
The Application of IT Tools in Assessing Employees' Personality and Motivation

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Abstract:

Purpose: The paper aims to explore the applicability of information technologies in assessing employee personalities and motivations, outline the evolution trajectories of relevant IT tools, and report experiences with their application methodologies.

Design/Methodology/Approach: The paper presents the findings of research on the applicability of IT support tools in determining employees' personality and motivation. The research methods included primarily Development and Assessment Center A&DC, and literature studies. The following techniques were used, interview, participant observation, role play, self-reflection sheet, feedback, and cause-and-effect analysis. The following psychometric tools were also employed: Hogan Systems, Test Intentio Consensio, Talento.

Findings: The proliferating applications of psychometrics are bilaterally tied to progress in related research. Evolution trajectories of considered tools lead toward the embracement of BI, AI, IT ontologies. A&DC methodology should be developed in parallel.

Practical Implications: The metaplan technique utilized by the authors compares business practice (what is it like?), as demonstrated by case studies, against a research model (what should it be like?). The resulting recommendations are given.

Originality/value: The paper seeks to make a contribution to the methodology foundations for the application of information technology in support of employee personality and motivation assessment, and to indicate paths for the evolution of relevant tools. Identification of user requirements is followed up by a set of practical recommendations, based on descriptors and selection criteria, concerning the use of such tools in organizational settings, with a special focus on the needs of HR knowledge workers.

Keywords: Human resource, personality, motivation, A&DC, computer support.

JEL classification: L86, M51, M53, M54.

Paper Type: Research study.

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1. Introduction

The dynamics of change in the business environment translate into variability of intraorganizational processes. Knowledge workers, albeit talented, thus have to meet increasing pressures in adjusting these processes – something that must be done, in line with the Active Case Management (ACM) concept (Szelągowski, 2020; Osuszek and Stanek 2015), on an ongoing basis. The acquisition and retention of such employees is associated with a need to assess their personality and motivators in an effort to best match talents to the organizational settings and to build effective development personal plans. The theoretical foundations for such assessment were laid by psychometrics, while the tools developed for the purpose are referred to as psychological tests (Bartram, 2004; Hoffman, 2008). The psychological testing market is still growing, and studies show that managers increasingly appreciate the opportunities that such tests bring to personnel selection and high-performance team building (Greco, 2009; Kantorowitz, Tuzinski, and Raines 2018). It should be noted, nevertheless, that applications in F500 companies are perceived as more effective than in all other companies.

The rapid advances of Internet technology have made it possible to boost data processing through the deployment of mediated communication, cloud computing, mobile devices, report generators, and multimedia. A number of relevant studies and ratings have acknowledged the superior performance of computerized online versions of tests over their paper-and-pencil counterparts (Ployhart, 2003; Bartram, 2004; Stanek and Sabat, 2019).

Researchers have so far obtained disparate results in experiments designed to verify the correlation between personality and performance (Bradurn *et al.*, 2020). This seems to imply the presence of some mediating variables. Some studies suggested that one such variable might be sought in motivations (Halim and Zainal, 2015). Consequently, the qualitative model proposed further in this paper includes the following variables: personality, motivation, and communication.

In practice, psychological tests are often used within the framework of Assessment Center (AC) or Development Center (DC) workshops. Where AC and DC differ is in their functions and applications in organizational contexts: while AC is used in screening candidates for jobs or promotions, DC is geared to determining the potential and the areas for development of teams and individuals. Since the methods and techniques typically used within these two are essentially the same, the term A&DC is often used in discourse where points made are just as true about AC and DC. Furthermore, there is no single and universal methodology for A&DC.

However, practitioners tend to observe the policies and procedures prescribed by the Guidelines and Ethical Considerations for Assessment Center Operations¹. As the Guidelines put it: “An assessment center consists of a standardized evaluation of behavior based on multiple inputs. Any single assessment center consists of multiple

components, which include behavioral simulation exercises, within which multiple trained assessors observe and record behaviors, classify them according to the behavioral constructs of interest, and (either individually or collectively) rate (either individual or pooled) behaviors.”²

Finally, a controversy should be pointed out that has recently unfolded over the use of some advanced IT tools – such as machine learning, Big Data or artificial intelligence with learning mechanisms – in recruitment and selection. On the one hand, these technologies have already demonstrated multiple strengths and proven their ability to cater to business needs in personnel selection or decision-making support, overcoming many of the weaknesses of traditional solutions, such as their inferior efficiency and high costs (Handler, 2015; Isson and Harriott, 2016, Vereckey, 2015). On the other hand, learning mechanisms may lead to the acquisition of knowledge that is felt to infringe on certain cultural and legal standards concerning e.g., privacy and use of personal data (General Data Protection Regulation), provoking distrust towards technology and causing fears of legal litigations (White Paper, 2020, Gangadharan and Niklas, 2019; Niklas, 2019). Hopes for a breakthrough may be reasonably associated with the application of ontologies in conjunction with multi-agent systems. Work on such solutions has already commenced (Drozdowicz, Paprzycki, and Ganzha 2020; Żytniewski and Stanek 2020; Skorupka, Żytniewski, and Stanek, 2018).

2. Theoretical Underpinnings

a. Personality

Personality is conceptualized in literature in a variety of ways. The word derives from the Latin *persona*, which means a mask worn by an actor to hide his true face and play a role in the theater. In modern psychology, the term corresponds to the psychological traits influencing the patterns of an individual’s behavior at different times and in specific settings (Zimbardo and Gerrig, 2015). Under organizational psychology, personality is defined, *inter alia*, as a structure of information/knowledge acquired via the learning process (Wekselberg, 2014).

At the heart of the discussion of personality are ancient theories describing four fundamental personality types (also designated as temperaments) and their predominant traits: sanguine, melancholic, choleric, and phlegmatic. In the 5th century BC, Greek thinker Hippocrates assumed that there are four fluids (so-called humors, or juices) flowing through the human body, blood, phlegm, black bile, and yellow bile, each having a distinct effect on individual behavior. This idea was developed seven centuries later by Greek physician Galen who presumed that each of the bodily fluids is linked to a characteristic behavioral pattern and that its predominance determines the personality type. Hence, if blood is the dominant fluid, then the person is cheerful and active (sanguine). If, on the other hand, phlegm is predominant, the person is apathetic and lethargic (phlegmatic). Where black bile prevails in the body, a person is sad and pensive (melancholic), while yellow bile

makes a person excitable and irritable (choleric).

Modern personality theories penetrate into the psychological aspects of human condition seeking to identify factors accounting for consistency in individual behaviors and to address the question of how such factors can be measured and assessed. Psychologists Gordon Allport, Raymond Cattell and Hans Eysenck staged trait theory that fuels most attempts at building prognostic models of personality. Under this approach to the study of human personality, traits are seen as permanent or relatively stable properties (personality components) whose intensity predisposes an individual to behave in a specific fashion. Allport distinguishes central traits, cardinal traits, and secondary traits, believing that these are essential to the understanding of individual personality. Empirical studies have confirmed that the Big Five stands out among models driven by trait theory in that it offers the most universal and comprehensive description of personality (McCrae and Costa, 1997). Under the Big Five model, personality traits are described by linking them to five factors, or across five dimensions (Table 1).

Table 1. Big Five personality traits

Factor	Linkage to traits	
	high intensity	low intensity
extraversion	outgoing, energetic, assertive	aloof, reserved, timid
agreeableness	friendly, kind, compassionate	callous, challenging, cruel
conscientiousness	organized, reliable, cautious	careless, unreliable, extravagant
neuroticism	nervous, sensitive, capricious	level-headed, calm, cheerful
openness to experience	creative, open-minded, curious, independent	rigid, conventional, conservative, pragmatic

Source: Own study.

From the Big Five model have been derived a number of further models attempting to describe personality, such as e.g. that proposed by American psychologist Robert Hogan (2006), who pioneered a scientific approach to assessing personality for business purposes. Hogan Personality Inventory arranges personality traits, and the relationships between them, into seven dimensions/factors (Table 2).

Table 2. Personality traits under Hogan Personality Inventory

Factor	Linkage to traits	
	high intensity	low intensity
adjustment	composed, even-tempered, self-confident, optimistic	irritable, reserved, susceptible to mood changes, pessimistic
ambition	eager to play leadership roles, energetic, competitive, oriented on personal development	uncommunicative, unassertive, uninterested in personal development
sociability	socially confident, attention seeking, extraverted, impulse-driven, team player	restrained, withdrawn, avoiding attention, lone worker
interpersonal	kind, friendly, tactful, empathic	independent, outspoken, outgoing

sensitivity		
conscientiousness	accurate, meticulous, rule-abiding, submissive	non-conforming to rules and intolerant of rigid supervision, creative, spontaneous
inquisitiveness	imaginative, bright, visionary	grounded in practicality, comfortable with routine tasks
learning approach	book-learner finding pleasure in learning for its own sake	hands-on learner thriving in “on-the-job” environments

Source: Own study.

Another concept that draws on trait theory is that of Cognitive Personality Structures of Work (Wekselberg, 2012), providing a theoretical framework for analyzing the relationships between personality and work. The concept is built around the distinction of two factors: willingness to cooperate and willingness to put effort into work. Personalities are described by rating individuals along a spectrum delineated by these two factors, as shown in Table 3.

Table 3. *Big Five personality traits*

Factor	Linkage to traits	
	<i>high intensity</i>	<i>low intensity</i>
willingness to cooperate	oriented on rivalry, individual goals and individual work, unwilling to help others	oriented on collaboration, social goals and group work, willing to help others
willingness to put effort into work (diligence)	avoiding effort and risk, reluctant to innovation and change, appreciative of stability	effort seeking, risk taking, welcoming innovation and change

Source: Own study.

b. Motivation

The word motivation relates to the dynamics of human actions and derives from the Latin word *movere* that means to move, travel, get ready for combat. In modern psychology, motivation is understood as the processes involved in starting, directing maintaining physical and mental activities (Zimbardo and Gerrig, 2012). Motivation may have an internal (individual factors trigger actions) or an external source (action is triggered by situational factors) (Katzell and Thompson, 1990). Under the organizational psychology approach, motivation is interpreted as exerting influence on the behavior of an individual through stimuli that are hence transformed into motives (Pszczółowski, 1978).

Theoretical reflection on motivation originates in the concept of drive and dates back to the works of ancient Greeks from the hedonistic school of thought. Modern theories of motivation demonstrate that motivation is anchored in the need or desire to satisfy one's needs. Abraham Maslow (1948) distinguished and hierarchically organized five classes of human needs, from those most basic to those most advanced ones (Table 4), where the fulfillment of higher-order needs hinges upon

the prior satisfaction of lower-order needs.

Table 4. Maslow's hierarchy of needs

Needs	Examples
1. basic (biological / physiological)	food, shelter, water, oxygen, rest, sex
2. safety	comfort, quiet, absence of fear, financial stability
3. social belonging	family, friendship, love
4. self-esteem	confidence, esteem, prestige, sense of accomplishment
5. self-actualization	developing one's talents and abilities, achieving one's full potential

Source: Own study.

Henry A. Murray (1938) defines needs as drives that can induce a person to behave in a certain way. Murray's theory distinguishes between primary (biological) and secondary (psychological) needs. These needs are not arranged hierarchically. He believed that this was not a complete list, as each person is characterized by individual needs. Table 5 presents a classification of needs aligned to Murray's theory and provides examples of needs that are relevant to the research area addressed in this paper.

Table 5. Selected needs under H. Murray's theory (system)

Category	Needs
1. interaction and support	social well-being, recognition, support
2. autonomy and influence	autonomy, dominance, competition
3. challenges and growth	challenge, cognizance, perseverance
4. recognition and rewards	prestige, esteem, cost and profit
5. stability and structure	safety, failure avoidance (inavoidance), work organization
6. effort and flexibility	efficiency, task-orientedness, change seeking

Source: Own based on content available courtesy of *Thalento*®.

3. Policy Review of Selected IT Tools

a. Test Intentio Consensio (TIC)

The TIC test is based on the Concept of Personality Structures of Work (CoPSoW) that was discussed in a preceding chapter (Table 3). The CoPSoW emerged from the research efforts of a community of scholars clustered around the Committee of Psychological Sciences of the Polish Academy of Sciences (Łukaszewski 1974)³. The research set out from the assumptions of cognitive psychology and employed the methodology of Marian Mazur's qualitative information theory (cf. Burgin, 2010). As he was working on his doctoral dissertation (1991) and carrying on the research in the USA, Wekselberg conducted the first TIC validation.

In the case study described below, an on-line version of the test was used, developed by the Test Laboratory of the Polish Psychological Association⁴. The underlying

calculations were performed using a dedicated platform contributed by the Business Development Institute⁵. Each test contained 64 statements⁶ that were rated by the respondent on a seven-point scale. The test took about 15 minutes to complete. The responses could be submitted to the platform via a dedicated web application or via paper-and-pencil⁷, i.e., through questionnaires provided by the Institute. Reports were generated automatically and delivered quantitative results for both *Intentio* and *Consensio* traits (on primary scales, secondary scales, and sub-scales) as well as a qualitative interpretation of the outcomes encompassing (1) a description of the respondent's personality potential⁷, e.g., increased likelihood of reluctance to take a leadership role, (2) observations on optimum external conditions for each individual, e.g. a near-equilibrium of *Intentio* and *Consensio* traits consistent with the predominant trend in the population. Both the testing and the presentation of results were supervised by certified psychologists (assessment packages may only be purchased by degree holders in psychology, and the final report is sent to a psychologist who would discuss the results with the respondent following the guidelines provided).

In Poland, validation and standardization of the TIC is currently based on assessments covering a total of over 2,500 people. The Cronbach's alpha reliability coefficient of the test is 0.79 for an *Intentio* trait and 0.75 for a *Consensio* trait. Its key applications include personnel selection for a variety of positions, career planning, assessment of personality potential (AC/DC), searching managerial talent, improving group work and team performance, evaluation of employee motivation and commitment. If required, specific organizations might also want to use other tests, such as Raven Matrixes Test, Temperament Questionnaire, Tacit Knowledge Test for Managers, or Situational Motivational Factors Test.

b. Hogan Assessment Systems (HAS)

Hogan Assessment Systems (HAS) was founded in 1987 by Joyce and Robert Hogan as a small startup whose business plan was as simple as building a team of talented, ambitious individuals and then getting out of their way. At the time, Robert worked among juvenile offenders as a probation officer, and that business idea, as well as their interest in psychology, was clearly fuelled by the need to understand and make a greater educational impact. What Hogan found pivotal for his work was retrospective analysis of personalities that, rather than pursue a career path, will succumb to destructive influences and tensions (drives). The conceptual grid was adopted from personality theories, with a central place given to socioanalytic theory combining and synthesizing methodologies from such fields as (neo-) psychoanalysis (notably Freud who was a major inspiration), group relations, social systems thinking, organizational behavior, and social dreaming (Hogan and Sherman, 2020; Bain, 1999).

Hogan's publications and research programs, alongside the support extended to scholars worldwide and the products and services provided by HAS, have been a major influence on the world of business, helping entrepreneurs reduce staff

turnover and increase productivity by hiring the right people, develop talent and assess leadership potential. A culture of good work, in conjunction with firm work ethics instilled in him by his parents, a continuous improvement strategy modeled on the Kaizen archetype and an understanding of the imperative to exploit modern technologies, appear to have been the key success factors, the Hogan-led⁸. HAS has arisen as a global leader used by 70% of the Fortune 500 companies and available in 47 languages, as well as a network integrator with nodes in 56 countries. Robert Hogan himself is today a widely recognized authority, winner of e.g., the RHR International Award for Excellence in Consulting Psychology, ranked among the greatest personality psychologists of all time alongside Freud, Eysenck, Allport, and Cattell⁹.

Hogan products (HPI – Hogan Personality Inventory, HDS – Hogan Development Survey, MVPI – Motives, Values, Preferences, Inventory) listed in Table 6 are widely known to professionals, many of whom are certified to interpret outcomes. The strands where the company's own research is underway are also included in the table, as the company solicits cooperation in implementing the emergent solutions and supports thesis writing within and across these strands.

Table 6. An overview of Hogan products

Test reliability	Applications	Scales	State of the art and research strands	
			Specific	General
HPI, $\alpha=0.76$	The bright side personality test, developed in the context of socioanalytic theory, describes how we relate to others when we are at our best. It predicts leadership performance, and measure the characteristics necessary for success careers, relationship, education, and life	adjustment, ambition, sociability, sensitivity, prudence, inquisitiveness, learning approach (7)	The updated assessment will include the same scales as the current HPI but with new items and more up-to-date item content	Artificial Intelligence (AI) at Hogan narrow AI to streamline behind-the-scenes processes
HDS, $\alpha=0.71$	It describes the dark side of personality, i.e. traits that will surface when people are stressed, bored, or do not pay attention to their behavior. Certain behaviors shown in such circumstances may interfere with career development, hinder interpersonal relationships, prevent effective communication, and compromise effective leadership. Awareness of these mechanisms helps curtail their effects through e.g. coaching	excitable, skeptical, cautious, reserved, leisurely, bold, mischievous, colorful, imaginative, diligent, dutiful (11)		The Hogan Judgment Report includes two scales that measure information processing Killing the Myth of the Charismatic Leader. Charismatic

<p>MVPI, $\alpha=0.76$</p>	<p>MVPI identifies what motivates us to succeed and in what type of position, job, and environment we will be the most productive. It describes the core goals, values, drivers, and interests that determine what we desire and strive to attain. It allows to ensure that a new hire's values are consistent with those of the organization and to diagnose areas of conflict among team members. It is a powerful tool that could be used throughout the employee lifecycle</p>	<p>recognition, power, hedonism, altruistic, affiliation, tradition, security, commerce, aesthetics, science (10)</p>	<p>The updated assessment will include subscales to provide three different insights into people: (a) what types of jobs they want, (b) what drives or motivates them, and (c) what subconscious biases may affect their views</p>	<p>leadership may be dangerous, while humble leadership is a much healthier and effective alternative</p> <p>Know the real you in our preception. Reputations concern how other people see us</p>
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Source: Own based on <https://www.hoganassessments.com/science/product-innovations/>.

4. Policy Review of Selected IT Tools

a. Test Intentio Consensio (TIC)

The paper features three case studies of human capital improvement projects with the use of AC&DC. The research aimed to explore the applicability of IT tools to assessing the employee personality and motivation, while at the same time-sharing application methodology insights and offering guidelines for further refinement of these tools. Figure 1 illustrates the relationships between the variables signposting major research objectives. What the figure intends to highlight is that objectives are, and should always be, established first, and that this must done in consultation with senior management.

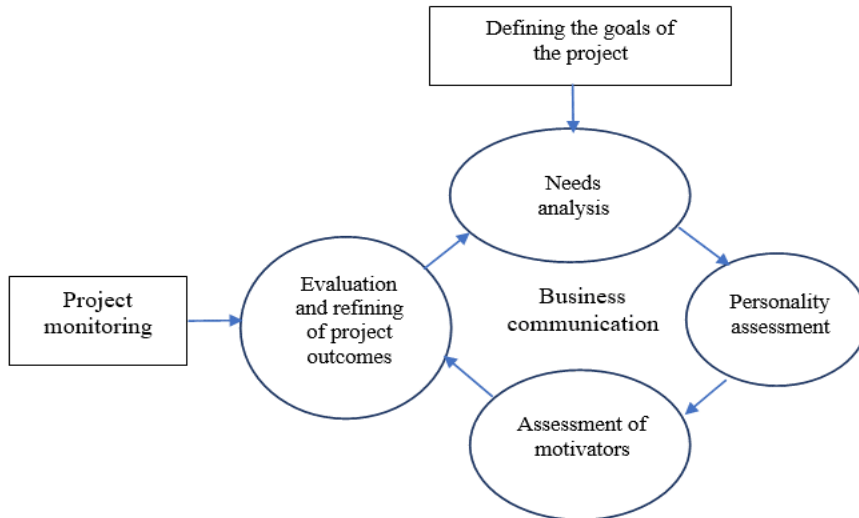
Next, needs are defined, such as, in particular, job descriptions and job prerequisites; it is at this stage that the demand for efficient communication, among employees and clients inside the project as well as with stakeholders outside the project, is taken care of. Another crucial step is the assessment of personality and motivation. Project evaluation, based on data collected throughout the life of the project, should too be seen as an important stage. Last but not least, attention ought to be placed on commitment to follow-up activities after project completion.

The following research questions came up from literature studies:

- Were the organization's needs identified prior to defining the project objectives? If so, what IT tools were used? How?
- Was a personality test conducted, in particular in relation to the needs of the organization? If so, what IT tools were used? How?
- Were motivators assessed in the context of their availability in the

- organization? If so, what IT tools were used? How?
- Were mechanisms envisaged for progress monitoring? Was a framework designed for evaluating and refining project outcomes? If so, what IT tools were used? How?

Figure 1. Research model



Source: Own study.

b. Case study 1

Problem identification:

A banking company was facing the issue of poor fit between employees' individual development goals and the organization's business objectives. Training opportunities offered up to that point, being mostly traditional events, that employees would be delegated to, went wide off the target, failing to bring the desired effect of generating bottom-up initiative and innovative business solutions. At its current stage of development, the company was looking for CSR project ideas as well as people with the requisite resources and motivations to implement such projects on an independent basis. Additionally, the organization sought to modify its development strategy toward incorporating a learning and development model based on the 70-20-10 principle (McCall, Eichinger, Lombardo) under which: 70% of the learning in an organization takes place in real settings (at the workplace), 20% of the organizational learning is knowledge acquired from others, and 10% of the learning only comes through traditional training.

Solution proposal:

It was proposed to launch a multi-level organization-wide staff development program (large enterprise) aiming to: identify employees with the right competences to run CSR projects, stimulate and sustain people's motivation to take action, provide mentoring/coaching support to selected individuals involved in project

execution, upgrade four of the competences indicated by the organization as key to the success of CSR projects, improve leadership skills, and implement the 70-20-10 learning model. To achieve these goals, the measures and activities enumerated in Table 7 were recommended, all of which were to be supported by the use of modern technology.

Table 7. Mandatory and optional measures under the proposed staff development program

Mandatory measures			
Activity	Description	Tools/ methods	Objective(s)
1. Kick-off event	official opening event hosting top managers and coupled with motivational talks given by inspirational individuals	event	lending prestige to the program and thus stimulating staff to attend and actively participate
2. Battery of Hogan assessments	personality assessment in work context	online psychometric test	personality assessment, identification of employee strengths and weaknesses, providing feedback to participants
3. Development & Learning Centre	evaluation of selected employee competences through the Development & Learning Centre (DLC) method	DLC sessions (observation, self-reflection, interview, role play, feedback, skills training)	assessing the levels of four key competences indicated by the organization and diagnosing developmental needs in respect of these; inspiring self-reflection; providing feedback; giving coaching support to development program designers; training a single key skill selected by the organization
4. Management Academy	participation in a management training series	traditional training	preparing a number of employees to take over managerial roles in the organization; upgrading leadership skills among the company's executives
5. CSR projects	developing a CSR project	coaching session	providing coaching support to those involved in CSR project development
Optional measures			
Activity	Description	Tools/ methods	Objective(s)
1. Live webinar	regular online webinars led by celebrities	online webinars, podcasts	sustaining employee motivation to complete CSR projects
2. MY Development platform	attendance at e-learning courses in: Leading and Motivating; Development Projects; Decision Making	e-learning course	training in skills indicated by the organization
3. Mentoring Program	participation in a mentoring project	mentoring sessions	providing mentoring support to those involved in executing CSR projects and personal development projects
4. Job rotation	transferring a number of employees to temporarily work at other locations	job rotation	enabling employees to run CSR projects at other locations; experience sharing across the company's locations/branches
5. Lunch	having lunch with other	staff meetings	experience sharing among project team

& Learn Coffee Talk	employees involved in projects and company's senior managers		members; supporting the achievement of developmental goals; strengthening motivation for personal growth and project involvement; monitoring of goal attainment
6. Clo- sing event speech	official closing ceremony hosted by top managers, featuring motivational talks by inspirational guest speakers	event	summing up program outcomes; expressing thanks to everyone involved; offering recognition to major contributors and high achievers

Source: Own study.

Problem solution:

Owing to the program, not only were sound business-driven CSR projects developed and implemented but also employees were effectively empowered to achieve their individual development objectives based on the 70-20-10 model. As part of the monitoring process, relevant SMART-compliant quantitative indicators were established for each project and analyzed to track the achievement of project objectives. The 70-20-10 model was successfully introduced into the organization, too. As a result:

- employees were more willing to take responsibility,
- more employees could effectively perform complex tasks combining or traversing several business areas,
- more employees could effectively perform tasks in an international environment
- job rotation was instituted, spanning internationally as well as across new business locations,
- employees would adopt the roles of mentors and coaches for others,
- employees were better prepared and motivated to participate in coaching processes,
- employees would, on a regular basis, engage in the pursuit of their development plans while receiving regular feedback from their managers,
- employees would attend traditional training events as well as e-learning courses and webinars,
- employees gained access to libraries and other knowledge resources (books, articles, podcasts, training videos).

c. Case study 2

Problem identification:

An IT sector company was experiencing difficulties with the timely execution of projects. Interviews were held with project managers responsible for scheduling and keeping projects within the prescribed time frame. The interviews revealed employees' unwillingness to carry out leadership roles and their lack of commitment to independent acquisition of knowledge and skills that could enable them to tackle more demanding tasks or solve problems on their own. The managers perceived that their staff lacked team spirit, expecting to be assigned individual tasks and to be held

responsible for those only; a majority preferred to work individually without the need to communicate and collaborate with other team members. It was a common practice among the staff, too, to put off tasks until explicitly reminded by a manager and offered direct support. Given the managers' frequent absences from the company's premises and hence deficient supervision, this led to notorious delays in project completion. Conversations with managers showed that they were not interested in personal development, e.g., enhancing their leadership skills. The organization did not have a succession plan.

Solution proposal:

It was proposed to conduct a survey among employees using the Development & Learning Center (DLC) method. The aim of the study was to assess the existing level of managerial skills among employees regarded by managers as potential successors and to determine their readiness to carry out ambitious tasks involving cooperation and increased intellectual effort. The DLC method was adopted to track the pace of changes in behavior toward what was desirable for the organization and to examine employees commitment to achieving their development objectives. For personality and motivation assessment, the TIC test was recommended to evaluate diligence defined as a potential to put effort into work and undertake tasks involving cooperation and supporting others. Based on the test results, candidates' readiness take on leadership roles was supposed to be ascertained, and a succession plan was to be built along with individual development paths for prospective successors. It was presumed, too, that high achievers would be assigned leadership roles within projects immediately on program completion, and at the same time offered an induction program and vested with formal powers. Table 8 outlines the proposed activities, all of which were to be supported by modern technology.

Problem solution:

The program helped identify employees capable of immediately adopting leadership roles on program completion and resulted in building a succession plan alongside individual long-term development paths. Newly appointed leaders, supported by coaches and their line managers, effectively assumed new roles, taking over some of the responsibilities related to coordination within IT projects. This contributed to significant improvement in the timeliness of project execution. Also, the other program participants engaged in pursuing individual development plans with the support of coaches and their line managers.

Table 8. Mandatory and optional measures under the proposed staff development program

Activities			
Activity	Description	Tools/methods	Objective(s)
1. Kick-off meeting	meeting with employees identified as potential successors	presentation	communicate program objectives; build motivation for active participation; stimulate sound competition
2. Deve-	conducting an evaluation of	DLC sessions	assess employees' managerial skills;

Development & Learning Centre	employees identified as potential successors	(observation, role playing, self-reflection, feedback and follow-up, interview, development planning)	establish staff's levels of readiness to play leadership roles; design individual development plans to be pursued with the dedicated support of coaches and line managers; pick out individuals capable of immediately adopting new roles on program completion
3. TIC testing	assessment of personality and motivation among staff	online testing	identify personality potentials for diligence and collaboration; shortlist candidates for tasks involving communication, collaboration and expending extra effort
4. Wrap-up event	communicating assessment outcomes to employees	presentation	summarize program outcomes; provide feedback on program participants' new organizational roles, inform them on follow-up activities and their long-term development objectives

Source: Own study.

Problem solution:

The program helped identify employees capable of immediately adopting leadership roles on program completion and resulted in building a succession plan alongside individual long-term development paths. Newly appointed leaders, supported by coaches and their line managers, effectively assumed new roles, taking over some of the responsibilities related to coordination within IT projects. This contributed to significant improvement in the timeliness of project execution. Also, the other program participants engaged in pursuing individual development plans with the support of coaches and their line managers.

d. Case study 3

Problem identification:

An energy industry company suffered major staff turnover affecting key management positions. The new HR Director and the Sales Director were hardly aware of the true competences of the management staff. The organization was undergoing deep changes and planned to intensify sales. At the same time, it intended to build a training and development program in the near future as well as launch an incentive program. The programs were geared to tailoring development activities and motivators to the individual needs and motivations of this employee group.

Solution proposal:

A competency audit management audit was proposed to help identify managers' individual strengths and weaknesses and to examine their motivation structures. The Assessment Center method was selected for the management audit, and Talento IT tool was to be used for personality and motivation assessment.

Thalento® was built around the Big 5 Model by Costa and McCrae and Murray's motivation theory. The tool is available in 26 languages and undergoes thorough scientific validation. The Thalento® model can be seen as a universal set of competencies expected of individuals holding managerial positions. The model covers all of the activities and responsibilities usually attributed to the management function, spanning across five areas: decision making, people management, adaptation to environment (flexibility), problem solving, communication, and exerting influence. For each of these five areas, three key competencies were isolated, making up a total of 15 key managerial competencies. All competencies are assessed on a five-grade scale in relation to a reference group. Appended to that quantitative assessment is a description of an individual's management style and personality traits, and a listing of personal motivators and needs. Thalento has already come to be widely used in personnel recruitment and, importantly enough, has been found to run smoothly in a cloud computing environment (Stanek, Sabat 2019). Table 9 brings up an overview of the proposed activities, all of which were to be supported by modern technology.

Table 9. Proposed measures under the management audit

Measures			
Activity	Description	Tools/Methods	Objective(s)
1. Kick-off event	audit group's meeting with top executives	event	introduce new staff; communicate the rationale and objectives of the audit; motivate employees toward participation in the program
2. Assessment Centre	assessment of selected management skills	AC session (role plays, STAR method interview)	assess managerial skills; identify individual strengths and weaknesses and offer personal development recommendations
3. Battery of Thalento tests	assessment of personalities and motivations in a employee group	online questionnaire survey	diagnose personalities and motivations; establish key motivators across the group
4. Wrap-up meeting	providing feedback to participants	meeting	sum up audit outcomes; present findings and conclusions for the training plan and the incentive program to be launched

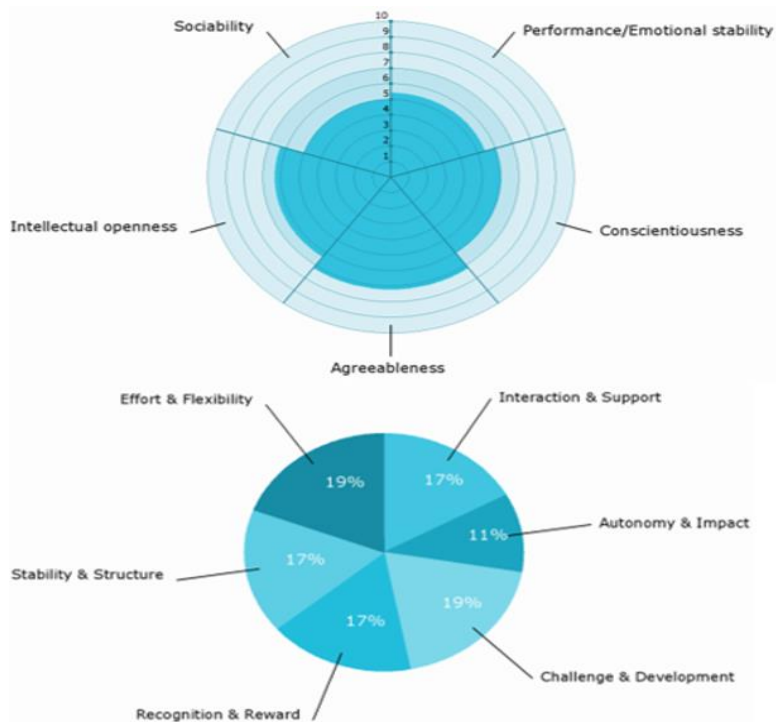
Source: Own study.

Problem solution:

As a result, the participants' level of managerial skills was accurately measured, their strengths and weaknesses were identified, and relevant development plans could be tailored to address their specific needs.

Personality assessment was performed with the use of an IT tool based on the Big Five model, while motivation structures were drawn on H. Murray's model (Figure 2). All of the findings were to be embraced by the training plan and the projected incentive program.

Figure 2. Sample personality and motivation profile



Source: Own study.

5. Recommendations and Conclusion

The paper gives an account of the authors' attempts to explore the applicability of IT tools to assessing employee personality and motivation. In doing so, the paper aims to share experiences with application methodology and to offer guidelines for further evolution of these tools. The metaplan technique utilized by the authors compares business practice (what is it like?), as demonstrated by case studies, against a research model (what should it be like?). The resulting recommendations are given in Table 10.

Table 10. Recommendations

What it should be like (research model)	What it is like (case study)
As a starting point, the available IT tools (e.g. BI systems) should be used to conduct a business needs analysis and a diagnosis of organizational problems (e.g. a decrease in productivity, loss of customers, a decline in profitability)	Assessments are not usually preceded by an analysis of business needs and organizational problems. As a result, companies are guided by guesswork, fags, etc.
The desired personality profile should be determined prior to personality assessment (e.g. for high-risk projects preference should	In some cases, the desired personality profile is not known (even if it can be determined using tools that are available) prior to personality assessment,

be given to high scorers on diligence, openness to experience, and low neuroticism)	resulting in a mismatch between employees and tasks
Prior to motivation assessment, IT tools should be deployed to identify key motivators in the context of their availability in the organization	Motivation assessment is not always performed. Employees' individual needs and motivators are therefore not taken into account. Instead, it is assumed that all employees are equally motivated by, for example, challenges. As a result, the staff refuse to engage and their motivations are short-lived
Progress indicators should be adopted each time and monitored with the use of IT tools	Quantitative and qualitative progress indicators are often lacking. This is particularly true about long term goals. As a result, goals are not met at all or not all goals are met
Recommendations	
<ul style="list-style-type: none"> • When contemplating the objectives for an assessment, it is important to start with a business analysis, using all available IT tools (e.g. BI), including a qualitative analysis through e.g. interviews with managers. • When defining the desired personality profile, the personality traits should be as closely as possible matched to the requirements of tasks/responsibilities to be performed in a specific job. • It is recommendable to assess individual motivations and align them with motivators available in the organization. If the organization is not able to meet the motivational needs of employees wanted, an incentive program should be put in place each time (to both stimulate and sustain motivation). • The achievement of goals should be monitored with the use of IT tools. 	

Source: Own study.

The proliferating applications of psychometrics, notably of psychometric tools, are bilaterally tied to progress in related research. Tools such as Hogan Assessment Systems, Test Intentio Consensio, and Thalentio® continue to absorb recent research outcomes while being at the same time widely utilized in research projects.

The recommended evolution trajectories of these tools lead toward the embracement of artificial intelligence, social networking, and support for mobile devices (SMAC architecture). Further, their much desired adaptation for compliance with anti-discrimination legislation and personal data protection regulations may be, in the authors' opinion, associated with consistent development of IT ontologies.

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Notes:

1 The article is regularly revised and updated by the International Taskforce on Assessment Center Guidelines (working under the auspices of the International Congress on Assessment Center Methods – <https://lp.ddiworld.com/eg/assessment-centers>) and published in the *Journal of Management*.

2 See, <https://journals.sagepub.com/doi/pdf/10.1177/0149206314567780>, p. 1248.

3 Since 1993, Professor Wiesław Łukaszewski has chaired the Committee of Psychological Sciences of the Polish Academy of Sciences.

4 See, <https://en.practest.com.pl/tic-intentio-consensio-test-evaluation-motivational-potential-work-situation>.

5 <https://platforma.test-tic.pl/users/login> (in Polish).

6 For instance: “You must be a good team player to succeed in the workplace.”

7 The psychologist delivers raw outcomes for further processing. The data are provided either via a structured CSV file or as completed questionnaires (in the latte case, an additional negotiable scanning fee applies).

8 In February 2015, Tomas Chamorro-Premuzic took the executive baton.

9 See, <https://www.businesswire.com/news/home/20200218005252/en/>.