aware of the criticisms voiced by others on the way the company does business.

- *Compliance*: A personality trait that indicates people who care about things like expertise, quality, and knowledge. ¹¹

Type “C” (Compliance) people typically want to acquire information or ideas before sharing them with other people. Their qualities include the capacity for in-depth thought and strong analytical abilities.

FIGURE 2: DISC DESCRIPTION



SOURCE: 10 Best Workplace Personality Tests for Teams (2023).

More and more people are switching from Myers and Briggs to DiSC because it is simpler to use, and it is a lot more reliable, analytical, and user-friendly (Greg Smith, 2016).

2.3.1. BENEFITS OF DISC TEST

The DISC method can improve recruiting accuracy by giving a more comprehensive view of applicants than what is revealed during interviews. It benefits team dynamics and executive coaching, enabling improved cooperation and comprehension among coworkers (Marian Gibbs, 2016).

¹¹ <https://discinsights.com/disc-theory>.

According to Christina Bowser (2018), organizations may utilize the results of DISC tests to determine how well teams get along, customize orientation and training, and increase employee retention. Additionally, by comprehending unique personality features through DISC tests, motivating techniques may be customized according to an employee's capabilities.

2.4. THE BIRKMAN METHOD

Self-awareness, according to McCarthy and colleagues, is a more general notion that focuses on a person's perception of themselves and whether or not that perception is correct. In general, people with realistic self-perceptions perform better in organizations and as leaders because they are more effective in terms of organizational and leadership performance.¹²

The Birkman Method is a psychometric instrument developed specifically for use in the workplace (Birkman et al. 2008; Fink and Capparell 2013).

Today, the “Birkman method”, originally known as the “Test of Social Comprehension”, is widely used by people and organizations in the United States and abroad to improve performance (i.e., both efficiency and effectiveness) of individuals and teams as well as to increase individual work satisfaction.

Dr. Roger Birkman created The Birkman Method in the 1950s as a psychological diagnostic, coaching, and team-building tool. In his post-war work as a social psychologist, Dr. Birkman drew on his experiences as a B-17 bomber pilot during World War II.¹³

He saw how individual variances in perception and behavior affected pilot performance and learning during that period (Birkman International, 2021).

¹² McCarthy AM, Garavan TN. Developing self-awareness in the managerial career development process: the value of 360-degree feedback and the MBTI J Euro Ind Train. 1999; 23(9).

¹³ A B-17 bomber pilot refers to the individual who pilots a B-17 Flying Fortress, a strategic bomber aircraft used during World War II (Johnsen, F. A. (2000). B-17 Flying Fortress: The Symbol of Second World War Air Power. McGraw-Hill).

The Birkman takes a quantitative, multi-dimensional approach to measure and describe the intensity of both behavioural and motivational issues facing individuals and teams at work (Digman 1990).

It provides nine “Components”, each of which has three scores:

1. *Usual Behaviors*
2. *Needs and Stress Behaviors* (behaviors that appear when Needs are not satisfied)
3. *Interests*.

The “*Usual*” ratings represent a person's self-image, which is formed by observing and learning from those they admire or resemble. This self-image characterizes people at their most productive when they are part of a community or society.

The “*Usual*” score is the one that aligns most with observable actions, attitudes, and values, as assessed by other instruments. This behavior is commonly seen in various contexts, particularly in the early stages of relationships or in formal and unfamiliar social or professional settings.

The Birkman Method uses self-description scales from the questionnaire to create “*Usual Behavior*” measures, and it acknowledges that beliefs of social desirability can influence these scores. This is intentional to enhance the reliability and usefulness of the assessment outcomes. The Birkman Method uses scaling methods to compare a person's self-perception responses to percentile scores that are uniformly distributed for “most people”.¹⁴

This enables a distinction between the socially correct actions (“*Usual*”) and how the individual wants to be perceived by others (“*Needs*”). By understanding both aspects, the Birkman Method aims to provide valuable insights into a person's behavior and preferences. Additionally, The Birkman Method does not call for any corrective methods, statistical or otherwise, to account for socially desired replies

¹⁴ *Scaling Methods* involves assigning numerical values to responses to create a standardized measurement. The *percentile scores* indicate how the individual's traits compare to those of a large reference group, often referred to as “most people” or the general population. In the Birkman Method it is assumed that people's traits follow a *uniform distribution*: this means that most people fall within certain percentiles for each dimension. For example, if an individual's percentile score for extraversion is 30, it means their level of emotional stability is lower than 70% of the reference group.

from questionnaire respondents, in contrast to other evaluations available. That data is utilized and integrated as a key component of the Birkman Method.

“Needs” are less obvious and often hidden beneath the surface of social and other activities. Together with “Usual” behaviors, they form a person's ideal work and social environment, representing how they desire to be treated by others. However, it is noted that the Needs score may significantly differ from the Usual score, indeed, if people believe the ideal method to connect with us is the way we interact with them, they may quickly discover that people’s Need is quite different from what they assumed.

When these needs are not addressed in certain circumstances, individuals may deviate from their regular productive behaviors and exhibit stress behaviors, which can be perceived as strange or startling by others. Birkman's Needs and Stress scores reveal drives that can lead to unanticipated and unproductive actions, which are sometimes overlooked in the results of other assessment instruments (Birkman, n.d.; Slack et al., 2020).

Birkman discovered through interviews that when people were in situations or relationships that fulfilled their needs, they displayed positive and productive behaviors (Usual behavior). Conversely, when their needs were not met, they tended to exhibit fewer effective actions (Stress behavior).

The behavioral component scales of the Birkman Method (Usual and Stress) are anchored by the Needs scales, which are not influenced by social desirability. The needs scales are created based on the responses of “most people” on the questionnaire, reflecting a person's propensity to behave in ways that may not necessarily be liked by others.

The *Interest* scales describe a construct of stated motivation. People with high-scale values tend to favour activities that align with the usual obligations connected to the meaning of the Interest scale. The level of anticipated expertise or aptitude with these activities is not measured by the Interest measures.

2.4.1. BIRKMAN SCALES AND COMPONENTS

Dr. Birkman identified nine Components, ten Workplace Interests scales, and six Perspectives meta-scales. These nine components offer an overview of a person's motivations and actions.

Two behavioral dimensions (Usual and Stress) and one motivational dimension (Needs) are used to frame the presentation of each component.

SOCIAL ENERGY or Need for Acceptance is a component that symbolizes a certain sort of sociable energy. This notion assesses several social behaviors, including talkativeness, appreciation of social interaction in groups, approachability, and each of these behaviors' opposites. It focuses on how people connect in group settings, at work, and in casual or informal settings.

PHYSICAL ENERGY, originally called Need for Activity, assesses many traits related to action orientation, fast thinking, and physical manifestation of energy, as well as their opposites. This idea relates to a person's preferred rate of action, method of planning, and way of making decisions. It has a connotation that is opposed to that of the concept of negative emotionality and is partly related to the impulsivity that is frequently connected to extraversion.

EMOTIONAL ENERGY, originally Need for Empathy, measures the intensity of negative emotions including despair, rage, and emotional instability. On one end of the spectrum, it is similar in meaning to the construct of Negative Emotionality with participation of "feelings of sadness" or despair and addresses comfort with emotional expression and engagement of feelings.

THE SELF-CONSCIOUSNESS SCALE, formerly known as the Need for Esteem scale, assesses a sensitivity-based construct that comprises shyness, sensitivity to criticism or criticism received, sensitivity to embarrassment or embarrassment experienced, and its opposites. This Self-Consciousness-related concept examines

how a person may handle (or prefers others handle) matters relating to receiving acceptance from others and how those subjects relate to specific people.

ASSERTIVENESS, originally known as the need for authority, evaluates persuasive interaction and outspoken opinion expression.

INSISTENCE, formerly known as the need for structure, is based on orderliness and has to do with dealing with details and sticking to plans. Low Usual conduct ratings in the Insistence category indicate adaptive and flexible conduct, as well as a preference for assignments that don't call for strict adherence to rules. Low Insistence Needs individuals flourish in settings with few routines and opportunities for achieving objectives. When under pressure, they may become disorganized or act impulsively if they feel too restricted or burdened by intricate processes.

INCENTIVES, originally known as Need for Advantage, is another dominance-based concept associated with trust and idealism. High Usual conduct scores imply aggressive behaviour that is motivated by money and personal advancement. The need for individualized rewards and knowledge of performance tracking is indicated by high needs ratings in the incentive category. When under pressure, they could exhibit excessive levels of mistrust and self-protection while focusing solely on winning.

RESTLESSNESS, or Need for Change, measures a construct associated with excitability and distractibility. It entails mutable interests, swiftly altering emphasis, and working quickly. High scores on the Usual Behavior scale for restlessness suggest reactivity and a propensity to change focus quickly. High Restlessness Needs people like diversity in their jobs and fast-paced, attention-shifting activities over rigid schedules. However, under pressure, they may get extremely agitated and distracted, particularly when dealing with dull chores or focusing for an extended period on a single objective.

THOUGHT is characterized by a cautious attitude towards decision-making, involving concern about making the right choice the first time and worrying about the potential outcomes. It encompasses the strategy individuals use to make decisions and take action. Thought has a negative correlation with both the Physical Energy Component and the concept of negative emotionality. Individuals with high Thought Usual Behavior tend to make careful decisions by considering various possibilities and potential consequences. Those with high Thought Needs prefer having access to all the necessary knowledge to make well-informed decisions and appreciate the opportunity to evaluate all aspects of an argument. When individuals with high Thought Stress Behavior face perceived pressure to decide or act without sufficient information, they may become less effective and appear unsure and worried.

2.4.2. BIRKMAN INTERESTS

Ten categories of interest have been identified during the development of Birkman Interests, which are frequently seen in other interest measures (such as the Kuder Preference Record). The following is a list of the ten Birkman Interests scales, which indicate a person's stated choice for various job titles based on guidelines assuming equal compensation for all positions:

- The *ADMINISTRATIVE* interest scale measures a desire for jobs requiring internal administrative assistance, public contact administrative work, or service-related work. It is defined by systems, reliability, and order. Examples of tasks include classifying, keeping records, and tracking systems.
- The *ARTISTIC* interest scale measures the predilection for careers in photography, architecture, design, and representational art. It is distinguished by artistic creativity, appreciation, and aesthetics like painting, admiring art, and designing.
- The *LITERARY* Interest scale evaluates a person's preference for occupations that entail writing, editing, reporting, and other aspects of the literary arts. Reading, writing, and editing are a few examples of activities.

- The *MUSICAL* interest scale assesses a person's choice for careers in music performance, music instrument making, or general musical and artistic activity. Playing an instrument, going to shows, and collecting and enjoying music are a few examples.
- The *NUMERICAL* interest scale measures a person's preference for jobs in arithmetic, accounting, auditing, financial and statistical analysis, and bookkeeping. It is defined by a focus on facts and numbers such as analysing, investing, and accounting.
- The *OUTDOOR* Interest scale identifies a predilection for occupations involving farming and construction, outdoor adventure, and working with animals. It is defined by work that is done outside like playing outdoor sports, farming, and gardening.
- The *PERSUASIVE* Interest Scale assesses individuals' preferences for occupations that need them to persuade, sell, communicate, and exercise other forms of influence, such as management.
- The *SCIENTIFIC* Interest scale assesses a person's preference for work in the fields of applied sciences, research, and medicine. Research, analysis, and intellectual curiosity define it.
- The *SOCIAL SERVICE* Interest scale gauges a person's preference for occupations that involve counseling, assisting, directing, teaching, and volunteering. It is distinguished by assisting and standing up for individuals.
- The *TECHNICAL* Interest Scale measures a person's preference for jobs in engineering, repair and troubleshooting, electronics, and skilled and semi-skilled mechanical crafts like programming, assembly, and product production or repair.

2.4.3. MINDSET

The six perspectives included in the Birkman Mindset study provide insights into people's belief structures towards both themselves and other people. These measures concentrate on interpersonal, intrapersonal, and professional factors and enable respondents to assess situational advantages and disadvantages as well as new ways of thinking.

SELF-AFFIRMING is a measure of how much people value themselves, whereas others-affirming indicates how much people value others' socially acceptable conduct. People with high *OTHERS-AFFIRMING* scores naturally anticipate that others will act in a way that is acceptable in society. When others behave differently from how they believe they should, these people could be shocked or critical.

IMAGE MANAGEMENT is influenced by the ratio of Self-Affirming to Others-Affirming scores. Those with high Image Management prioritize maintaining a favorable public image, while those with low Image Management may feel misunderstood and take on excessive responsibility.

DISTINCTIVENESS demonstrates how differently people view themselves in comparison to others. People with high distinctiveness are adaptable, often at the expense of other objectives, whereas people with low distinctiveness have a clear perspective and may be steadfast in their ideas.

While *SOCIAL ACUITY* measures people's capacity for properly interpreting social dynamics, *ALIGNMENT* measures how people exhibit themselves in a typical or conventional way.

High Alignment people conform to social standards and can come out as being too cautious. Low Alignment people live by their own rules and may come across as different only to be different.

People with high social awareness are aware of social expectations and know what appropriate and inappropriate behavior is according to cultural norms. Being too

pessimistic or extremely pessimistic in how you interpret social circumstances are two signs that you have low social acuity.

2.4.4. THE ASSESSMENT

The Birkman Method evaluation has been completed by more than 2 million people and has been used by 5,000 organizations worldwide, including a range of business and academic institutions, for almost 50 years.¹⁵

Birkman presented a revolutionary technique for assessing personality and social judgments. He reasoned that differences in personality and social perception would probably stand out more in a survey that measured both self- and other perceptions. Two factors led to the adoption of this new approach:

- First, Birkman supported the use of academic research. While other studies focused on the motivations for respondents' activities, Birkman identified the behaviors that were the result of the respondent's actions and other reactions, making sure to account for all of the basic human dynamics.
- Second, Birkman was aware that he was working on fundamental human aspects because a significant portion of his work was based on the work of notable psychologists of the era (like Cattell), factor analysis, and recent research on clinical issues (such as schizophrenia, bipolar disorder, depression, etc.). Birkman was notable for his focus on individuals with normal functioning and his self-other perceptual orientation. The Birkman Method is the result of Birkman's study.

Participants are questioned about how they view themselves, their social settings, and their potential careers on a self-report questionnaire used in the Birkman Method. By comparing the results of self-report questions with descriptions of preferences and behaviors provided by other sources (such as supervisors and direct reports), scales were scientifically established.

¹⁵ <http://www.birkman.com/images/uploads/BehavioralAssessmentImproves>.

By definition, traits are a willingness to behave or think in response to stimuli or occurrences in the same way. People differ on continuous variables or dimensions, which is a common assumption in trait theory. People are seen to differ more in terms of the quantity or degree of a trait than in terms of its quality (having it or not).

The Usual, Needs, and Stress scales of The Birkman Method are measured continuously. As opposed to the MBTI, which employs a binary test to categorize people without taking their intensity or quantity into consideration, the MBTI places people in either one of two groups.

The Birkman Method can differentiate between two persons who have comparable characteristics but differ in those characteristics to varying degrees thanks to continuous evaluation. The MBTI does not do this and has difficulty differentiating between people. The Birkman Method evaluates differences of degree (“Bill is moderately extraverted while Jane is highly introverted”) as well as differences of kind (“Bill is extraverted while Jane is introverted”).

The online Birkman test is given as a multiple-choice questionnaire and takes around 30 minutes to finish. It is not self-scored, and it measures how the strength of a person's particular underlying needs (productive “Usual Behavior” and unproductive “Stress Behavior”), shape interactions with others at work. The Birkman does not assess technical competence, abilities, or intelligence.

It comprises 298 questions that ask about a person's typical communication and behavior patterns, as well as their communication and conduct patterns under pressure, their requirements from other people, and their hobbies.

Although processing so much data can often be more time and labor-intensive than processing the results from other instruments, it can provide many valuable insights into both individual and group behavior.

The test compares a person's typical needs and style to those of others using 27 measures, including those for emotional orientation, social orientation, process orientation, and other topics.

Communication is classified as “direct” or “indirect” in the Birkman Method evaluation, while conduct is classified as “task-oriented” or “people-oriented”. Under normal and stressful conditions, many communication and behavior patterns are characterized. A point is assigned on a color-coded Birkman Lifestyle Grid for each degree to which the communication and behavior patterns fit into each category. The four personality types are represented by the grid's quadrants.

2.4.5. THE LIFESTYLE GRID

The Birkman Lifestyle Grid (the Grid) is composed of a four-quadrant diagram, and a bar chart reflecting organizational focus, through which Birkman communicates quantitative data. Both the bar chart and the Grid sum up an individual's characteristics using the following colors: red, yellow, green, and blue.

- *EXPEDITERS* are defined as those whose typical communication and conduct patterns are plotted within the RED quadrant. These people would be expected, according to the Birkman Method, to be straightforward communicators and task-oriented in their everyday actions. Expeditors frequently concentrate on operations or production, prioritize tactical short-term goals, act upon goals, and exhibit an open communication approach. They are often viewed as direct, assertive, and determined, yet under pressure they can come out as demanding, impatient, impulsive, or even disconnected.
- *COMMUNICATORS* are defined as those whose typical communication and conduct styles are mapped inside the GREEN quadrant. These folks should generally behave as direct communicators who care about other people. Communicators excel in influencing or motivating others via active, ongoing communication and frequently concentrate on selling or promoting ideas. They are frequently seen as persuasive, talkative, and vivacious. But when under pressure, communicators could come out as authoritative, restless, or even aggressive.
- People who tend to be indirect communicators, with a typical orientation toward tasks, and who are classed as *ADMINISTRATORS* are described as having a

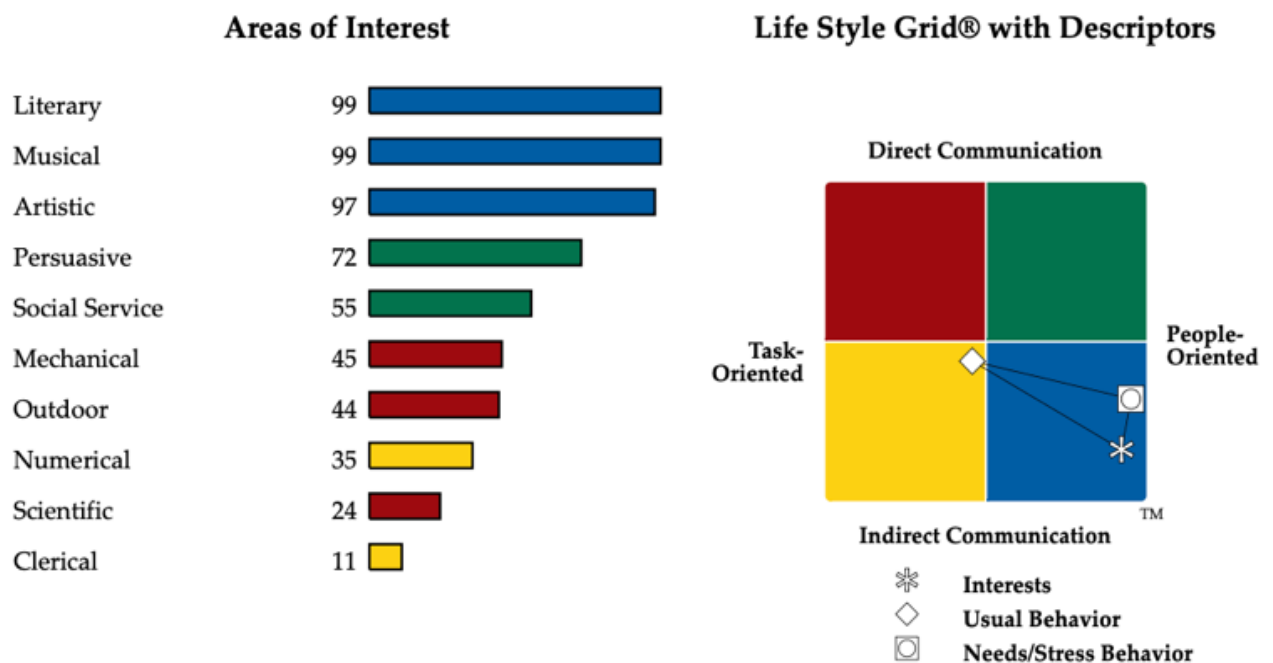
YELLOW quadrant personality type. Administrators are skilled in analyzing vast volumes of data, presenting the facts, and coordinating procedures or systems. They may be viewed as change-averse since they are frequently considered meticulous, planned, and regimented. When under pressure, they could come out as being rigid or controlling.

- Finally, the BLUE quadrant depicts planners who are typically people-oriented and indirect communicators. *PLANNERS* often operate with an idealistic mindset, concentrate on strategy and innovation, and emphasize the welfare of people. They are frequently viewed as circumspect, thoughtful, and sentimental. When under pressure, planners could come out as being impulsive, too sensitive, and free-spirited. A percentile rating of interest alignment with major professional categories (such as social services, scientific, numerical, clerical, mechanical, and others) is also offered. Individuals' interests are also mapped along the Birkman Lifestyle Grid continuum.¹⁶

The symbols Interests (asterisk), Usual Behaviors (diamond), and Needs/Stress (circle within a square) are used in the Birkman Life-Style Grid to represent the aggregate measurements of three qualities for everyone. Two axes make up the Grid. Left to right assesses “focus”, from people-to task-oriented. The vertical axis measures “interaction style”, which ranges from indirect communication or introversion (i.e., “thinking”) to direct communication or extraversion (i.e., “talking”). Two composite indices are created for each feature based on the values of several Birkman indicators used to calculate the individual's location in the Grid.

¹⁶ Fink, S. B., & Capparell, S. (2013). *The Birkman method: Your personality at work*. John Wiley & Sons.

FIGURE 3: THE LIFESTYLE GRID AND AREAS OF INTEREST



SOURCE: The Birkman test.

The symbols for a person's Interests, Typical Behaviors, and Needs/Stress may show up in up to three Grid quadrants. Interests, Usual Behaviors, and Needs/Stress of a person are all grouped when all the symbols describing them appear in one quadrant.

Because the actions they observe mirror the individual's interests and needs, other people are more likely to have an appropriate sense of how to help that person. In contrast, co-workers (and maybe the individuals themselves) may not comprehend what makes them productive if their interests, usual behaviors, and needs/stress symbols are dispersed among the quadrants.

For instance, others in the organization may be surprised to learn that a person who appears to be a task-oriented, decisive decision-maker, needs time to consider the complexity of a problem and plan before deciding if their Needs symbol is in the Planner quadrant and their Usual Behaviors symbol is in the Expediter quadrant.

The Grid analysis is especially helpful for giving a broad picture of the traits of the people that make up an organization, which in turn characterize its culture. Staff emblems congregating in one or two quadrants may be suitable, depending on the

organization's objective. To cover all the characteristics necessary in a high-functioning company, however, every organization requires employees in each of the four quadrants, regardless of the objective. Planners require expeditors, and communicators need administrators, yet these pairings may struggle to cooperate because of differences in their interests, usual behaviors, and needs.

2.4.6. THE REPORT

The Birkman Method generates a 41-page report that details a person's behavior and communication under normal and stressful conditions.

The report also includes detailed explanations of each personality trait that helped determine the person's normal and stressful behavior and communication styles. The inclusion of a coaching page also offers insight into the person's preferred methods of giving and receiving feedback, as well as how their chosen methods of giving feedback may be seen by others who belong to different color categories.

To assist persons who complete the assessment in interpreting and learning how to utilize the results in personal and professional interactions, trained trainers provide Birkman Method training programs.

There have been earlier publications that provide a thorough explanation of the validation processes used to guarantee the test-retest reliability, internal consistency, and the convergent and divergent construct validity of the Birkman Method assessment.¹⁷

All the detailed information offered by the Birkman report will be further examined (in the next chapter), as well as their applicability to both businesses and individuals.

¹⁷ Birkman, R., Elizondo, F., Lee, L. G., Wadlington, P. L., & Zamzow, M. W. (2008). The Birkman method manual. Birkman International, Incorporated. The Birkman Method website. <https://birkman.com/wp-content/uploads/2016/05/>.

2.4.7. THE STRENGTH OF BIRKMAN METHOD

Birkman is successful because it validates various behavioral patterns, emphasizing that everyone has qualities to offer, according to testimonies and reviews after completion. The Birkman technique uses a sophisticated collection of psychological tests and interpretation reports to create score profiles that may be used to identify key behavioral and motivational patterns. By asking respondents to describe their impressions of how “most people” perceive the world and comparing those replies with their own beliefs, these patterns are produced. Additionally, with the right interpretation, several Birkman reports may be combined to forecast how different patterns of personality traits may affect how well people get along with one another at work.

The evaluation is more accurate and perceptive than rival assessment methods, which is the most significant competitive advantage. This test assesses aspects of people that affect their actions, motives, and perceptions. A key differentiation is being able to describe these deeply ingrained ideas since the tool can reveal how and why a person is likely to act. The Birkman Method utilizes a special approach for evaluating personality through positive psychology, to assist individuals in living and flourishing rather than just existing. It reports on both behavioral and vocational data.

Employees and supervisors may improve workplace interaction by knowing the “why” underlying each other's personalities and behavior. This is only possible by comprehensive assessments of each person's professional and interpersonal capabilities, as well as by teaching them how to “connect with others” more successfully.

The 40 committed workers never stop improving the goods and services offered to businesses using the Birkman Method. The “High-Performing Teams: Building the Foundation” program by Birkman debuted in 2019. This was created specifically to support teams in using agile working approaches to better align and interact.

To guarantee the evaluation findings are accurate and faithful to Birkman's conceptualization, all items in the questionnaires are being evaluated and updated due to the societal changes brought on by generational shifts since immigration, the fusion of new job categories, etc.

2.4.8. RELIABILITY AND VALIDITY OF THE BIRKMAN METHOD

The consistency or stability of an instrument is referred to as reliability. There are several approaches for the estimation of reliability. Some of the most popular methods are:

- *Internal consistency* (Cronbach's alpha), which is calculated using the coefficient alpha.
- *Temporal stability*, that is assessed using a test-retest study.

A good scale takes into account every component of the construct as it is defined. For this reason, researchers use coefficient alpha to assess the reliability of scales and questionnaires, ensuring that they provide consistent and accurate measurements of the construct of interest. It considers:

- *Item Correlation*: which is the correlation among the pairwise between each item in the test.
- *Variance Calculation*: which is the total variance of the test scores, and it represents the overall variability in the test.
- *Internal Consistency*: it determines the extent to which the items are consistently measuring the same underlying construct.

Alpha's value varies from 0 to 1. The items are more reliable and consistently assess the same construct when the value is greater (closer to 1), indicating more internal consistency. A lower score (closer to 0), on the other hand, indicates a lower degree of internal consistency and that the items might not be tightly connected. For most research purposes, a coefficient alpha value over 0.70 is often regarded as appropriate and denotes an adequate level of internal consistency. However, based on the situation and the chosen measurement method, the

acceptable threshold may change. The coefficient alpha ¹⁸ was used also to examine the internal consistency of The Birkman Method scales (Cronbach, 1951). A stratified random sample of 9,056 individuals who completed the questionnaire between August 2008 and July 2015 was employed for this purpose, matching the working population in the US. For gender, age, ethnicity, and job family.

TABLE 3: INTERNAL CONSISTENCY OF BIRKMAN COMPONENTS

	Cronbach's Alpha	
	Usual Behavior	Needs
Social Energy	.80	.73
Physical Energy	.75	.75
Emotional Energy	.84	.83
Self-Consciousness	.78	.74
Assertiveness	.70	.63
Insistence	.71	.77
Incentives	.67	.84
Restlessness	.66	.62
Thought	.71	.73

SOURCE: 2019 BIRKMAN NORMATIVE SAMPLE.

TABLE 4: INTERNAL CONSISTENCY OF INTERESTS

	Cronbach's Alpha
Administrative	.89
Artistic	.84
Literary	.85
Musical	.87
Numerical	.89
Outdoor	.88
Persuasive	.78
Scientific	.73
Social Service	.86
Technical	.90

SOURCE: 2019 BIRKMAN NORMATIVE SAMPLE.

¹⁸ Coefficient alpha, also known as Cronbach's alpha, works by measuring the degree of correlation among the items within a psychometric test or scale.

As evident in the Tables above, internal consistency for Birkman's Usual Behavior, Needs, and Interests is adequate. Alpha ranges from moderate (Restlessness) to very good (Technical). For the most part, reliability coefficients are moderately high (Fried & Ferris, 1987).

Over the years, Birkman International has conducted several test-retest studies to assess the stability of the Birkman scales and constructs over time. Recently, two test-retest studies were conducted, one in 2018 and another in 2019.

TABLE 5: TWO WEEKS TEST-RETEST RELIABILITY OF BIRKMAN COMPONENTS

	2018 Study		2019 Study	
	Usual Behavior	Needs	Usual Behavior	Needs
Assertiveness	.79	.74	.78	.60
Insistence	.70	.76	.80	.70
Incentives	.77	.74	.75	.68
Restlessness	.72	.71	.84	.66
Thought	.80	.65	.84	.61

SOURCE: 2019 BIRKMAN NORMATIVE SAMPLE.

TABLE 6: TWO WEEKS TEST-RETEST RELIABILITY OF BIRKMAN INTERESTS

	2018 Study	2019 Study
Administrative	.84	.89
Artistic	.82	.90
Literary	.83	.88
Musical	.89	.91
Numerical	.83	.91
Outdoor	.88	.92
Persuasive	.78	.85
Scientific	.72	.84
Social Service	.85	.91
Technical	.83	.90

SOURCE: 2019 BIRKMAN NORMATIVE SAMPLE.

As shown in the Tables above, the test-retest reliabilities for Birkman components in 2018 ranged from 65 to 86, and in 2019, they ranged from 60 to 89.

The most basic type of validity is called face validity, and it is described as the appearance that the results are pertinent, significant, or understandable to the test-taker. This validity is crucial since it provides a gauge of the test's perceived accuracy while not being based on psychometrics. Both individuals and groups have repeatedly affirmed the face validity of the Birkman Method. Face validity is credited with a significant portion of the consultants' effectiveness in feedback sessions utilizing The Birkman Method. The fact that so many organizations have believed the instrument to be pertinent, significant, and logical may be the best argument for face validity (PIP; Goldberg, 1999; Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006).

2.5. PERSONALITY ASSESSMENT IN PERSONNEL SELECTION

Numerous techniques based on research might be applied throughout the recruiting process. Reference checks, interviews, and the use of tests or the use of assessment centers are a few of these.

It has been demonstrated that some techniques, such as personality assessments are more reliable than others at predicting future job performance (see table 7). According to estimates, American businesses spend more than \$400 billion annually on assessments for both the hiring and evaluation processes (Gettler, 2004; Kluger, Watson, Laidlaw, & Fletcher, 2002).

The success rate can be significantly increased by combining two or more approaches, for example using evaluations in conjunction with reference checks (Greengard, 2002). Also, other researchers have corroborated this data as well (Gettler, 2004; Robertson & Smith, 2001; Schmidt & Hunter, 1998).

TABLE 7: PREDICTORS OF JOB SUCCESS BY ASSESSMENT METHOD

Assessment Method	Prediction (1.00 = perfect)
References	0.10
Unstructured Interview	0.25
Structured Interview	0.35
Personality Questionnaire	0.40
Work Sample Tests	0.46
Assessment Center Approach Scores	0.60

SOURCE: BAIN & MABEY, 1999.

Psychometric tests are tools used to objectively assess an individual's psychological attributes, such as aptitude, values, and preferences. These tests provide insights into how a person thinks, feels, and responds to various situations. Companies that utilize psychometric testing gain a comprehensive understanding of applicants' abilities and can identify individuals who are well-suited for a particular position, understanding a potential employee's strengths, weaknesses, and compatibility with the team and company. The significance of these tests throughout the talent management process, from recruitment to development, is supported by statistical evidence linking psychometric test results to exceptional job performance. Organizations heavily rely on psychometric tools to identify, onboard, and nurture the most suitable candidates for open positions, shaping their recruitment and learning and development strategies.

According to Saville (2006), personality tests may be categorized into deductive, inductive, or validation centric.

Assessments such as the Occupational Personality Questionnaire (OPQ) and the Myers-Briggs Type Indicator (MBTI) are more deductive in nature, with the results inferring application to the real world, and future performance from personality traits. These tests are designed to identify a person's personality traits and the kinds of occupations or careers that would fit those traits the best. Contrarily, according to Saville (2006), inductive tests like the 16PF or NEO- Personality Inventory are meant to provide the subjects with information about themselves and their present level of performance.

Due to their increasing popularity and applicability, psychometric evaluations are widely employed across various industries, including technology firms, financial institutions, management consultancies, public services, and the military.

However, it is important to note that individuals with specific personality types may limit their job choices based on their preferences (Gardner & Martinko, 1996). Because of this predisposition, researchers have cautioned that people should not eliminate certain occupations from job consideration solely on the basis that they are not the appropriate type (Abella & Dutton, 1994). Rather, potential employees should carefully consider positions that may not be standard for their type.

Pursuing such job opportunities can provide them with personal growth as well as provide significant benefits, due to their abilities that are generally rare among co-workers in the new workgroup (Myers & Briggs, 1995).

According to Tieger and Barron-Tieger (2001): *“Respondents should be told that Type reflects an individual’s preferences, not abilities or intelligence, nor is it a predictor of success. People should not be counseled toward or away from certain jobs solely based on their type”.*

Lawrence and Martin (2001) cautioned similarly: *“Before we review some of the applications of type to careers, it is very important to understand that type alone is not enough information to make a career choice. Virtually all types are found in all careers. People making career decisions need to understand not only their personality type, but also their history, values, interests, skills, resources, and goals, among other things”.*

But what benefits can personality testing offer?

- *Efficiency in hiring:* In two important ways, personality testing helps expedite the recruiting process. First, by assisting the hiring manager in determining how effectively a candidate would be able to carry out their job responsibilities and fit within the company. Second, imagine that you are recruiting numerous employees for similar positions, such as office administrators, salespeople, accountants, or service workers. In such a situation, you could discover that people in successful jobs tend to score

similarly on personality tests. You may use this information to compare prospective candidates to this score. Before adhering too closely to identical scores, it's important to balance this against the advantages of creating a varied workforce.

- *Employee retention:* By understanding what drives your staff, you can lower employee turnover and boost retention. Managers and HR teams may find this information useful in understanding how to improve the workplace, what rewards or benefits to provide, and how to manage teams and individuals most effectively.
- *Boost team morale and productivity:* A productive, content staff is a result of hiring applicants with the appropriate aptitude and attitude. Leaders and team members may better understand each other's strengths, limitations, and potential development areas by using personality tests. Teams that achieve their goals, get along well, and are motivated to work have five important traits, according to Forbes. "High-performing teams" are the term commonly used to describe these groups. These are the five traits:
 - Trust
 - Clear communication
 - Defined roles and responsibilities
 - Engaged leaders
 - Shared goals

Employing managers may gain fresh insight about candidates after taking a personality test. Potential employees may not present themselves in the best light during tense interview situations. You may prevent overlooking good applicants by using the CV and personality test together.

Are there any negative aspects of personality tests?

Only a few qualities are shown by personality testing. They should not be the only strategy utilized to hire new staff because this does not always imply that they are 100% correct. Recruiters should combine personality testing with other methods of evaluating candidates' talents, such as mock interviews, quizzes, or simulations.

Similar to employment interviews, certain candidates may be prone to provide responses that are more in line with your expectations than with the truth, depending on the exam. Even while it's far more difficult to “game” a personality test than an interviewer, it might nevertheless provide strange or inaccurate findings. Research, however, indicates that applicants are more likely to respond honestly on a personality test.

A significant consideration when employing professional and unskilled personnel from nations like India, Asia, Africa, and the Middle East is making sure that whatever personality test you utilize is free of any cultural or Western prejudice. Cultural bias refers to the fact that certain questions on the personality test are difficult for the candidate to grasp given their culture.

It's also critical to keep in mind that the assessment simply serves as an indicator; it does not establish intelligence or competence. Therefore, companies should refrain from utilizing the outcomes to 'label' their staff indefinitely.

In general, personality tests may give applicants significant information. Even though they may be an effective tool for hiring managers and recruiters, they must be utilized in conjunction with other interview techniques and information from the candidate.¹⁹

There are also other new methods to hire people by the companies, like short movies that outline a candidate's talents and professional experience, which are called video resumes. Although they offer more information on a candidate's prior endeavors and experiences, research indicates that they are ineffective in foretelling personality qualities other than extraversion (Ihsan & Furnham, 2018). So, employers should utilize video resumes with caution and refrain from drawing conclusions about a candidate's personality from them.

American businesses are increasingly using artificial intelligence (AI) in the employment process. Benefits include a bigger application pool, a reduction in time and human error, and the opportunity to identify high achievers (Riley, 2018). In

¹⁹ <https://www.eduployment.com/blog/can-personality-tests-help-employers-in-the-recruitment-and-hiring-process/>.

recorded interviews, AI systems like Hirevue assess applicants' body language, intonation, communication abilities, and keywords (Feloni, 2017).

However, when engaging with AI-based technologies, some job candidates experience a sense of dehumanization due to the absence of human engagement and dialogue. Indeed, due to the lack of interpersonal engagement, they could not feel appreciated or worthwhile (Buranyi, 2018).

2.6. EXAMPLES OF ORGANIZATIONS USING PERSONALITY TEST AND THEIR OUTCOMES

Psychometric tests are utilized by businesses all over the world for recruiting.

In the 1880s, the University of Cambridge imagined the first iterations of these exams. The current labor market is extremely competitive, which can provide companies with several recruitment difficulties. Employing someone who first seems promising but eventually performs poorly or simply struggles to fit in might drain an organization's resources.

Indeed, seasoned hiring managers often claim to be able to measure a candidate's appropriateness. Companies still need a more sophisticated system to protect the objectivity of their hiring procedure. Employers may utilize psychometric testing to make fair and accurate hiring decisions and gain a better understanding of the traits of candidates that are difficult to assess from resumes and intuition-based hiring.

By eliminating the possibility of unconscious hiring bias, psychometric examinations let employers evaluate candidates' abilities and personality objectively. Additionally, they offer a fair playing field for any aspirant to demonstrate their true capabilities (Organizational Behavior. Stephen P. Robbins, Timothy A. Judge. Originally published March 30, 2018, Updated September 15, 2021).

2.6.1. AMERICAN HONDA MOTOR COMPANY

Any successful business knows that keeping consumers coming back for more is a sign of success. Honda updated their training using the DISC Assessment tool from “Everything DISC” to assist in developing and deepening customer connections and it was distributed to over 1000 dealers. “Building Lifetime Customer Loyalty” is the name of the initiative, and the DISC Assessment was a key element of it. In more than 50 US locations, Honda held 151 seminars with an average of 22 attendees. This program's curriculum incorporates the DISC Profile to assist participants in understanding their unique behavioral preferences.

The participants in this training session for workers stated that they intended to utilize the information they acquired from the profile to enhance their relationships both at work and in their personal lives.

2.6.2. SKODA MINOTTI

In 2015, Skoda Minotti, now a division of Marcum LLP, launched The Birkman Method to help a recent merger run smoothly, to standardize the onboarding process, facilitate improved team cooperation on accounting engagements, and ensure the seamless operation of a recent merger.

The company noticed gains in productivity on engagement teams, greater ratings for its new recruit program, and retention right away. These higher ratings and lower turnover rates are due to improved self- and other awareness from training on the evaluation outcomes.²⁰

Skoda Minotti wanted to lower their turnover rate and increase employee engagement. The organization lowered its turnover rate from 11–14% to 6% by integrating The Birkman Method into its talent development procedures in 2014, and it has remained under 8% ever since.

Early in 2015, Birkman tests were given to the entire staff and used in team-building techniques. According to Rohde, *“As employees learn more about*

²⁰ <https://www.marcumllp.com/insights/effective-team-building-the-birkman-method>.

themselves and other people, they become more connected to each other and the company”.

“The Birkman Method improved retention and our capacity to capitalize on unique capabilities. An engaged worker is more successful and satisfied”.

The HR division started using Birkman tools in their hiring procedure, training, talent development, stress management, career trajectory planning, conflict resolution, and even a corporate merger after seeing immediate results.

Thus, since smarter hiring practices are the first step in improving retention, Skoda Minotti uses Birkman data to guide more deliberate interview conversations. Before interviews, candidates for important roles complete the Birkman to demonstrate their best qualities to the team. The information is used to determine how their personality will fit with individuals they would be managing and working closely with.

The company might proactively inquire during interviews about potential team issues and realistic interpersonal dynamics. These discussions aid the company in selecting the ideal applicant for the position, team, and culture they will be joining. It is essential to base recruiting selections on a candidate's interests if you want an employee to like their work and stay with the company. The company may determine whether an applicant's interests align with the job's requirements by looking at their Birkman scores.

Every new hire completes the Birkman questionnaire as part of the onboarding process, and they then get a debrief during their first week of work to raise awareness of their strengths and diversity. Along with training that personally exposes them to Birkman principles, new workers also receive their individualized reports.

The company also gives each employee a reference card with the employees' Birkman Needs on it as a means of assistance. People are encouraged to consider changing their approach based on the demands of the other person. Taking the initiative to treat others how they want to be treated can help to strengthen bonds between people and improve communication. The Birkman colors and symbols

used by each employee are also shown on Microsoft Outlook and on their desks and office doors for other people to see when deciding how best to communicate with them.

“The Birkman Method improved retention and our capacity to capitalize on unique capabilities. Employee engagement increases productivity” - Skoda Minotti's HR Director is Laura Rohde (Case Study: Using One Assessment to Empower Growth and Performance Birkman International, 2019).

CHAPTER III: THE INTEGRATION OF BIRKMAN TEST WITHIN MANAGEMENT SOFTWARES

3.1. MICROSOFT DYNAMICS AS A TOOL FOR HR AND TALENT MANAGEMENT

Microsoft Dynamics 365 is a cloud-based platform reserved for businesses, which includes both the potential of customer-centric CRM (customer relationship management) solutions and ERP (enterprise resource planning) functions useful to the entire business system, as well as tools for productivity and artificial intelligence.

Launched by Microsoft on Nov. 1, 2016, the iconic Business Apps platform can visualize a huge amount of data, drawing it from different sources, to collect it in the same virtual place. To create a single work environment, Dynamics 365 is integrated with all Microsoft 365 applications.

Dynamics 365 consolidates all sales and customer data into a single system, providing users with a single source of truth. This provides users with a comprehensive view of their customers' travels, allowing them to track client journeys, generate and assess leads, and capitalize on opportunities.

The software can help raise customer satisfaction at all points of the sales funnel and improve long-term brand loyalty by assisting users in connecting with their customers and providing better, faster service. Businesses can run more efficiently by reaching more customers while saving time and money by automating certain portions of the sales and marketing process.

3.1.1. HOW MICROSOFT DYNAMICS CAN BE IMPLEMENTED

Customers can choose between three deployment options for Dynamics 365:

- *CLOUD: Software as a Service*, or SaaS, is a type of software that users do not install on their devices. Instead, they use a web browser to access it. Customers who select this option for Dynamics 365 use a version that is

hosted in the cloud on the vendor's servers and is accessible via the Internet. These cloud instances are hosted on Microsoft's public Azure cloud or by Microsoft partners who provide managed Azure services.²¹ This option provides advantages such as cloud-specific features like integration with other software and machine learning-powered reporting. Because data is stored on the vendor's servers when using a SaaS application, users may be required to pay for additional storage space.

- *ON-PREMISES*: The traditional method of distributing software is on-premises deployment, also known as *Local Business Data deployment*. It enables users to host their Dynamics 365 software on their own, or on the servers of an IT partner. Businesses use this method to install the program and store all data on their hardware. On-premises Dynamics 365 is an appropriate solution for businesses that must keep their data in-house due to data regulations or have an unreliable internet connection that makes accessing a SaaS version of the software difficult.
- *HYBRID*: Hybrid deployments, also known as *Cloud and Edge*, are completely integrated with the Microsoft Cloud, but transactions and data are stored locally on the users' own data center and synced as needed.²²

3.1.2. BENEFITS OF DYNAMICS 365

With Dynamics 365 it is possible to have a 360-degree, real-time view of a business environment. The presence of AI allows managers to anticipate demand to act promptly in the marketplace, relying on an information-rich repository.

This application package helps to personalize the buying experience and automate processes, making them faster. At the financial level, it simplifies operations, reducing, as in the case of Remote Assist, operational expenses. Centralizing data is also useful in HR, where, with the Human Resources feature, integrated analytics can be performed by uncovering valuable details about workers and candidates.

²¹ <https://azure.microsoft.com/it-it/explore/>

²² <https://www.nigelfrank.com/insights/everything-you-ever-wanted-to-know-about-dynamics-crm>.

This tool, which can be customized so that each company can find the solution that best suits its needs, allows, overall, to manage its business by achieving better results thanks to the continuous flow of data provided by artificial intelligence.

Users gain a connected view of data intelligence on customer records, transactions, behaviors, and preferences, as well as information about orders, inventory, and shipping, and predictive insight tools for decision-makers, by combining Dynamics 365 CRM and ERP with Microsoft's productivity applications.

Unlike some CRM systems that rely on third-party plugins, Dynamics 365 provides more effective connectivity with Microsoft's products, which is especially important for businesses that rely heavily on Office 365, Outlook, or Azure. Because of this, as well as its user-friendly layout, it is appealing, increasing user adoption. Microsoft is also expanding its collection of third-party Dynamics 365 applications available through the AppSource marketplace.

As Dynamics 365 is less expensive and more flexible in terms of license than Salesforce (which is one of its main competitors with SAP, and Oracle), it is more appealing to SMBs and smaller commercial firms, whereas Salesforce is typically used by much larger organizations.²³

3.1.3. OVERVIEW OF MICROSOFT DYNAMICS 365 HR

Microsoft Dynamics 365 HR is a comprehensive human resource (HR) and human capital management (HCM) system for businesses of all sizes. It provides a wide range of HR services on a single platform, including recruitment, onboarding, performance tracking, and leave management. This cloud-based solution streamlines HR operations, automates tasks, and includes tools for workforce planning and data management. It seamlessly integrates with other Microsoft products and third-party data sources to form an all-encompassing HR management solution. Dynamics 365 HR streamlines HR processes, allowing managers to focus on attracting, developing, and empowering their workforce while relieving them of IT hosting responsibilities.

²³ <https://alphalogix.co.uk/crm-software/what-is-microsoft-dynamics-crm/>.

One of the most significant advantages of Microsoft Dynamics 365 HR is the ability to use the company's platform to unify HR and HCM data into a single system.

This enables businesses to build better employee experiences based on data. Dynamics 365 HR also enables comprehensive HR automation, which allows employees to spend less time on manual, repetitive duties.

Microsoft Dynamics 365 HR was reviewed on numerous software review websites, with product users expressing satisfaction with the solution. They reported that it included rich dashboards that displayed a wide range of HR data in a centralized location, tools to streamline onboarding processes, and HR functionality such as time off requests, training, and recruitment capabilities that assisted in locating suitable candidates to fill their vacant positions.

3.1.4. MICROSOFT CO-PILOT

Microsoft 365 Copilot is more than just an integration of Open AI's ChatGPT into Microsoft 365; it's a sophisticated processing engine that uses *LARGE LANGUAGE MODELS* (or LLMs), Microsoft Graph data, and Microsoft 365 apps to revolutionize the workplace.²⁴

It seamlessly integrates with popular Microsoft 365 apps like Word, Excel, PowerPoint, Outlook, Teams, and others, boosting creativity, productivity, and skills, and it securely leverages business data while adhering to privacy and compliance standards and providing accurate, context-aware responses.

Furthermore, it introduces a novel experience called Business Chat, which combines LLMs, Microsoft 365 apps, and data from various sources such as calendars, emails, chats, documents, meetings, and contacts to perform previously difficult tasks. It can, for example, generate status updates based on natural language requests, such as explaining product strategy updates.

²⁴ LLMs are a sub-type of artificial intelligence model (NPL: Natural language processes) that is designed to understand and generate human language. These models are frequently used for text generation, translation, summarization, question answering, and other natural language processing (NLP) tasks. Brown, T., Mann, B., Ryder, N., Subbiah, M., Kaplan, J. D., Dhariwal, P., ... & Amodei, D. (2020). Language models are few-shot learners. *Advances in neural information processing systems*, 33.

It is built into popular productivity apps, ensuring a consistent user experience and design language across applications such as Teams and Outlook.

Microsoft 365 Copilot's core competencies include task creation, summarization, analysis, collaboration, and automation within specific content and business contexts.

It can also learn new skills, such as connecting to CRM systems to integrate customer data. It promises to deliver even more sophisticated capabilities for business productivity as it continues to learn and adapt to new domains and processes.

Microsoft 365 Copilot transforms the world of work in three ways:

- *UNLEASH CREATIVITY.* With Copilot in Word, you can start the creative process, so you no longer have to start from scratch. Copilot gives you a first draft to edit, saving you hours of writing, research, and editing. In some cases, Copilot will be able to process correct text, in others it will not, but in any case, it will support users in creating text. With Copilot, the author is always in control of the activities by carrying out their ideas and asking Copilot to shorten a text, rewrite it, or provide feedback. Copilot in PowerPoint helps create beautiful presentations from a simple prompt, adding relevant content from a previously created document. With Copilot in Excel, you will be able to analyze trends and create charts and graphs of data.
- *INCREASE PRODUCTIVITY.* To help people focus on 20 percent of important tasks and free up 80 percent of the time consumed by secondary tasks, Copilot enables you to lighten the load on workers. From summarizing long email threads to quickly drafting suggested responses, Copilot in Outlook helps clear out inboxes in minutes. And every meeting is productive with Copilot in Teams: Copilot can summarize the key points of the meeting, including who said what, how far all participants are aligned, and where they disagree, and suggest next steps, all in real-time. With Copilot in Power Platform, anyone can automate repetitive tasks, create chatbots, and go from idea to application in minutes. Copilot not only increases individual

productivity but also helps to create a new knowledge model for each organization by leveraging the vast amount of data and insight that is largely inaccessible and untapped today. Business Chat works across all enterprise data and applications to surface the information and insights needed from a large amount of data, so that knowledge flows freely throughout the organization, saving valuable time in searching for answers. Business Chat can be accessed from Microsoft 365.com, from Bing after logging in with your Azure Active Directory corporate identity, or from Teams.

- *SKILLS ENHANCEMENT*. Copilot enables users to improve what they do well and allows them to quickly master what they have yet to learn. The average person uses only a handful of commands, such as “animate a slide” or “insert a table”, out of the thousands available in Microsoft 365. Now, all these rich features can be unlocked using only natural language. And this is just the beginning: Copilot will fundamentally change the way people work with AI and the way AI works with people. As with any new work model, there is a learning curve, but those who embrace this new way of working will quickly reap the productivity and collaboration benefits. ²⁵

3.2. **ZOHO AS A TOOL FOR HR AND TALENT MANAGEMENT**

Zoho is a company that provides a diverse range of cloud-based software and applications for both personal and business purposes, ranging from communication and collaboration to project management and customer engagement. These tools are accessible from anywhere with internet access, do not require downloading, and, more importantly, are intuitive and simple to use.

Zoho Planner allows users to create to-do lists, set reminders, take notes, and upload files and photographs.

Because of its emphasis on accurate task management and its free pricing model, it is more robust than other online to-do lists. Furthermore, unlike a standard

²⁵ <https://news.microsoft.com/it-it/2023/03/16/microsoft-presenta-microsoft-365-copilot-il-copilota-per-il-mondo-del-lavoro/>.

agenda, this program prioritizes tasks and activities and allows users to contextualize their lists with comments, attachments, and tags.

The platform has an in-page chat for real-time collaboration, like RSS support, allowing users to subscribe to page feeds and receive change notifications. This is very useful for joint work.²⁶

Zoho provides a wide range of tools, each designed to meet a unique purpose, and when combined, they provide a comprehensive solution for businesses of all sizes. For example, Zoho offers tools like Zoho PROJECTS, enabling teams to centrally plan, assign, and monitor tasks and projects. While through applications such as Zoho DOCS, users can collaboratively create, share, and edit documents, spreadsheets, and presentations in real-time, much like Microsoft Office but in a cloud-based environment.

Zoho CRM aids in managing customer interactions, sales, and marketing efforts.

It features tools for automating processes and improving customer communication. Zoho MAIL provides cloud-based email services with collaborative features, offering an alternative to traditional email platforms.

Zoho PEOPLE serves as a comprehensive human resource management solution, covering attendance tracking, leave management, performance evaluation, and more. Zoho BOOKS supports accounting and financial management by facilitating the tracking of expenses, income, invoices, and company budgets. Zoho encompasses tools like Zoho CAMPAIGNS for creating and managing email marketing campaigns, as well as Zoho Surveys for designing online surveys.

Zoho SOCIAL assists in managing social media presence by aiding in content planning, publishing, and monitoring across various social channels. Zoho offers collaboration-oriented tools like Zoho CONNECT, which fosters communication and cooperation among team members, making it easier to share ideas and information.

²⁶ RSS (Really Simple Syndication) is a technique that allows users to receive updated content from websites or online sources without having to directly visit those websites. It's a standardized format for delivering and gathering web material, making it simple for users to stay up to date on their favorite websites, blogs, news sources, podcasts, and more. RSS feeds can contain a variety of material kinds, such as text, photos, audio, and video. (O'Reilly, D. (2005). Dykes, L., & Tittel, E. (2011). XML for Dummies. John Wiley & Sons.

Zoho PEOPLE is an innovative Human Resource Management Software (HRMS) solution focused on simplifying and enhancing human resource management within enterprises. It provides a comprehensive set of tools and features focused on improving many elements of human resource operations and employee development.

The program is designed particularly for the needs of small and medium-sized organizations. Its user-friendly interface and scalability make it an excellent alternative for firms looking for an efficient and adaptable HR management solution.

At its core, Zoho People enables businesses to handle personnel information more effectively. This includes a wide range of information, such as personal information, contact information, educational credentials, and professional experiences. It provides a platform for efficiently documenting working hours, vacation time, sick leaves, and other sorts of absences.

Setting and tracking staff goals, performing performance evaluations, and conducting periodic performance reviews are all supported by the platform. This dynamic functionality supports in evaluating staff performance and charting individual growth pathways. Furthermore, the platform can handle training and development activities.

Importantly, Zoho People is designed to work in tandem with other corporate apps, creating a unified environment. It also has customization capabilities, allowing businesses to customize the software to their specific needs and operations.

3.2.1. AI WITHIN ZOHO SOFTWARE: ZIA

Zia is a conversational AI assistant from Zoho. Similar to smartphone voice assistants, Zoho's Zia is a CRM-focused conversational AI assistant.

It helps with a wide range of tasks, from simple data entry to complex analytics, across all Zoho products, including sales, marketing, recruitment, and social media. Users can contact Zia by calling her on the mobile app or starting a chat on the laptop screen.²⁷

Zoho uses AI in a variety of ways to improve user experience and automate tasks. This includes automating data entry and validation, mining data for insights, automating processes in Zoho CRM such as lead scoring and customer segmentation, and providing consumer behavior insights. AI in Zoho Analytics automates data preparation and visualization while also providing data-driven decision support.

In addition, Zoho uses NLP for content creation, language translation, and customer service, while computer vision²⁸ is used in products like Zoho Books for document scanning, object recognition, and motion tracking.²⁹

AI is essential for improving user experiences, automating processes, and generating insights. As AI technology advances, Zoho intends to improve user experiences and automation across all its productivity products. Moreover, Zoho's tools are free, with a few exclusions (only the two most costly levels of Zoho CRM plans, which start at \$35 per user, per month, include Zia Voice).

²⁷ <https://www.zoho.com/zia/>

²⁸ Computer vision is a form of AI that enables software to perceive and understand the world around it.

²⁹ <https://www.businesswire.com/news/home/20230504005213/en/Zoho-Integrates-OpenAI-with-Zia-Strengthening-Generative-AI-Capabilities-While-Upholding-Core-Tenets-of-AI-Strategy>

3.2.2. LIMITATIONS

While Zoho has many features and capabilities, it, like every software platform, has some restrictions.

While Zoho integrates with a variety of applications, it may not effortlessly interact with all third-party tools or systems used by your firm. Integration issues may arise, necessitating additional modification or development activities. Zoho has a varied portfolio of tools, and while they try for usability, there may be a learning curve for employees who are new to the platform. Training and onboarding may be required.

While Zoho is appropriate for small to medium-sized firms, it may be limited in meeting the needs of larger enterprises with complex workflows and vast amounts of data.

While Zoho does provide customer care, the response speed and efficacy may not always satisfy every user's expectations. The quality of support can vary depending on the subscription level. Some Zoho products are strongly reliant on an online connection, restricting their functioning when users are not connected to the internet. Although Zoho's apps are adaptable, they may not provide industry-specific solutions to the extent that specialized software suppliers do.

While Zoho provides affordable solutions, the pricing structure may become less appealing as the firm expands and demands more complex capabilities or more people. Concerns about data security and privacy, like with any cloud-based platform, could be problematic, particularly for enterprises working with sensitive or personal information.

It's crucial to remember that the constraints will differ depending on the Zoho application and your organization's demands. Before deploying Zoho, it's a good idea to properly assess your needs and examine any constraints in connection to your business goals.

3.3. HOW THE PERSONALITY TESTS CAN BE INTEGRATED INTO THE SOFTWARES

To integrate the Birkman Test results within management software, there are some steps to follow:

- **PRIVACY AND SECURITY:** Before implementing any linkage between the Birkman Test and enterprise software, it is essential to ensure that all privacy and security laws are followed, and that informed consent is obtained from employees for the use of their personal data.
- Then, the first step is to **CARRY OUT THE INTEGRATION** if it's possible or **DEVELOPING A CUSTOM COMPONENT:** companies can add a custom component within their management software to view and manage Birkman Test result data.
- Once the integration has been configured, the **USERS' PROFILE** must be **UPDATED** with the results of the personality test, and managers can view and use information about employees' personalities for purposes such as skill development, team formation, and team management.

Figure 4 depicts an employee's Zoho People interface, and it is useful to understand how simple it is to integrate the Birkman test results within Zoho or Microsoft Dynamics.

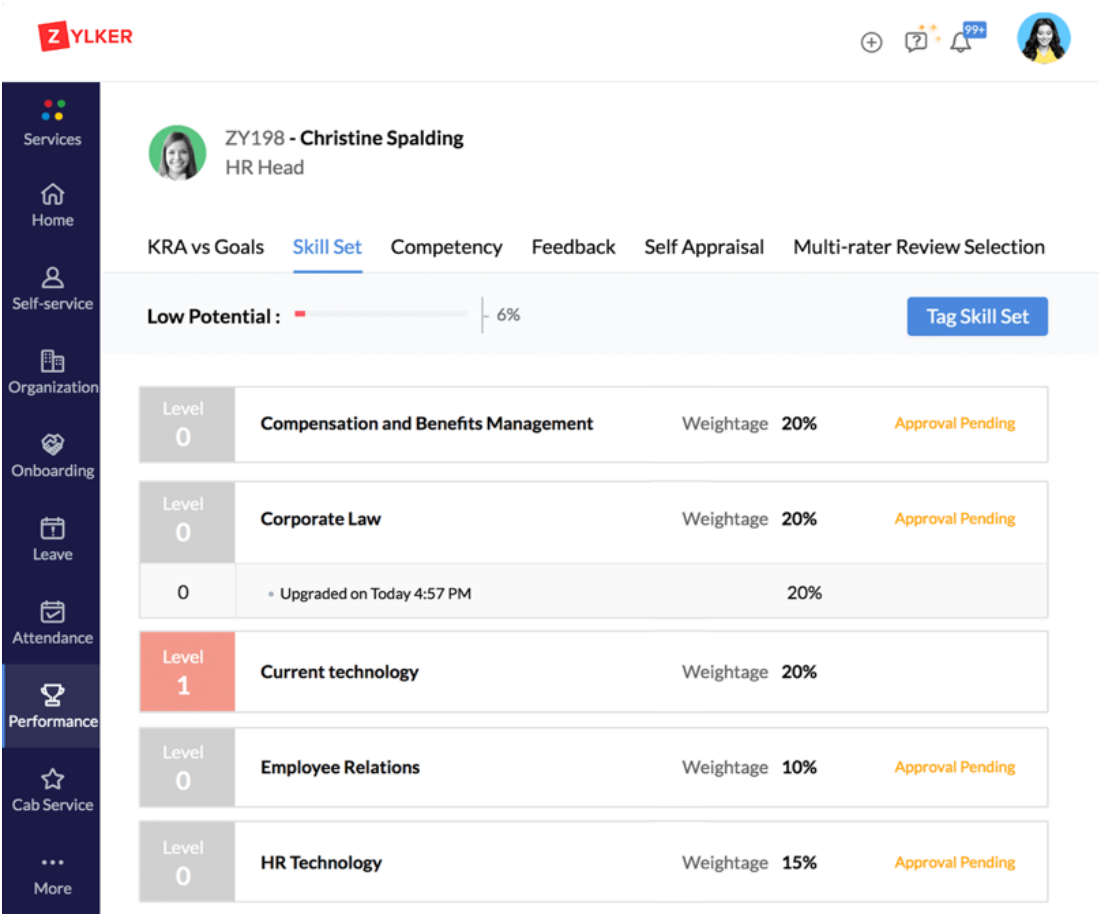
A manager could indeed have a broad picture of all employees, divided into different categories and traits, but it would also be possible to visualize a single person with all the competencies demonstrated.

Managers could include the test results in the "SKILLS SET" or "COMPETENCIES" sections, or in a completely new one.

Managers could immediately identify employee traits (for example, using the four colors, but also selecting the skills needed through some filters), which will help them choose the right person not only to hire but also to deliver a large project or to promote to a new job position, as well as to create a team with specific characteristics.

Once these results are incorporated into the software, they simply allow for easier management of human resources, lowering costs, increasing outcomes, and improving employee happiness and satisfaction.

FIGURE N. 4: INTERFACE OF AN EMPLOYEE IN ZOHO.



SOURCE: <https://www.zoho.com/it/people/?ireft=nhome&src=it-dd>.

FIGURE 5: SKILLSET OF AN EMPLOYEE IN ZOHO SOFTWARE



SOURCE: <https://www.zoho.com/it/people/?ireft=nhome&src=it-dd>.

The organization of training sessions or workshops is another important component of incorporating the Birkman method into management software. These sessions should provide all company employees with detailed explanations of how the test works and its potential positive impact on business outcomes and employee quality of life. Managers must be trained and educated to quickly interpret the meaning of each symbol and color without having to read the entire report.

3.3.1. THE BIRKMAN TEST EXPLAINED

Here is a brief description of the four colors of the Birkman test, which I personally executed. I would like to demonstrate some practical results from the test, and how it can help both respondents to have a deeper knowledge about themselves, and managers to have a clear picture of the candidates and employees.

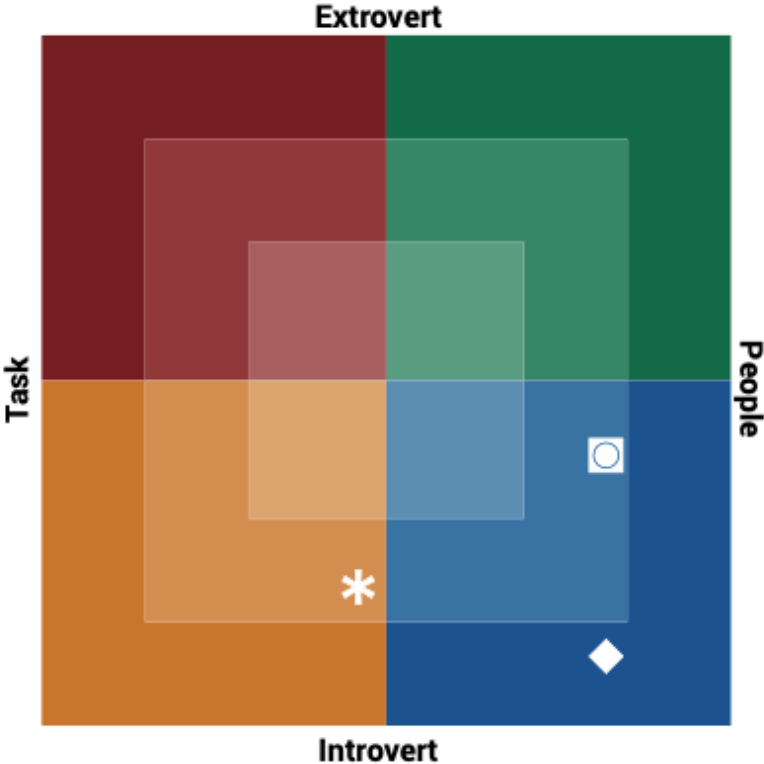
TABLE 8: THE BIRKMAN COLOR KEY.

RED	<p>DOER</p> <p>RED is the Birkman color for people who prefer to make quick decisions and get results. Reds are direct and action-oriented and give full attention to the task at hand. Reds enjoy building, working with their hands, organizing people and projects, solving practical problems, and producing an end product they can see and feel. Reds are objective, energetic, commanding and enjoy team competition. Reds get results through action.</p>	GREEN
YELLOW	<p>ANALYZER</p> <p>YELLOW is the Birkman color for people who love working with processes, details, definitions and rules. Yellows enjoy doing careful and detailed calculations, scheduling, recordkeeping, and establishing systematic procedures. They are usually comfortable with numbers, place a high priority on being fair, and are cautious and thorough in analysis. Yellows are task-oriented and often prefer indirect communication methods including forms, rules and regulations. If you need to get organized, find a Yellow.</p>	BLUE
	<p>COMMUNICATOR</p> <p>GREEN is the Birkman color for people with a strong desire to communicate and work with people. Every time you see a Green, they are selling, persuading, promoting, motivating, counseling, teaching or working with people to get results. Greens who believe in a product, service or idea can communicate about it with ease and a natural confidence. If you want someone to win friends and influence people, a Green is your person for the job.</p>	
	<p>THINKER</p> <p>BLUE is the Birkman color for the concept and idea person. Blues love innovation, being creative and long-term planning. They enjoy abstract thinking and discovering new ways to solve problems. Blues thrive on generating fresh ideas and coming up with the most viable solutions for the problem at hand. Blues tend to be introspective, and while they love originality and innovation, they may need to be around other creative individuals to trigger the spark.</p>	

SOURCE: Birkman Basics Report | ALESSANDRA BUIATTI | ©2023, Birkman International, Inc.

The Symbols on your Birkman Map define who you are in two ways. The symbol's placement within a color quadrant represents the degree to which you resemble that color quadrant. The map's left and right sides (horizontal axis) represent your preferred method of dealing with tasks or people. The top and bottom (vertical axis) represent whether your personality is more extroverted or introverted.

FIGURE 4: THE BIRKMAN MAP OF ALESSANDRA BUIATTI.



SOURCE: Birkman Basics Report | ALESSANDRA BUIATTI | ©2023, Birkman International, Inc.

- ✱ - INTERESTS: The asterisk represents what you like to do and where your interests lie in terms of activities.
- ◇ - USUAL BEHAVIOR: The diamond represents your typical behavior. These are your strengths, and they make up your most effective and productive style. This is how others perceive you. When your needs are met, your usual behavior is how you act.
- - NEEDS: The Circle represents how you should or expect to be treated by others and your surroundings. Needs are frequently hidden or invisible to others.
- - STRESS BEHAVIOR: Your frustrated behavior is represented by the Square. This is your unproductive, reactive style. When your needs are not met for an extended period of time, you exhibit stress behavior. Some of the difficulties you are experiencing may manifest themselves here.

3.3.2. EXPLANATION OF MY INTERESTS (THE ASTERISK)

The Asterisk indicates the types of activities you prefer. In my case, my asterisk is in the YELLOW quadrant, but it's also near the BLUE one. Thus, I probably (according to the test) enjoy detailed activities, but I also enjoy tasks that require theorizing, planning, or creating new ways of doing things.

Interests in the YELLOW quadrant include:

- scheduling
- doing detailed work
- keeping close contact
- working with numbers
- working with systems

My Asterisk indicates that I prefer to maintain close control, influence tasks indirectly, develop rules or procedures while thinking about the future, combine detailed work with the development of new approaches, measure, monitor, and record.

As previously stated, the Birkman test can help in determining which applicants most closely match the company's culture and job requirements. For instance, I would not be a good fit for a job that required me to make quick decisions or use my hands to make something. The test tells me that if I apply for a job like this, I will be automatically turned down. This aids the company in selecting the best candidates based on personality traits that aren't listed on a resume.

3.3.3. EXPLANATION OF USUAL BEHAVIOR (THE DIAMOND)

The Diamond describes my productive approach to my tasks. In my case, the diamond is positioned in the BLUE quadrant, thus, when I am working efficiently, I am more likely to be reflective and creative. Usual Behaviors in the BLUE quadrant include being:

- insightful

- selectively sociable
- thoughtful
- reflective
- optimistic

The Birkman Test can help a business identify which of its employees are most suitable for career advancement. For instance, if a worker exhibits a strong aptitude for analytical work, the company may consider assigning them to roles or projects that will help them hone this skill. The most qualified candidate can be identified by looking at both the employee's performance and the qualities recorded in the management software of the business.

3.3.4. EXPLANATION OF MY NEEDS (THE CIRCLE)

The Circle describes the assistance a person requires to develop the Usual Behavior. My circle is in the BLUE quadrant, but it is also near the GREEN one. You respond most effectively to people who are insightful and persuasive. People with their Needs in the BLUE quadrant want others to:

- offer individual support
- encourage the expression of feelings
- allow time for reflection
- give time for difficult decisions

So, my circle demonstrates that I am most at ease when those around me are interested in both feelings and logic, allowing you time to make complex decisions. It also demonstrates that I respond well to people who make it clear who is in charge, are openly enthusiastic, and provide you with personalized incentives.

The Birkman Test can also be applied to existing teams to enhance team dynamics. It might, for instance, draw attention to the preferred communication methods of team members and make recommendations for ways to boost cooperation. Each

employee could have a tiny pin that would indicate the preferred communication style.

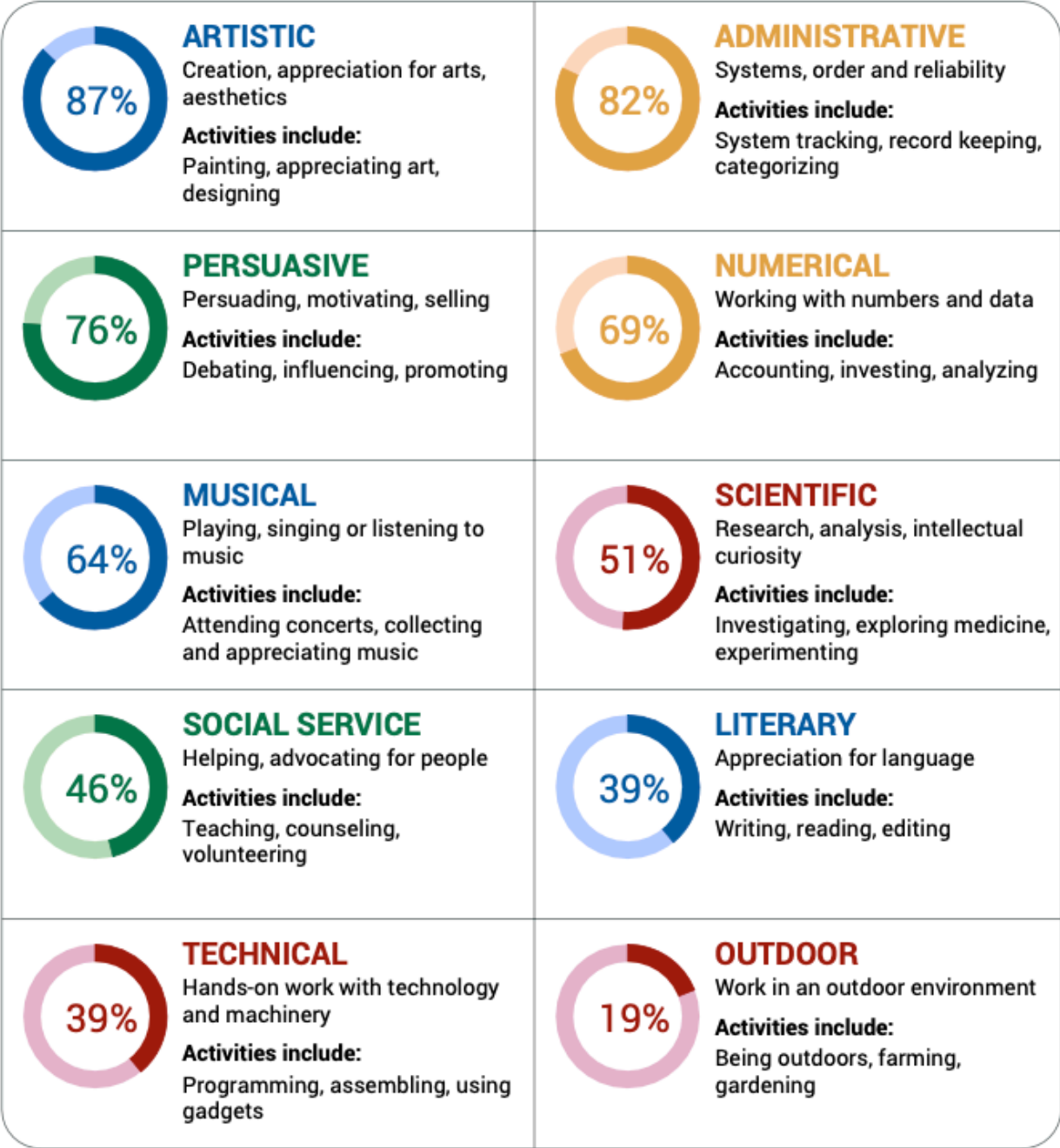
3.3.5. EXPLANATION OF MY STRESS BEHAVIOR (THE SQUARE)

My Stress Behavior is represented by the Square, which is located in the BLUE quadrant but also close to the GREEN one. This indicates that if people do not treat me in the manner that your needs require, I may become easily distracted and hesitant. Those with Stress Behaviors in the BLUE quadrant:

- ignore social convention
- become indecisive
- find it hard to act
- see the worst possibilities

My Square demonstrates that when I am stressed, I can become anti-social and easily discouraged, as well as overly sensitive to criticism. Furthermore, it suggests that I may become disorganized, self-protective, and evasive.

TABLE 9: BIRKMAN INTEREST OF ALESSANDRA BUIATTI.



SOURCE: Birkman Basics Report | ALESSANDRA BUIATTI | ©2023, Birkman International, Inc.

High scores indicate, of course, that I enjoy those activities, while Low scores indicate areas I would rather avoid. Interests do not always translate to skill, but they are powerful motivators.

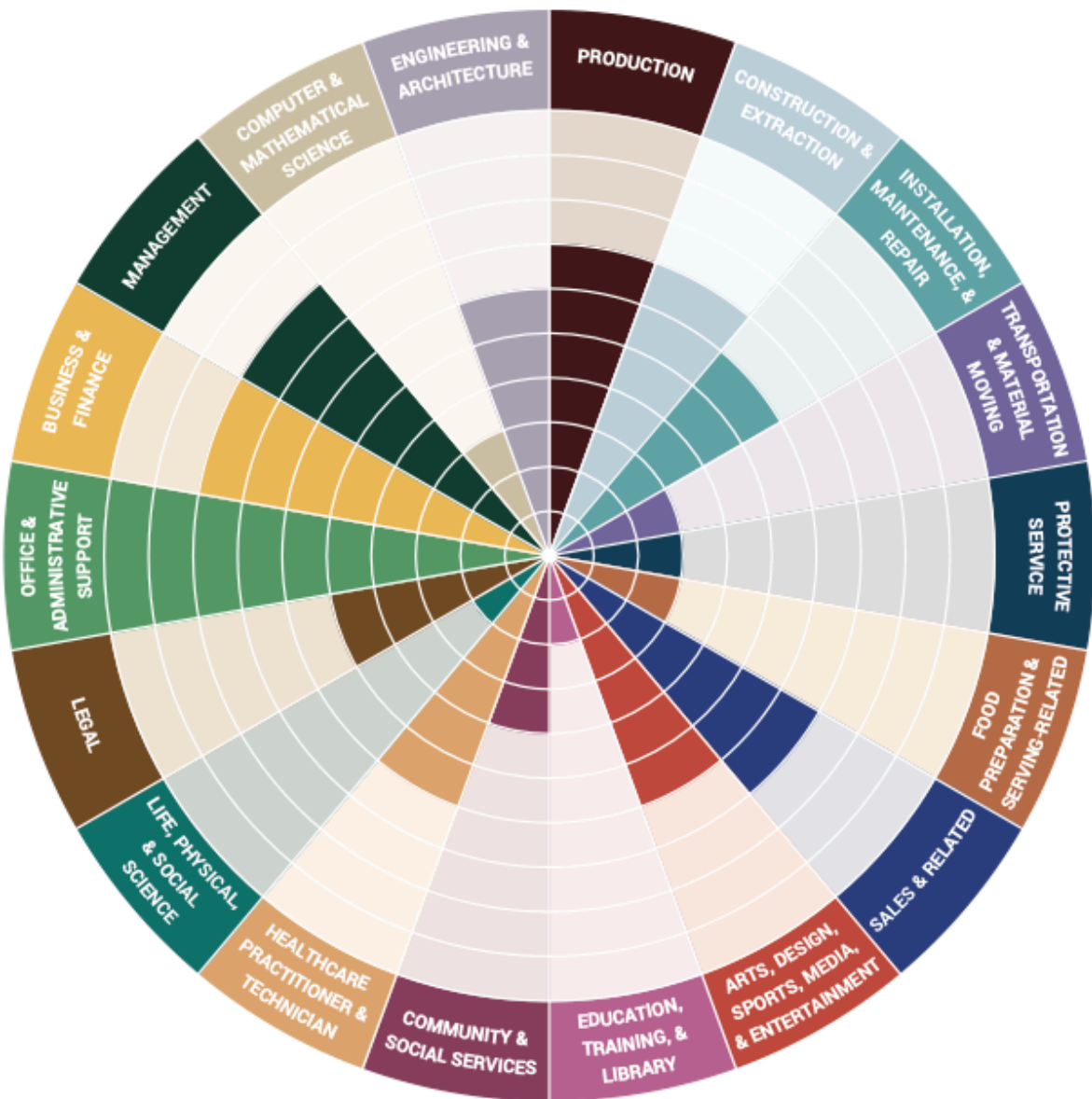
FIGURE 5: THE STRENGTHS OF ALESSANDRA BUIATTI.

- You like working with systems – this may involve computers and databases, filing systems, or positions which involve introducing or following procedures to increase efficiency
- You are interested in the visual appeal of products and services, and may well have an artistic ability of your own
- You meet people easily and relate well to others when they are involved in group activities
- You are structured and organized in your thinking and approach, and you bring these tendencies to the work you do
- You appreciate an environment where everyone wins together
- You understand and relate well to others' feelings, and you are aware of the extent to which these can affect performance both positively and negatively
- You can handle ambiguous situations well, where the best answer may be less obvious or buried in important details

SOURCE: Birkman Basics Report | ALESSANDRA BUIATTI | ©2023, Birkman International, Inc.

Above, you can read about my strengths, what I do well, and the qualities that I can highlight, for example, during a job interview. With the Birkman test, I can demonstrate all of these qualities, and a company that requires specific characteristics can make more informed hiring decisions.

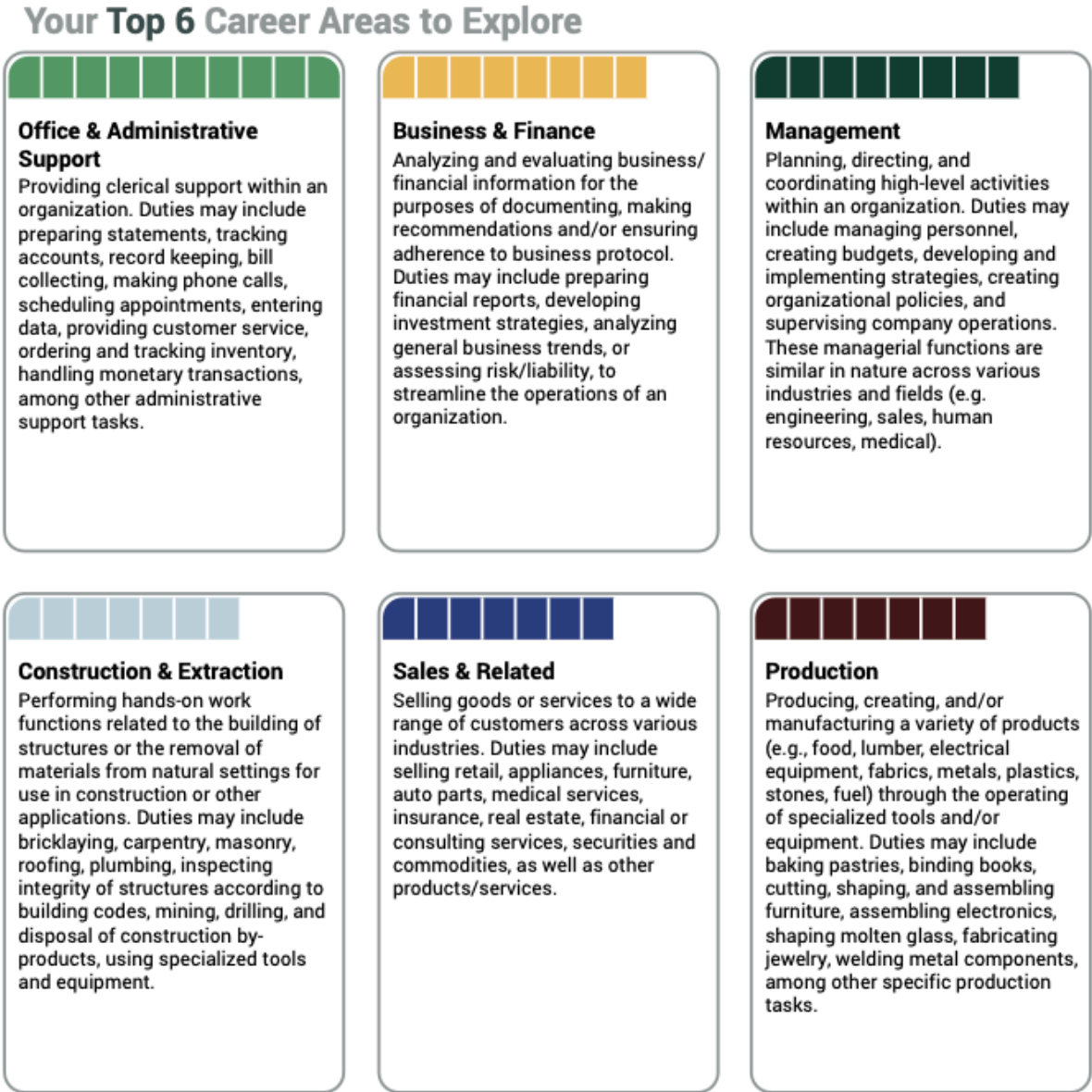
FIGURE 6: CAREER EXPLORATION OVERVIEW OF ALESSANDRA BUIATTI.



SOURCE: Birkman Basics Report | ALESSANDRA BUIATTI | ©2023, Birkman International, Inc.

The Career Exploration Overview is designed to introduce the users, to the detailed occupational information that the Birkman measures. Table 10 displays the top career options based on my Interests, Usual Behavior, and Needs scores. knowing this information might be helpful to me because it allows me to gain a better understanding of myself and the careers that will suit me best.

TABLE 10: TOP 6 CAREER AREAS FOR ALESSANDRA BUIATTI.



SOURCE: Birkman Basics Report | ALESSANDRA BUIATTI | ©2023, Birkman International, Inc.

As you can see, these career suggestions are related to my strengths, what I am good at, and what I enjoy doing the most. This makes it easier for me to find a job that satisfies me and that I appreciate. This is one of the most important pages of the Birkman test because it provides a concrete suggestion for people who take the test, guiding them to a more knowledgeable job search.

A company can also create a section within its software to categorize each employee based on career areas and strengths. This allows the business to create

a list of employees who for example excel at SALES, those who prefer working in PRODUCTION, and so on. The managers can see if all of the employees are doing work that they enjoy and are good at. They can eventually propose a different job within the company.

3.4. FUTURE PROSPECTIVES

Artificial intelligence (AI) is the concept of machines that think, learn, and behave like humans (Awasthi and Sangle, 2013). In 1956, John McCarthy coined the term "artificial intelligence" to describe the science of creating intelligent machines.

It uses machine learning algorithms to process and learn from data, allowing it to make more informed decisions.

As stated earlier in this chapter, an AI-powered computer can perform tasks such as language acquisition, planning, and realization without the need for human intervention. AI is regarded as an effective tool for improving customer relationship management (CRM) activities due to its processing capabilities (San-Martna et al., 2016). AI has enabled data analysis, forecasting, automation, and personalized customer interactions.

Artificial intelligence (AI) is now widely used in organizations, with 80% of large corporations incorporating it into core operations, a 70% increase in just five years. This trend is critical in all organizational functions (Ghosh, Daugherty, Wilson, and Burden (2019). Furthermore, AI is the top workplace trend according to the Society for Industrial and Organizational Psychology (SIOP, 2020), and it applies to almost all organizational functions.

The future of labor will undoubtedly include a significant amount of AI, according to academics (Huang & Rust, 2018; Wilson, Daugherty, & Davenport, 2019). The use of AI technologies has a wide range of advantages, from increased process efficiency, quicker and more accurate results, and a decreased error rate to better strategic outcomes at the organizational level (Davenport & Kirby, 2015; Davenport, Guha, Grewal, & Bressgott, 2020; Paschen, Pitt, & Kietzmann, 2020).

There has been great interest in examining the underlying dynamics that AI systems may introduce within the social environments where they are being used or will be used soon. These emergent dynamics hold important clues to key questions regarding the future of work. Arguments have both been made about the potential for AI to create new forms of work or displace existing workers.

Soon, when AI is progressively integrated into workplaces on a large scale, creating a strong alignment between individuals and company culture will be critical. As the workforce shrinks due to AI-driven efficiencies, everyone's contribution becomes even more important. This emphasizes the need for a unified and synchronized team that moves the organization ahead.

Furthermore, as the reliance on AI grows, personality assessments will evolve to play a critical part in defining the workforce. These evaluations will provide insights into candidates' underlying qualities and attributes, going beyond surface-level skills and qualifications.

This transition is critical to ensuring that new workers not only meet the technical requirements of their jobs, but also represent the values, attitudes, and soft skills that are in line with the company's culture.

The combination of AI-driven insights with a sophisticated understanding of individual personalities will allow firms to make more educated and purposeful hiring decisions. Businesses will create teams that are not just proficient, but also motivated, adaptive, and driven by a shared goal if they choose people that align not only with the technical requirements but also with the cultural fabric of the organization. This proactive response to the changing work landscape ensures that enterprises flourish in an era where AI and human collaboration meet.

3.5. OVERVIEW OF THE DATA COLLECTED - INTERVIEW TO MICHELANGELO AQUINO

- **WHAT DOES YOUR AGENCY DO?**

We are digital advertisers, and we do advertising and growth processes for companies that want to grow through online ads, and that rely on us. One of the core services we have is the online advertising part.

- **HOW DID YOU DISCOVER THE BIRKMAN TEST AND WHAT WERE THE FACTORS THAT PROMPTED YOU TO IMPLEMENT IT IN YOUR COMPANY?**

We got one recruitment wrong at the beginning of 2021, and by the end of 2021, we're wondering how we can protect ourselves from talent who professes to be talent but isn't. Then, Stefano Ferranti, an advertising agency consultant, introduced it to us: my partner, our front lines, and me. This test reveals a lot about us and our front line. Its results were extremely accurate, so we began using it right away.

- **HOW DO YOU RATE THE EFFECTIVENESS OF THE BIRKMAN TEST?**

Absolutely positive. Of course, this test will cost me money, but consider how much it will cost to hire the wrong people: 100 times more, not less. If you do a six-month contract with a RAL of €25,000 (if you pay that person cheaply), do you want to tell me that hiring the wrong person is not worth €25,000, given the negative impact it has on the team? Not to mention the time it takes to train him. I will never change.

- **HOW DID YOU EVALUATE THE OVERALL EFFECTIVENESS OF USING THE BIRKMAN TEST WITHIN THE ORGANIZATION?**

It's not just a matter of attracting talent; it's also a matter of keeping them for as long as possible. There are all the hidden costs associated with reforming and re-

educating employees. And it all adds up in economic terms. Everything you don't have to budget for bad hires. And the point is that when you are so small, you optimize resources. When you put the wrong money in the wrong resources, you risk a lot more.

- HOW USEFUL WAS AND IS THE BIRKMAN TEST IN MEASURING PERSONALITY DURING PERSONNEL SELECTION, THUS AS A TOOL FOR CHOOSING A CANDIDATE FOR THIS SPECIFIC JOB?

In July we hired two girls, both of whom we had tested. One of them had failed it, she didn't make a good impression, but we questioned the outcome of the Birkman test. The result? In September she will no longer be in the company. As an entrepreneur, as a company manager, you have to take risks and make choices, even unpopular ones if you like, but every time you don't listen (to the test) then there is a negative outcome. A small company, if it does not have extraordinary people, does not grow. Why? But we are not talking about second-class people from the point of view of hard skills, we hire for soft skills and do training to supplement hard skills, because it is thanks to those people there and thanks to a specific approach there that the company grows. The group adapts to the "rotten apple", so you have to be careful not to let any gears in. The Birkman test screeches resoundingly. The importance of not hiring the wrong people, especially in small companies is crucial because you as an entrepreneur don't have infinite cash flow, you cannot afford to make mistakes all the time. The Birkman helps to scan a lot; it's a filter, a barrier to entry, and every time you don't listen to it, what I was telling you happens. This machine works if you are selective at the entrance.

- HAVE YOU USED THE RESULTS TO FIND AND DEVELOP INTERNAL TALENT OR TO PLAN THE TRANSFORMATION INTO KEY ROLES IN THE AGENCY?

I haven't used this option yet.

- HAVE YOU EVER HAD DIFFICULTIES USING THE PERSONNEL MANAGEMENT TEST? AND IF SO, HOW DID YOU HANDLE THEM?

I found them in those resources that it turned out not to be suitable to be in our company, and the result was that, in the end, they were no longer part of the Agency.

- CAN YOU GIVE SOME PRACTICAL EXAMPLES OF HOW YOU USED THE RESULTS OF THE BIRKMAN TEST TO IMPROVE THE EFFICIENCY OF TEAMS TO SOLVE INTERNAL PROBLEMS?

We hire for soft skills because you have to find them outside. What was the benefit? The fact that you have ethical people inside with principles, with values. They have good manners, and this helps to improve efficiency within teams.

- WHAT SUGGESTIONS WOULD YOU OFFER TO OTHER COMPANIES CONSIDERING THE ADOPTION OF TESTING TO IMPROVE HUMAN RESOURCES MANAGEMENT?

That I would stop considering it, but I would immediately implement it. So, adopt it and follow what it says.

CONCLUSIONS

It has been demonstrated in this thesis that in today's highly competitive corporate landscape, a nuanced understanding of personality traits is essential. Psychometric tests give employers an objective assessment of a person's psychological characteristics, allowing for more informed hiring decisions while reducing bias. They offer advantages such as faster hiring processes, lower turnover, and higher productivity. It is possible, that certain issues, such as misinterpretation, a lack of information, and social desirability, may arise. For this reason, it is recommended to use these tests in conjunction with other evaluation methods such as interviews, quizzes, or simulations to improve the accuracy of job performance prediction.

It is important to note that not all psychometric tests are as accurate and reliable as the Birkman method, which employs academic studies, factor analysis, and clinical issues (such as schizophrenia, bipolar disorder, and depression).

Several cases have proven the link between companies that use the Birkman method, and their better outcomes. Skoda Minotti, for example, saw an increase in team productivity and a lower turnover after implementing the Birkman test.

Michelangelo Aquino expressed his satisfaction with the test too, illustrating its numerous benefits such as saving money and time on bad hires, reducing turnover, selecting a candidate who shares the team's values, and many more.

Companies will embrace the potential of this tool, even more as they realize they save time and money while also improving job performance.

As Michelangelo stated, "small" companies or startups should use it as well, if not more than larger businesses, because smaller companies have fewer employees, and each employee has a greater responsibility for the company's results. For this reason, in the coming years, as job positions are reduced and the demand for specific soft skills grows, the use of personality assessments is expected to grow.

To conclude, the use of psychometric tests, particularly the Birkman assessment, provides a strategic advantage that will become increasingly important for success in the corporate environment.

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