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Consequences of compatibility level between employee and job characteristics: recommendations for HRM

Konsekwencje stopnia dopasowania pomiędzy cechami pracownika i pracy: rekomendacje dla Zarządzania Zasobami Ludzkimi

Doctoral dissertation

in the discipline of management and quality studies

Dissertation written under the supervision of

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Summary

With changes in the labor market going in two opposite directions: (1) more jobs with HIGH job autonomy & LOW level of routinization; (2) more jobs with LOW job autonomy & HIGH level of routinization, the question of who is better suited to these types of work is very important.

The empirically focused dissertation has tested whether employee working style can explain differences in their Well-being in jobs differ in autonomy/routinization level.

The main objective of the dissertation was to deepen HRM knowledge of risk factors resulting from the mismatch between POINT vs. INTERVAL working style [WIS] and job characteristics.

The operational goal of the dissertation was to carry out 3 research tasks and test 18 hypotheses. Using the methodological paradigm WIW, it has been shown:

(1) The correlational relationship: the higher job AUTONOMY, the higher employee well-being, the higher self-assessed health (analysis replicated on nationally representative Polish, Czech Hungarian, German and Turkish samples from European Working Conditions Survey, altogether 5668 employees).

(2) The preferential paradox: POINT employees feel worse in case of low job AUTONOMY (higher level of routinization) and at the same time prefer when asked about it, routinized work (analyses conducted on data from two conducted studies, in which a total of 849 employees - study B: 234 and study C: 615- participated.

The doctoral dissertation ends with recommendations for HRM.

Key words

Interval working style, person – job fit (P-J fit), job autonomy, routinization

Streszczenie

Wraz z idącymi w dwóch przeciwnych kierunkach zmianami na rynku pracy: (1) więcej miejsc pracy charakteryzujących się WYSOKĄ autonomią i NISKIM poziomem rutynizacji; (2) więcej miejsc pracy o WYSOKIM poziomie rutynizacji i NISKIEJ autonomii, bardzo ważne jest pytanie, kto lepiej nadaje się do tego rodzaju pracy.

W rozprawie doktorskiej mającej przede wszystkim charakter empiryczny sprawdzano, czy styl pracy może wyjaśnić różnice w dobrostanie pracowników w warunkach różniących się poziomem autonomii/rutynizacji. Głównym celem rozprawy było pogłębienie wiedzy ZZL na temat czynników ryzyka wynikających z niedopasowania punktowego vs przedziałowego stylu pracy [WIS] do standardów organizacyjnych.

Celem operacyjnym rozprawy była realizacja 3 zadań badawczych i przetestowanie 18 hipotez. Używając paradygmatu metodologicznego WIW, pokazano:

(1) Związek korelacyjny: im większa AUTONOMIA pracy, tym wyższy dobrostan pracowników, tym wyższa samoocena zdrowia (analiza powtórzona na polskich, czeskich, węgierskich, niemieckich i tureckich próbach reprezentatywnych z Europejskiego Badania Warunków Pracy, łącznie 5668 pracowników).

(2) Paradoks preferencyjny: PUNKTOWI Pracownicy czują się gorzej w warunkach niskiej AUTONOMII pracy (przy wyższym poziomie rutynizacji) i jednocześnie preferują, gdy są o to pytani, pracę zrutynizowaną (analizy przeprowadzone na danych z dwóch badań własnych, w których uczestniczyło łącznie 849 pracowników - badanie B: 234 i badanie C: 615.

Rozprawa doktorska kończy się rekomendacjami dla ZZL.

Słowa kluczowe:

Przedziałowy styl pracy, dopasowanie pracownik-praca, poziom autonomii pracy, rutynizacja pracy

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Introduction

*"**It is amazing how few people** can define their method and **working style**. Most do not even know that each of us works differently, which is probably why many **people copy other people's methods** of working and end up with **mediocre results**. [...]*

the way we work is unique**, because it comes from our personality. Whether personality is shaped by our genes or upbringing, the **process** of **personality formation is complete long before** we begin **our careers.

*Just like our talents and shortcomings, our **working method and style** are somehow **defined**. It is **possible to modify** them, but it is **not possible to change them completely**, at least not easily. We perform well not only when we do the work for which our innate talents predestine us, but also when our working method and style enable us to do it as well as possible."*

Peter Drucker, 2006[1]

Justification of the choice of the topic

More and more jobs require not only professional qualifications but also the special psychological predispositions, which are NOT included in job offers. In today's world, it is difficult to talk about vocational fit, because the same vocation can be performed in an environment that requires totally different psychological predispositions. One example: when introverts choose the IT profession, they could expect a quiet environment, devoid of social contacts. It may happen that their expectations will be fulfilled - they will be hired solely to write new software in a company that allows a lot of autonomy in the way they organize their work as long as the program is created by a certain deadline. However, an IT specialists may be employed in a **"front-line" position**, where their task is not only to supervise the IT system on an ongoing basis, but also to respond to calls and emails from various production departments and solve their problems as quickly as possible, even if they need **to answer phone calls at night**. It happens often that they have to drive to the company immediately, if all solutions proposed over the phone have proved to be ineffective. At the same time, they are required to attend **morning briefings** on the

[1] Drucker, 2006

operation of the production department, at which problems and ways to prevent them in the future are discussed. In the case of a multinational company, in the middle of the night they have to explain in English. The requirements described above are not a product of imagination, but a description of the work conditions in one of the companies operating in Poland. To sum up in one sentence, more and more employers are requiring employees to be ready to make quick decisions at different times of the day, to be resilient to stress, to be able to work closely in a team, or to provide delegated work - without including these requirements in job offers. Not all people can work under such conditions.

A meta-analysis of 27 studies with more than 600,000 employees in Europe, America and Japan found that risk factors associated with workplace stress increased the likelihood of cardiovascular disease by 10% to 40%[2]. Workplace stress, called a silent pandemic, can arise due to the lack of compatibility between employee and the job. Typically, five types of fit are examined: person & vocation [PV], person & job [PJ], person & organization [PO], person & group [PG], person & supervisor [PS]. In an extensive review of 172 studies[3], Person-Job fit was tested in 36% of them, the Person-Group in 12% and Person-Supervisor in 10%, Person-Organization in 64%.

The PJ misfit has several negative consequences for the employee and the organization, which is why it has been the subject of scientific research for years.

With the changes in the labor market that are going in two opposite directions: (1) more jobs with HIGH job autonomy & LOW level of routinization; (2) more jobs with LOW job autonomy & HIGH level of routinization, the question of WHO is better suited to these types of work is very important. The empirically focused dissertation will test whether employee working style can explain differences in effectiveness (in broad meaning) in jobs differ in autonomy/routinization level.

Key terms

The following terms were often used in the dissertation:

- Five types of fits: person-vocation [PV], **person-job [PJ],** person-organization [PO], person-group [PG], person-supervisor [PS].

[2] Kivimäki & Kawachi, 2015 after Nowak 2021

[3] Kristof-Brown et al. 2005

- Five job characteristics [JCM]: C1: Skill Variety C2: Task Identity C3: Task Significance C4: **Autonomy** C5: Feedback.
- **WIS- Working style** is the preferred way for planning and executing job tasks. The INTERVAL working style is associated with **imprecise goals** settings and ways of achieving them, **starting an action without planning**, and **switching between different tasks**. The opposite is the POINT working style, which is characterized by high precision focus, precise planning, and a sequential, **methodical way** of execution of tasks.
- **SSA** - [Sondaż Stylów Aktywności] is an on-line version of the ISA [Inwentarz Stylów Aktywności] developed in 1994[4] to measure individual preferences for goal setting and planning strategies at work.

Dissertation Structure

The focused on empirical work doctoral dissertation contains of 4 chapters and the Appendix.

Chapter 1, titled **'Literature review for hypotheses development'** is organized in 4 sections of different length, because their volume was determined by the number of research that have been identified. In the third decade of the twenty-first century, when the number of publications on any topic is growing exponentially (cf. e.g., Kowalczyk, 2019), a difficult decision was made to focus the literature review to the general theory of the Person-Job fit (PJ fit) with particular emphasis on the fit between the level of Job Autonomy and Working Style.

Looking back, I can say that the greatest influence on the theoretical model I adopted had the works of (in alphabetical order): Andysz, 2011; Czerw, 2017; Edwards, 2008; Eliasz, 2004-2011; Kristof-Brown et al., 2005-2017; Pazura, 2021; Hesketh & Neal, 1999; Humphrey et al., 2007; Grant et al., 2011; Grant & Parker, 2009; Hackman & Oldham's 1975-2010; Johns, 2006; Judge, et al., 2001 - 2015; Karczewski, 2019-2022; Spik, 2021; Turska, 2016; Twenge, 2007-2011; Wang & Wu, 2021; Wegman, et al., 2018; Wieczorkowska 1992-2022; Woods et al, 2019; Zalewska, 2003. A full list of the bibliographic items used in the dissertation can be found in the references section. The literature review consists of the following 4 sections.

[4] Wieczorkowska 1992-2022

The first section, titled **'Person-job [PJ] FIT'**, addresses the problem in the context of Person-Environment FIT and 4 other types of fit: (1) to vocation, (2) to organization, (3) to group, (4) to supervisor. The section describes also the Job DEMANDS-RESOURCE Model **(JDR),** used for PJ fit, that incorporates a wide range of working environment factors and employee characteristics into the analyses of consequences of different levels of fit. The chapter ends with the clarification of components of PJ fit and the characteristic of the consequences of fit/misfit between supplies and demands (job side) vs. abilities and needs (employee side).

The second section, titled '**Job characteristics'**, includes: [**JCM**] Job Characteristics Model[5] and impact of Routinization on Job Autonomy. Contains a literature review of **the routinization** and its **impact on job autonomy**. This section describes the 5 core job characteristics of the JCM: (1) skill variety, (2) task identity, (3) task significance, (4) **autonomy,** (5) feedback, and includes justification of the chosen for further literature review and analysis job characteristic factor: **autonomy** vs. employee characteristic: **working style**. The section ends the summary of both positive and negative consequences of routinization for organizations and employees.

The third section, titled '**Employee characteristics',** presents the review of the literature on employee characteristics: (1) commonly used by researchers - the BIG FIVE personality traits; (2) selected for empirical analyses of this dissertation: **working style [WIS]** as an explanatory variable and the need for achievement & reactivity as covariates. The section ends with a description of 8 studies on the correlates of WIS.

The fourth section, titled '**Consequences of PJ misfit**', addresses the description and examples of research of the main PJ misfit consequences**: job satisfaction, emotional balance** at work, **stress level** and **health.** The chapter ends with the summary of organizations implications such as **turnover** and **absenteeism** rates.

The last short and methodological - section titled **'Four types of measurement of PJ fit' describes** 4 ways of PJ fit's operationalization: (1) SUBJECTIVE - based on the subjective perception (**'This job suits me'**), (2) OBJECTIVE - measured in direct way and based on external criteria (e.g., education) and assessed by external observers such as recruiters, (3) PERCEIVED – calculation based on a comparison of attributes assessed

[5] Hackman & Oldham, 1975-2010

separately by an employee (applied in Study A and B), (4) PREDICTED[6] where employees are asked to evaluate TARGET DESCRIPTIONS of different jobs (applied in Study C).

The chapter ends with the selection for further consideration of one employee characteristic: Working Style (due to the identified research gap in the world literature) and one job characteristic: AUTONOMY is related to the level of Job routinization. When job constrains allow employee for a high level of autonomy – they can perform work in accordance with their working style.

Chapter 2, titled **'The methods and objectives',** presents the methodological paradigm 'WiW' used in the dissertation and SSA. It includes a description of the samples, procedures, and operationalization of the variables. Chapter 2 concludes by identifying the **objectives** of the dissertation and **research tasks**.

Chapter 3, titled **'Results'**, contains analyses of data from 3 **studies** in which a total of 849 **employees** (**own research -** study B: N=234, and C: N=615) and **5668 employees** participated (preexisting data from **European Working Conditions Survey**).

Chapter 4, titled **'Summary'**, contains a discussion of the results of the 3 studies, limitations, directions for further research and recommendations for HRM.

In the Appendix there are supplementary materials that are not necessary to track the course of the argumentation but are necessary for those who would like to learn about the distributions of variables, details of the analyses carried out, or to replicate the analyses carried out on other data (detailed description of research procedures).

General remarks how doctoral dissertation was edited

In accordance with the supervisor's recommendation, the following standards were used to maintain the transparency of the argumentation and readability of the results.

1. Due to the exponential growth of scientific publications on any topic, the literature review is limited to items relevant to the research problem. References to the literature are arranged in the following order: (1) WHAT and how (type of study) was demonstrated? On what sample (year of study, country, sample characteristics)? The lack of information on study type means that these are the most common correlational studies, inherently subject to low internal accuracy, resulting in the possibility of

[6] Wieczorkowska, 2022

obtaining apparent correlations. Unfortunately, at this level of development of management science, experimental studies are rare. From the point of view of knowledge synthesis, the names of study authors are the least relevant information, so instead of being in parentheses - as the 20th century APA standard dictates - they are placed in footnotes. This way of referencing **shortens the entire text by about 20%** and makes it easier to focus on the synthesis of results rather than on the history of research, the analysis of which is left to historians of science.

2. The volume of the doctoral dissertation should not exceed 150 pages. To facilitate the perception of the content, the most important concepts are distinguished using SMALL CAPS or **bolding**. New threads are separated in the American style by leaving **free lines**, instead of using uniform line spacing using indentation.
3. We do not avoid repeating the same words – scientific concepts – remembering that the doctoral dissertation is a scientific text, and the precision of the language is important. If we use synonyms, e.g., superior, leader, boss, it should be clearly indicated in the text.
4. When discussing the results of analyses, where there are many variables presented in the tables, we focus only on the factors relevant to the interpretation. We do not enter statistics and significance levels into the text if they are included in the tables. However, we introduce average values into the text even when they are not presented in drawings. Numbers are important, because the purpose of drawings is to illustrate the relationships found, so they can exaggerate the differences.
5. If the results of a series of studies are presented in a dissertation, the discussion of the results obtained can be presented together in Chapter 4.
6. Unless otherwise indicated in a specific table or drawing, graph, the source of all tables and figures presented in the dissertation is the work and analysis of the author of the dissertation.

Chapter 1: Literature review for hypotheses development

The starting point of this dissertation is the statement on changes in the labor market that are going in two opposite directions: (1) more jobs with no precise standards of task execution, and (2) more jobs with constant supervision[7] of behavior of employees who perform sequences of precisely described activities. In a job of the first type, neither the standard of performance of the product (e.g.: employee conflict resolution, strategic decision making) nor the standard of how it is performed can be easily determined. An example of this is the work of a strategic director who on a daily basis has to show great flexibility in the unpredictable business environment. Examples of the second type could be a salesman at McDonald's or a belt production worker in a car factory.

Employees in the XXI century experience an information overload. Knowledge workers spend between 30 and 60% of their time merely searching and processing information for later use. Most of the information used by companies is hard to index and store efficiently, from the point of view of its future availability on demand, without pursuing again time-consuming searches. It is estimated that no more than 20% of all business information is easily searchable. This should not be surprising, considering the fact that people mostly deal with image - and text-based information and computer systems are most efficient with processing numbers. The vast majority of textual and pictorial information is hardly re-usable, simply because no machine can understand its contents. Recent developments in the area of machine learning and deep neural networks give hope for the increasing accessibility of this kind of information.

Today, with a rapidly changing world, the influx and processing of information, accelerated technological development, the experience of a global pandemic and the consequent disappearance of one industry and the emergence of another, an employee is no longer guaranteed to work in one job for life, but rather will change his or her job at least several times. It is therefore important to find an answer to the question of what kind of employee is suited to a given job in order for it to be performed optimally. **Almost all employees search for well-being** and **success**. Ideal relations between employees and

[7] possible due new technological tools

the job are when the employees want to use fully their capabilities, and the employer allows them to do that.

The rise of automation and the Internet, as well as globalization, makes having one job or pursuing one profession a myth. Younger generations differ from the previous ones in that they can work anywhere in the world with different employers thanks to language skills and easy access to technology. After the Covid-19 pandemic, remote work has also gained popularity, making it even more flexible and free.

People manage informational overflows, try to ignore distracting stimuli, or attempt to deal with several tasks in parallel, i.e., multitask. Neither of these cognitive tools is cost-free. Ignoring stimuli irrelevant to the current task requires cognitive effort and has been shown to fail under cognitive load. Multitasking on a surface, appears to reduce information overload by providing a means to complete more tasks in a shorter time. However, heavy multitasking has been shown to reduce the ability to filter out distractors, resulting in worse task performance scores. Related research track has shown that banner-ads can be ignored by individuals, but at a cost of increase in perceived workload.

Multitasking, or switching one's attention among several different activities, has become an increasingly integral aspect of almost all jobs. Employers seek workers who can juggle tasks and work on several projects at the same time (by switching between them). Multitasking and frequent attention switching, may not always be more efficient than working on tasks sequentially. It is important to establish who may be better suited for jobs that involve constant changes and concurrently pursuing several tasks and who has avoided them.

1.1 Person – job [PJ] fit

The study of fit and its determinants is one of the most intensely developing trends in HRM, as many studies have shown that the level of fit is related to very important attitudes and behaviors at work. The concept of fit is very broad[8]. The theory distinguishes several dimensions and levels of this phenomenon. Person - Environment fit refers to the compatibility between the characteristics of the employees and the characteristics of their

[8] Andysz, 2011; Nowak, 2021

work environment. The basis assumption of Person – Environment **(PE)**[9] fit research is: "**For each employee**, there is **a specific environment** that is most compatible with employee personality traits". If an employee works in such an environment, it has positive consequences including improved work attitudes and performance and reduced stress and negative behaviors. In P - E fit there are needs and awards of an employee, person skills and environmental requirements, similarity between a person and her/his social environment. Fitting to the environment means that the fit is matching to the situation in which is the person as the well as social environment of the person. So far, research on P-E fit has been focused on an employee's fit to one of four types of environments such as job (P-J), vocation (P-V), organization (P-O), and group (P-G).

- **Person-vocation fit (P-V)** – Fit is the degree of similarity to the dominant type of professional personality in a given profession[10].
- **Person – job fit (P-J)** – match between a person's **KSAs [knowledge, skills, and abilities]** and the demands of a job (**abilities- demands fit)**, or the person's needs and interests and the resources provided by the job (**needs-supplies fit**).
- **Person – organization fit (P-O)** - probably the most extensively studied [11] fit between people and organizational characteristics like their goals, organizational culture etc. The PO fit is most strongly associated with feelings of attachment to the organization, such as organizational commitment and the intention to quit.
- **Person – group fit (P-G)** - match between employees and members of their immediate work groups.

Person **–** Job fit is a very important issue because employee well-being, attitudes, and behaviors at work depend on it. It is defined by the level of compatibility between the characteristics of the employee and the job or tasks they perform at work. In the literature, the PJ fit has been used to describe fit with occupations or vocations. In psychology, PJ is understood as the characteristics of a person and a job that together determine an individual employee's performance. For analyzing PJ fit, the most commonly is used the **Job DEMANDS-RESOURCE** Model **(JDR)**[12], which is an extension of classic concepts of occupational stress - mainly Karasek and Theorell's 1990 Demands-Control-Support model and Hobfoll's 1989 Conservation of Resources Theory. According to this model, employees feel best in a job when their needs (NEEDS) and competencies (ABILITIES)

[9] e. g., Jastrzębowska, 2020

[10] Edwards, 2008; Kristof-Brown, 2005; Wheeler at al., 2005

[11] O'Reilly, et al., 1991; Kristof, 1996

[12] Bakker & Demerouti, 2007

are matched with their resources (SUPPLIES) and demands (DEMANDS) of the job. The first two terms refer to the characteristics of the employee, the last two to the characteristics of the job.

SUPPLIES is the term for Job RESOURCES, which include prestige (social status) and good job compensation, good organizational climate (e.g., supportive co-workers), feedback of adequate quality and frequency, tasks quality (appropriate level of clarity, variety, complexity). SUPPLIES refer to those physical, psychological, social or organizational aspects of work that meet at least one of the following characteristics[13]: (1) Support professional goals achievement; (2) Facilitate tasks performance and the associated physiological and psychological costs; (3) Stimulate personal growth and employee's competence development. DEMANDS is a term for job REQUIREMENTS which lead to considerable effort and psychophysiological costs paid by employee. Psychological, physical, social and organizational demands include e.g., work overload work under time or social pressure with high level complexity of organizational procedures, requiring specialized expertise, work experience, good physical condition, poor working conditions, noise, emotionally demanding interactions with customers and co-workers, organizational constraints, as well as work monotony.

Although work DEMANDS are not in themselves a negative phenomenon, they can have a negative impact when meeting them requires a great deal of effort, straining the employee's energy.

Fundamental to an employee's professional well-being is achieving the right balance [FIT] between **resources (SUPPLIES) and requirements (DEMANDS).** Too many demands with too few resources lead to excessive strain, stress and exploitation of the employee, the reverse situation is also not desirable, as it leads to boredom and idleness.

The best fit is found when both SUPPLIES and DEMANDS are high. Research[14] has shown that employees achieve the highest levels of engagement, job satisfaction and highest productivity in challenging work environments that offer many resources (such as competency development, supportive relationships, efficient work organization). Such work environments facilitate work engagement and a sense of work. This means that organizations should offer their employees appropriate work challenges with

[13] Bakker & Demerouti, 2007; Spik, 2021

[14] See: Spik, 2021

simultaneous access to resources such as supportive feedback, social support and task variety, and competence development[15]. In the literature three ways to increase the fit are described[16]: (1) Increasing job resources (e.g., by requests for social support); (2) Transforming requirements into more professionally challenging (e.g., choosing to work on challenging, developmental projects); (3) Reducing stressors at work (e.g., avoiding contact with demanding customers). The SUPPLIES/Resources-DEMANDS/Requirements model has been empirically verified[17]. A positive correlation was shown between job burnout and the demands operationalized by overload, responsibilities, emotional demands, and the overlap between work and private life. In contrast, a negative correlation was shown between job burnout and such job resources as social support, autonomy, learning opportunities, and feedback[18]. The growth of the work resources makes it possible to predict an increase in labor engagement. In the meta-analysis[19] has been shown that resources at work, such as social support, autonomy, feedback, positive organizational climate, and self-efficacy, are significantly and positively associated with work engagement. In a study of Polish teachers[20] it has been shown that social and personal resources weakened the negative impact of job demands and were positively associated with measures of occupational well-being.

Employees differ both on the dimensions of ABILITIES and NEEDS[21]. The characteristics of an employee are devoted to a separate section, so here we will only briefly describe it. ABILITIES constitute an employee's personal resources[22] e.g., intellectual traits (genetically determined e.g., school, kinesthetic, emotional intelligence...), knowledge, competencies (professional, interpersonal), job experience etc. NEEDS – employees can vary e.g., in terms of preferred level of earnings, challenges, autonomy employment stability, prospects for development, quality of interpersonal relations, job stability, advancement prospects). Research focuses on 2 dimensions of PJ fit: **NS: needs- supplies** fit and **AD: abilities-demands** fit. The first dimension of **needs - supplies** concerns the relationship between the needs or desires of the employee and the supplies that a job provides. It is the most studied area of a person - job fit. There are two

[15] Bakker & Demerouti, 2014; Spik, 2021
[16] Tims & Bakker, 2010; Spik 2021
[17] e.g.; Schaufeli 2009; Halbesleben, 2010, Baka, 2013, Demerouti, Bakker, & Halbesleben, 2015
[18] Schaufeli, Bakker, & Van Rhenen, 2009
[19] Halbesleben, 2010; Spik, 2021
[20] Baka, 2018; Spik, 2021
[21] Bakker & Demerouti 2017; Nowak, 2021
[22] Wieczorkowska, 2022

situations here, one of excess and the second of deficiency. Negative consequences occur when job supplies fall short of personal needs, and positive consequences are maximized when environmental supplies exactly match personal needs.

The second **dimension of abilities-demands** fit occurs when the employee possesses the abilities (skills, knowledge, time, energy) to meet job demands. In a situation where environmental demands exceed personal capabilities, tension and negative affective consequences can result. The concept of matching requirements with capabilities forms the basis of traditional selection techniques designed to find qualified candidates for vacancies.

Job fit is also affected by personality[23]. Employees with a high need for dominance will value a managerial job more than those who do not like to dominate. More on employee's characteristic in a separate section.

1.2 Job characteristics

In studies on job **characteristics**, some examine the five characteristics identified in the job characteristics model[24] [JCM], some focus on work characteristics divided into job DEMANDS and job SUPPLIES/ resources categories[25], while others select only one or a few work characteristics depending on their research interests[26]. Such diverse examinations, make it difficult to develop an integrative knowledge base[27], so I would focus on one work characteristic – level of autonomy – and one employee characteristics – working style putting review of the study in the broader context.

1.2.1 [JCM] Job Characteristics Model

In addition to the division of job characteristics into SUPPLIES/resources and DEMANDS/requirements, which we will discuss later in this section, it is worth mentioning JCM. The Job Characteristics Model (JCM) [28] enumerates 5 core job characteristics:

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[23] Tranberg et al., 1993
[24] Brousseau, 1978; Brousseau & Prince, 1981; Wang & Wu, 2021
[25] Sutin & Costa, 2010; Wu, 2016; Wang & Wu, 2021
[26] Kohn & Schooler, 1978, 1982; Li et al, 2014, 2019; Wu et al, 2015; Wang & Wu, 2021
[27] Wang & Wu, 2021
[28] Hackman & Oldham, 1975-2010

C1. Skill Variety: defined as a degree to which a job requires various activities, requiring the employee to develop a variety of skills. More meaningfulness can be experienced in jobs that require different skills than in elementary and routine jobs.

C2. Task Identity: The degree to which the job requires the identification and completion of a workpiece with a visible outcome. More meaningfulness can be experienced in jobs that require involvement in the entire process rather than just being responsible for a part of the work.

C3. Task Significance: The degree to which the job affects the lives of others. More meaningfulness can be experienced in jobs that substantially improve the 'world'.

C4. Autonomy: The degree to which the job provides the employee with significant freedom, independence, and discretion to plan the work and determine the procedures in the job. For jobs with a high level of autonomy, the results of the work depend on the workers' own efforts, initiatives, and decisions; rather than the instructions from a manager or a manual of job procedures. In such cases, employees experience greater personal responsibility for their own successes and failures at work. How important is job AUTONOMY has been demonstrated by comparing the heart attacks' frequency in in the group of directors and in middle management. The **heart attack rate** was 40% higher in the second group whose work - although less stressful- is characterized by a lower than director's degree of autonomy and control[29].

C5. Feedback: The degree to which carrying out the work activities required by the job results in the employees obtaining clear, specific, detailed, and direct information about the effectiveness of their performance. New technology allows for real-time tracking and obtain feedback on errors and prompt the employee to fix mistakes even before the task is completed[30]. The popularization of multilateral feedback systems makes feedback from others more often. It has been shown that feedback from the job and others tend to correlate substantially[31]. When employees receive clear, actionable information about their work performance, they have better overall knowledge of the effect of their work activities and what specific actions they need to take (if any) to improve their productivity.

The scope of work characteristics has been recently expanded to include more characteristics, because many authors[32] have noticed that **social work context**, such as the interpersonal aspects, interactions, and social structure of work is missing in JCM. The importance of individual differences has been demonstrated by showing that some employees are more likely to positively respond to an enriched job environment than

[29] After: Lewicka, 2020

[30] Hesketh & Neal, 1999, Wegman, et al., 2018

[31] Humphrey et al., 2007, Wegman, et al., 2018

[32] Grant et al., 2011; Grant & Parker, 2009; Humphrey et al., 2007, Oldham & Hackman, 2010, Johns, 2006, Wegman, et al., 2018, Wang & Wu, 2021

others. The degree of employee autonomy is limited by organizational routines, so these will receive the most attention in the next section.

1.2.2 Impact of Routinization on Job Autonomy

Taylorism[33], popular in the twentieth century, assumed that achieving efficiency in production requires that the employee focus only on the task that must be done. Organization of work environment is aimed at eliminating any waste - time, energy, means of production.

The role of the manager is to break down complex tasks into smaller and simpler parts (such as WBS - Work Breakdown Structure in project management[34]) and provide employees with detailed instructions (training them in its scope) on how to perform the required activities. On the other hand, is to accurately perform the tasks assigned to them. Taylorism introduced the development of routines for each job that created an algorithm for performing each activity. In this way, the assumption of responsibilities by succession employee is seamless[35].

The basic slogans of routinization[36] based on the belief that there is always one best and most effective way to perform each activity are the following.

- **standardization** - meaning uniform rules for performing most processes in a company which, thanks to repeatability, allow one to increase the speed of action and facilitate the measurement of the effectiveness of the tasks performed;
- **optimization** - aims at the efficient use of the means of production;
- **specialization** - each employee performs one activity, which allows her/him to reach perfection in performing her/his tasks.

Routinization of tasks is treated as a natural activity in an organization[37] that ensures its efficiency[38]. Routinized behaviors[39] are repeated, stable and relatively reliable patterns of activity[40]. A variety of activities can be routinized by means of appropriate procedures, e.g.: testing the efficiency of vehicles for car service customers, assembling equipment, or working with a cash register in a supermarket[41]. Routinized activities are intended to

[33] Taylor, 1912 after Karczewski, 2022
[34] Project Management Institute, 2013 after Karczewski, 2022
[35] Piotrowski, 2013
[36] formulated by Frederick Winslow Taylor
[37] Orlikowski, 2000
[38] Stinchcombe, 1990
[39] Forgas, 1983
[40] Nelson & Winter 1982
[41] Burns & Stalker 1961

prevent errors, minimize the degree of variation in performance and eliminate uncertainty about the performance of the expected service[42].

Routine behaviors described in the literature fall within a range that is constrained on the one hand by automatically repeatable standard operating procedures (e.g., working on a production line), and on the other hand by the use of a general pattern of previously routinized activities, with the possibility of choosing a specific behavior and method of execution[43] (e.g., good practices in project management and project methodologies are based on this).

Work with the highest degree of routinization is based on activities established in advance based on previous experience and lessons learned from repeatedly performing the task[44]. Depending on the type of organization, they may describe activities and sequences of actions in detail. The employer usually requires them to be performed in a predetermined form, and the employee is not allowed to change them or interfere with their basic form.

In highly routinized work, there is a pattern of obligatory activities, categorized guidelines and rules of action, compliance with which minimizes the effort required[45]. If the customers of the organization are stable, homogeneous, and the specific processes of conduct are well researched, usually the workflow of such an entity is highly routinized[46].

Organizational routines are compared to ready-made scenarios of action[47]. They may involve employee's cognitive resources to some degree because they often involve decision points, choices, and indicate which branch of action to use in a given situation (e.g., different customer reactions and different ways for an employee to respond to each). However, they do not require any deliberate exploration, because all major decisions are made in advance[48].

In complex organizational structures, at the highest level we deal with a kind of mega-routinization. In this case, are at least several high-level routines, broken down into smaller, more routinized activities assigned to the appropriate departments. Mega-routines are critical to the company and represent a significant portion of the company's

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[42] Parasuraman et al., 1991
[43] Pentland & Rueter, 1994
[44] Cheng & Miller, 1985
[45] March & Simon, 1958
[46] Hage & Aiken, 1969
[47] Levitt et. al, 1999
[48] Marc & Simon, 1958; Feldman & Pentland, 2003; Abbott, 1992

activities and capabilities. Such routines may be invisible to managers responsible for individual units but are important to the company from the perspective of the overall organization[49].

Routinized activities consist of two aspects[50]: ostensive and performative. A prototypical version of the **ostensive** aspect of routines is **a ready-made procedure** on what activities should be done and how they should be done in a specific organizational process. In a recruitment procedure the description of activities might include requirements for placing advertisements in specific newspapers, specific websites, how to screen and select candidates, how to communicate the results... This intensive aspect is usually codified as a standard operating procedure with ready-made forms or can exist as an accepted norm[51]. However, the implementation of the recruitment process is still influenced by the subjective interpretation of its participants[52]. **The performative** part of a routine is the specific actions taken by specific people involved in a routinized process at a specific time. Organizational routines defined as repetitive, recognizable patterns of interdependent actions are not static, unchanging objects, because they are capable of endogenous changes.

Although routine activities are commonly viewed as a recreation of the past, performing routines may also require adaptation to contexts that require specific or continuous change[53]. The use of routines may require improvisation. Even when working with detailed descriptions of the expected sequence of steps, participants may introduce variations in their routines[54]. They interpret their actions to understand what they are doing, and although their choices of how to proceed sometimes seem automatic or unreflective, more often than not there is the possibility of making a decision not anticipated by the transcript of the routine[55]. Changes in routines are often the result of external pressures to improve performance. They may reflect in themselves a reaction to certain organizational goals[56].

The most common mistake is an incorrect understanding of how tasks are actually performed. A change in one part does not necessarily lead to a change in another.

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[49] Winter, 2000; Lillrank, 2003
[50] Bourdieu, 1990, Feldman & Pentland, 2003 after Karczewski, 2022
[51] Feldman & Pentland, 2003
[52] Schutz, 1967
[53] Emirbayers & Mische, 1998
[54] Rocco & Warglien, 2000
[55] Giddens, 1984; Orlikowski, 2000 after Karczewski, 2022
[56] Cohen et al., 1996

Overestimating the importance of the ostensive part of a routine leads managers to underestimate the importance of the adjustments and improvisations that employees make[57]. Routines emerge that have minimal opportunities to make changes to routines as they are performed[58]. The performative aspect of routines is often improvisational. Even activities carried out by the same workers many times should be adapted to changing contexts[59]. The same as musical improvisation involves adjusting to what others are playing. Improvisation in performing routine activities involves adjusting to the team and the context, just as a musician improvising responds flexibly to what is happening while playing[60]. Sometimes, seemingly new decisions are recombinations and adaptations of old routines[61]. The execution of a corporate hiring routine should be sensitive to context, for example, the labor market situation. It may be necessary to adapt a corporate routine to work together across departments, which may set a precedent and generate analogous expectations for subsequent recruitments. It is good if routines evolve and change to adapt to the changing environment[62]. For example, routinized training should be modified due to the lower or higher motivation of the trainees or their lack of knowledge. These changes must ensure continuity of the training process while adapting to unforeseen events during the day[63]. Changing processes usually involves high costs, e.g., it takes a long time to implement or change hiring or accounting processes, and the people affected usually have limited confidence in the new activities. Evolutionary modifications of routines do not require a lot of resources from the organization[64]. Still some elements of Taylorism - called digital in the 21st century - are applied[65].The main goal is to reduce the number of errors, maximize the predictability of employee behavior and the results of their work. In the 21st century, modern technologies and computer programs are used to measure the effectiveness of work. The negative side of control is the monitoring of employees, tracking their movements with the help of video surveillance (production) or GPS technology (transport). This allows tracking employees' mistakes, but at the same time increases their stress level.

[57] Feldman & Pentland, 2003
[58] Feldman & Pentland, 2003
[59] Weick, 1998
[60] Feldman & Rafaeli, 2002
[61] Laureiro-Martinez, 2014
[62] Feldman, 2000
[63] Giddens, 1984
[64] Feldman & Pentland, 2003
[65] Kulesza et al., 2011

The term **"low-routinized work"** (non-routinized work) is used to describe tasks in certain areas of professional organizations, such as hospitals, law firms, or consulting firms[66]. These places are characterized by a highly unstable environment and a frequent unpredictability of the actions to be taken. The term "certain areas" is intentionally introduced here. Even in a situation where the work itself cannot be routinized, as exemplified by the work of a surgeon, it is surrounded by activities that are maximally routinized. In the example used, this would be patient preparation, tools, etc. These activities are mastered to perfection by the teams and are performed in a matter of seconds, and even fractions of seconds are decisive.

Low-routine work consists mainly in managing partially structured or unstructured problems. Tasks are based on reliable, but general, input, variable details, extended and unfixed time horizons, not entirely clear data from inside and outside the organization, and distributed or general scope.

In a non-routinized process, the set of different types of input varieties is larger. It is also less stable than the limited and process-reasonable set that we face in processes with a high and medium degree of routinization. It cannot be described exhaustively before application. Thus, a ready-made pattern of operation cannot be applied. A non-routinized process does not have the required and described type of input varieties as a starting condition. The same applies to the output data, which are not sufficiently described before the process starts.

It is possible to recognize situations where the process being executed does not have a corresponding routine. Therefore, input that does not fit existing categories should not be discarded. The input lacking a ready-made pattern of operation is interpreted and assigned to activities to develop new algorithms. This may require a search for new input and several iterations of trial-and-error to try to stabilize such a process into a predictable form at some point. A **non-routinized** process may turn into a highly or moderately routinized process after some time. In a situation where both **activities** and **inputs** remain **unpredictable**, it is necessary to leave the process **unroutined** keeping in mind the risk that it will become **chaotic**[67].

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[66] Pava, 1983

[67] Lillrank, 2003

The line between high and low levels of routinization can be fluid. Routinization cannot be equated solely with repeated behavior. An employee may recognize familiar patterns and, after careful consideration, choose a response similar to that of the past. Such a behavior cannot be considered an example of routine despite observable repetition[68].

Note that **seemingly non-routinized** work may still exhibit a **high degree of regularity**. In studies carried out in technical departments of organizations[69], it was found that the apparent irregularity of the observed behavior maintained a high degree of stability (stability in variability). This is **a behavioral signature**, that is, characteristic patterns of behavior seemingly difficult to observe, but regular for given situations.

In organizations with routinized processes most of their decisions can be made without involving top management, which is seen as a sign of high organizational effectiveness[70]. Research[71] on decision-making suggest that **routinization protects** against the occurrence of **groupthink** syndrome (when imposed self-censorship of group members results in too rapid consensus decisions). The occurrence of the syndrome is favored by the isolation of the group from its surroundings and the closing of the group in its own world[72]. It has been shown that groups with high cohesion without proper decision-making routines make inappropriate decisions. The reanalysis of the evidence that this conclusion was false. After a careful analysis[73]of a huge amount of data, it turned out that cohesion should be excluded from the list of predictors of **groupthink** syndrome.

The need to incorporate methodical decision-making routines was also demonstrated in a case study[74] with jury deliberations, which suggests the **effectiveness** of **methodical decision-making procedures**, such as parliamentary procedure and information retrieval procedure.

The degree of routinization in an organization depends on the **organizational culture**. In **bureaucratic organizations**, the aim is to have the most precise and detailed description of all activities[75], so the rules created limit the freedom of behavior during the performance of work. There is no possibility of modifying the way of performing

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[68] Weiss & Ilgen, 1985; Lillrank, 2003
[69] Neck & Moorhead, 1992
[70] Zollo et al., 2002, Winter, 1995
[71] Neck & Moorhead, 1995
[72] Janis, 1972, Callaway & Esser, 1984
[73] Whyte, 1998
[74] Neck & Moorhead, 1992
[75] Dobrzyński, 1978

activities, because a separate procedure[76] is created for each situation. This gives a sense of security, order, and certainty of the result of work, which is necessary in many industries, such as drug or car manufacturing, accounting, or during the procedure of preparing a patient for surgery in the hospital. The opposite of bureaucratic culture is a **pragmatic culture** in which detailed rules of operation are not important.

Routinization, on the one hand, allows for stability, regularity, and continuity, i.e., the characteristics of bureaucracy[77]. On the other hand, however, bureaucracy (more precisely, its negative variant, bureaucratism) is considered a source of **inertia**[78], **inflexibility**, unreflectiveness[79], decrease in skills, demotivation[80], stagnation[81], and competence traps[82]. Hence, some researchers equate routinization with bureaucracy[83], and routinised activities are considered to lock organizations into rigid and unchangeable patterns of activity.

Organizational routines can be multi-stakeholder, and thus difficult to observe and understand from the perspective of an ordinary employee. Landing an airplane is a highly routine process that must be analyzed systemically, because analyzing the work of only one employee does not capture the essence of the process.

The routinization process allows companies to **deal with** the **uncertainty** and **complexity** of organizational goals. It simplifies complex and complicated tasks by breaking them down into simpler and shorter organizational procedures. Simple-to-repeat patterns and patterns of performed activities are introduced. Therefore, several people can perform a more complex task after being broken down into simple components, such as building a car. Therefore, routinization is often treated as a simplification of complexity[84].

Routinized activities are a key component of **organizational learning**[85], which aims to protect against failure through knowledge of similar and solved problems in the past[86]. They facilitate rational management without "reinventing the wheel".

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[76] Zbiegień – Maciąg, 1999
[77] Stinchcombe, 1959; Feldman & Pentland, 2003
[78] Hannan & Freeman, 1983
[79] Ashforth & Fried, 1988
[80] Ilgen & Hollenbeck, 1991
[81] Hummel, 1987
[82] March, 1991
[83] Blau, 1955; Feldman & Pentland, 2003
[84] Baba & Jamal, 1991
[85] Argote, 1999; Feldman & Pentland, 2003
[86] March, 1991, Gittell, 2002, Levitt & March, 1988

The description of routinized activities acts as a memory[87] - a way of storing knowledge. Routines can be a permanent feature of a company and determine its possible behavior, just like its environment[88] and can be transferred between organizations - as in project management methodology, where the processes described can be implemented unchanged in different organizations. To explain a company's behavior is to explain its routines, and to model a company is to model its routines[89].

Routines are also important in the interaction between the environment and companies[90], facilitating cooperation between companies[91], information acquisition, communication, conflict resolution, decision making, or managing the cooperation process at a general level. Interorganizational routines can be seen as substitutes for coordination mechanisms. Companies that have developed a history of working with a partner and a corresponding set of routines have less need to approach the board or owners. Routinization can help resolve conflict (reaching a truce)[92] assumes that routinization about how work gets done avoids procedural wars in organizations. On the other hand, routinization can be seen as a means to impose management control over employees[93], which does not reduce conflict only suppress it.

It is important to remember that there are organizations (or departments of organizations) where the level of routinization should be very low by design, because of the instability of the environment. These include, for example: development departments of companies creating advanced technologies which are not yet available on the market, or some departments of advertising companies based on creativity.

The possibilities of routinizing processes in organizations also depend on the stability of the environment. Large organizations operating in stable industry structures have a higher potential for routines than organizations operating in highly markets dynamic[94]. Where markets are moderately or lowly dynamic, an organization's capabilities translate into its routines, which take the form of complex, detailed, and analytical processes based on existing knowledge, linear execution, and predictable outcomes[95].

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[87] Huber, 1991
[88] Nelson & Winter, 1982; Baum & Singh, 1994; Feldman & Pentland, 2003; Abbott, 1992
[89] Lillrank, 2003
[90] Lillrank, 2003; Nelson & Winter, 1982
[91] Zollo et al., 2002
[92] Nelson & Winter, 1982
[93] Braverman, 1974
[94] Eisenhardt & Martin, 2000
[95] Lillrank, 2003

Routines can retain elements of adaptation to past constraints, e.g., bypassing technological obstacles that no longer exist, and reflect human inertia, distrust, and everyday organizational difficulties in adjusting to a new way of doing things.

The intelligent design of routines is a key element. Before trying to change it, it is important to examine the reasons why a particular routine was created in the organization and to be aware of the existence and importance of the costs of changing habits.

When the experience of an organization is automatically transferred to different situations, the activation of routines can have negative consequences. The learned automaticity caused Soviet troops secretly in Cuba, disguised as civilians, to form ranks in the marina, thus deconfirming the nature of the action[96]. Routines enable effective and coordinated action while introducing the risks associated with performing tasks in an automatic manner.

The manifestations of a too low degree of routinization or inadequacy of the level of routinization to the real conditions of the organizational environment are the following[97]:

- constant improvisation of managers and employees due to lack of systematized rules for solving the same problems;
- excessive time spent by the manager explaining to subordinates how to perform repetitive tasks and prolonged adaptation of new employees in understanding the activities of the implementation of processes;
- bypass current procedures and creating parallel, unofficial, repetitive ways of performing tasks.

The manifestations of too high or inadequate degree of work routinization are:

- helplessness of employees in situations not covered by routines;
- monotony of work perceived by employees;
- lack of flexibility of processes causing zero freedom of choice of actions which could bring benefits to customers (e.g., dissatisfaction of a fast-food restaurant customer because of the lack of possibility to change a particular dish in the set).

The following reasons for introducing routines in an organization are listed[98]: (1) to increase the reliability and efficiency of processes by optimizing the required activities to

[96] Allison, 1971
[97] Grajewski, 2007
[98] Cohen & Bacdayan, 1994

be performed; (2) to increase the speed of processes by optimizing the time of individual activities; the routine describes the optimal way, from the point of view of a particular organization, to perform the process; (3) to repeat a sequence of the same activities and actions, e.g., in accounting; (4) to implement market-based, systematized practices; (5) to increase managerial control; (6) to optimize costs.

Choosing the appropriate level of routinization for a particular organization requires taking into account the consequences that such a decision entails. A high level of routinization, such as in financial audits or the work of accountants, means that the procedures for performing a given activity are defined in detail. Both positive and negative consequences can be mentioned.

The **positive consequences of routinization** include[99]:

1. Task routinization allows large amounts of information to be processed quickly with less effort than when it does not exist. It contributes to improved efficiency[100], maintains process stability, and enables significant time savings. Routinized activities support organizational processes. The systems of procedures used provide the expected control and help to identify and then solve problems. For example, in the moment of appearance of discrepancies between the actual state and the state presented in detail in documents describing the course of the process[101].
2. Routines act as organizational memory[102] and are an important part of organizational learning[103].
3. Routinization of activities allows companies to deal with complexity and uncertainty within bounded rationality. Companies differ by developing different routines, even in similar environments or circumstances. Routinization through this is a source of distinctive character and competitiveness for the company[104].
4. Work routinization enables effective use of human resources. By using reliable historical data collected during the execution of identical or similar processes, it simplifies the forecasting of time-consuming tasks and necessary human resources needed to perform specific activities.

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[99] See: Karczewski, 2022
[100] Eisenhardt, 1989
[101] Feldman & Pentland, 2003; Feldman & March, 1981
[102] Huber, 1991
[103] Argote, 1999
[104] Lillrank, 2003

5. Managers with a high propensity for routinization stabilize their expectations and perception of the business environment around them[105]. The benefits of routinization of past solutions and the optimization of the resources used thus achieved may lead to better decisions that cannot be routinized.
6. Routinized activities release employees' cognitive resources, thus contributing to the creation of space for creative and innovative activities. The freed resources may translate into an increase in the number of employee proposals for improvement of the work environment and processes used.
7. Routinization of work is associated with a reduction in the level of employees' stress, resulting from the risk of results uncertainty, affecting their level of satisfaction[106]. On a psychological level, the routinization of daily life contributes to an increased sense of security[107].

The **negative consequences of routinization** include[108]:

1. Routinization of processes can lead to **an unreflective and rigid** attachment to a particular way of doing things, which in turn can lead to the same mistake[109] being reproduced over and over again just like a software error being repeated in successive versions of the software, because of the programmer's attachment to one unreflective way of writing code.
2. It is possible that the internalization of routines has occurred to such an extent that the procedures become a value in themselves, more important than the purposes for which they were created[110]. Often in such organizations, supervisors do not tolerate exceptions from previously accepted procedures.
3. Employees may perceive routinization as a deliberate restriction of their freedom[111]. The result of a high degree of routinization may be a situation in which the system of procedures controls the person, rather than the person controlling the system. This in turn leads to alienation in the work environment and a feeling of helplessness when the employee does not know how to deal with a situation not covered by a procedure. Routinization is then presented as causing problems with adaptation to the frequently

[105] Cohen & Bacdayan, 1994
[106] Karatepe, Avci & Arasli, 2004
[107] Giddens, 1984; Karatepe, Avci & Arasli, 2004; Tierney & Farmer, 2002; Feldman, Pentland, 2003
[108] See: Laureiro-Martinez, 2014; Karczewski, 2022
[109] Gersick, Hackman, 1990
[110] Pasieczny, 2013
[111] Ross & Wrigh, 1998

changing environment and creating inflexibility in the organization. The result may be **a loss of employee engagement**[112]. An alternative way of "rebelling" is creating **unofficial routines** (the so-called trodden paths leading to shortcuts, outside the official circuit).

4. Research on the introduction of new technologies and manufacturing innovations[113] show that even the most advanced new systems can be useless if their introduction has not been preceded by an appropriate analysis of the company's system of routinized tasks. An example is the failed attempt to replace the QWERTY keyboard with an alphabetical layout. Habituation to the old layout won out.
5. Learned automatisms can be dangerous, e.g., the vigilance of control tower operators accustomed to answering every safety question with the words: "all right" from the control tower operators is thus weakened[114].

1.3 Employee characteristic

It has been shown[115] that the employee characteristics: (1) are an important for choosing a profession[116], (2) manifest in the way employees work[117], (3) influence their professional effectiveness and level of performance of professional tasks[118], (4) are associated with a commitment to work[119]. The summary[120] of meta-analyses of 15 research shows that: (1) diligence is an important predictor of the level of task performance in various occupations; (2) emotional stability (low neuroticism) promotes high overall job performance. It was also discovered curvilinear relationships between effectiveness and, for example, **diligence** (after crossing a certain threshold of diligence and its further increase does not result in better work results).

In studies on **employee characteristics**, most researchers focus on all the Big Five traits[121], while many others[122] focus on specific traits, such as locus of control, proactive

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[112] Rockart, Mitchell, 2006
[113] Zuboff, 1988; Womack et al., 1990
[114] Gersick & Hackman, 1990
[115] Jurek & Olech, 2017
[116] Holland, Johnston & Asama, 1994
[117] Jurek & Olech, 2017
[118] Hossiep & Paschen, 1998; Judge, Rodell, Klinger, Simon & Crawford, 2013; McCrae & Costa, 2005
[119] Inceoglu & Warr, 2011
[120] Le, Oh, Robbins, Ilies, Holland & Westrick, 2011
[121] Sutin & Costa, 2010; Wu, 2016; after Wang & Wu, 2021
[122] Wu et al, 2015; Li et al, 2014; Kohn & Schooler, 1973; Gecas & Seff, 1989; Mortimer & Lorence, 1979; Wang & Wu, 2021

personality, trait optimism, intellectual flexibility, self-directedness or self-concept. Such diverse examinations, make it difficult to develop an integrative knowledge base, so I would focus on one only, which will be defined later.

Holistic understanding of personality means seeing it as something that broadly represents individuality. Personality can be defined in different ways:

For example, as:

- "an individual's characteristic pattern of thought, emotion, and behavior, together with the psychological mechanisms — hidden or not — behind these patterns"[123].
- "relatively enduring patterns of thoughts, feelings, and behaviors that distinguish individuals from one another"[124].
- "a spectrum of individual attributes that consistently distinguish people from one another in terms of their basic tendencies to think, feel, and act in certain ways"[125].

The trait-based approach like The Big Five, The Big Three, The Big Seven[126] has been mostly studied in the literature on personality at work over the last three decades.

Simplifying the findings, the following relationships between personality traits and work performance have been shown in the research:

1. the higher OPENNESS to experience, the higher effectiveness in training and learning settings[127]
2. the higher CONSCIENTIOUSNESS, the better performance, and more proficiency at their core tasks[128], the higher "contextual performance"[129]
3. the higher EMOTIONAL STABILITY, the better performance[130]
4. the higher AGREEABLENESS, the better teamwork[131]
5. the higher EXTRAVERSION, the better performance in jobs that require assertiveness and strong motivation to be leader [132]
6. the higher intensity of the DARK TRIAD of personality traits — Machiavellianism, narcissism, and psychopathy — the worse job performance, the more frequent counterproductive work behavior[133]

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[123] Funder, 1997; after Wang & Wu, 2021

[124] Roberts & Mroczek, 2008; after Wang & Wu, 2021

[125] Ones et al, 2005; after Wang & Wu, 2021

[126] Wang & Wu, 2021; after Wang & Wu, 2021

[127] Barrick et al.,2001; after Wang & Wu, 2021

[128] Barrick & Mount, 1991; Barrick et al., 2001; Bartram, 2005; Dudley et al., 2006; Hough, 1992; Hurtz & Donovan, 2000; Salgado, 1997; Tett et al., 1991; after Wang & Wu, 2021

[129] Chiaburu et al., 2011; Dudley et al., 2006; Hurtz & Donovan, 2000; LePine et al., 2002; Organ & Ryan, 1995; after Wang & Wu, 2021

[130] Hogan & Holland, 2003; Hough, 1992; Hurtz & Donovan, 2000; Salgado, 1997; Tett et al., 1991; after Wang & Wu, 2021

[131] Barrick et al, 2001; Bartram, 2005; Chiaburu et al., 2011; Hough, 1992; Hurtz & Donovan, 2000; Hogan & Holland, 2003; Mount et al, 1998; after Wang & Wu, 2021

[132] Barrick et al., 2001; Bartram, 2005; Bono & Judge, 2004; Hogan & Holland, 2003; after Wang & Wu, 2021

[133] Grualva & Newman, 2015; O'Boyle et al., 2012; Wang & Wu, 2021

7. the higher score on HONESTY — HUMILITY in the HEXACO model, the higher work-related outcomes[134,135]
8. the higher PROACTIVENESS (inclination to initiate and enact changes in their environment), the higher work performance and more career success, higher engagement, and lower chance for burnout[136].

Moreover, personality matters for employees' well-being. In particular, emotional stability and extraversion are the best predictors for job satisfaction and low levels of burnout[137].

Understanding employees' personalities is also considered crucial for unlocking individuals' potential, which consequently lifts their performance and helps organisations to achieve their goals. Hence, personality testing can also play a substantial role in talent development and retention strategies[138].

Instead of thinking (as the previous list suggested) that certain personality traits are associated with better performance, we need to remember that each personality trait indicates that individuals have the **potential to excel in different competency** potential areas (e.g., extraverted employees have higher potential to develop in "leading and deciding").

Therefore, by assessing and understanding each employee's personality, organizations can craft tailored personal development plans to facilitate career development within organization. Questionnaires are also used broadly to help team members to develop better awareness of their own and each other preferences and styles at work, hence unpacking team dynamics and improving team effectiveness[139].

1.3.1 Need for achievement

A number of theorists have focused their research on understanding 3 basic social needs for: affiliation, power, and achievement. From the point of view of the topic of this dissertation, the most important among them is the need for achievement, because it drives performance. The need for achievement is associated with intense, prolonged, and

[134] Ashton et al., 2014; Wang & Wu, 2021
[135] Ashton & Lee, 2019; Wang & Wu, 2021
[136] Alarcon et al., 2009; Fuller & Marler, 2009; Thomas et al, 2010; Tornau & Frese, 2013; Wang & Wu, 2021
[137] Alarcon et al., 2009; Judge et al.; Wang & Wu, 2021
[138] Bartram & Guest, 2013; Wang & Wu, 2021
[139] Wang & Wu, 2021

repeated efforts to accomplish something for individual important. Achievement-motivated people would say that achieving the aim, task completion, gives greater personal satisfaction than receiving praise or recognition. Financial reward is regarded by them as a measure of success, not an end in itself. They constantly look for improvements and ways to do things better. Compared to LOW level, employees with HIGH level of need for achievement (also called **Growth Need** Strength) respond more positively to the opportunities provided by jobs with high levels of all five core characteristics: skill diversity, task identity and significance, autonomy, feedback. It has been shown that in sales representatives[140] achievement motivation is mediating the relationship between employee agreeableness, diligence, and extraversion and sales performance.

1.3.2 Reactivity

Reactivity is perhaps the most important temperamental characteristic in adapting to job requirements, as it directly reflects the energetic resources that an employee possesses. It is defined as "a tendency to react intensively to emotion-generating stimuli, expressed in high emotional sensitivity and low emotional endurance"[141]. A high REACTIVE person [HR] will feel overloaded by work that is emotionally intensive, such as in fast-paced and chaotic work environments like a sales department. A comparison of how different individuals that have different energetic resource, in this case characterized by low or high reactivity, respond to tasks that are more or less stimulating is shown in Figure 1. In the analysis of the relationship between the level of arousal and the level of task performance (efficiency), it is apparent that in **HR [highly reactive]** people, the level of arousal increases rapidly, reaching a plateau, and then rapidly decreases. In contrast, **LR [low reactive]** people's performance level also increases slowly; the **plateau interval of arousal** is much broader than in HR persons, so LR can adjust more easily to the working conditions. This also affects how both types of people perform under time pressure. What causes a feeling of "crumbling under pressure" in some (high reactive) creates a "winging it" effect in others (low reactive). They feel energized and get on with the task with increased energy. They perform better under time pressure. High reactive people will feel

[140] Barrick et al., 2002

[141] Strelau & Zawadzki, 1995

safer in less stimulated situations, for example, when everything is predetermined: deadlines, rules of action, and cooperation.

HR employees feel overloaded in high-paced and chaotic environment - e.g., sales department.

LR employees who have a strong need for stimulation and will suffer in the environment with low stimulation value, e.g., when attending a boring multi-hour meeting, experience discomfort, sometimes even in the form of unconscious tension. They may compensate for the lack of external stimulation by seeking internal sources of activation, such as fantasies, intense imaginations, plastic daydreaming, or by engaging in activity (asking questions, making formal requests, writing comment letters to a neighbor).

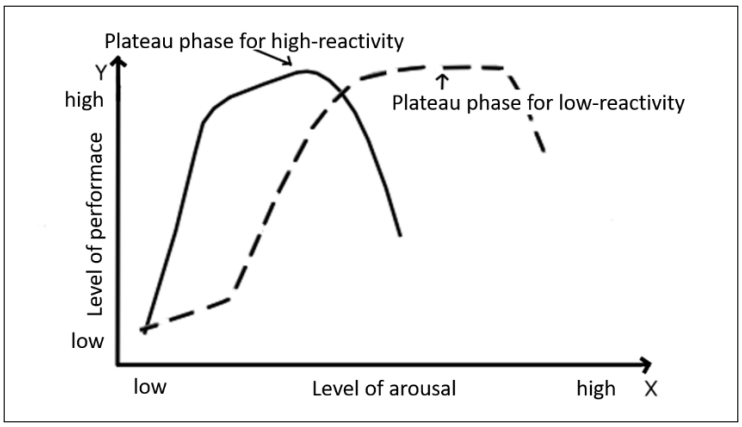


Figure 1 Yerkes-Dodson Law for LOW and HIGH reactive persons. Source: Wieczorkowska & Sieradzka, 2018

Low levels of reactivity are associated with lower baseline levels of arousal, so low-REACTIVES tend to be chronically under-aroused and bored. They need strong stimulation to get them to an optimal level of performance. They tend to perform better in situations where they are highly stimulated by external events.

Conversely, individuals high in reactivity tend to be chronically over-aroused. They need peace and quiet to bring them up to their optimal level of performance. They tend to do poorly in situations rich in stimulation, because they are above their optimal arousal, or stimulation threshold, for the best performance. Generally, the higher the reactivity, the lower the need for stimulation for optimum performance. The next part of section is completely dedicated to working style literature.

1.3.3 Working style

There is extremely difficult to find research conducted on work/ working styles (both terms are used while searching in scientific databases such as Scopus or Web of Science with very few items. One example is 2021 publication, in which one can read work styles are vital to both employees and managers[142]. Unfortunately, further reading showed that working style is understood quite differently, as the authors argue that (1) working styles reflect the outcome and quality of a training program; (2) during an era where most job applicants hold similar qualifications, especially functional competencies, working styles offer a way to distinguish candidates that are most suitable for the job and organization culture; (3) working style assessment can help with promotion decisions, as employees with certain working styles tend to be more efficient; (4) measuring working styles enables an organization to keep track of the level of effort made by its employees over time and compare the amount and quality of effort required. They claim that working styles are not static but influenced by a wide range of variables; including policy, structural change, and environmental transformation.

The tool used by the authors is called WSA[143] [Work Style Assessment] and consists of following 16 items:

1. Achievement: Job requires establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks;
2. Initiative: Job requires a willingness to take on responsibilities and challenges;
3. Persistence: Job requires persistence in the face of obstacles;
4. Leadership: Job requires a willingness to lead, take charge, and offer opinions and direction;
5. Cooperation: Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude;
6. Concern for Other: Job requires being sensitive to others' needs and feelings, and being understanding and helpful to others on the job;
7. Social Orientation: Job requires preferring to work with others rather than alone, and being personally connected with others on the job;
8. Self-Control: Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations;
9. Stress Tolerances: Job requires accepting criticism and dealing calmly and effectively with high-stress situations;

[142] Warr & Conner, 1992

[143] Messer & Ureksoy, 2014

10. Adaptability: Job requires being open to change (positive or negative) and to considerable variety in the workplace;
11. Dependability: Job requires being reliable, responsible, and dependable, and fulfilling obligations;
12. Attention to Detail: Job requires being careful about details and thorough in completing tasks;
13. Integrity: Job requires being honest and ethical;
14. Independence: Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done;
15. Innovation: Job requires creativity and alternative thinking to develop new ideas for and answers to work-related problems;
16. Analytical Thinking: Job requires analyzing information and using logic to address work-related issues and problems.

Respondent has to answer questions: How important is e.g., Self-control to the performance of your current job? by using rating scale (1) not important (2) somewhat important (3) important (4) very important (5) extremely important. The method of operationalization shows that these are dimensions for describing **work requirements** and not employee's preferences.

The second publication states[144] "**Working styles** are an **important yet largely unexplored** component of the theory of work adjustment, describing a dynamic component of how individuals maintain and adjust fit with their work environment". Researchers introduced the concept of **active working style** which is generalized level of work activity and effort across time and consists of 4 factors: celerity, pace, rhythm, and endurance.

Each item was measured using a 7-point Likert type scale (1 = Never to 7 = Always)

1. I started projects and tasks straight away
2. I was quick to start my jobs
3. I delay my efforts at the start of a work project or task (reversed)
4. When given a task or project I began working on it immediately
5. I put a lot of energy into my work tasks
6. I expended a great deal of effort in carrying out my job
7. I used a high amount of effort and energy
8. My level of effort was steady over time
9. The levels of energy I put in was highly stable over time
10. I was consistent in the amount of effort and energy I put into my tasks at work

[144] Bayl-Smith & Griffin, 2015

11. I finished whatever I began
12. I finished tasks that took a long time to complete
13. I persevered in doing my work task

In Polish literature, the problem of working style is not popular, neither[145]. The only theoretical model of Working Style I found in the literature is the theory of INTERVALITY[146], which is described in detail in the next section.

[WIS] Working Interval Style

The main assumptions of the theory of INTERVALITY[147] are as follows: Choices in everyday life, in any domain, such as choosing a mobile phone or a career path, require the individual to categorize available options into three subsets: (1) acceptable options; (2) unacceptable options to reject; and (3) options one is indifferent to, or which are ambivalent (see Figure 2).

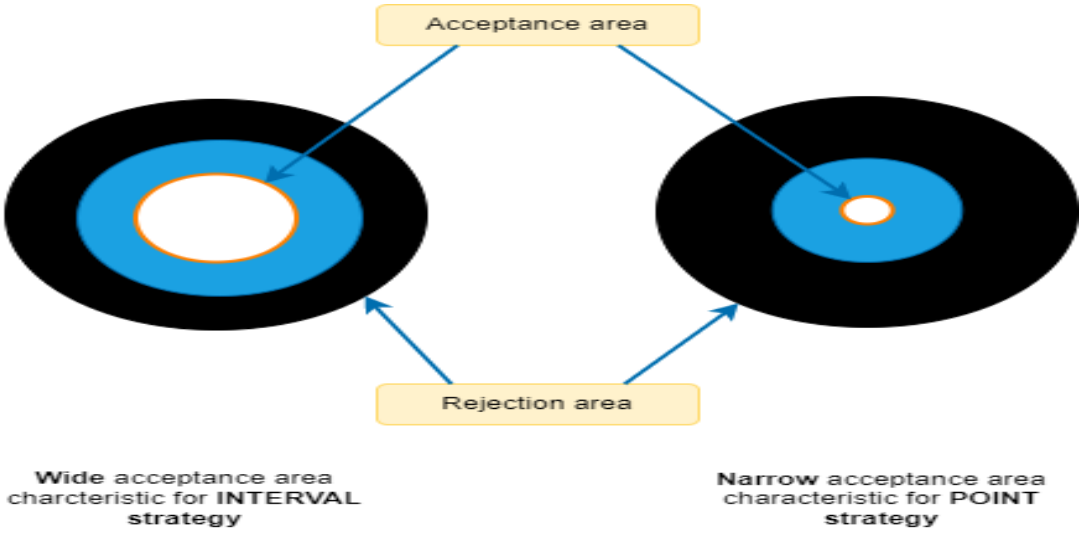


Figure 2 Acceptance set size for interval and point person. Source: Wieczorkowska, 1992

The first category is called an **acceptance set.** When an intention to act appears, the *acceptance set* is automatically converted into a *goal-category*.

People categorize available options based on their descriptive (e.g., heavy, easy, difficult) and evaluative (e.g., pleasant, attractive, disgusting) properties. Many studies have shown

[145] Except for old work by Strelau, 1983; Lachowicz-Tabaczek, et al., 2004
[146] Wieczorkowska 1992, 1998; Wieczorkowska and & Burnstein, 1999
[147] Wieczorkowska 1992, 1998; Wieczorkowska & Burnstein, 1999

individual differences in the size of the descriptive categories (e.g., Pettigrew category width). The descriptive categories may vary in size depending on how much attention one pays to details.

If we do not see subtle differences in the available phone brands, we evaluate them as equally desirable, although objectively they are different. Evaluative categorization may cause options (e.g., mobile phones) with very different descriptive properties to end up in the same category.

As people categorize objects, they can also **categorize** their **future plans** and **activities**, which can be considered as a set of options. Individuals vary in the size of their set of acceptances for planning their future activities. For example, if someone is looking for a job as a store manager, they may only think of their preferred industry as (e.g., the beauty industry). For others, the area of acceptance may include several options: store manager in specific industries including skin care, makeup, perfume, hair care in particular.

Each activity should theoretically have a specific **vision of an end-state** (result), which allows determining when a person can consider the task done. However, people differ as to how precisely this vision is cognitively represented. For those who tend to formulate their goals in the form of clearly defined tasks, the vision is usually also clearly defined, for example, for a writer, “to write 5 pages today”. The end-point vision may also be defined in a **fuzzy way**, e.g., "write as much as I can manage today".

The size of the acceptance set can be analyzed not only in the context of evaluation of a given set (e.g., choose a meal in the restaurant, buy the product), but also in the evaluation of “generative” choices (e.g., cook the meal, create a business plan for a company). The choice category (subset of acceptance set) might have a **single ideal option** (e.g., the business plan must concern creating a fitness club) or several equally acceptable solutions (e.g., 3 business plans of creating a restaurant, a fitness club, spa in the mountains). The first is called **UNIprototype,** the second **MULTIprototype**.

The **size of an acceptance set** (or goal category) **has several implications,** because our cognitive resources are limited; therefore, **the broader the acceptance set, the less cognitive space** is left for goal representation, and for planning how to achieve it.

Therefore, the broader the acceptance set:

(1) the bigger the **number of comparisons** must be made to choose the best option;

(2) the process of **choosing takes longer** and consumes more energy;
(3) the **lower** the **frustration** when the chosen **goal becomes blocked** or unavailable, and the **easier** the substitution or **adaptation to changes**;
(4) the **easier** one can be **distracted** when trying to achieve the selected goal;
(5) the greater the **difficulty in estimating the time** needed to perform a single task or achieve the selected goal.

The consequences of the tendency to accept a lot and to form **broad acceptance sets** are **imprecise planning of multitasking** [polychronicity], **lack of concern for details**, and **focus on the big picture** rather than on detail. This behavioral strategy is called the Working **INTERVAL** Strategy **[WIS].**

The consequences of the tendency to reject a lot of choices and to form **narrow acceptance sets** include preference for performing tasks or achieving goals **sequentially**, and strong **focus on details and precise** planning. This behavioral strategy is called the **POINT** Working Strategy.

The **size of the acceptance set** depends on several factors, such as the **importance of the domain**, the costs of bad choices, the individual's **resources**, and the resources available in the environment. From a rational point of view, the best approach would be to **maintain flexibility** – **reject** a lot **or accept** a lot **depending on the domain**. However, it was shown that the most often the *behavioral strategies* can acquire **functional autonomy** and become **characteristic style** of a person. Employees who prefer INTERVAL strategy of task executions are called INTERVAL employees **(in Polish: Przedziałowcy)**. Employees who prefer POINT strategy of task executions are called POINT **employees (in Polish: Punktowcy)**.

Key differences between the point and interval activity styles are summarized in Table **1**.

POINT WORKING STYLE	INTERVAL WORKING STYLE
When making choices **rejects a lot** and forms NARROW goal-categories.	When making choices **accepts a lot** and creates BROAD goal-categories.
Tries to achieve **one goal at a time**.	Tries to achieve **many goals at a time** (multitasking).
When comparing objects, "the same" means EXACTLY the same.	When comparing objects, "the same" means MORE or LESS the same.
Pays attention to **details** and considers them **important**.	Does not pay attention to **details** and considers them **unimportant**.
Carefully plans and **prepares**.	**Does not plan** or **prepare** carefully.
Reluctant to shift or substitute goals when current goal is blocked.	**Readily switches** or substitutes **goals** when a goal is blocked.
Rigidity: persists in attempts to complete an activity before switching to another.	**Flexibility**: readily gives up an activity before it is completed and switches to another.
Accurately estimates time needed to complete a task.	Unaware of or **underestimates time** needed to complete a task.

Table 1 Comparison of point and interval activity style. Source: Wieczorkowska & Burnstein, 2004.

Examining an acceptance set in a given area, we can distinguish two key dimensions:

1. The number of tasks carried out in parallel, ranging from **monotasking** (sequentially performing awaiting tasks) to **multitasking**. It usually manifests in starting a new task, without completing the previous; then interrupting the other to start a third one, or to return to the first.
2. The level of detail of cognitive representations a goal, ranging from **precision** to **fuzziness**. It determines how detailed are our cognitive representations of the goals or plans.

A journalist with INTERVAL (fuzzy) representations may find that when faced with the task of writing an article about sports cars, he wrote an article about trucks. Nonetheless, the journalist may have a sense of having successfully completed the task, because the vision of the goal was represented by writing an article by a certain date and not necessarily by writing an article on a certain topic.

The size of the acceptable set may not be the same across all domains of life and activity - it would be very difficult, for example, to apply a strong INTERVAL strategy to every decision, in every context. There is a positive correlation of the order of 0.3 - 0.4 between the number of objects considered acceptable in different domains. In a given domain, the

size of the acceptable set depends largely on our situation in a given context (experience, available resources and time).

The adaptive value of POINT and INTERVAL styles (also in the context of educational choices) depends on the characteristics and properties of the environment. When the resources and options are limited, or the environment is unpredictable and changing rapidly, INTERVAL people function better, due to their ability to accept more diverse offers and simultaneously focus on many tasks. When the resources and options are plentiful, or the environment is relatively easy to control by an individual, POINT style is more adaptive, as it protects from overflow and irrelevant distractors.

Interval working style - is associated with planning only the general direction of action. This simultaneous pursuit of multiple goals is associated with low persistence in achieving goals, a tendency to abandon the tasks started, which in moderate form leads to flexibility, while in extreme form to chaos. INTERVAL employees (people who prefer an interval way of completing tasks) are not very precise, have difficulty estimating the time needed to complete a given activity, and have difficulty maintaining order. Thus, the INTERVAL working style is associated with extensive scanning, lack of attention to detail, imprecise planning, trouble finalizing work, and putting things off. Created plans are often unrealistic due to the underestimation of time needed to complete a single task. INTERVAL strategy is a simultaneous activity associated with low precision.

Point working style – involves pursuing only one goal at a time. It is characterized by precision in formulating objectives, detailed planning, persistence in pursuit of the goal, working out the details, striving to complete the undertaken actions. POINT employees are people (who prefer a point style of task completion) who are precise, work in a sequential manner, and can accurately estimate the time needed to complete a task. In its extreme form, it takes the form of rigid behavior and striving for perfectionism. The POINT strategy is characterized by sequential action associated with attention to detail (precision).

Prototypical POINT employees [PE]: with rejection as a default reaction to a new idea finds as acceptable a very few ideas, goals, and ways of accomplishing them. PE loves predictability - most often creates a plan before s/he acts. Do not like to start the next task

before finishing the previous one. They are more persistent and therefore less flexible than IE. POINT employees like to create their own routines[148].

Prototypical INTERVAL employees [IE]: with acceptance as a default reaction to a new idea finds as acceptable many ideas, goals, and ways of accomplishing them. Engages in multiple activities in parallel: starting a new task without completing the old one then interrupts and returns to the previous task. These employees do not like routines and do not like repetition.

POINT working style increases the stimulus value of performing work in an environment that forces **multitasking. The INTERVAL working style** can lead to overload in an environment that offers **many options to choose from**[149]**.**

To summarize - Working style is understood as the preferred method of task execution and preferences regarding the type of tasks[150].

Examples of research on correlates of WIS

Only one study examined the behavior of POINT people and INTERVAL people under conditions of low or high freedom of choice, so this study will be discussed in great detail.

S1: Real Estate Agency

In the study, subjects worked for clients with point (single-prototype), interval, or two-prototype preferences. The control condition for the two-prototype client was two clients with single-prototype preferences. In addition, requirements were introduced to **"narrow"** or **"expand" the decision freedom**. For each type of task, there were other very carefully selected offers, so that they were equally similar to the client order. Nevertheless, to put it in technical language, the offers were "nested" within the tasks, making direct comparisons between clients have to be made very carefully.

There are no such problems in the comparison between the experimental conditions (**high and low decision freedom**) because the only difference was the different instruction. The results were analyzed at two levels:

1. separately for each task type (client)

2. combining the indicators from the eight tasks (two sessions - each with four clients) into one overall indicator characterizing the agent's decision making.

Analyses included how many offers the agent wanted to show the client, how the agent perceived the match between the offers and the order, and how difficult (unclear) the

[148] Wieczorkowska, 1998

[149] Karczewski, 2022

[150] Wieczorkowska, 1992-2022

order was for the agent. Decision-making time and mood change during the study were measured.

In part one, at the outset, potential agents rated different apartments in terms of attractiveness to them. Based on the analysis of the width of the acceptance areas, the group belonging to the upper 33% of the distribution (the most accepting) were called housing INTERVAL people, while the one located in the lower 33% were called POINT people.

On average, POINT people accepted 4.46 apartments, while INTERVAL people - 9.85.

In the next part, the respondents had to forget about their own preferences and concentrate on choosing **offers for clients appearing in the agency.**

It was found that differences in own acceptance areas did not significantly affect the number of offers "accepted" on behalf of the client. The most important key factor for this variable was instruction.

When agents were given decision freedom (**the "extending" version**), they offered customers significantly more homes to view (M=3.06) than when they were asked to be precise (**the "narrowing" version**) in their instructions (M=2.38).

The change in assignment conditions primarily affected INTERVAL people. They showed clients many more apartments in the discretion condition (M=3.13) than when they were told to stick strictly to the assignment (M=2.16).

The difference in the number of apartments shown by POINT people in the two conditions was not statistically significant (M=2.62; M=2.99, respectively). The averages are shown in the Figure 3 below.

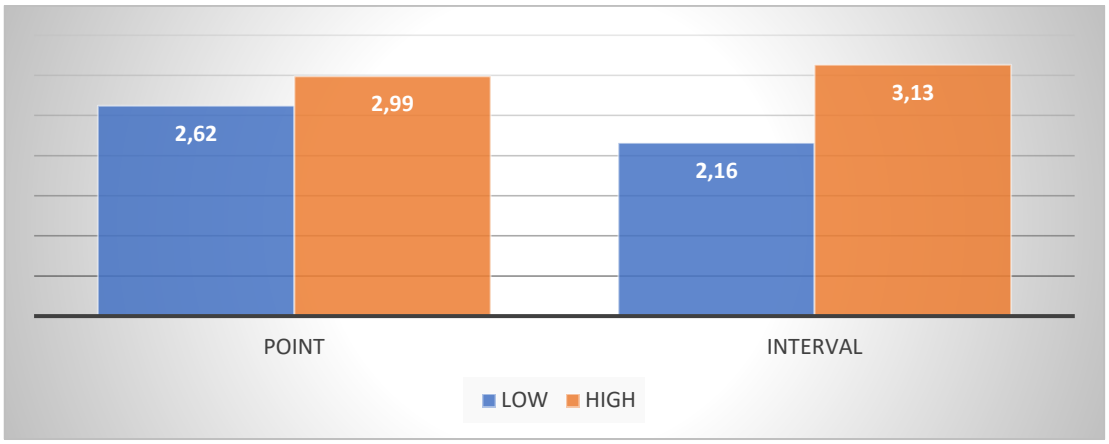


Figure 3 Number of apartments shown, depending on instructions with HIGH vs LOW freedom Source: Wieczorkowska, 1998

It turned out that this difference was associated with different perceptions of the degree of offer matching**. In the version with leaving the freedom** (M=3.99), agents perceived

the same offers as **less mismatched to the same assignments** than in the version with limited freedom (M=4.34).

Analogously to the number of apartments shown, it appeared that the change in assignment conditions primarily affected INTERVAL people. They rated the matching of offers better in the "extension" version (M=3.95) than when they were told to stick strictly to the assignment (M=4.47). For POINT people, the difference was not statistically significant (M=4.20; M=4.02, respectively).

The results of both types of analysis are consistent. Although in both conditions both orders and offers were the same, the freedom to decide resulted in the perception of a greater matching of offers to the order, which in the "extension" version with decision freedom instead of a point - it became a "lump" - as the range of permissible transformations of clients' requirements increased. This was true for all types of clients.

It appeared that the respondents adapted well to the demands of the task. Where they were allowed to do so (high decision freedom), they created wider areas of clients' acceptance than where accuracy in task execution was demanded (low decision freedom). The agents' own preferences did not influence their behavior, but they did determine the decision costs they incurred. The most interesting result concerned the analysis of rated task difficulty (ambiguity). It was expected an effect of the main experimental condition. A task in which the subject was allowed considerable freedom (M=2.71) was perceived as more difficult than a situation in which the subject was instructed to follow the instructions exactly (M=2.39). However, it was noted an unusually strong interaction effect between decision freedom and agent preference. POINT agents found the "extending" version (M=3.28) much more difficult than the "narrowing" version (M=2.18), and the reverse was true for INTERVAL people (M=2.23; M=2.59, respectively).

The results showing different effects of task type on mood in both groups are not surprising (see Figure 4). 37% of respondents assessed their mood after the task as the same as before it, in 38% of people it worsened, and in 25% it improved. It turned out that INTERVAL people felt the worst in the "narrowing" version (M=3.52) and POINT people in the "expanding" version (M=3.70). Working under preference conditions had a positive effect on mood (M=4.04 in POINT people; M=3.89 in INTERVAL people).

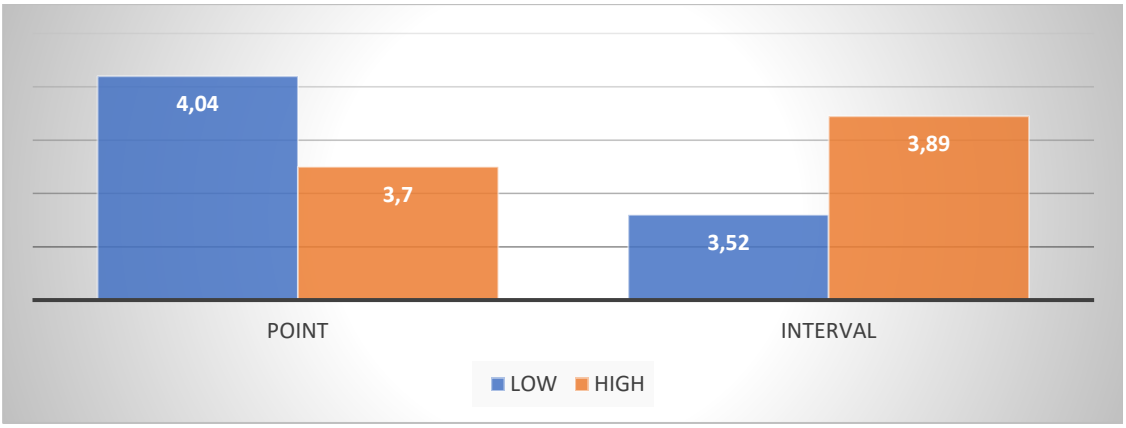


Figure 4 Mood after the tasks depending on freedom of decision (low, high) and style (point, interval) Source: Wieczorkowska, 1998.

Although the manipulation of information about the type of customer preference did not produce the expected strong interaction effects, it is worth taking a closer look at the results obtained. The two - prototype client was shown more offers (M=3.23) than the POINT (M=1.75) or INTERVAL (M=1.55) client.

A client with a two-prototype order should be treated quite the same as two customers with single-prototype orders. And so, it was in the narrowing version. The two-prototype client was shown slightly fewer (M=3.23) offers than the two clients together (M=3.85).

However, where agents were left free, their belief that two different clients need to be shown more apartments (M=4.79) than one (M=3.23) regardless of their preference structure prevailed. A significant interaction was also observed between preferences and task conditions when serving a two-prototype client. POINT people showed him more apartments (M=3.53) in the "narrowing" version than in the "expanding" version (M=2.85). This is the only instance of the relationship being reversed since the rule was to show more apartments when agents were left free to decide than when they were restricted. This is how the INTERVAL people behaved when serving a client with a two-prototype preference structure - they offered fewer apartments in the "narrowing" version (M=3.12) than in the "expanding" version (M=3.6). Respondents "accepted" the different types of assignments exceptionally well - regardless of their preferences. Perhaps the information about assignments was structured in too abstract a way. For example, the "blurring" of the INTERVAL client was apparent - after all, he put precise limits on his acceptance, so agents treated him the same as others. It would have been better if the agent had - as in real life - to infer the client's preference structure by asking him questions. Table **2** below shows the average number of apartments shown, the average perceived degree of matching offers, and the difficulty of the task as a function of client type, task type, and agent preference.

Average number of apartments shown by client type and instruction type				
Decision freedom	POINT client	INTERVAL client	Two-prototype client	Two clients
low	1.22	1.21	3.23	3.85
high	2.32	1.91	3.23	4.79
together	1.75	1.55	3.23	4.29
Average degree of matching offers by client type and instruction type				
Decision freedom	POINT client	INTERVAL client	Two-prototype client	Two clients
low	4.36	4.57	4.05	4.38
high	4.22	4.28	3.55	3.89
together	4.29	4.43	3.82	4.15
Average order difficulty depending on client type and instruction type				
Decision freedom	POINT client	INTERVAL client	Two – prototype client	Two clients
low	2.15	2.48	2.50	2.43
high	2.57	2.80	2.71	2.77
together	2.35	2.63	2.60	2.59

Table 2 Method of task execution depending on customer type, decision conditions and agent preferences. Source: own elaboration based on Wieczorkowska, 1998.

When we go to the store with a precise vision of the desired object in mind, our task is simple: simply compare what we see with what we expect. In times of total scarcity, it was difficult to buy anything using this strategy. Another way of making a purchase is contextual: the client goes to the store and looks at what is there. He takes stock of how it compares to his prototypes. When merchandise only occasionally appeared in stores, this was a more adaptive strategy. Assessing similarity is not symmetrical. Tversky would say that there is a difference between whether we are comparing the prototype of the steak tartare we decided to prepare for our name day party to the beef in the store, or the beef to the prototype. However, the problem is not just one of asymmetry, but of the number of prototypes that are active at the time of shopping.

A POINT person looking for beef for a steak tartare makes a quick decision and can often go home with an empty basket. The pre-participant who allows steak tartare to be substituted for roast romaine has a more difficult decision problem. Is the beef in the store suitable for a steak tartare, and if not, is it suitable for roast romaine? He thinks longer, but the chance that he will buy is higher.

According to the considerations presented above, the POINT people in the BUYING A CARPET study made their decision faster than the INTERVAL people. On the other hand, no significant differences in decision time were found between the distinguished groups in the NON-PROFIT AGENCY study. Why? The respondents were buying carpet for themselves; the apartment was rented to clients. Another difference was in the type of task: they were to buy **one** carpet and choose **acceptable** apartments. According to the model, INTERVAL people only have trouble choosing the best option. It is difficult, for example, to compare two options that are equally distant from two prototypes. The situation is much easier when we make a comparison with a single prototype. To resolve the conflicting results, the next study called TRAVEL AGENCY was designed.

S2: Travel Agency

In the first part, the respondents filled out the "Vacation" Acceptance Area Survey Kit, which contained 27 suggestions for spending the vacations. They were asked to mark the ideas that they found appealing. Sample options were:

"Vacationing in a tent on a wild, uninhabited island. No one visits, so peace and quiet is guaranteed, but it is far from stores" or "Baltic Sea cruise with calls at several large ports. The ship is comfortable, but not big, it will definitely be very rocking".

The main part of the study was **a computer game** in which the subjects took the role of employees of a travel agency. Their task was to **choose a holiday offer from several available** ones and propose it to the customers. Each group of subjects was presented with a set of the same seven tasks. Each task consisted of choosing among four holiday offers that appeared simultaneously on the screen, so that the chosen offer matched the customer's wish as closely as possible.

The customer's request appeared at the top of the screen each time. Offers and orders were selected, so that the similarity between offers and orders was the same in each task. Both offers and orders were described on three dimensions: time of stay (four levels); price for stay (four levels); place of stay (three levels). Sample offers looked as follows: "10 days, 5 million, hotel" or: "7 days, 3 million, camping". The first task was for training and was not included in the analyses. Half of the subjects were asked to select the best offer and the other half were asked to select acceptable offers. Additional questions asked about the psychological costs incurred during the assignments. These sounded as follows: (1) How difficult was it to match offers to client demand?, (2) Were the offers matched to the client's wishes?, (3) Do you think you did a good job?, (4) Did you have any doubts while choosing the offers?, (5) Did you find it easy to select from among the offers?, (6) Was the task clearly defined?

Questions about psychological costs were asked twice: three after completing the first three tasks, all six after completing the seven tasks. The final part of the experimental procedure consisted of questions about the subjects' level of motivation during the study.

The questions were: (1) Did you make an effort while completing the following tasks?, (2) Were you bored while doing subsequent tasks?, (3) Were you involved in the realization of subsequent tasks?

Respondents provided answers on a six-point scale from "1=no", to "5=yes", and "hard to say" outside the rating scale. Participants were randomly divided into 2 experimental groups instructed to choose: the best option (E1) or acceptable options (E2). As predicted, it took respondents significantly longer to choose **the best option** (M=10.77) took the respondents significantly **more** than to choose **acceptable options** (M=10.87). The **INTERVAL** people (M=10.95) took significantly **longer** to decide than the **POINT** people (M=10.80) **only** when choosing the **best option.** There were no differences between POINT and INTERVAL groups when choosing acceptable options (see Figure **5**).

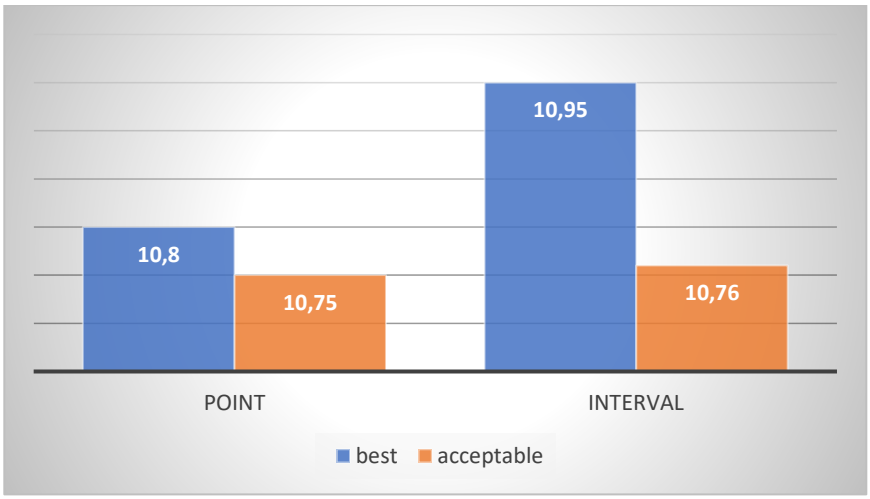


Figure 5 Decision time (logarithm) depending on task type and WIS. Source: Wieczorkowska, 1998

The INTERVAL people were more engaged when choosing the best option (M=4.38) than when choosing acceptable options (M=4.19), while POINT people were the opposite (M=3.94; M=4.3, respectively). A situation inconsistent with one's preferences required more involvement, which is completely understandable.

S3: Unemployment

In the first research[151] done in the early 1990s, it was shown that the width of carpet acceptance areas, as determined during a game simulating shopping in a dynamically changing market situation, correlates with the number of accepted occupations, performance on the Pettigrew Category Width test, and activity style. Two studies have shown that INTERVAL employees, more quickly than POINT employees, found jobs in times of high unemployment (see Figure 6). Subsequent studies have shown that after a social change (from a centrally planned economy to a market economy) that resulted in increased availability of goods and services, POINT strategies became more effective[152].

[151] Wieczorkowska, 1992; Wieczorkowska & Burnstein, 1999

[152] Wieczorkowska & Burnstein, 1999

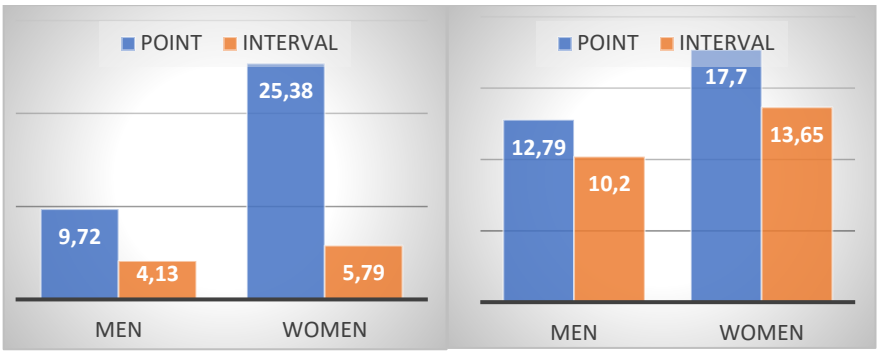


Figure 6 Job search time in months by WIS level. Left panel: data collected form 106 unemployed in the Job Club in Warsaw. Right panel: Polish General Social Survey, 1998: representative sample of adult Poles. Source: Wieczorkowska & Burnstein, 2004

S4: Double Major Students[153]

Students (N=1070, 66.7% of whom were female, 84.6% of whom were between 20 and 25 years old; the remainder were older than 25 years old) were divided by the number of majors they studied simultaneously. There were 299 people studying in more than one field of study. They will be referred to hereafter as "double major students". It was checked whether they differed from the single major ones in terms of activity style, flexibility (jobs incompatible with education, below qualification), anticipation of career success and emotional balance.

The **WIS index** was operationalized by 10 questions from the former version of SSA containing sub-dimensions of precision and sequentiality.

The flexibility index was constructed from responses to 2 questions: (1) In my future career, I allow for the possibility of work that is incompatible with my completed major; (2) In my future career, I allow for the possibility of working below the level of education obtained.

The expectation of success index was constructed from responses to 3 questions:

(1) I believe that the knowledge and skills I have acquired in my education to date will enable me to be successful and successful in my future career; (2) I am convinced that my efforts and involvement to date are sufficient to be successful in the labor market; (3) I am confident that I will achieve success and success in my future career.

The Emotional Balance Index was constructed with 9 questions from the NEO_FFI neuroticism scale[154].

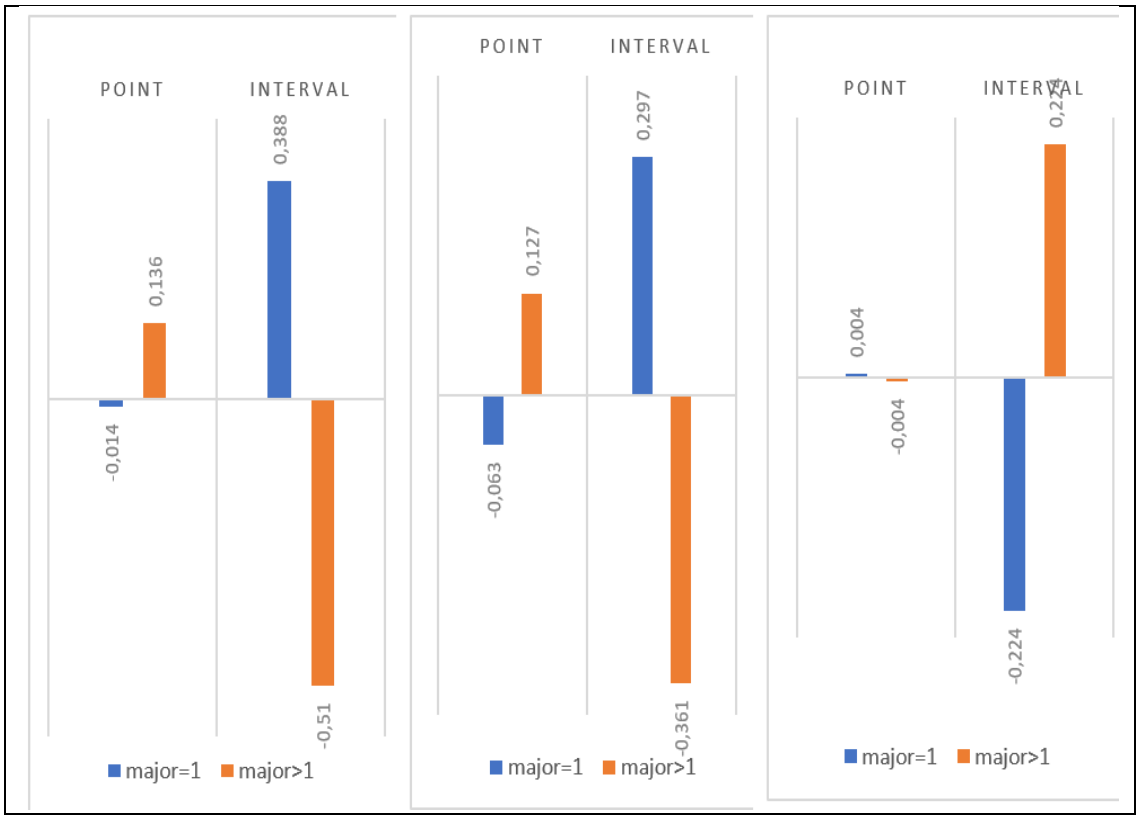
Sample questions from this scale are: (1) I rarely feel alone or depressed; (2) Sometimes I feel completely worthless; (3) I am cheerful and spirited; (4) I often feel helpless and

[153] Turska, 2016

[154] Zawadzki, et al., 1998

need someone to solve my problems; (5) Sometimes I am so embarrassed that I wish I could hide somewhere.

The analyses conducted confirmed that double major compared to single major are significantly more interval, optimistic about their career development and have a better emotional balance. It is interesting to note that the effect of the number of majors is strongest in the INTERVAL group, as illustrated by the significant interaction effects shown in the Figure 7:



Willingness to **accept less attractive job offers** (standardized score)**:** The single major INTERVAL students are ready to accept inferior job offers, if necessary.

Negative emotional balance (standardized scores): Double major INTERVAL students are most satisfied, single major INTERVAL students - least of all.

Expectation of career success (standardized scores): Double-major INTERVAL students have the strongest expectations of career success

Figure 7 Interactional effects of number of major studies and WIS. Source: own elaboration based on Turska, 2016.

S5: PHYSIOLOGICAL response to stressors[155]

Working Interval Style was measured by SSA two weeks before lab experiment, in which both subjective and objective costs were measured during 3 different tasks execution. When preparing the experimental procedures, care was taken both for situational realism

[155] Nowak, 2019

- the tasks to be performed were similar to elements of tasks in many occupations (the task of sorting e-mails, parallel performance of tasks, the need to ignore distractors) and psychological realism - the tasks were to be engaging for the subjects. A short description of the tasks and costs measurements is presented below[156].

The objective physiological costs were measured by a mobile optical device[157] (see on the left). The measure of pulse rate variability used was HF power, which is known to correspond to stress, anxiety, and worry[158]. The measure was standardized and revered for ease of interpretation, as pulse rate variability decreases as objective costs rise. To assess subjective costs of task performing 3 questions were used: (1) How difficult was the task for you? (rating scale from [1] very easy to [7] very hard; (2) How stressful was this task for you? (rating scale from [1] not very stressful or not stressful at all to [5] very stressful; (3) How much pressure did you feel when performing the task? (rating scale from [1] very little or no pressure to [5] very strong pressure. The details of how the measures were obtained is described in Nowak (2019).

Distraction task

The modern employee working, e.g., in an open-space environment, has to ignore many non-relevant distractions when focused on a task. The distraction task's aim was to test the participant's ability to withhold from an automatic response[159]. An example of such a response is reading a word (or decoding its semantic meaning) when he should be concentrated on its other attributes (for example length or color). The Stroop task is used as an indicator of the ability to focus attention[160]. This task activates two competing responses: automating reading the word and controlled naming the color[161].
A modified, computer-based version of the Stroop task was used. During the task participants were shown words and were asked to indicate the color of the word as quickly as possible while ignoring the word's meaning. The chosen words were names of colors. Some words were the same as the color of the font, for example the word "**blue**" written in a **blue font,** while other were incongruent, for example the word "**green**" written in a yellow font. A screen capture of how the task looked from the participants' perspective is above.
Participants were randomly divided into 2 groups where they completed the distraction task:

E1: with positive feedback (message e.g., "good job" or "you are doing very well)" then negative feedback (message e.g., "why is this taking so long", "you are making a lot of mistakes");

E2: in reversed order: first negative feedback, then positive feedback.

The study design was counterbalanced, so the depending on which of the two conditions the participants were randomly assigned to, they either completed the distraction task with

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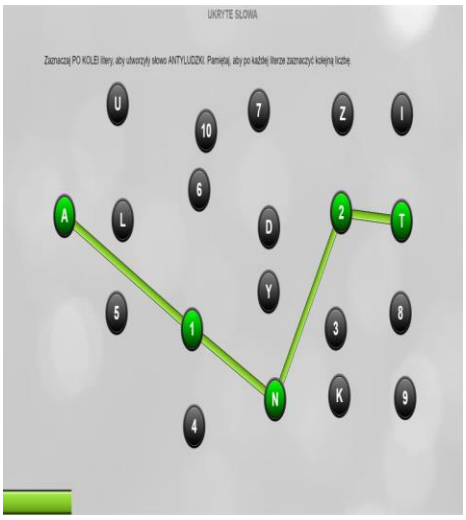
[156] Nowak, 2019
[157] GSR Development Kits produced by Shimmer
[158] Kleiger et al., 2005
[159] Jodzio, 2008
[160] Lezak, Howieson, Loring, 2004; Jodzio, 2008
[161] Banich, et al., 2000

positive or negative feedback. In the positive feedback condition participants received positive feedback every 10-20 screens while performing the task. All participants completed both versions of the tasks, only which one came first differed. Each task took around 3 to 5 minutes to complete.

Dual task: In the DUAL task participants were randomly divided into 2 groups:

(E1): with no supervision, then while under supervision of the experimenter;

(E2): in reversed order: under supervision, then without supervision.



The dual task was designed for evaluating an employees' attention switching capabilities: the Trail-Making Task[162] (TMT). In this task the participants are asked to alter their attention between to sequences one of letters making up a ten-letter word. Example: A,N,T,Y,L,U,D,Z,K,I and a sequence of numbers: 1,2,3,4,5,6,7,8,9,10. In this modified version the goal of the task is to simultaneously join the letters in the order that they appear in the world and the numbers in ascending order, switching from one to the other. This is to be done as quickly as possible, with a timer indicating the maximum allotted time per sequence. A screenshot from the perspective of the participants while they completed the task is shown on the left.

The list of words shown in both instances of the task were: Antyludzki; Niedbaluch; Stypendium; Podejrzany; Absolutyzm; Dyletancki; Dokuczliwy; Budowniczy; Zaskroniec; Liczykrupa; Klasztorny; Bezwstydny.

[162] Sanchez-Cubillo et al., 2009

The SEGREGATION task

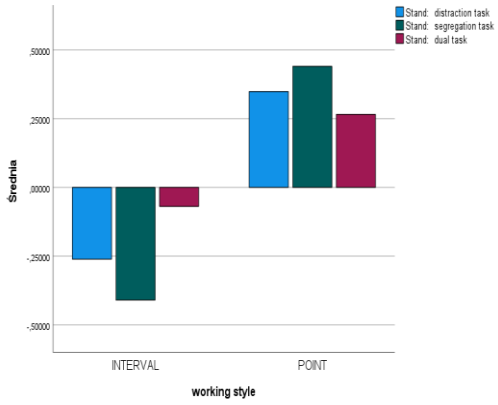
Participants were asked to imagine they were working in the university administration, and that their work consisted of sorting emails received from students concerning courses to the respective office or professor. They had a total of 50 emails to sort through and the task took approximately 3 to 5 minutes to complete. In the version with the time pressure the inbox got filled out at an accelerating rate, with 20 seconds for each email at the begging of the task, and a 3 increase in time per email allocation for each new email. In the version without time pressure a new email came appeared in the inbox after the previous email has been sorted.

The study design was counterbalanced, thus part of the participants completed the task with time pressure first, while the others completed the task without time pressure first.

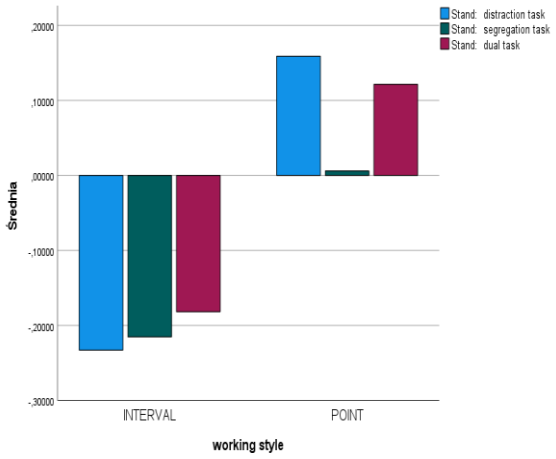
The type of task and instruction type did not significantly influence the cost of performing the tasks. The strongest predictor turned out to be the style of work operationalized by methodicality. POINT people (when adjusted for reactivity) had the highest subjective and objective costs scores (see Figure 8 below). The working style does not differentiate between the objective costs of a task for individuals with a low need for achievement, that is, for whom the laboratory task probably did not motivate them to make an effort.

All 3 stressors (time pressure, social pressure, feedback) have a negative effect on POINT students and a positive effect on INTERVAL students, but only for the **work under time pressure,** the difference is statistically significant.

WIS was a **significant** predictor of **subjective ratings.** The **more POINT** the employee is, the **more stressed** under negative feedback and **time pressure.** Analysis of physiological responses showed that WIS [methodicality] was a risk factor for highly reactive, while it reduced costs for the low reactive.



Subjective costs (standardized scores) dependent on WIS



Objective costs (reversed and standardized) dependent on WIS

Figure 8 Standardized objective and subjective job costs of 3 types of stressful tasks execution depending on WIS measured by SSA. Source: own analyses based on Nowak, 2019

S6: IT professionals: Eighty-seven IT professionals (34% women) aged from 22 to 40 (M=29.04, SD = 3.86) took part in this study. SSA was used to predict preferences regarding the job preferences, operationalized as a level of routinization of a dream job. The Job Preferences Index correlates in easily predicted direction with 4 subscales of SSA: (1) choosiness, (2) precision, (3) polychronicity, (5) methodicality (see Table 3 below), but regression analyses have shown that only two of them were significant, when analyzed together, with methodicality having much bigger impact (β=0.467) on job preferences than precision (β=0.277).

	choosiness	precision	planning	polychronicity	methodicality
JOB preferences	0.234*	0.441***	0.146	-0.325**	0.495***

* p< 0.05; ** p< 0.01; *** p< 0.001

Table 3 Correlation coefficients between Job Preferences index (level of routinization of a dream job) and 5 subscales of SSA. Source: Urban, 2015

S7: Psychotherapists and prison service

Among 240 employees who took part in the study, there were 2 groups, whose jobs OBJECTIVELY differ in levels of job routinization: group of 99 psychologists – mostly psychotherapists, and a group of 102 prison service employees. The mean age of two groups were almost the same (M=38.3, SD=10.3) for psychologists (M=38.7, SD=5.9)

for prison service. Women accounted for 80.8% of the psychotherapists and only 10.8% of the prison service workers, so gender was controlled in all analyses.

The experienced level of work routinization was measured both objectively (comparison between psychotherapists and prison service) and subjectively (estimated by respondents).

As expected, psychotherapists wanted to have less procedures at work, than prison service employees. It was shown a general relationship, which holds across different samples: the more procedures you have in your current job, the more you would like to have them in your dream job (r=0.65, N=240). Even if on the mean level people prefer to have significantly (t=7.73, p<0.001) fewer procedures (M=4.1), than they currently have (M=4.71).

It is hardly surprising, as human beings are capable of adapting to a wide variety of conditions, and it can be expected that once person got used to a certain job, he perceives any other jobs in context of the current position. Tendency to maintain status quo, and to avoid change, influences evaluations of future prospects.

DV=degree of routinization of a dream job	**psychotherapists R^2=0.33; N=96**	**prison service R^2=0.34; N=98**
Gender	0.065	–0.003
Age	–0.116	–0.078
Routinization Index for Current Job (subjective)	0.270**	0.475**
Temperament (H: highly reactive)	–0.187	–0.240**
Working style (H: methodical)	0.437**	–0.055

Table 4 Standardized regression coefficients from regression analyses. Dependent variable: degree of routinization of a dream job. Each column contains beta coefficients for a different area of employment (psychotherapists and prison service employees)- ** p<0,001. Source: Wieczorkowska at al. (2016)

S8: Employee's well - being

In the study of 880 employees (41.1% males) with at least 3 years of work experience, aged 24 to 42 years (M=34.5 SD=3.09) with at least secondary education (68.5% had a university degree), the relationship between Employee's Well - being and Level of Job routinization and two employee characteristics was examined: WIS (an index built from 9 questions) and Temperament (reactivity).

The hypothesis said "Highly routinized work is beneficial for highly reactive (because routinization should reduce unpredictability and consequently lower the stimulative value of job environment) and POINT (because they like routines) employees.

For **Job Routinization Index** the following questions were used: (1) My job allows me to decide how it is done; (2) My job is meticulously supervised by a supervisor, (3) My job allows me to decide the order in which tasks are performed; (4) My job requires that I perform procedures very carefully, step by step; (5) My job allows me to decide the timing of a particular task; (6). My job requires me to meet tight deadlines; (7) My job requires strict adherence to guidelines received. The response scale was: 1 - very rarely; 2- rarely; 3 - sometimes; 4 - often; 5 - very often.

For **Emotional Balance Index t**he following questions were used: (1) How often do you feel satisfied?; (2) How often do you feel satisfied?; (3) How often do you feel relaxed?; (4) How often do you feel worried?; (5) How often do you feel tense?; (6) How often do you feel stressed? The response scale was: 1 - never; 2 - very rarely; 3 - rarely; 4 - often; 5 - very often; 6 - always.

For **Cognitive Overload Index**: The following questions were used: (1) I feel overloaded with an excess of information (from the Internet, television, radio, friends); (2) I am tired of chaos, lack of orderliness of information; (3) I am tired of the lack of orderliness of objects. The response scale was: 1 - never; 2 - rarely; 3 - sometimes; 4 - often; 5 - always.

The analyses showed (see Figure 9) the opposite to the prediction: highly reactive POINT employees feel worse in highly routinized work, low reactive INTERVAL employees feel best in low-routinized work.

Figure 9 Employee's wellbeing (standardized) dependent on WIS, Temperament and Level of Job routinization. Source: Karczewski, 2022.

1.4 Consequences of PJ misfit

The JDR model is based[163] on 1974 **Herzberg's two-factor** theory of motivation dividing work related factors into (1) so-called hygiene factors (e.g., safety, good salary), which when unfulfilled have a demotivating effect, and (2) growth factors (e.g., development opportunities), which intensify work motivation.

The JDR model assumes that the demands at work and the resources at hand affect a person through two processes – energetic and motivational. The first is triggered by excessive DEMANDS at work. They lead to the mobilization of the employees' energy and increase their mental and physical costs. Prolonged demands at work over time lead to the exhaustion of a person's mental and physical resources, and this can result in occupational burnout or various psychosomatic sicknesses, such as depression[164]. The energetic process is modified by the operation of the motivational process associated with the resources at hand. They weaken the detrimental effect of demands at work and protect against the deterioration of health and the development of harmful behavior. Resources satisfy basic needs - for example, feedback and participation in decisions satisfy the need for competence, a sense of control and freedom of action satisfy the need for autonomy, and support from superiors and co-workers satisfies the need for belonging.

Satisfaction of needs strengthens work engagement, which in the long run supports attachment to the organization[165]. The feeling of **misfit** at work (the perceived discrepancy between the needs of the employee and the possibilities of satisfying them by the environment, and between the demands placed on the employee by the environment and the individual's ability to meet them) is a cause of stress (as highlighted by van Harrison's individual-environmental fit theory, Karasek's demands-control model, or Siegriest's effort-reward imbalance model)[166]. Some of the negative somatic effects of misfit and stress include: coronary heart disease[167], complaints from the musculoskeletal system[168]. Some of the negative psychological phenomena associated with lack of

[163] Baka, 2017
[164] Schaufeli & Bakker, 2004; Baka, 2017
[165] Hakanen et al., 2008
[166] Mora, 2008, Andysz, 2011; Marklund et al., 2008
[167] Mora, 2008
[168] Marklund et al., 2008

satisfaction and perceived stress include: job burnout, boredom, depression, anxiety, insomnia, hostility, feelings of inferiority[169].

Results of meta-analyses on person work environment fit (PE fit) show that employees who perceive themselves to be more fit in the work environment, are among other things[170]: more engaged at work, more productive, and less likely to quit. Job fit is specifically associated with job satisfaction, supervisor fit with satisfaction with the relationship with the supervisor, group fit with satisfaction with teamwork, and so on[171].

Job satisfaction

Job satisfaction occurs when, first, we perform the job according to our interests and aptitudes, and second, we work in an environment that is fitted to us[172]. Other individual effects of job fit include commitment to the job, as well as a sense of competence and comfort[173] which indirectly affect the level of perceived job satisfaction.

In addition to fit, job satisfaction is **influenced by salary**, scope of responsibilities, accountability quality of interpersonal contacts, labor market situation, work-life balance, and so on.

Job satisfaction is a term often used and estimated not only in management studies[174], but also in everyday conversations. Job satisfaction can be defined both on affective (Holistic system #1 of mind) and cognitive level (Analytic system #2). On the affective level #1 job satisfaction is understood[175] as **an emotional state** derived from subjective responses from employees toward their work experience[176]. On the cognitive level #2 job satisfaction is understood as the **evaluation** derived from assessment of[177] job conditions, opportunities, and supplies etc. It is important to remember that cognitive job satisfaction includes the process of making comparisons to chosen reference values/object, so it could be changed easily with the change of reference. Job satisfaction is recognized as one of the most important performance indicators. It has been shown that, the **higher** job satisfaction, the lower **burnout**, employee turnover, greater engagement, and increased

[169] Roelen, et al., 2008
[170] Sutherland, et al., 1995
[171] Kristof-Brown, et al., 2005
[172] Paszkowska-Rogacz, 2003
[173] Chatman, 1989
[174] Rainey, 2009
[175] Robbins et al., 2015; Zalewska, 2003
[176] Bajcar et al., 2011; Celik, 2011
[177] Zalewska, 2003

efficiency[178]. Job satisfaction is also affected by personality[179], e.g., employees with a high need for dominance will value a managerial job more than those who do not like to dominate.

Measurement of the level of job satisfaction is usually very direct – it is assessed on the basis of answer to one general question (e.g., **'How satisfied are you with your work?'**) or many specific questions about individual aspects related to work.

There is no agreement among researchers whether to analyze individual dimensions separately or to create a single general indicator[180].

Some examples of job satisfaction measurement are following:

WDI - Work Description Inventory[181] is an example of an 8-dimensional tool for measuring job satisfaction. Each dimension contains several statements with two rating scales: numerical consent scale and the graphical consisted of 7 faces (from very dissatisfied to very satisfied). This inventory is considered as most comprehensive tools for job satisfaction measurement.

JSS - Job Satisfaction Scale[182] in which employees are asked to assess their satisfaction in 7 domains: 1. Working conditions, 2. Professional development, 3. Colleagues, 4. Direct supervisors, 5. Type of tasks performed at work, 6. Financial rewards, 7. Work time.

A review of the literature[183] have shown following relationships of job SATISFACTION with:

1. (positive) job performance[184], the higher job complexity, the stronger relationship[185];
2. (negative) the intention to quit job (employee turnover)[186];
3. (negative) level of absenteeism[187];

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[178] Haley-Lock, 2007
[179] Tranberg, Slane, Ekeberg, 1993
[180] Zalewska, 2003
[181] Zalewska 2001
[182] Neuberger & Allerbeck, 1978, in the Polish adaptation Zalewska, 2001
[183] Pietrzak, 2020
[184] Keaveney & Nelson, 1993; Kluger & Tikochinsky, 2001; Noruzy et al., 2011; Shore & Martin, 1989; Barry et al., 1993; Judge et al., 2001
[185] Judge et al., 2001
[186] Tett & Meyer, 1993; Tziner, et al., 2014; Verquer et al., 2003; Zhao et al., 2007
[187] Diestel et al., 2014

4. (positive) intensity organizational citizenship behavior[188,189,190];
5. (negative) work - life conflicts[191];
6. (negative) counterproductive behavior e.g., sabotage or theft[192].

We need to keep in mind that direct impact of satisfaction on employee behavior is usually not very strong[193], because contextual variables are shown to be very important.

The challenges of ensuring an adequate level of employee satisfaction vary depending on the nature of the employees and the organization[194].

Emotional balance at work, stress level and health

The question of job satisfaction is addressed directly to the conscious analytical system of the employee's mind[195]. But the holistic system of our mind records experiences, so the question about the frequency of experiencing different emotions at work is very important. Below there are some selected examples of measurement tools[196]:

- **JAWS -** The Job-related Affective Well-being Scale[197] is designed to assess people's emotional responses to their work. In it, the subject indicates, for each of the 30 emotions (in case of the shortened version, 20 emotions), how often they have experienced them in the last 30 days. The scale was used in one of our studies.
- **PANAS** - The Positive and Negative Affect Schedule[198] consists of 60 different emotions, which are divided into two general scales: General Negative Affect and General Positive Affect.
- **JAS** - The Job Affect Scale[199] contains a list of 20 emotions, based on positive affect (pleasant engagement, energy arousal) and negative affect (unpleasant engagement, tension arousal). The subject assesses the intensity of feelings felt at work during the last two weeks at work.

Research indicates impact of emotional balance at work on many variables. The **more frequent positive emotions** (not only joy, but also more complex emotions such as pride):

1. The better employee health[200];
2. The better objective indicators such as an assessment from the supervisor[201] or even a **salary increase**[202];

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[188] García-Almeida et al., 2015; Grobelna et al., 2016; Lee et al., 2018
[189] Nielsen et al.,2009
[190] Sarala, 2017
[191] Meyer et al., 2002
[192] Chen & Spector, 1992
[193] Jachnis, 2008
[194] Wilczyńska et al., 2016
[195] Wieczorkowska, 2022
[196] Czerw, 2017
[197] Van Katwyk et al., 2000
[198] Watson & Clark, 1997, Polish tool version: Skala Uczuć Pozytywnych i Negatywnych (SUPIN; Brzozowski, 2010) with fewer items
[199] Burke et al., 1998, in the Polish adaptation Anna Zalewska, 2002
[200] Wärnĺ et al., 2007; Czerw, 2017
[201] Staw et al., 1994; Wright, 2014
[202] Staw et al., 1994

3. The **higher probability** of **achieving** set professional goals, especially when their implementation depends on contacts with superiors[203];
4. The more **friendly** and pro-social **behavior** toward **co-workers** and **customers**[204].

Working conditions and organizational factors affect health both directly, in terms of health and safety at work, and indirectly, in terms of satisfaction, reduction of tension, stress and frustration.

Higher levels of **job satisfaction** reduce the likelihood and number of **chronic illnesses**, as well as the extent of perceived symptoms of illness. Job satisfaction thus has a buffering effect improves health and prevents its deterioration.

For **organizations**, the consequences of a lack of fit have a tangible **financial** output - dissatisfied employees are more likely to **take sick leave**[205].

As is common in correlational research, it is important to remember that the relationship between satisfaction, health, and fit is two-sided. Healthy employees may work better, receive higher bonuses, be more satisfied...

Organizational implications

Organizational commitment is the degree of employee identification with a company, which allows for organizational goals internalizations and display of organizational citizenship behavior[206]. Employees could demonstrate organizational citizenship behavior as a sign of being thankful for organizational support[207]. Employees with higher retention commitments are more devoted to their jobs, organizational commitment is inversely related to **turnover** and **absenteeism** rates[208].

Although the level of satisfaction and connected with it PJ fit is not the only factor determining a decision to change or remain at work, using ceteris paribus paradigm - an employee who is dissatisfied with his job (and thus in some important aspect misfitted with it) and has the opportunity to change it for a subjectively better one, will certainly take such a chance. In other words: Job satisfaction resulting from a sense of fit leads to measurable financial impact from **reduced staff turnover**[209]. Low turnover allows employees to "get along" and achieve a high degree of mutual understanding. So we can

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[203] Wong et al., 2013
[204] Wright, 2014
[205] Roelen et al. 2008; Piko, 2006
[206] Mowday et al., 1982; Naz et al., 2020
[207] Podsakoff et al., 2000
[208] Robbins, 2005
[209] Borucki, 1977

say that other important organizational consequences of employee fit include a good organizational climate, loyalty to the organization, and a sense of competence and comfort[210].

To summarize: the consequences of feeling a sense of fit for an employee and organization can be divides into **positive**: higher job satisfaction and overall well-being, higher job longevity, reduced staff turnover, reduced absenteeism rates and **negative:** lack of job satisfaction, stress, lowered mood, job burnout, difficulty balancing work and personal spheres, decreased organizational commitment, increased staff turnover, increased absenteeism rates.

1.5 Four types of PJ fit measurement

The degree of PJ fit can be measured directly and indirectly[211]. The literature lists 4 ways to operationalize fit:

1. SUBJECTIVE fit based on the employee's subjective perception, like an agreement with the statement **"This job suits me"** meaning a sense of being the right person in the right place
2. OBJECTIVE fit can be measured in direct way when indicators of objective fit are e.g., the amount of bonuses earned, the number of days missed at work do not depend on the employee's perception. Fit based on external criteria (e.g., education) is assessed by external observers such as recruiters. Objective assessment of fit can be based on one or more sources of information[212]. Objective fit can be also based on a comparison of objectified measurements of the characteristic of an employee and a work/job. This way of operationalization requires a good knowledge of organizations (on job requirements and resources) in which research participants work.
3. PERCEIVED fit – calculation based on a comparison of attributes assessed separately by an employee – self-assessment and assessment of their job characteristics. This method of operationalization was used by us in study A and B when employees assessed themselves and their jobs.
4. PREDICTED fit[213] where employees were asked to evaluate TARGET DESCRIPTIONS of different jobs. Study C used this methodology asking for evaluation specially constructed job offers.

[210] Spokane et al., 2000; Chatman, 1989; Bocchino et al., 2003; Caplan et al.,1985
[211] Kristof – Brown, et al., 2005
[212] Kristof-Brown et al., 2005; Andysz, 2011
[213] Wieczorkowska, 2022

The most frequent used method is PERCEIVED Fit assessment, because in research, we rarely have access to an objective [independent from employee perception] description of the work characteristics, because respondents [employees who took part in research] usually work in different places.

It means that researchers should rely on the work description delivered by employees which could be distorted by their psychological characteristics, e.g., the same work under high time pressure can be described in a very positive way by low reactive employees and in a very negative way by high reactive. This means that **the same objective conditions** (even the best ones) may be **perceived in radically different ways** by different employees[214]. It was shown that it is easier to predict dissatisfaction related to failure to meet boundary conditions (good pay, job security, etc.) than satisfaction.

1.6 Summary

There are many studies that try to find simple relationships between 2 variables like "impact" of Job characteristics on Job "effectiveness" (in broad sense) OR impact of Employee characteristics on Job "effectiveness".

Far fewer studies look for interactive effects when, for example, job characteristics are moderators or mediators of the relationship between employee characteristics and job effectiveness. Some examples: all personality traits from the Big Five model are more likely to predict job performance if the work is performed in the context of vague boundary conditions[215]. In the case of simple tasks, an increase in diligence and emotional stability beyond a certain threshold decreases performance. With complex tasks, the more diligent and emotionally stable employee is, the better. **Extraversion** is more important in predicting the level of performance of **tasks requiring social skills**, **agreeableness** is less important in predicting the results of work requiring **competition**[216]. **Proactivity** of an employee characteristic promotes efficiency under conditions of high AUTONOMY (manifested, inter alia, in the freedom to choose the way of doing work); in the absence of autonomy, efficiency is not predicted by this characteristic.

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[214] van Harrison, 1987

[215] Uppal et al., 2014, Jurek & Olech, 2017

[216] Judge & Zapata, 2015, Jurek & Olech, 2017

As it is pointed out also in the literature[217] there has been very limited research conducted on working styles, especially from 1990 up to now, so there is **an essential need to study** them as workforce characteristics in HRM.

A review of the literature on the working style as a characteristic of the employee showed **a research gap** in the world literature. In Poland, this topic has been intensively studied in the Managerial Psychology and Sociology Department (WZ UW) since 2014 – when a paper[218] was published stressing the thesis that in management like in in medicine, good measurement tools are needed. One sad example is the analysis[219] of available data collected by using business tools like a very widely used Gallup's Clifton StrengthsFinder Assessment, which shows that diagnosis can be biased when it is not adjusted for individual differences in employee response style.

As Druker claims – which is also consistent with the psychological knowledge – working style is modifiable to a very small degree, so it has been established as stable employee characteristic. From this point of view the most important characteristic of work is the level of AUTONOMY, which - when high - allows employees to perform work in accordance with their working style.

[217] Bayl-Smith and Griffin, 2015
[218] Wieczorkowska, 2014
[219] Wieczorkowska, Karczewski, 2019

Chapter 2: Methods and goals of empirical part

Chapter 2 is organized into 5 parts:

1. Description of methodological paradigm
2. Research objectives, and research tasks
3. Datasets' descriptions
4. Operationalization of main variables
5. Hypotheses

All research and analyses were carried out within methodological paradigm (WiW), which I am presenting below[220].

2.1 Description of methodological paradigm WiW's for HRM research

The results of research in the field of HRM do not lead to the construction of immutable laws, but only remain socially, culturally, and historically limited generalizations[221]. The formulation of a research program requires not only the determination of the research area, but also the specification of the problem and objective of this research[222]. The research instrumentarium we will use in their case will result from the adopted research objective and the possibility of its implementation.

We study what is observable, measurable, and susceptible to experimentation. Science is based on empirical evidence.

2.1.1 Terminology

All data obtained by asking employees questions are called **survey data.** All participants, regardless of whether they took part in surveys, experiments or interviews, are called **respondents**, because the object of analysis is their reactions (answers).

Results of measuring people can have the form of **numbers**, in which case we speak of quantitative research/analysis, or **words**, which are most often a component of qualitative research/analysis.

[220] This part of the text is quoted after Wieczorkowska, 2022

[221] Sułkowski, 2011 in: Czakon, 2011

[222] Niemczyk, 2011 in: Czakon, 2011

Quantitative data are sets of numbers that are subjected to statistical analysis. **Qualitative** data are sets of words that are an attempt to describe different visions of the researched phenomenon (reality is in the eye of the beholder), subjected to the researcher's interpretative analysis, which may include objectivizing elements such as classification of statements by independent judges, counting the frequency of using different phrases.

Quantitative research differs from qualitative research in the degree of proceduralization of methods of analysis. The aim of quantitative research is most often the objective testing of hypotheses assuming relations between variables. The aim of qualitative research is most often to identify individual ways of perceiving reality.

2.1.2 Methodological pluralism/eclecticism + pragmatism in the choice of problem

The WiW paradigm rejects both **anarchism** (accepting arbitrary methods and techniques drawn even from individual experience) and methodological **fundamentalism**, in which different research methods cannot be mixed. It agrees with the postulate that research methods in HRM should be applied reflexively, as they are heuristic in nature, making algorithmizing impossible. Therefore, it recommends **pluralism** and even methodological **eclecticism** that accepts the use of methods drawn from different disciplines and theoretical approaches to solve a research problem[223].

At the stage of selecting the research problem, it is recommended to apply **a pragmatic** approach, if the analyzed research problem does not have important practical consequences, then it is not worth dealing with it, leaving such considerations to basic sciences.

2.1.3 Specificity of the test object

Methodologists forget that the study of inanimate objects is governed by different laws than the study of people. To make matters worse, we are dealing with conducting „people-by-people" research. The specificity of HRM research lies in the fact that the objects of measurement are **people who create meanings,** e.g., their reactions to stimuli are mediated by their expectations, interpretations determined to a large extent by the record of their previous experiences. Therefore, in contrast to the sciences, **in HRM each replication of the study is a success**, because the group of surveyed employees, their experience, the cultural context, are always changing.

The objects of analysis in HRM research are **mental facts**, e.g., most often people's answers (verbal or categorized on numerical scales) to the questions asked. It should be remembered that this type of quantitative data is almost always distorted, as has been shown in many studies[224]. The model of the question-answer process shows why there is such a great variation in the responses of the respondents.

[223] Sułkowski, 2011 in: Czakon, 2011

[224] Wieczorkowska & Wierzbiński, 2013

Answering a question about evaluation, e.g., job satisfaction, requires the activation of various information contained in long-term memory in its semantic (e.g., what it means to be satisfied) and episodic parts (e.g., recalling various emotional states). The recalled information, according to a concept of consciousness called **a multiple sketch model**, is subject to continuous editing. At no point in this process can it be said that the editing is complete, and the final outcome is consciously experienced. At a given moment, we recall the worst episodes; in an hour, we may recall information that radically changes our judgment. When we are in a good mood, we look for positive aspects of working in this company; when we are in a bad mood, we "look for holes in the whole". Respondents, while filling in the questionnaire, very rarely have ready answers on their satisfaction "in their heads". The assumption that we constantly archive different opinions is not very convincing. An alternative assumption is that we construct them on an ongoing basis when they are needed. Specific goals, standards, judgments, and attitudes with a high capacity to generate further information. We have various general opinions, goals, standards, and attitudes encoded in our minds to generate further opinions. These are essential for the formation of emotions, because without them it is impossible to give any meaning to the events we encounter. Most of the cognitive representations (e.g., views about the role of work in life) that we ask about are not represented in the mind before the evaluation is initiated. Such representations can be described as virtual (because they do not exist before the question is asked). Our approach differs significantly from the traditional approach of measurement theory, which assumes that the respondent already has a fixed 'true' answer - one they would give themselves, so the primary concern is to minimize measurement error caused by the form of the question, the social context. Every evaluation requires the ability to focus one's attention to select information, to omit or at least block out those that are of peripheral importance. In the process of transforming a thought into an opinion, a chain of associations emerges in the mind. Each word, especially an ambiguous one, triggers a sequence of associations that run often in different, even very divergent directions. There are many cognitive schemas encoded in permanent memory that are "ready" to interpret such a word. The mind usually sifts through associations and selects only those that are related to the thought we want to express. The more accurate this information sifting, the more effective the next stage of processing associated with conscious attention can be. Only a modest fraction of this process can be made conscious, but this does not mean that we cannot take control and turn our attention to different aspects of the issue. In this way, awareness modifies the operation of the filter. We can call up information from long-term memory, and it will filter the incoming information. To sum up, we must be aware that **respondents very often do not have a ready answer and they form it only when the questions are asked.** Very often, they do not reproduce their opinions, but construct them. What opinion they form depends on which of the four strategies of forming an opinion we apply: 1) reproducing ready-made judgements, 2) motivated processing, 3) heuristic (simplified) processing, and 4) analytical (detailed) processing.

The information processing strategy chosen is determined by the respondent's cognitive abilities (e.g., level of reflexivity), state of the organism (overload, mood), and goals

determining the degree of involvement. The choice is also influenced by the characteristics of the object of assessment (degree of familiarity and complexity) and the characteristics of the situation (time pressure, social approval, how costly mistakes are). In surveys, respondents, due to time constraints and the lack of costs of making an incorrect judgment, extremely rarely use an analytical strategy. Therefore, we should keep in mind:

1. Importance of psychological realism of the research – it is very important to maintain the respondents' engagement, e.g., by offering personalized feedback if it is possible. The respondent wants to understand not only WHAT is being asked about, but also WHY?

2. Respondents do not have ready answers in their heads and must have the right to say "I don't know", not applicable, or omit the answer. Forcing them to give an answer can lead to irritation and giving random answers to subsequent questions.

3. Respondents, if they can, will avoid the mental effort – they love to use middle options on the rating scale, so even-numbered points with Don't Know (Difficult to Say) option outside the rating scale is recommended. Research[225] has shown that the absence of a middle option does not significantly increase the number of Don't Know (Difficult to Say) answers.

To conclude: Respondents answer have different validity and reliability. Sophisticated methods of data analysis are of no use if these data are distorted in various ways.

2.1.4 Scientific concepts and operational definitions

In science, we use the language of observation and the language of theory in parallel. In the language of theory, we use **scientific concepts** (theoretical constructs, latent variables) e.g., leadership style, need for dominance, emotional well-being of an employee etc., which need to be translated into the language of observation.

The WiW paradigm recognizes that the theoretical constructs under study are **natural concepts** that cannot be defined in a classical way by means of necessary and sufficient conditions, so the solution to the problem is operationism[226], which assumes that scientific concepts do not capture the essence of things, but only give the scientist's actions, his psychophysical operations needed to define the thing under study**.**

We use various measurement tools to build indicators. An example would be sets of questions built to measure an employee characteristic. Such sets of questions are called scales (e.g., Anxiety Scale) or psychological tests, which can be treated as a variety of *calibrated tools*[227].

The positivist approach[228] to quantitative research analysis assumes that the object of research is facts, which are presented in the language of variable values. Hundreds of

[225] Wieczorkowska &Wierzbiński, 2011
[226] Bridgman in: Tatarkiewicz, 1950
[227] Brzeziński, 2019
[228] Tatarkiewicz, 1950

variables and their operationalization have been described in scientific HRM studies. One can get the impression that the introduction of another scientific concept to describe a person is overly accepted. That is why the researcher has to choose the variables that are the subject of his inquiries by describing the theoretical model of the phenomenon described and the measurement model of the theoretical constructs.

The task of the researcher is not limited to registering facts and laws governing the facts but consists in such an ordering of them in theoretical models as to be able to predict subsequent facts on their basis.

2.1.5 Theoretical Models

In HRM, we gain knowledge mainly through empirical tests of models, not through observation. Therefore, the first step is to select, based on a literature review, the theoretical variables (scientific concepts) that will be used to model the phenomenon of interest to the researcher.

A theoretical model should be as follows:

- be simple - the fact that reality is complex does not imply that the model should be complex[229],
- congruent with available scientific facts if it is not intended to question interpretation of them,
- be logical, internally consistent[230],
- being able to generate predictions,
- be empirically verifiable.

A **theoretical model** that has been confirmed by many studies can be called **a theory**.

Each model in HRM consists of an a priori part, an assumption that the selected variables are valid and relevant, or a set of hypothetical relationships between variables, which are subjected to precise empirical tests. In addition to the theoretical model, a measurement model must be specified, that is, a way of operationalizing all the variables.

Hypotheses are falsifiable statements about the relationships between the variables specified in the theoretical model.

2.1.6 Five types of triangulation

The WiW paradigm recommends 5 types of triangulation: (1) methods, (2) data, (3) operationalization, (4) modes of analysis, and (5) researcher.

Triangulation of methods: Even in online surveys, we can combine correlational, experimental, and qualitative methods. We analyze numerical answers to closed questions

[229] As professor Robert Zajonc used to say

[230] Burniewicz, 2021

with quantitative methods, and verbal answers to open questions with qualitative methods.

Data triangulation: The availability of population representative random samples is very limited in the social sciences, due to the fact that people can be drawn but cannot be forced to participate in surveys. Therefore, in most cases, surveys are conducted on convenience samples consisting of people who have agreed to participate in the survey. We increase external validity by replicating studies in different convenience samples. **This means that we should test the same hypotheses on different data sets.**

Triangulation of operationalizations: There are no standard operationalizations of variables in HRM. Operationalization of variables should be carefully selected considering the specifics of the sample, e.g., the item "I make decisions under time pressure more easily" is a good indicator of low reactivity in the group of young employees, but not among managers. Even if we use standardized ready-made measurement tools, their psychometric properties should be checked on the sample.

Triangulation of analysis methods: Although in quantitative analyses assumptions are made about the axiological neutrality of science and the noninterference of the researcher, even in the preproceduralized, objectified statistical analyses, the researcher has to make decisions about how to "clean" the data set, how to build indicators, how to choose assumptions about the level of measurement, how to choose statistical tests. The decision of whether to treat a questionnaire score as a continuous or ordinal variable (e.g., after median splitting) may lead to different conclusions. Therefore, the WiW paradigm **recommends quantitative selection methods to analyze** a data set.

When analyzing qualitative data, words, **researcher triangulation** is recommended, data should be coded by at least two people independently of each other.

2.1.7 External and internal validity of research

We increase external validity by using different types of triangulation – in particular, by testing the same hypotheses on different data sets.

Where possible, we should take care to ensure the INTERNAL VALIDITY of the study. Even in surveys we can **manipulate the independent variables** – that is, we can conduct experimental research by assigning volunteers randomly to different experimental conditions.

Where possible, in both surveys and interviews, we introduce DESCRIPTIONS of the objects whose evaluation we want to know. For example, when asking employees for their opinions about their boss, we are not able to determine to what extent it results from the employee's perception and to what extent from the objective characteristics of the boss. Asking for the evaluation of the model description of e.g., a dominant, partner-like boss we can investigate individual differences in the evaluation of various features that were the basis for the construction of these descriptions.

2.1.8 Quality of Data

Before analysis, data sets should be carefully cleaned of "false" respondents, who, e.g., gave random answers[231]. Standard measurement tools used in research should be checked for psychometric properties/adapted to the group of respondents studied.

2.1.9 Quantitative, experimental case studies[232]

Findings on relationships between 2-3 variables (with ceteris paribus paradigm) are difficult to apply in practice because of multidimensionality of reality). Therefore, WiW methodological paradigm promotes QUANTITATIVE experimental case studies, where the values of variables at selected time points are manipulated and quantitative measurements are made over a long period of time.

2.2 Research objectives, and research tasks

Methodological handbooks demand the formulation of the research hypotheses in the first step, with the second step devoted to the collection/search for data that could falsify these hypotheses. The WIW methodological paradigm recognizes that access to good data in HRM is a scarce good (people can be drawn but cannot be forced or even encouraged, due to the saturation of companies living from asking questions), so it is worth identifying the possibilities of data access first.

An example is this dissertation. When the dissertation proposal was accepted by the Scientific Council in 2019, I had planned to continue the experimental study described in Chapter 1 as S5. This was a lab experiment in which I played the role of an experimenter. The tasks performed by the research participants in the laboratory did not leave them any freedom as to how to perform them – these were the conditions low job AUTONOMY.

In such condition POINT respondents pay higher costs that INTERVALs both on the subjective and objective (measured by heart-rate variability).

Therefore, the next step was planned to replicate this study under condition of high job AUTONOMY. The pandemic made it impossible to invite volunteers to the lab, so I had to restructure the research proposal.

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[231] Wieczorkowska, Wierzbiński, 2011; Kabut, 2021

[232] Wieczorkowska, 2014

The main objective of the dissertation remained unchanged: to deepen HRM knowledge of risk factors resulting from the mismatch between selected characteristics of the employee and selected job characteristics. The theoretical basis for the selection of employee characteristics is Wieczorkowska's theory of Intervality (1992-2022). The theoretical basis for the selection of work characteristics is: Hackman & Oldham's Job Characteristics Model (1975-2010) along with a 2018 meta-analysis[233].

The operational goal of the dissertation is to carry out 3 research tasks:

Task #1 Testing the relationship between employee well-being and job AUTONOMY on representative samples of employees in 5 countries.

Task #2 Testing the preferential paradox: POINT employees feel worse in case of low job AUTONOMY (high level of routinization) and at the same time prefer when asked about it, highly routinized work.

Task #3 Testing predictive validity and reliability of WIS measurement using SSA.

The hypotheses that were tested are described in section 5 after the description of variables operationalizations.

2.3 Data sets' description

2.3.1 Study A: Job AUTONOMY and employee health and well-being

The survey is Eurofound's sixth **European Working Conditions Survey** (EWCS), which has been running since 1991 and covers **Face to Face** interviews with up to 44,000 employees in 35 countries. Respondents are working in a wide range of economic sectors, industries, occupations across Europe.

The working conditions surveyed included exposure to physical and psychosocial risks, work organization, work-life balance, and employee health and well-being.

The EWCS 2015 report also included an analysis of employees' self-reported job evaluation. This was described with relationships on various dimensions of job quality and factors showing job engagement, financial security, skills and competency development, health and well-being, work-life balance, and job longevity.

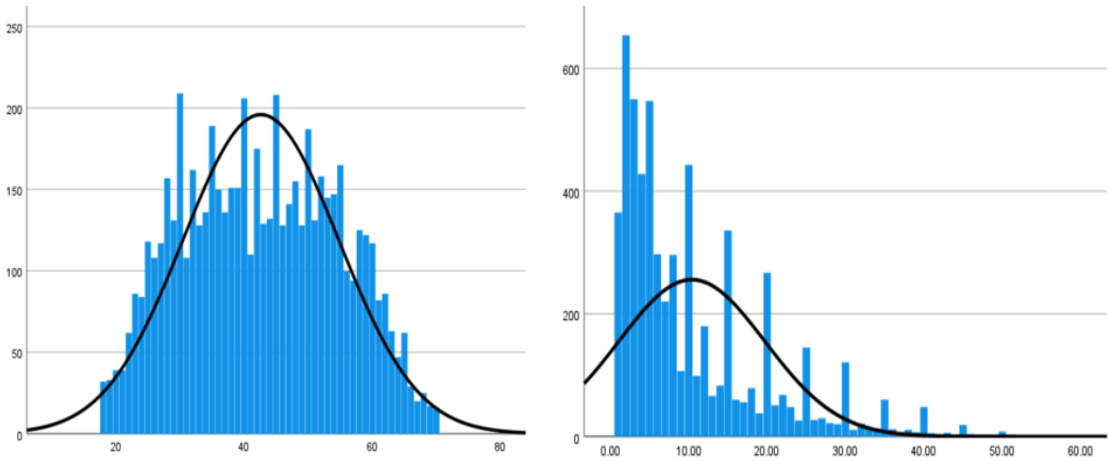
Analyses were carried out on a **5 nationally representative samples: Poland, Czech Republic, Hungary, Germany,** and **Turkey**. Czech Republic and Hungary were

[233] Wegman et al., 2018

selected, for their similar economic level relative to Poland. Germany was chosen, because it is a Western European country neighboring Poland. Turkey, on the other hand, was selected, because it is a completely culturally different country compared to Poland, but one that participates in the European Working Conditions Survey.

Respondents who qualified for the analyses had to meet the following prerequisites:

1. were at least **18** and at most **70** years old
2. declared a **length of seniority** of **not less than one year** based on the answer to the question "How many years have you been in your company or organization?"
3. when asked about their **professional status**, they chose the option of "**at work as an employee**" or "**employer/self-employed/relative assisting on family farm or business**"
4. who were judged by interviewers to have had fair, good or **very good cooperation** during the interview.



Distribution of Age

Distribution of Seniority in Organizations

Figure 10 Distributions of age and seniority

Age and seniority are highly correlated (r=0.52, df=5974) so cannot be used simultaneously as predictors in regression analyses.

The 5 samples of respondents, who met the prerequisites have following sociodemographic characteristics:

The **Polish** sample consisted of 785 employees (55% women) with average seniority M=10.3 SD=9.1. The mean age is 41.2 years, with a standard deviation of 11.9 years. The average length of employment (job tenure indicator) with the current organization is 8.7 years, with a standard deviation of 9.2 years.

The **Czech** sample consisted of 837 employees (52% women). The average length of employment (job tenure indicator) with the current organization is 9.6 years, with a standard deviation of 7.9 years.

The **Hungarian** sample consisted of 794 employees (53% women). The average length of employment (job tenure indicator) with the current organization is 9.8 years, with a standard deviation of 8.1 years.

The **German** sample consisted of 1664 employees (48% women). The average length of employment (job tenure indicator) with the current organization is 11.9 years, with a standard deviation of 9.5 years.

The **Turkish** sample consisted of 1588 employees (25% women). The average length of employment (job tenure indicator) with the current organization is 9.4 years, with a standard deviation of 9.7 years.

2.3.2 Study B: Compatibility of Job characteristic (Autonomy) and employee Characteristic (WIS)

The study involved 257 respondents, from different age groups, with different levels of education, from different industries, and with different job positions. Women constituted 57.4% of the sample, the mean age of respondents was 38 years, the SD 13.35 years, mean education was 16.1 years of formal education, SD 2.6 years. The purpose of the survey is to capture the multifaceted dimensions of work styles in Poland, drawing a picture of working people, their working styles, well-being at work, and health.

Each data set collected by SSA survey is analyzed for false (inattentive) respondents. After analysis based on response time, test questions, logical consistency, and declarative cooption (questions explicitly asking about the level of engagement in the survey), 23 individuals were excluded. The final sample includes 234 individuals.

2.3.3 Study C: Job Preferences depends on Working Style

The study involved 615 respondents coming from a survey done through a Polish commercial nationwide panel. Participants collect points in exchange for participation in the survey and can later exchange these points for various rewards. The sample was drawn from more 250,000 panel participants who had to meet following prerequisites:

1. were at least **25** and at most **70** years old
2. declared a **length of seniority (tenure indicator)** of **not less than 3 years**
3. had at least secondary education
4. work in **the Mazovian macro-region**.

The requested quota was not met for this administrative area, so additional respondents were invited from two cities: Lublin and Łódź. Study was conducted in July 2021. The

sample has 55.7% women, and the participants have at least secondary education. The mean age is 43.9 years, with a standard deviation of 10.7 years. The average number of years of education was 16, with a standard deviation of 3 years.

2.4 Variables operationalization

WIS - Working Interval Style was in both studies measured SSA, so we will start with the description of this tool.

2.4.1 SSA – Survey of Activity Styles[234]

The primary purpose of creating the Activity Styles Inventory (ISA) in 1994 was to provide measurement tools for a variety of theoretical variables that describe different aspects of how activities are organized. Its online version is called the Activity Styles Survey - SSA. As shown in the literature review in Chapter 1, research on employee characteristics has been dominated by the NEO-FFI Questionnaire[235], which has several weaknesses:

1. It is made up of indicative sentences, formulated in the first person singular, which may raise problems regarding the respondent's lack of experience. For example, the sentence "I often try new and exotic dishes" may be negated both by people who do not like novelties, as well as those who would like to experiment with exotic food, but do not have such opportunities. To obtain the maximum score, e.g., on the scale of openness to experience, one has to agree with 5 items and disagree with the remaining ones. Different cognitive processes triggered when agreeing and denying (cf., e.g., research on asymmetry) very often result in positive (requiring agreement) and negative (requiring denial) items being separated into separate factors in factor analysis.
2. However, the biggest problem is the heterogeneity of the two theoretical constructs. In OPENNESS to EXPERIENCE, up to 14 of the questions relate to an interest in art/poetry. In CONSCIENTIOUSNESS, both the need for achievement, responsibility, and pedantry are included. This heterogeneity makes it difficult to imagine a person who scores high or low on the scale. The results obtained in this way can be used in nomothetic research, when we are interested in relations between variables - statistical abstracts, and not in the personality of a particular person. The proponents of such measurement method argue that NEO-FFI scales have high homogeneity indices calculated using Cronbach's α, forgetting that this does not guarantee that the scales are univariate. It is very easy to obtain high α if we take a large enough number of non-negatively correlated questions.

[234] Based on Wieczorkowska, 1998, 2014, 2022

[235] Costa & McCrae, 1989, 1992

In contrast to the Five-Factor Model of Personality[236], which was developed based on lexical research, created in 1994 the Activity Styles Inventory[237] was developed on the basis of observations of different ways of organizing ways of performing tasks.

The main psychometric requirement for the scales of SSA is to meet the requirement of the measurement model (as it is understood in structural modelling), so first and foremost that they should be **unifactorial**.

The SSA items has the form of contrasting descriptions of the behavior of two people in the same situation: person A and person B. The respondents have to make a choice by indication whether in this situation they will behave “exactly like A, rather like A, rather like B or exactly like B?". They can also choose the option "Difficult to say", which is always outside the response scale.

This way of phrasing questions has undeniable advantages: the respondent does not need to have experience of the specific situation we are asking about, and furthermore the information that someone, i.e. A or B, has behaved in a certain way, somehow legitimizes this behavior, thus weakening the impact of the variable social approval. It is important that the questions deal with different reactions to the same situation, so it is very easy to imagine the behavior of the person who scored high/low on the scale. The difficulty in constructing questions with binary choices is that not all aspects of interest can be presented as simple alternatives.

SSA consists of **several blocks of questions.** Each block consists of 5-6 questions that are indicators of a specific characteristic. This set of questions is called **a scale/dimension**. When building the set of questions, the objective is to ensure that the number of diagnostic questions requiring the indication of person A is equal to the number of questions requiring the indication of person B, eliminating the influence of the nodding tendency. The editions of the SSA used in research in subsequent years are modified depending on the purpose of the study and the sample studied. In recent years, scales describing activity/work style have been added, among others, to measure: the three needs (affiliation, dominance, achievement); temperament (reactivity, extraversion, emotional balance at work and in leisure time).

Responses to SSA questions are subjected to **a false respondent detection procedure.** The first step is to check the number of noncontentious DIFFICULT TO SAY [TP] answers, which is analyzed not only as a feature of the question but also as a feature of the respondent. In a single question, the TP response if it is additionally associated with a longer response time may be an indicator of the respondent's flexibility, because due to the context not sufficiently specified in the question the respondent may think that s/he behaves once as person A, in another situation as person B. In such cases, TP responses are recoded to the middle of the response scale. First, however, the number of TP answers given by the respondent must be counted - if there are a lot of TP answers (e.g., more than

[236] Costa & McCrae, in: Siuta, 2006

[237] Wieczorkowska, 1998

50%), it is an indicator of cognitive laziness or disregard for the survey and such respondent should be removed from further analyses.

In my research (study B and C), 4 SSA scales were used to measure the Working Interval Style.

Scale: Methodicality from low to high

High scores are obtained by a person who thinks about what needs to be done, divides the task into parts, plans it in time, and starts to complete the task when s/he has devised exactly how to do it. Believes that decision-making should be a methodical (structured and sequential) process.

Low results are obtained by a person who starts tasks without knowing how s/he will perform them, thinking that somehow it will be done, does not analyze how much there is to do and how long it will take. S/he believes that in decision-making it is important not to follow repetitive patterns, but to leave oneself full freedom.

Scale: Sequentiality from low to high

High scores are given to a person who gets frustrated when they have to think about several different things in parallel. A low simultaneous person likes to concentrate on only one task at a time. When different tasks compete in terms of importance, a low-simultaneous person tries to finish what they started first.

A low scorer is a person who tries to have several things started simultaneously to "switch" from one to the next. When different tasks compete with each other in importance, a highly simultaneous person tries to somehow complete them in parallel. S/he often interrupts work that is important to her/him when something interesting, though unrelated to what s/he is doing, comes up.

Scale: Precision from low to high

High scores are given to a person who cares about details, likes tasks where attention to detail is required. His/her knowledge is very precise, if s/he knows something, it is with details.

Low scores are given to a person who ignores details and looks for the overall picture of a problem. S/he cares more about the overall result than about the details of the task at hand. Her/his knowledge is not very precise, s/he knows a lot, but not very precisely.

Scale: Routinization from low to high

High scores are obtained by a person who likes to perform tasks according to a clearly specified procedure. Likes work that requires strict application of received guidelines on how to perform the task. Tired of chaos and information overload.

Low scores are given by a person who likes to have freedom in choosing how to perform tasks. Likes to work in a way that allows them to do things differently each time. Tired of monotony.

It is worth adding that studies have shown positive correlations of these dimensions with self-control (lack of procrastination and finishing tasks started), pedantism, and good time estimation. Especially the latter dimension is important in working conditions.

The indicators for the individual scales are univariate and close to the observation level; it is easy to imagine the behavior of, for example, a low methodical person. The dimensions of methodicality, precision, sequentiality, and routinization correlate with each other, but not so highly that one of them can be removed. In individual employee diagnoses, for example, there are highly methodical and low-precision people – although there are far fewer of these than precise and methodical people.

For the purposes of psychological diagnosis, the employee receives the results on the subdimensions, as these show the areas that need/want to be modified.

For statistical analyses (as in the research described in the dissertation), theoretically and empirically correlated dimensions are aggregated into **second-order indicators**. Second-order factors do not translate as easily into observation levels as first-order factors, but they do allow hypothesis testing.

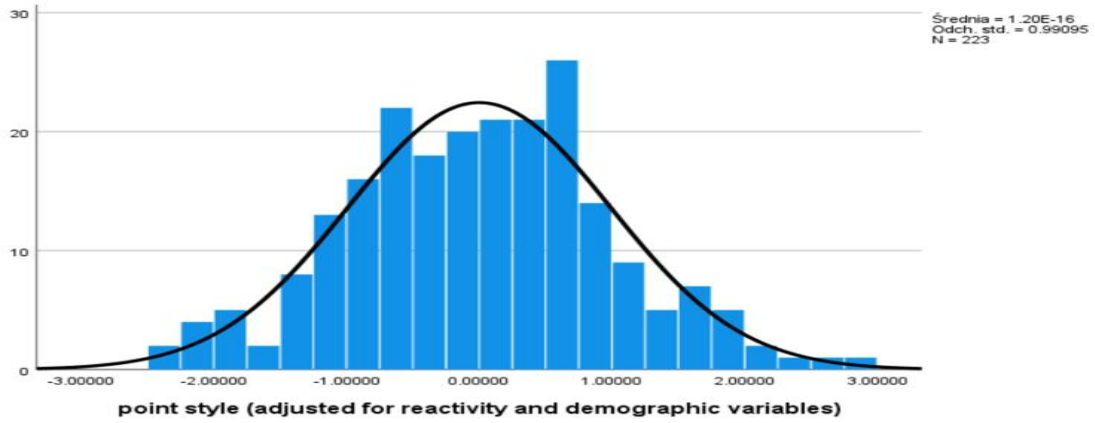


Figure 11 Distribution of WIS (the higher the more POINT like) in study B

For comparative analyses, the median split of the index is often used, separating the group of POINT and INTERVAL people.

In the analyses there were two 2 other employee's characteristics used as control variables: reactivity and need for achievement. Both were measured by SSA scales.

2.4.2 Job AUTONOMY level / Degree of freedom at work

Study A: European Working Condition Survey

The degree of freedom index was built based on answers to 3 questions: "Do you have the **ability to** choose or **change...?** (A) **The order** in which you perform your duties, (B) **The way you do** your job**, (C) The speed** or pace of work" with the response scale "yes",

"no", "don't know." Responses to the questions were highly correlated, with alphas ranging from 0.76 [Czech Republic] to 0.85 [Turkey] – so one AUTONOMY index was built. Median split of the index divided sample into categories: (1) who said 3 times YES; (2) the rest.

The Figure 12 shows the percentages of employees who said YES

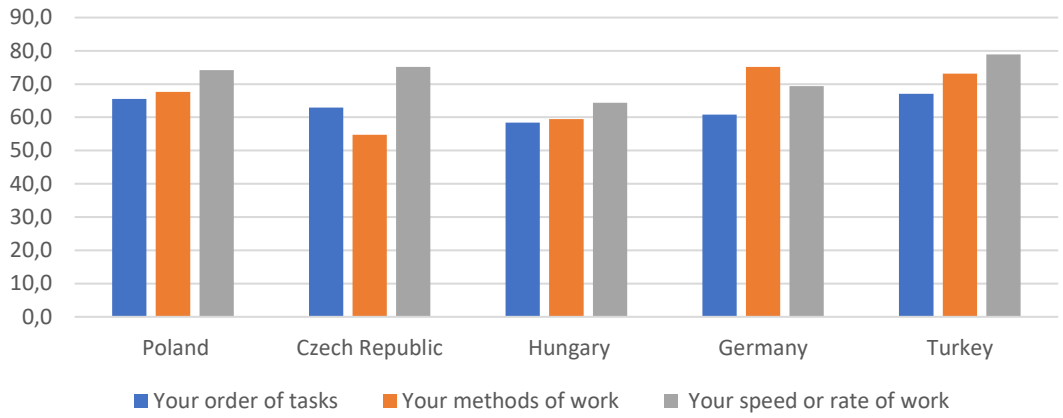
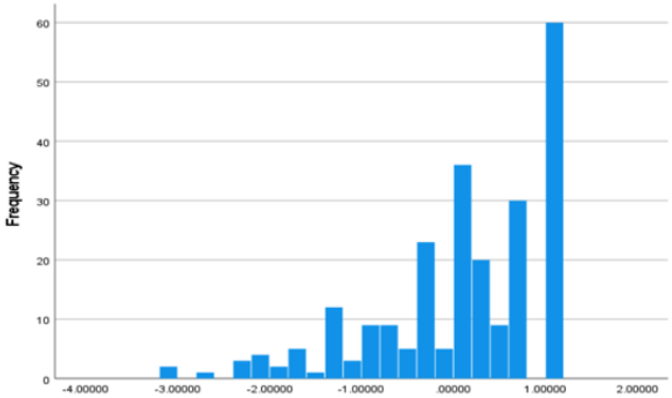


Figure 12 Percentages of employees who had freedom at work depending on the country

JOB AUTONOMY in Study B: SSA20

To operationalize Job AUTONOMY the same items were used as in study A but the rating scales [instead of YES or NO] was described as follows: 1 - very rarely or never; 2 - rarely; 3 - often; 4 - very often or always; TP - hard to say. The answers to 3 questions were correlated (alfa=0,79) so one index was constructed.



N	239
M	0.08
SD	0.94
Minimum	-3.05
Maksimum	1.08
Alfa Cronbacha	0,79

Figure 13 Distribution and descriptive statistics for the Job AUTONOMY index

The median split of the Job AUTONOMY index was used in the analyses.

2.4.3 Job ROUTINIZATION level in study B

In study B an index was built based on answers to following 3 questions:

	1 – Never or very rarely	2	3	4	5 – Very often or always
is scrupulously supervised by a supervisor	16.9	20.3	33	15	14.8
requires adherence to tight deadlines	3.3	10.6	18	31	37.1
requires strict application of the guidelines received	7.3	12.7	29	25	25.3

Table 5 Percentages of respondents that chose a given answer on questions used in routinization level index

Although these 3 questions correlate highly with each other – so we could build a single indicator to preserve the façade validity important for the interpretative purpose. It was decided to consider the answer to the last question as an indicator of the Job ROUTINIZATION. As in the case of job autonomy, the median split was used in all analyses.

2.4.4 Job Well-being in study A (EWCS)

In study A the WELL-BEING index was constructed based on 2 correlated and standardized variables: Job SATISFACTION and Emotional BALANCE.

Emotional BALANCE Index was created based on responses on the rating scale from 1=always, 2=most of the time, 3=sometimes, 4=rarely, 5=never to the following 6 statements related to **how employees feel about their job**.

A. I feel full of energy in my work B. I approach my work with enthusiasm. C. When I work, time passes very quickly. D. I feel exhausted at the end of the working day*. E. I doubt whether my work is important* F. I believe that I am good at what I do at work.

It turned out to be one factor scale, so the index was built with higher scores denoting positive job-related affect. Items signed by (*) were reversed.

Job SATISFACTION: Overall, are you very satisfied, satisfied, not very satisfied, or not at all **satisfied** with the **working conditions** in your main paid job?

2.4.5 Well-being at work in study B (SSA20)

The aggregate (general) index of well-being was constructed out of the 5 following components:

- y1 – emotional balance at work;
- y2 – work overload (reversed);
- y3 – feeling appreciated;
- y4 – liking job;
- y5 – job SATISFACTION.

All 5 components were highly correlated Cronbach's α=0,79, so one **aggregate index** of WELL-BEING is built. Its distribution is shown on the Figure 14 and then the operationalization of all components is presented.

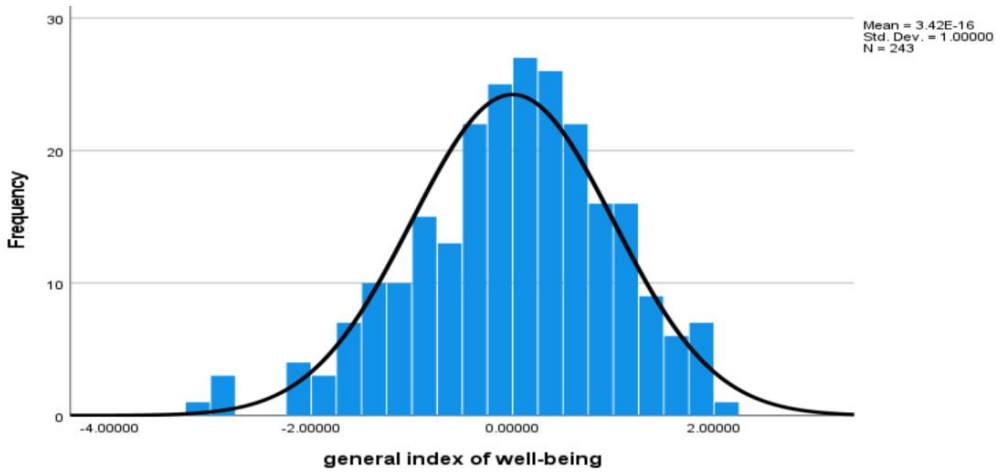


Figure 14 Distribution of aggregate well-being index

y1 - Emotional balance at work

Responses to the following questions were used to build the EMOTIONAL BALANCE index at work. During a typical day at work in your company, how often did you feel satisfied? content? relaxed? worried? tense? stressed? The response scale was described as follows: 1 - never or very rarely; 2, 3, 4, 5, 6 - very often or always. The distribution of the Emotional balance at work is shown in Figure 15.

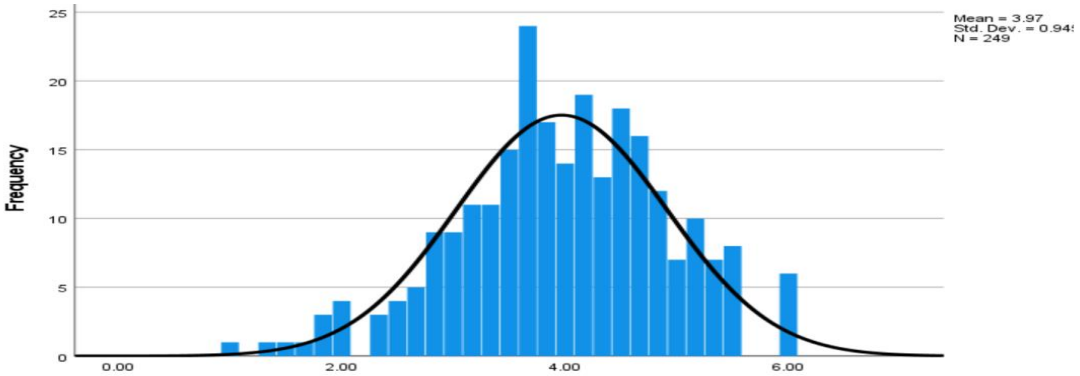


Figure 15 Distribution of emotional balance at work index

y2 - Work Overload (reversed)

Responses to the following questions were used to construct an index of the degree of cognitive overload. (1) I feel that my work negatively affects my physical and/or emotional well-being; (2) I have too much work and/or too many impossible deadlines to meet; (3) I feel that work pressures interfere with my family and/or personal life. The response scale was described as follows: 1 - very rarely or never; 2 - rarely; 3 - often; 4 - very often or always; TP - difficult to say.

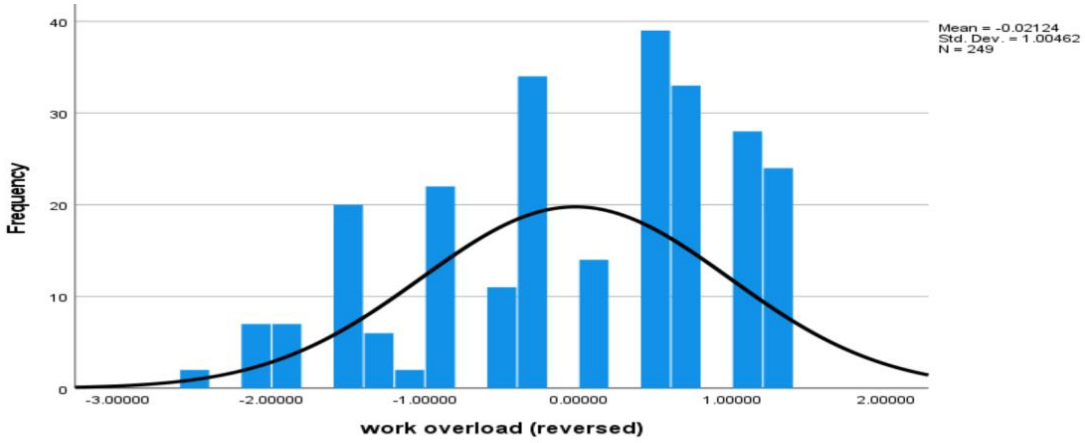


Figure 16 Distribution of work overload index (scale reversed)

Y3 - Feeling Appreciated

The responses to the following questions were used to construct an index of the degree of recognition. (1) I have adequate control and/or influence over job responsibilities; (2) I receive appropriate recognition or rewards for good job performance; (3) I am able to use my skills and talents to their full extent at work.

The response scale was described as follows: 1 - very rarely or never; 2- rarely; 3 - often; 4 - very often or always; hard to say.

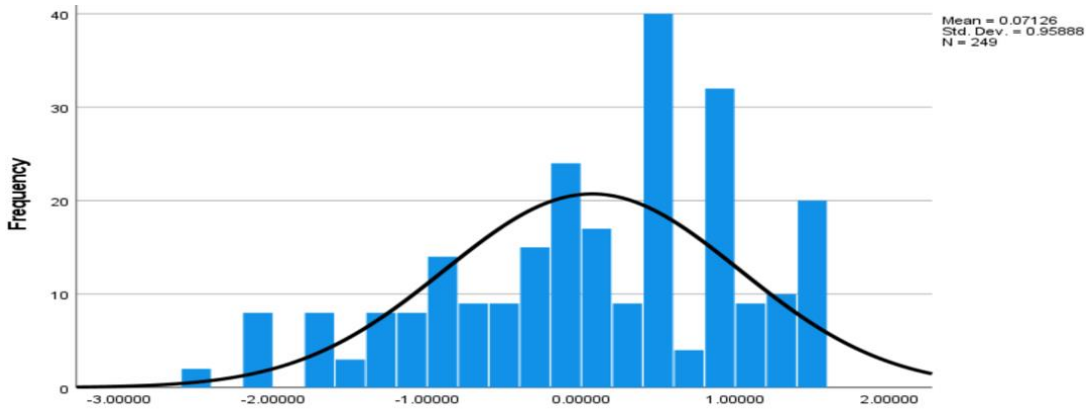


Figure 17 Distribution of feeling appreciated index

Y4 - Liking job

The answer to the single question "What do you think of your current job?" on the rating scale from (1) I love it!; (2) I like it; (3) It is acceptable; (4) I don't like it; to (5) I hate it; was used to create an index (after being reversed from (1) = I hate it to (5) = I love it!).

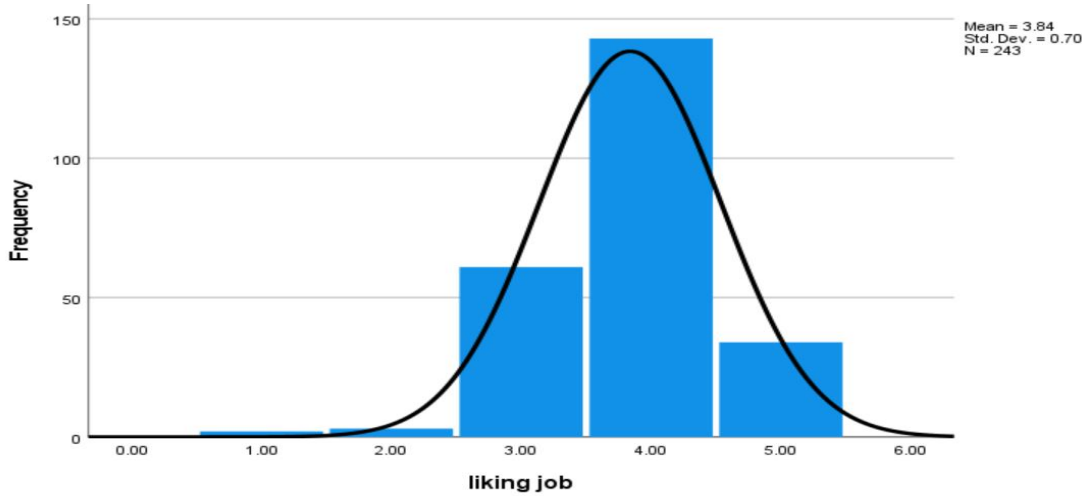


Figure 18 Distribution of answers to question about liking job

Y5 - Job SATISFACTION

To construct an index of the job SATISFACTION the responses on the rating scale from (1) - very rarely or never; (2)- rarely; (3) - often; to (4) very often or always (with the difficult to say outside the scale) to the following 5 questions were used:

How often have you felt at work in the **past 3 months**:

(1) that you are able to accomplish a lot in this job? (2) that time is slipping through your fingers? (3) that you would do better in another position? (4) are you satisfied with

your job? (5) that you handle difficult things well? The responses were highly correlated, so one index was constructed see Figure 19).

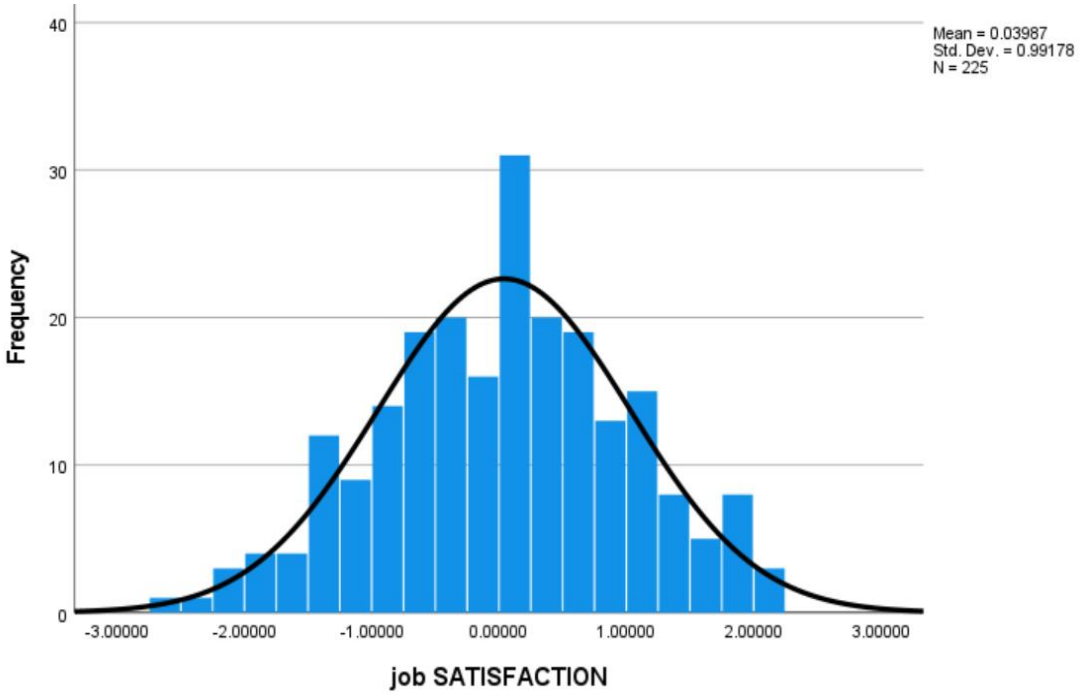


Figure 19 Distribution of job satisfaction index

2.4.6 Health assessment index in study A (EWCS)

The Health Index in study A was constructed from 3 standardized variables: (1) item **"Overall, what is your health like? Would you say that it is..."** with a 5-point scale: Very Good, Good, Satisfactory, Bad, Very Bad, (2) number of health problems and (3) number of days being sick in the last year (reversed).

The list includes following health problems:

1. Hearing problems [Last 12 months, have any health problems?]
2. Skin problems [Last 12 months, have any health problems?]
3. Backache [Last 12 months, have any health problems?]
4. Muscular pains in shoulders, neck and/or upper limbs [Last 12 months, have any health problems?]
5. Muscular pains in lower limbs [Last 12 months, have any health problems?]
6. Headaches, eyestrain [Last 12 months, have any health problems?]
7. Injury(ices) [Last 12 months, have any health problems?]
8. Anxiety [Last 12 months, have any health problems?]
9. Overall fatigue [Last 12 months, have any health problems?]
10. Other (spontaneous) [Last 12 months, have any health problems?]

11. Difficulty falling asleep [Last 12 months, any sleep related problems?]
12. Waking up repeatedly during the sleep [Last 12 months, any sleep related problems?]
13. Waking up with a feeling of exhaustion and fatigue [Last 12 months, any sleep related problems?]

The distribution of the HEALTH index is shown in Figure 20.

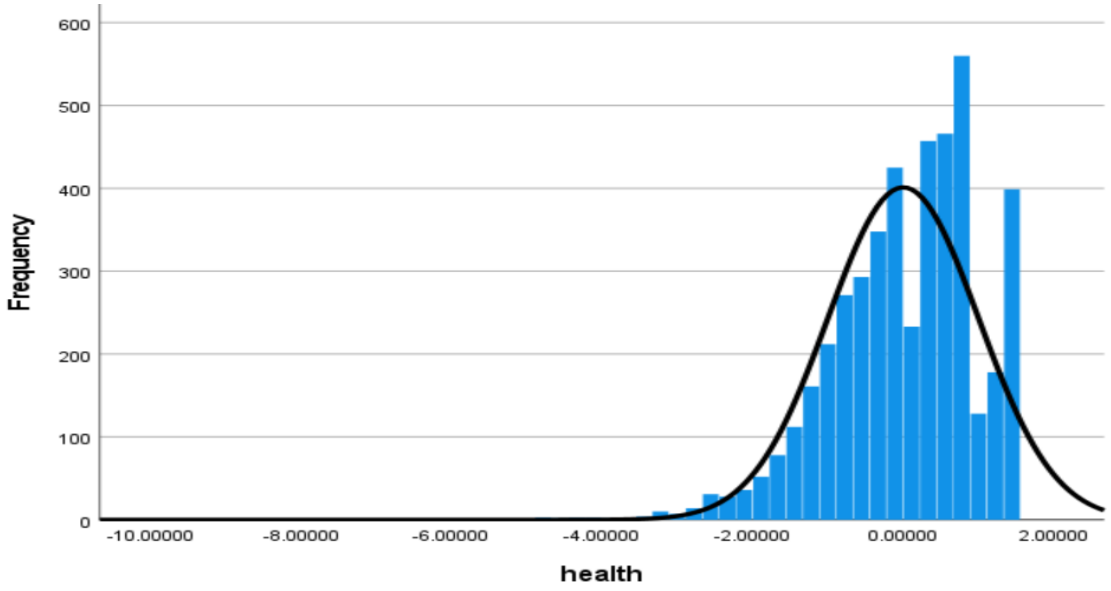


Figure 20 Distribution of health index in 5 countries

2.5 Hypotheses

Using operationalization described in the last section following hypotheses were tested:

H1: The **higher job AUTONOMY**, the **higher** employee **well-being**.

H2: The **higher well-being**, the **better health** (self-report).

The hypotheses were tested in each of 5 countries separately, so altogether **10 hypotheses** were tested.

H3: Impact of job AUTONOMY on well-being is moderated by employee working style and job ROUTINIZATION.

The hypotheses were tested with one aggregate index of well-being and on each of 5 components: y1 – emotional balance at work; y2 – work overload (reversed); y3 – feeling appreciated; y4 – liking job; y5 – job SATISFACTION, separately.

So altogether **6 hypotheses** were tested. In all analyses there were 3 explanatory variables: WIS (point vs interval), job AUTONOMY (high vs low) and job ROUTINIZATION (high vs low) and 4 covariates: education (in years), gender, need for achievement and age.

H4: When have a choice: **POINT** employees prefer jobs with **HIGH** level of routinization, while **INTERVAL** employees prefer jobs with **LOW** level of routinization.

This hypothesis was tested in **two ways**:

(1) in experimental study, when 615 divided into 2 groups based on their WIS score evaluated 2 job offers with HIGH vs LOW level of routinization

(2) in comparison of WIS score between groups differ in their answer to open-ended questions on their preferences regarding level of job routinization.

In the next chapter the results of the **18 hypotheses** testing will be presented.

Chapter 3: Results

3.1 Study A: Job autonomy and employee health and well-being

Design of analysis

In the theoretical model tested in study A, the following variables were identified:

- Predictors/Explanatory/Independent variables (IV)**:**
  - **Job AUTONOMY** level
- Explained/Dependent Variables (DV):
  - (DV1) **Well-being** at work (aggregate index composed of 2 components)
  - (DV2) Employee **health** (aggregate index composed of 3 components)
- Controlled Variables: **Gender**, **Age**, **Seniority**, **Education** (in years of schooling), Countries: **785 Polish** employees, **837 Czech** employees, **794 Hungarian** employees, **1664 German** employees and **1588 Turkish** employees.

The descriptions of the sample selection and procedure, variables operationalization is in Chapter #2. Altogether **the responses from 5668** employees were analyzed.

The analyses were conducted as replications for each country separately, as each country coded education differently, and there were significant differences between countries in the explained variables and also in age, as shown in Figure 21.

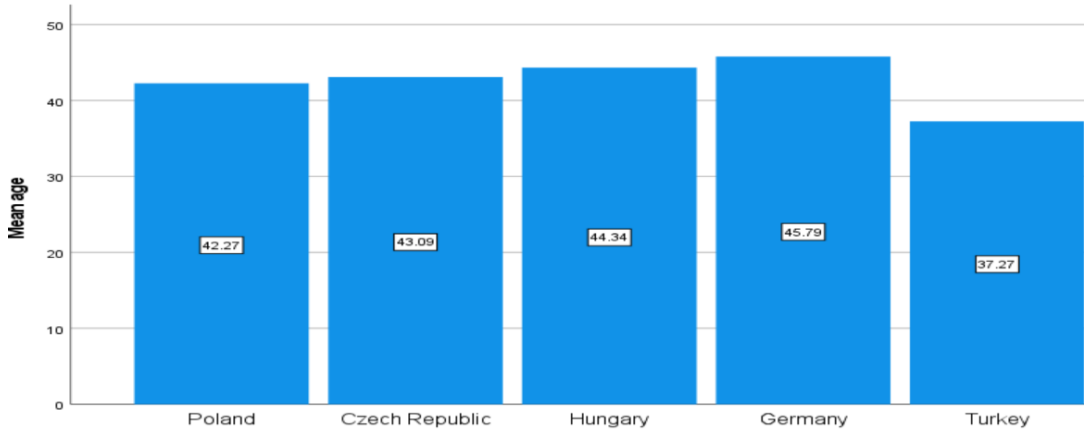


Figure 21 The multi-country differences in **age**

The representative samples for the countries differed in the average age of respondents (see Figure 21) with the German sample being the oldest and the Turkish sample the youngest.

Significantly lower Job Autonomy than Poles was shown by Hungarians. Other differences are statistically insignificant (see **Figure 22**).

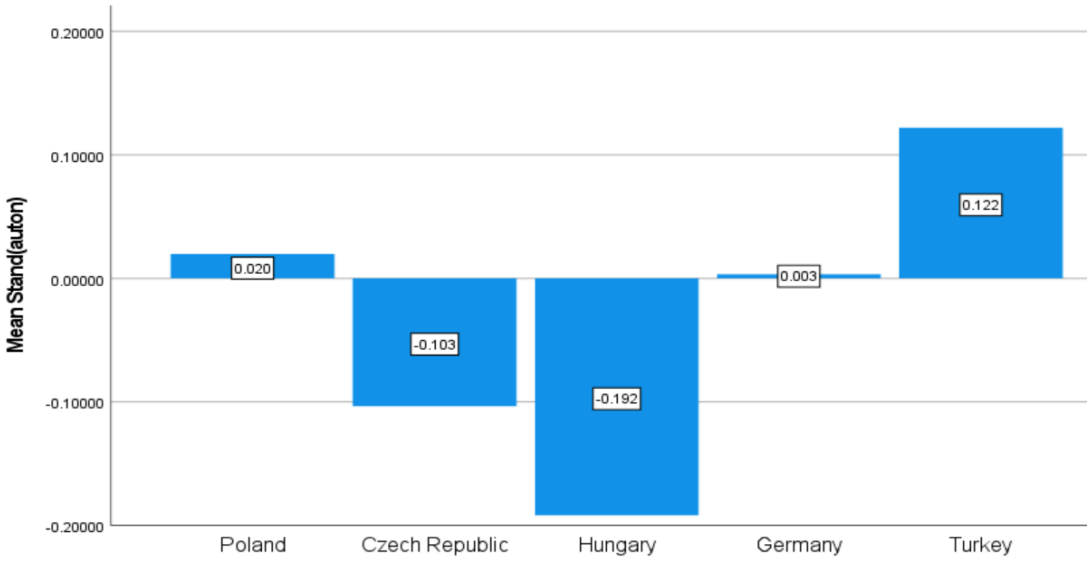


Figure 22 The multi-country differences in **Job Autonomy** level

The **lowest well-being** (and significantly lower than the others) was observed in the **Turkish** sample (see Figure 23). The sample of **German** workers showed significantly **higher well-being** than the Polish and Czech samples - not significantly different from the Hungarian sample.

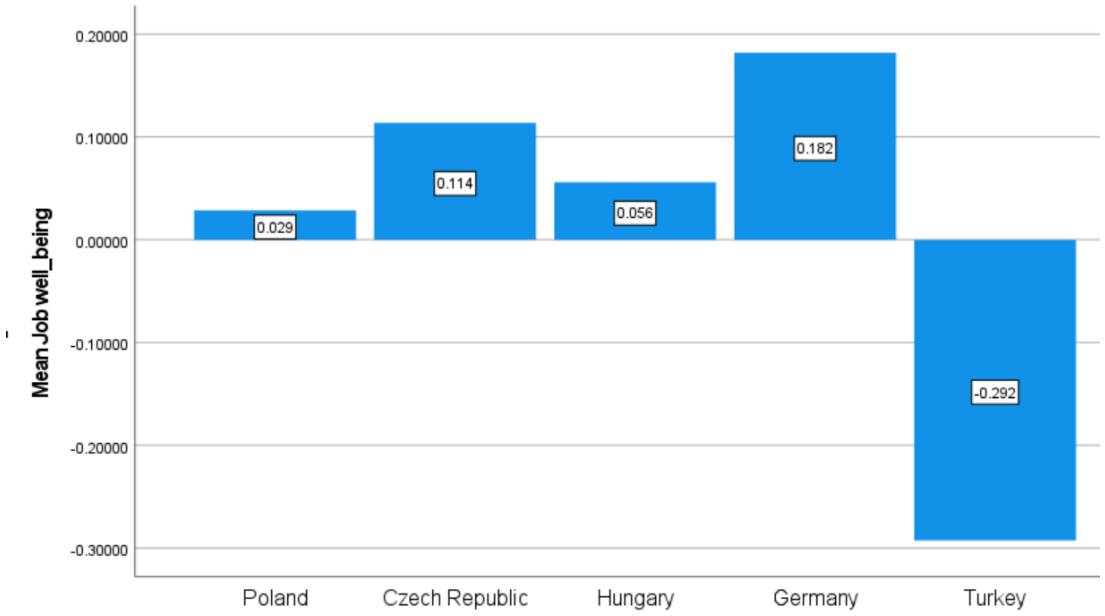


Figure 23 The multi-country differences in **well-being** (standardized score)

On the **Figure 24** there are shown means in health rates. The Polish sample rates of health is significantly lower than the Czech, Hungarian and German employees' samples. The differences between the Polish sample and the Turkish sample (which also scores low on this dimension) are not statistically significant.

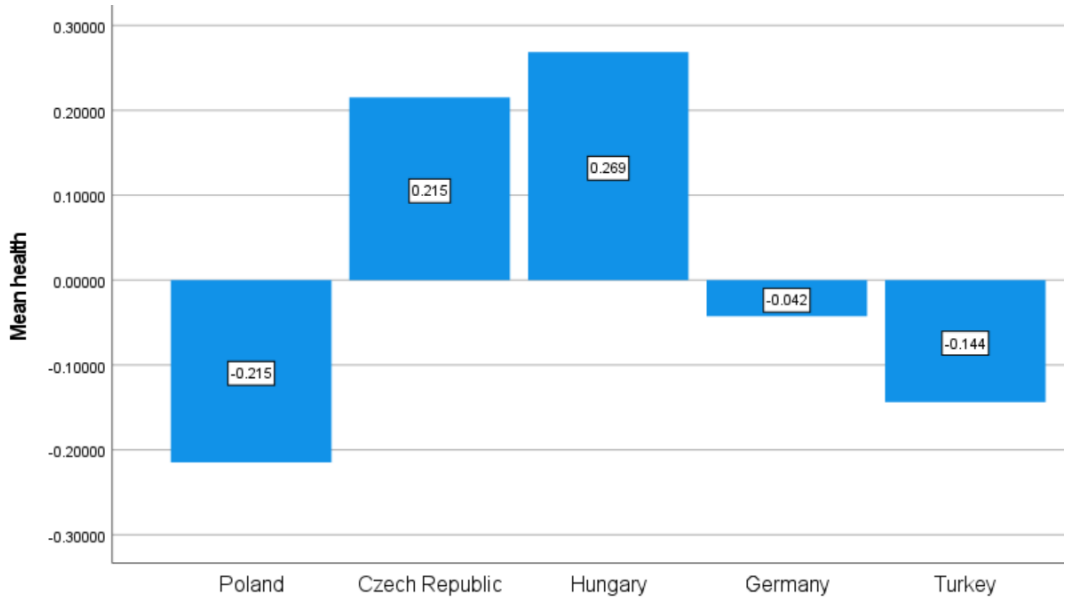


Figure 24 The multi-country differences in **health** (subjective assessment, standardized score)

Results of hypotheses testing

The 2 following hypotheses were tested in study A:

> **H1**. The higher level of well-being at work is significantly predicted by the higher job AUTONOMY.
>
> **H2**. The higher level of well-being at work, the better health (subjective estimation)

To test hypothesis "H1: The higher level of well-being at work is significantly predicted by the higher job autonomy" five multiple regression analyses were performed (more tables with statistical details are in Annex 1).

		b	sb	BETA	t	p
Poland	(Constant)	-0,9	0,18		-4,96	
	job autonomy (freedom at work)	0,27	0,09	0,11	**3,16**	**0,002**
	seniority (number of years in company)	0,01	0	0,11	**3,04**	**0,002**
	the highest level of education/ training completed	0,02	0,02	0,05	1,52	0,130
	Gender	0	0,07	0	0,05	0,961
Czech Republic	(Constant)	-1,14	0,14		-8,25	
	job autonomy (freedom at work)	0,48	0,07	0,22	**6,48**	0,000
	seniority (number of years in company)	0,01	0	0,07	2,1	0,036
	the highest level of education/ training completed	0,02	0,01	0,06	1,78	0,075
	Gender	-0,02	0,06	-0,01	-0,38	0,706
Hungary	(Constant)	-1,36	0,14		-9,54	
	job autonomy (freedom at work)	0,55	0,08	0,25	**7,09**	0,000
	seniority (number of years in company)	0,01	0	0,11	3,08	0,002
	the highest level of education/ training completed	0,03	0,01	0,11	**3,07**	0,002
	Gender	-0,11	0,07	-0,06	-1,73	0,085
Germany	(Constant)	-1,09	0,1		-11,06	
	job autonomy (freedom at work)	0,43	0,05	0,22	**9,09**	0,000
	seniority (number of years in company)	0,01	0	0,07	2,74	0,006
	the highest level of education/ training completed	0,08	0,02	0,09	**3,83**	0,000
	gender	-0,01	0,04	0	-0,19	0,850
Turkey	(Constant)	-1,38	0,13		-10,63	
	job autonomy (freedom at work)	0,48	0,06	0,19	**7,81**	0,000
	seniority (number of years in company)	0	0	-0,04	-1,58	0,114
	the highest level of education/ training completed	0,08	0,02	0,12	**4,71**	0,000
	gender	-0,01	0,05	-0,01	-0,27	0,787

Table 6 Regression coefficients for 5 countries.

On the **Figure 25** we can see values of standardized regression coefficient (BETA) for all 4 predictors in 5 countries. Job autonomy is the strongest predictor of wellbeing at work in all countries with Poland showing the weakest and Hungary the strongest relationship (the unstandardized coefficients are respectively 0.16 and 0.45).

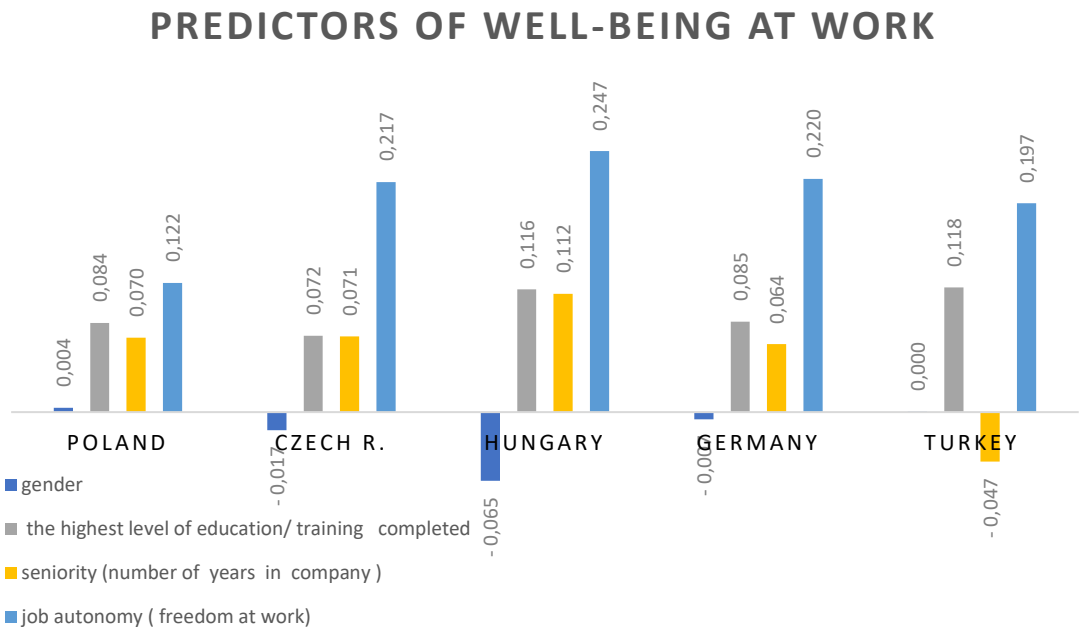


Figure 25 Standardized regression coefficients in 5 countries

To test hypothesis "H2. The higher level of well-being at work, the better health (subjective estimation) 5 correlation coefficients were computed (tables with statistical details are in Annex). On the **Figure 26** we can see values of 5 Pearson correlation coefficients between health index (adjusted for age and gender) and wellbeing at work. All are statistically significant.

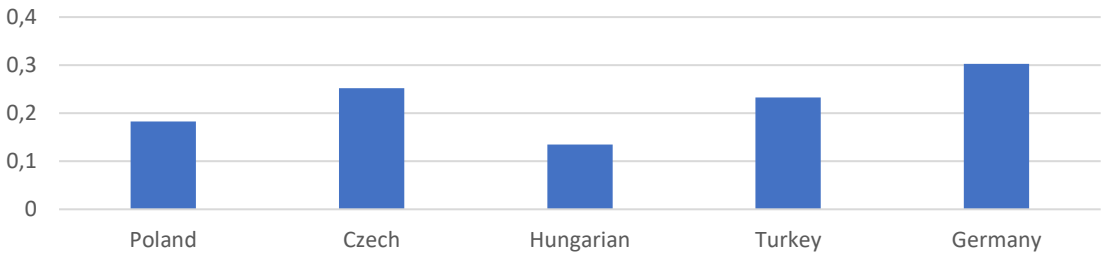


Figure 26 Pearson correlation coefficients between health index (adjusted for age and gender) and well - being at work. All are statistically significant. The table with values of statistics and probabilities can be found in Annex.

The discussion of the results is in Chapter 4.

3.2 Study B: Moderating effect of WIS on Job autonomy and well-being relationship

In the theoretical model tested in study B, the following dependent, independent and controlled variables were identified.

- Predictors/Explanatory/Independent variables (IV):
  - **WIS** adjusted for reactivity (INTERVAL vs POINT)
  - **Job AUTONOMY level** (high vs low)
  - **Job ROUTINIZATION level** (high vs low)
- Explained/Dependent Variables (DV):

Aggregate Index of well-being that consisted of 5 components:

- Job satisfaction
- Overload at work
- Feeling appreciated
- Emotional balance at work
- Liking the job

Controlled Variables: **gender**, **age**, **years of education, need for achievement**

The descriptions of the sample selection, procedure, and variables operationalization is in Chapter #2. Altogether **the responses from 257 employees** were analyzed.

Results of hypotheses testing

H3: Impact of job AUTONOMY on well-being is moderated by employee working style and job ROUTINIZATION.

The hypotheses were tested with one aggregate index of well-being and on each of 5 components: y1 – emotional balance at work; y2 – work overload (reversed); y3 – feeling appreciated; y4 – liking job; y5 – job SATISFACTION, separately.

So altogether **6 hypotheses** were tested. In all analyses there were 3 explanatory variables: WIS (point vs interval), job AUTONOMY (high vs low) and job ROUTINIZATION (high vs low) and 4 covariates: education (in years), gender, need for achievement and age.

Dependent Variable: general index of well-being

Source	SS	df	MS	F	
Corrected Model	31.84[a]	10	3.18	3.76	0.000
Intercept	0.01	1	0.01	0.01	0.934
age	1.19	1	1.19	1.41	0.237
education	0.01	1	0.01	0.01	0.922
gender	1.21	1	1.21	1.43	0.233
job routinization	0.29	1	0.29	0.34	0.559
job AUTONOMY	13.16	1	13.16	**15.52**	**0.000**
WIS	0.01	1	0.01	0.01	0.924
routinization by autonomy	0.10	1	0.10	0.11	0.737
routinization by WIS	0.38	1	0.38	0.45	0.502
autonomy by WIS	4.17	1	4.17	**4.92**	**0.028**
routinization by autonomy by WIS	9.34	1	9.34	**11.01**	**0.001**
Error	157.68	186	0.85		
Total	189.63	197			
Corrected Total	189.52	196			

a. R Squared = 0.168 (Adjusted R Squared = 0.123)

Table 7 Interactional effect of Job Autonomy and Routinization and WIS on Well-being

In the **Table 7** of the analysis of variance we can read that employees feel significantly better at high level of job AUTONOMY, which is a replication of the relationships found in study A. It is worth emphasizing that main effect of Job ROUTINIZATION is not significant. There are also no significant differences between well-being of POINT vs INTERVAL employees. But this difference is revealed when we take into account the level of routinization of work. For a POINT employee, the level of autonomy is much more important than for an INTERVAL employee. They feel bad when they can't get the job done their own way.

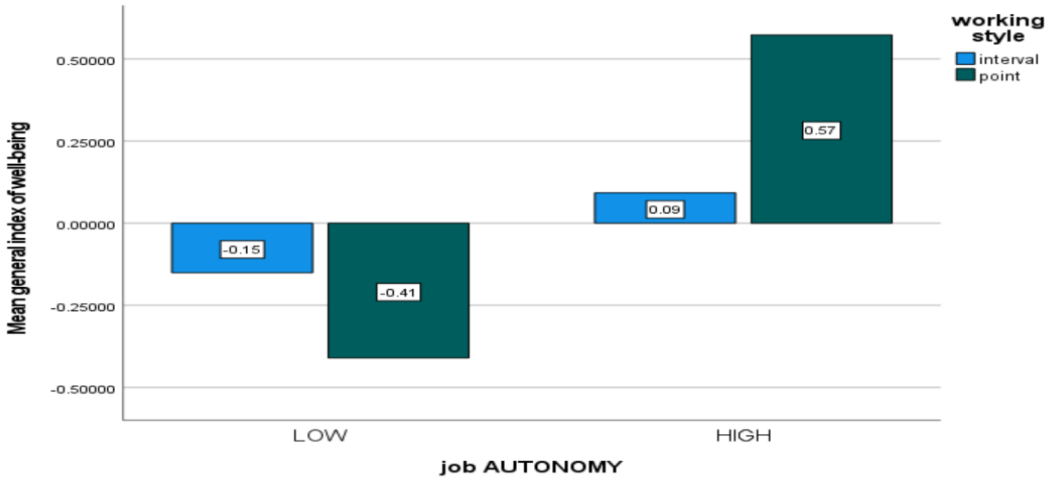


Figure 27 Interactional effect of Job Autonomy &WIS on AGGREGATE (general) Index of Well-being

The significant 3-way interaction is more difficult to interpret, but in the Figure 27 you can see that in the POINT employee group, the strongest impact of autonomy on well-being occurs in LOW level of routinization jobs.

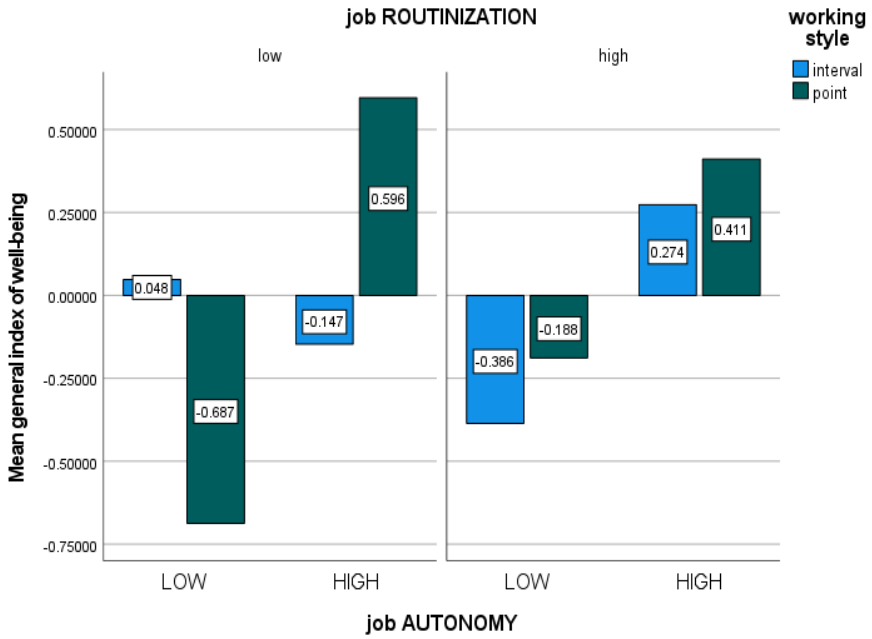


Figure 28 Interactional effect of Job Autonomy & Routinization & WIS on AGGREGATE Index of Well-being

In the Annex you can find similar analyses for all 5 components of aggregate index of well-being. In all analyses 3-way interaction was significant, what can be seen on 5 figures below.

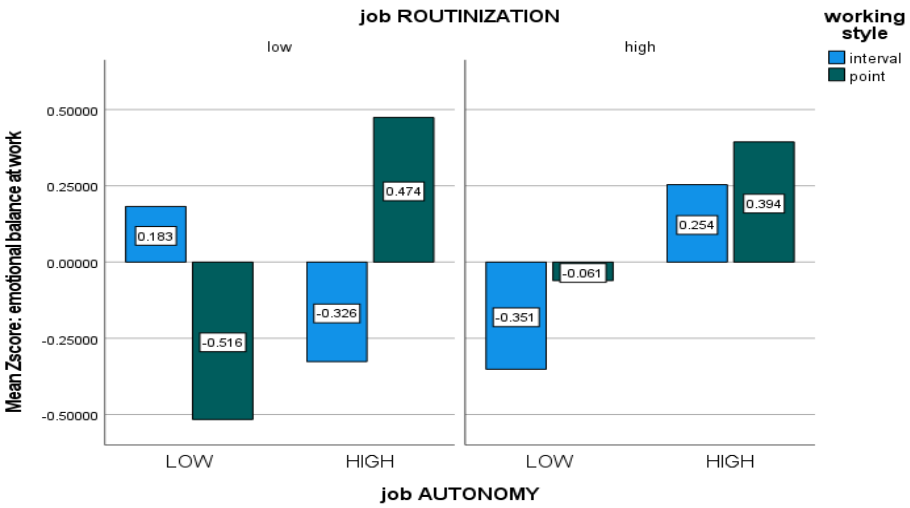


Figure 29 Interactional effect of Job Autonomy & Routinization and WIS on Emotional balance at work

EMOTIONAL BALANCE AT WORK

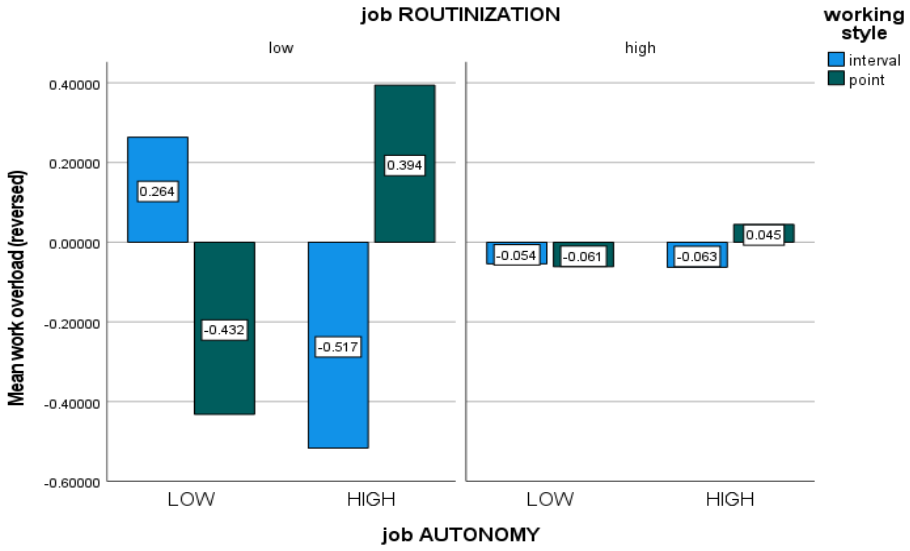


Figure 30 Interactional effect of Job Autonomy & Routinization and WIS on **WORK OVERLOAD** (reversed)

Figure 31 Interactional effect of Job Autonomy & Routinization and WIS on **Feeling appreciated**

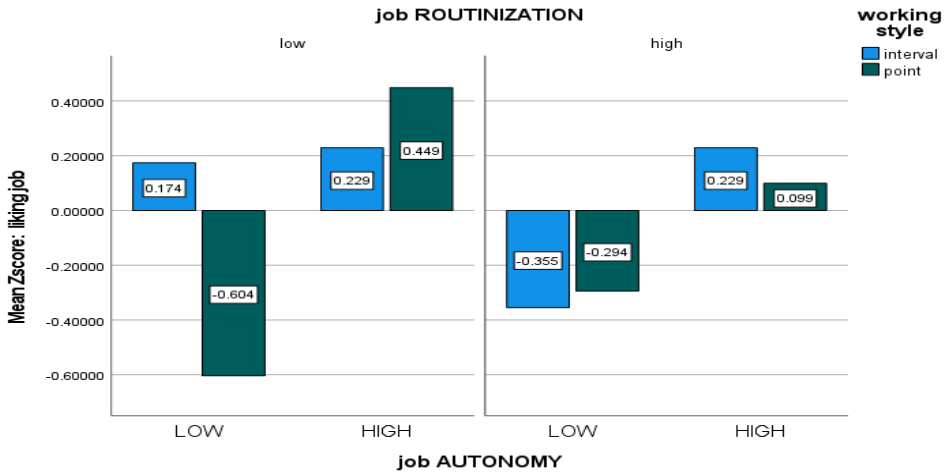


Figure 32 Interactional effect of Job Autonomy & Routinization and WIS on **LIKING JOB**

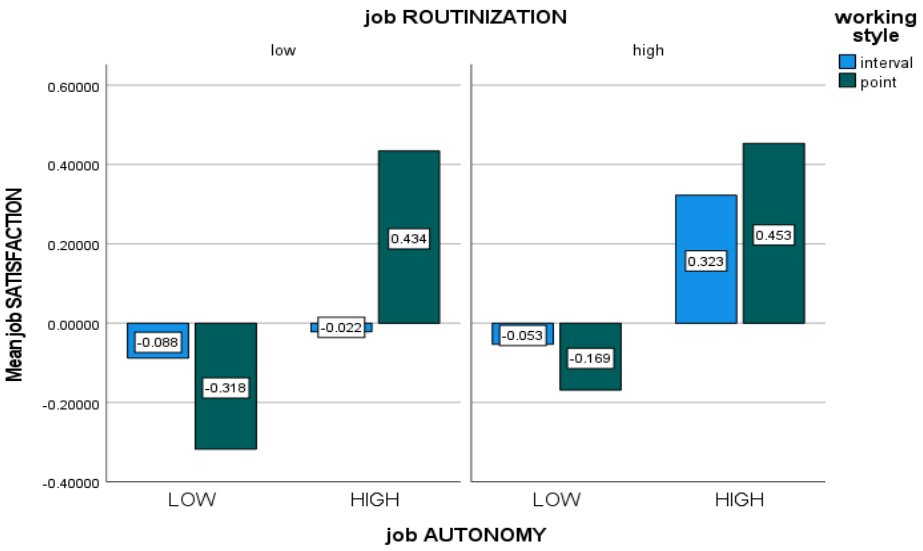


Figure 33 Job Autonomy and Routinization and WIS on **Job SATISFACTION**

3.3 Study C: Job preferences

In the theoretical model tested in study C, the following dependent, independent and controlled variables were identified.

- Predictors/Explanatory/Independent variables:
  - (IV1) JOB offers differing in level of routinization (high vs low)
  - (IV2) Working style (POINT vs INTERVAL)
- Explained/Dependent Variables (DV)**: Acceptance degree of job offer**

Controlled Variables: **Gender, Age, Seniority, Education** (in years of schooling)

The descriptions of the sample selection, procedure, and variables operationalization is in Chapter #2. Altogether **the responses from 615** employees were analyzed.

The degree of **acceptance** of the job offer JOB offers differing in level of routinization (HIGH vs LOW) was measured using the TARGET descriptions presented in Table 8.

After the two TARGET descriptions were presented, the respondents answered two questions:

Rate how willingly you would choose to work at company A, and rate how willingly you would choose to work at company B.

company A – HIGH level of routinization	**company B - LOW level of** routinization
In Company A, employees are given not only a list of tasks, but also a step-by-step procedure on how to complete them. Some people appreciate this structured way of doing things, others would expect more freedom of action.	In company B there are no written procedures, what matters is the task and the way in which the goal is achieved is less important. Some people prefer this spontaneous way of working, others think that the lack of order leads to chaos.

	Frequency	%
Under no circumstances	52	8.6
if there were no other choice	147	24.4
Without enthusiasm	139	23.1
Willingly	172	28.5
With the greatest pleasure	93	15.4
Total	603	100

	Frequency	%
Under no circumstances	81	13.3
if there were no other choice	169	27.8
Without enthusiasm	132	21.7
Willingly	155	35.5
With the greatest pleasure	70	11.5
Total	607	100

Table 8 Target description of Job Offers.

Results of hypotheses testing

To test the hypothesis on dataset SSA21, a 2 (WIS) by 2 (type of job) covariance analysis of a job offer acceptance with repeated measured the last factor was performed. There was one between subject factor: working style [interval vs. point] and one within subject factor: job offer differ in company TYPE (HIGH vs LOW level of routinization).

Age, gender, education (in years), need for achievement were used as covariates.

The results of ANCOVA was shown in **Table 9**, Table 12, Table 11

```
Tests of Significance for T2 using UNIQUE sums of squares
Source of Variation          SS      DF        MS          F  Sig of F

WITHIN CELLS            1124.90     588      1.91
TYPE                      16.37       1     16.37       8.56     0.004
zx72 BY TYPE              32.22       1     32.22      16.84     0.000
```

Table 9 Test of Within Subjects factor: TYPE of job offer - (HIGH vs LOW level of routinization) and their interaction with WIS [zx72]

Interpretation of significant interaction was shown on the **Figure 34**. INTERVAL employees prefer jobs with low level of routinization

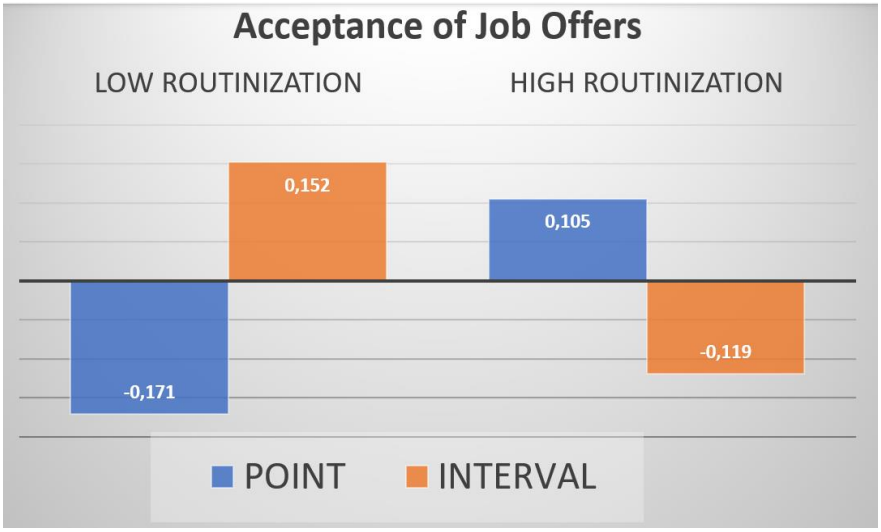


Figure 34 Acceptance of job offers differing in level of routinization (HIGH vs LOW) depending on working style

There was no significant main effect of WIS (see Table 12)

Tests of Between-Subjects Effects.

Tests of Significance for T1 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN CELLS	584.05	584	1.00		
REGRESSION	1.40	4	0.35	0.35	0.843
zx72	1.20	1	1.20	1.20	0.273

Table 10 Test of Between Subjects factor: Working Style [zx72] don't explain the differences in acceptance of job offers.

Based on this analysis (see Table 10 above), we can conclude that:

- The main TYPE of the effect of the company type [TYPE] means a stronger acceptance of the job offer from HIGH (M=3.18) than LOW (M=2.94) level of routinization company.
- The significant effect of the interaction of TYPE of company x working style (see Table 11 None of the covariates (Tage=age, Tsex=gender, TX1-achievement motivation, Tedur=education in years) was significant.

- 4 above) means that there is **no significant difference** in job offer acceptance for INTERVAL employees. POINT employees accept significantly stronger job offer from HIGH (M=3.36) than LOW (M=2.73) level of routinization company.

None of the covariates: need for achievement, gender, age, years of education (in years) was significant (see Table 11).

COVARIATE	B	Beta	Std. Err.	t-Value	Sig. of t
Tage	-0.0004632045	-0.0070883647	0.00276	-0.16803	0.867
Tsex	-0.0628368862	-0.0440339674	0.05984	-1.05001	0.294
TX1	-0.0060747762	-0.0088057434	0.02900	-0.20945	0.834
Tedur	-0.0045621650	-0.0181588146	0.01060	-0.43052	0.667

Table 11 None of the covariates (Tage=age, Tsex=gender, TX1- achievement motivation, Tedur=education in years) was significant.

Preferences for HIGH vs LOW level of job routinization: open-ended question

Respondent were asked following question:

> The 21st century is increasingly introducing standardization of work. Employees are given not only a list of tasks, but also **a step-by-step procedure** on how to complete them.
>
> How is it in the case of your work? Do you have to follow certain procedures? Do you like it when someone else decides not only what, but also how and when things should be done? Do you prefer **general guidelines or detailed instructions**?

289 employees responded, of which 170 were responses that referred to the content of the question in a way that allowed for interpretation. They were classified into 4 categories described below with exemplary statement of respondents:

Category **1**: preference for **LACK of procedures - FULL AUTONOMY (38** respondents**)**

"My current job requires me to adhere strictly to global processes and procedures. I would much rather implement my own ideas". [woman, 39 years of age, 17 years of education]

Category **2**: preference for **GENERAL procedures (92** respondents**)**

"Standardization of work is becoming increasingly apparent, but fortunately, it affects me very little. I do all tasks in my own way, but in accordance with generally accepted regulations. It does not interfere too much with the procedures. I hate it when someone tells me how to do my job, especially when they don't know about my work. I prefer to be given general guidelines. When in doubt about how to do something, I discuss it with the appropriate person". [man, age 42, 19 years of education]

Category **3**: preference for **GENERAL and SPECIFIC procedures** (**15** respondents)

"I am given general guidelines; rather, I have to wrestle with some problems of doing a task myself. This is often quite difficult and takes a long time". [woman, age 42, 18 years of education]

Category **4**: preference for **VERY SPECIFIC procedures - NO AUTONOMY** - (**25** respondents)

"Unfortunately, in my work, there is a lack of standardization of work even in the simplest activities which causes chaos. I prefer detailed instructions because it avoids misunderstandings. [man, 32 years old, 15 years of education]

"Procedures in my job are very important. Lack of them means bad consequences. I prefer detailed instructions and when I have problems I can get help. [woman, 53 years old, 17 years of education]

A comparison was made as to whether the 4 categories differed in their working style.

The main effect of categorization was significant due to the significant difference between Category #1 <preference for lack of procedures - full autonomy (38 respondents**)>** and Category #4 <preference for VERY SPECIFIC procedures - NO AUTONOMY - (25 respondents)>. The Figure 35 shows that the employees from category #1 score significantly lower on WIS (are more INTERVAL) than employees from category #4 who are more POINT like.

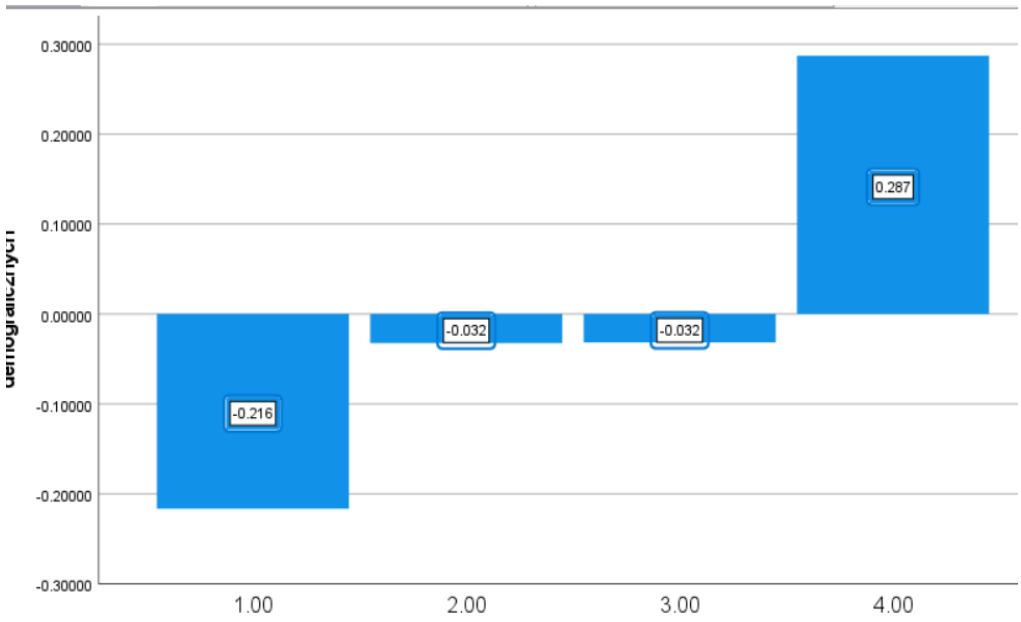


Figure 35 Groups categorized on the basis of answers to the open question differ in WIS score (on the OY axis – the higher the more POINT like Working Style)

3.4 Summary

In summary: in **study A** it has been shown that job AUTONOMY is the strongest predictor of well-being at work (stronger than seniority, education....) Well-being at work predicts health.

In **study B, the impact of AUTONOMY on job well-being** has been shown to be moderated by Working Style [WIS]. What's more important - Job AUTONOMY is a strong predictor of Emotional BALANCE Index with higher scores denoting **positive job-related affect.** It doesn't predict Emotional BALANCE Index in leisure time.

In Table 12 there is summary of significant effects in 6 analyses. The main effects of WIS or level of routinization were significant in none of the 6 analyses. If we stay on level of simple correlation between 2 variables analyses, we could claim that both predictors are unimportant, which turned to be untrue! In all analyses the 3-way interaction was significant (see Table 12).

In **study C** it has been shown that POINT employees prefer HIGH level of Job routinization while INTERVAL employees prefer having higher autonomy. Discussion of these results can be found in chapter 4.

Table 12 Summary of significant effects in 6 analyses

	Job Autonomy	Job Autonomy x WIS	Job Autonomy x Routinization X WIS	Significant covariates
y6 - Aggregate index of well-being	+		+	
y1 – emotional balance at work;	+	+	+	Age
y2 – work overload (reversed);		+	+	Achievement motivation
y3 – feeling appreciated;	+		+	
y4 – liking job;	+		+	
y5 – job SATISFACTION.	+			Achievement motivation

Chapter 4. Summary, limitations, directions and recommendations

Although this is not typical order in the summarizing chapter, I will start with the limitations of the studies carried out before I analyze the conclusions of the research.

4.1 Limitations

First limitation is MEASUREMENT. The basic problem in the social sciences is not a lack of theoretical considerations (there are too many of them), but problems of measurement. Measuring employee characteristics is the easiest part of estimating compatibility, because psychologists have developed many questionnaire-based measures over the decades. They are far from perfect, because they are based on self-reports, but they are tested repeatedly.

The operationalization of WIS consists of 4 dimensions of SSA: precision, sequentiality, methodicality, and routinization. But it is worth to mention the changes in some dimensions. The precision (attention to detail), diagnostic in a planned economy era, when the concept of intervality of action styles was introduced, in a market economy is enforced by the demands of the market. Nonchalance in the treatment of details can disqualify an employee nowadays. In the last century, sequentiality correlated with a passion for precision - the stronger the lower the employee's education. In research conducted in the 21st century both traits are often uncorrelated. In one of the studies[238] 2 x 2 classification was confirmed in which, in addition to the prototypical POINT person (precise & sequential) and prototypical INTERVAL person (imprecise & simultaneous), two additional types were distinguished: <precise & simultaneous> and <imprecise & sequential>. As expected, the <precise & simultaneous> type has the highest energy resources and the highest achievement motivation. The <imprecise & sequential> type has shown the lowest achievement motivation.

The basic problem in employee diagnosis is that - as predicted by theory[239], reactivity correlates with WIS. Among highly reactive employees, 64% prefer the POINT working

[238] Described by Wieczorkowska, 1998 and empirically confirmed by Król, 2017

[239] See: Wieczorkowska, Eliasz, 2004

style and among LOW reactive employees, 37%. A compatible working style with temperament was manifested by more than 67% of employees (about half of them are HIGH reactive POINT people, half LOW reactive INTERVAL people), but the remaining 33% can be considered misfitted. According to theory and the results of previous studies, a combination of INTERVAL Working Style and high reactivity is a greater threat (because it can lead to overload) than a combination of POINT working style and low reactivity (the consequence of which can be understimulation). To formulate such conclusion we need to take into consideration the environment type, e.g., level of job autonomy / routinization.

Measuring the characteristics of a job is much more difficult than employee characteristic, because we very rarely have access to an objective [independent from employee perception] description of the work characteristics. Our respondents [employees who took part in research] usually work in different places. This happens in study A and B when employees assessed both themselves and their jobs characteristics. It means that we had to rely on the work description delivered by employees which could be distorted by their psychological characteristics, e.g., the same highly routinized work can be described as a low level routinization job by POINT employee, and high routinization job by INTERVAL employee.

In previous studies[240], an open-ended question asked for a description of the work performed allowed for grouping of the respondents into seven categories showing that in each occupational group, some perceived their work as highly routinized. In the group of **managers** it was about **40%**, in the group of specialists (e.g., programmer) almost 47%, in the group of **customer service** (e.g., salesperson) more than **56%**. Only in two occupational groups more than half of employees described their jobs as HIGHLY routinized work (**68%** in jobs requiring **physical work**, for example, warehouse workers) or LOW routinized (over **70%** in the freelancers group, for example, journalist, musician). The perception of work as highly routinized may depends on the employee's working style. POINT employees could perceive their work as more routinized than INTERVAL employees. In the studies with their participants working in the same place,

[240] Karczewski, 2019/2022

has been shown[241] that the same objective conditions (even the best ones) may be perceived in radically different ways by different employees.

Second limitation is SAMPLING. As in the vast majority of studies in HRM, the employees participating in own studies B and C were not randomly drawn from the entire employee population. Only in Study A the analyses were conducted on representative Polish, Czech Hungarian, German and Turkish samples. In study B, a convenience sample of employees, which agreed to participate in the study (they were recruited by doctoral students) took part. In study C, random sampling of employees with predetermined sociodemographic characteristics. It is also important to remember that people can be drawn, but those drawn cannot be forced to participate in research[242]. Therefore, the external validity of research in the social sciences is increased by replicating studies, not by studying representative samples. Random representative samples are necessary when we want to estimate the variables' distribution in the population, but not when we test the relationships between variables.

As both studies B and C were collected by web survey - it should be mentioned the serious threat to validity of web survey: FALSE respondents, who voluntarily participate in a survey and answers questions without thinking (e.g., chooses a random or first good enough answer). The special procedure[243] was used to eliminate such respondents which reduced sample sizes to 80% in study A, 81,5% in study B, 86,5% in study C.

Third limitation is CORRELATIONAL design. Despite the fact that in the dissertation the phrases: the interactional "effect" of working style and Job AUTONOMY on well-being of employees are used, the results obtained cannot be interpreted in terms of cause-and-effect relationships, because study B was correlational and not experimental. It is important to remember that, as in all correlational research, the effect of the 'third variable' is unavoidable. Uncontrolled variables in our studies, such as family or financial situation, could have influenced well-being at work. At the same time, the validity of the results obtained is supported by the fact that they are consistent with the theory and results of previous studies. This is why we could claim that a low level of Job AUTONOMY reduces well - being at work. However, it is important to remember that all scientific

[241] van Harrison, 1987; Baka, 2018
[242] Wieczorkowska, Król & Wierzbiński, 2015
[243] Kabut, 2021

quantitative analyzes are conducted in a *"ceteris paribus"* paradigm (where the influence of other variables is kept constant), but in organizational practice, "*ceteris* is NEVER *paribus".*

4.2 What was found?

In the dissertation, 3 research tasks were completed.

In the Research **Task #1** <Testing the relationship between employee well-being and job AUTONOMY> two hypotheses were tested:

H1: The higher job AUTONOMY, the higher employee well-being.

H2: The higher well-being, the better health (self-report).

These hypotheses were tested in each of 5 countries separately, so altogether 10 hypotheses were tested. We will not discussed multinational differences in the means of explanatory or explained variables (e.g. significantly lower self-assessment of the health of Polish employees), because cultural differences were not the subject of the dissertation. Analyses in 5 countries served only to check the universality of variable relationships.

All hypotheses have been confirmed and can be summarized as follows: **< Job Autonomy→ Job Well-being→ Employee Health>**, but as in all correlation studies, the direction of these relationships has not been proven. The implication <Job Well-being→ Employee Health> could have the opposite direction , <Employee Health→ Job Well-being>, because it could be difficult for 'sick' employees to be happy at work.

It is much more difficult to find arguments in favor of reversing the first part of the relationship: <Job Autonomy→ Job Well-being> because it is difficult to argue that happier employee feel more autonomy but as it is in all correlation studies you can NEVER exclude 'the third variable' effect.

In study A, individual differences were not taken into account (except for simple sociodemographic characteristics such as gender, age, education, etc.).

In the Research **Task #2** the preferential paradox < POINT employees feel worse in case of low job AUTONOMY (high level of routinization) and at the same time prefer when asked about it, highly routinized work> was tested.

In study B, **H3:** Impact of job AUTONOMY on well-being is moderated by employee working style and job ROUTINIZATION was examined.

According to the WIW paradigm, triangulation of well-being operationalizations was used.

All 5 operationalization turned out to be highly correlated, although they differed slightly in the significance of the effects – e.g. for Job Satisfaction: Job Routinization was not an important moderator of the relationship <Job Autonomy& WIS → Job Well-being>.

H3 was confirmed on an aggregate index of well-being and **on almost all its components**: y1 – emotional balance at work; y2 – work overload (reversed); y3 – feeling appreciated; y4 – liking job; y5 – job SATISFACTION, separately.

In 5 out of 6 analyzes the 3 way interaction of WIS (point vs. interval), the job AUTONOMY (high vs. low) and the job ROUTINIZATION (high vs. low) was significant. For job SATISFACTION only 2 way interaction of WIS job AUTONOMY was significant. Gender and education were insignificant covariates in all analyses. The need for achievement was significant covariates in 2 out of 6 analyses, age only in emotional balance at work. It should be said that the achievement need in separated analyses failed to be a significant moderator of relationship < Job Autonomy→ Job Well-being> so this is why it was used as a covariate only.

Study B showed an **unexpected** and **interesting** difference between job AUTONOMY and job ROUTINIZATION. In previous studies both job characteristics were treated as negatively correlated: High job ROUTINIZATION → low job AUTONOMY.

In study B, it turned out that both indicators are uncorrelated, and including them as independent factors in the analyses revealed the moderating effect of job ROUTINIZATION.

We learned from these analyses that while the lack of autonomy has negative impact on well-being, the job routinization level is not significant predictor of well-being.

Analyses conducted separately in subgroup differ in Job Routinization (LOW: N1=117 and HIGH: N2=124) showed that the moderating effect of WIS on well-being applies only to the first group.

There, the interaction ‘WIS x Job autonomy’ is relevant for all indicators, in the second group irrelevant to all (see Table 13). On this basis, it can be assumed that the influence of the interactive impact of autonomy and WIS disappears in highly routinized work.

These results require further research, with a better Job Routinization indicator than the one used in study B. It would also be worth to conduct experimental studies in which the level of autonomy is manipulated, since in correlational studies it can never be excluded that a third variable is responsible for it. Alternative interpretations such as the impact of working in a managerial position, which should be associated with higher level of autonomy, were tested in Study B. In the sample surveyed in Study B, 32.2% of participants managed others. The number of managers in the group with high (35.7%) vs. low autonomy (28.3%) did not differ significantly statistically. Also, a comparison of managers vs. non-managers showed no significant differences in their well-being.

	LOW Job Routinization			HIGH Job Routinization		
	F	p	Eta^2	F	p	Eta^2
Emotional balance at work	15.538	<0.001	0.150	0.001	0.979	0.000
Work overload (reversed)	17.030	<0.001	0.162	0.082	0.775	0.001
Feeling appreciated	4.975	0.028	0.054	0.013	0.910	0.000
Liking job	9.986	0.002	0.102	0.004	0.950	0.000
Job satisfaction	4.918	0.029	0.053	0.156	0.693	0.002
General index of well-being	19.018	<0.001	0.178	0.028	0.866	0.000

Table 13. Aggregate (general) index of WELL-BEING at work and its 5 components in two subgroups (LOW and HIGH Job Routinization) depending on WIS and Job autonomy

In study C, **H #4**: <When have a choice: **POINT** employees prefer jobs with **HIGH** level of routinization, while **INTERVAL** employees prefer jobs with **LOW** level of routinization>.

This hypothesis was confirmed in both **ways**:

- in experimental study, when 618 divided into 2 groups based on their WIS score evaluated 2 job offers with HIGH vs LOW level of routinization.
- in comparison of WIS score between groups differ in their answer to open-ended questions on their preferences regarding level of job routinization.

Thus the preferential paradox was confirmed: POINT employees feel worse in case of low job AUTONOMY (high level of routinization) and at the same time prefer when asked about it, highly routinized work.

In other words: although in the study B as in previous studies has been shown that POINT employees feel worse in low job AUTONOMY conditions they are not 'aware' of this. Similarly, recent studies have shown that POINT employee prefer to have POINT not INTERVAL supervisors, forgetting that adapting to other people's routines **is resource costly.** The fact that POINT employees love to design their OWN routines does not mean that they would like to follow ALIEN (e.g., designed by their managers) routines. Research shows that in many organizations nowadays constantly new routines are introduced.

It is worth to underline that in study C experimental methods was used – the employees had to PREDICT their decision regarding artificially constructed job offers. This is much better method to assess individual differences. When people describe their job we do not know what is their job in reality. With the TARGET DESCRIPTION method we know that they evaluate the same stimuli. This method should be used in next studies.

Research Task #3. Testing predictive validity and reliability of WIS measurement using SSA.

The measurement of WIS with SSA once again demonstrated its good psychometric properties.

4.3 Recommendations for HRM

As we shown in the example of work of IT specialist (in section on topic justification) choosing a job is not easy in today's reality.

Typically, job offers descriptions include required qualifications, tasks to be performed… Job AUTONOMY is not specified. Changes in the labor market are moving in the

direction of strong control of the employee's behavior - the employee is increasingly monitored with the help of new technologies, which decreases job AUTONOMY.

The first objective for effective Human Resource Management is an accurate description of job requirements, followed by an accurate diagnosis of employee's predispositions.

The primary task of HR is to help employees become aware of their own preferences/predispositions that make them more comfortable with a certain type of work rather than another.

We do not recommend HRM to use screening tests for working style, because people have great flexibility and when they are highly motivated they can do work that is incompatible with their predispositions. More - a certain level of incompatibility can be developmental for them. A job with HIGH level of routinization and LOW autonomy level can generate unfavorable consequences for INTERVAL employees, because the need to constantly perform duties in a structured and routinized manner is incompatible with the preferences of such employees. At the same time, work with with LOW level of routinization and HIGH autonomy level can overburden them, because it allows them to test a great many alternative scenarios - they like to do. Therefore, paradoxically, POINT employees who immediately impose their own structure of activities are better off in such a situation.

At the same time - employees tempted by high salaries may accept job offer incompatible with their working style, but must be warned of psychological costs incurred in a misfit situation, that could have adverse long-term consequences[244] (including illness, burnout, etc…).

Candidates should be given access to auto diagnostic tools allowing them to determine the costs they will incur by doing a job that does not fit their preferences.

It should be stressed that psychometric properties of diagnostic tools used by the business should be checked by scientists. Unfortunately, most often these are tools that do not meet the basic standards[245].

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[244] Marzec, Scibelli & Edington, 2015; Kocakulah, Kelley, Mitchell & Ruggieri, 2016 after: Karczewski, 2022

[245] See: Karczewski, 2022

Temperament cannot be changed, but as shown in earlier studies, one can try to modify (but not change completely) the working style,[246] e.g., by investing more or less time in preparation before starting and change working condition by modifying the stimulative value of work environment by increasing or decreasing predictability, controlling time and social pressures, resigning or introducing open space…

HRM should be prepared also for the new trends[247] which predicted: (1) multilevel fit assessment – when PE fit is assessed simultaneously in relation to all existing in the organization all levels of professional functioning: position, team, organization; (2) Future Oriented Job Analysis (FOJA) taking into account simultaneously both the current and future job requirements; (3) BIMODAL assessment - first determine the variability of a job requirements over time, and then formulate preferred employee characteristics.

4.4 Contributions of the dissertation

The cognitive contribution of the dissertation is to demonstrate preferential paradox: Point employee think that jobs requiring precise execution of procedures are better. In contrast, analyses show that the well-being of this group of employees is highest in jobs that provide a lot of freedom in task execution. Interval employee are less sensitive to Job AUTONOMY level.

The methodological contribution of the dissertation is showing in study A usefulness of using preexisting publicly open big multinational surveys in hypotheses testing. The research B and C confirmed the usefulness of the SSA for the measurement of work and employee characteristics. Reliability of SSA scales on successive samples of employees were confirmed and predictive validity of WIS measure was shown.

The practical contributions of the dissertation are recommendations for HRM resource management practice.

I started with the citation from Drucker and will end with another citation worth to be memorized.

*"There is **no «one right» speed** and **no «one right» rhythm** for human beings. Speed, rhythm, and attention span vary greatly among individuals. [...] Nothing, we now know, creates as much fatigue, as much resistance, as much anger, and as much resentment, as*

[246] Wieczorkowska, 1998

[247] Turska, 2020

*the **imposition** of an **alien speed,** an **alien rhythm,** and an **alien attention span,** and above all, the imposition of one unvarying and uniform pattern of speed, rhythm, and attention span. That is alien and physiologically offensive to every human being. It results speedily in a buildup of toxic wastes in muscle, brain, and bloodstream, in the release of stress hormones, and in changes in electrical tension throughout the nervous system " – Peter Drucker*[248].

[248] Drucker, 1986

Annex

Table 14 Job Autonomy as predictor of well-being (study A)

region	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
6,00 Czech Republic		0.217[a]	0.047	0.044	0.82889
11,00 Germany		0.211[a]	0.044	0.043	0.73107
13,00 Hungary		0.271[a]	0.074	0.070	0.90378
21,00 Poland		0.141[a]	0.020	0.016	0.91563
32,00 Turkey		0.171[a]	0.029	0.027	0.94892

a. Predictors: (Constant), seniority (number of years in company), autonomy level, gender

region		Sum of Squares	df	Mean Square	F	Sig.
6,00 Czech Republic	Regression	28.2	3	9.4	13.7	<0.001[b]
	Residual	572.3	833	0.7		
	Total	600.5	836			
11,00 Germany	Regression	41.2	3	13.7	25.7	<0.001[b]
	Residual	886.1	1,658	0.5		
	Total	927.4	1,661			
13,00 Hungary	Regression	51.1	3	17.0	20.8	<0.001[b]
	Residual	642.0	786	0.8		
	Total	693.1	789			
21,00 Poland	Regression	13.3	3	4.4	5.3	0.001[b]
	Residual	653.1	779	0.8		
	Total	666.4	782			
32,00 Turkey	Regression	42.9	3	14.3	15.9	<0.001[b]
	Residual	1,424.5	1,582	0.9		
	Total	1,467.4	1,585			

a. Dependent Variable: well-being at work

b. Predictors: (Constant), seniority (number of years in company), autonomy level, gender

region		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
6,00 Czech Republic	(Constant)	-0.69	0.13		-5.39	<0.001
	autonomy level	0.34	0.06	**0.20**	**5.88**	**<0.001**
	gender	-0.03	0.06	-0.02	-0.46	0.649
	seniority (number of years in company)	0.01	0.00	0.08	2.22	0.027
11,00 Germany	(Constant)	-0.50	0.08		-6.23	<0.001
	autonomy level	0.27	0.04	**0.18**	**7.43**	**<0.001**
	gender	-0.02	0.04	-0.01	-0.56	0.578
	seniority (number of years in company)	0.01	0.00	0.09	3.78	<0.001
13,00 Hungary	(Constant)	-0.83	0.14		-5.90	<0.001
	autonomy level	0.45	0.06	**0.24**	**6.91**	**<0.001**
	gender	-0.06	0.06	-0.03	-0.93	0.352
	seniority (number of years in company)	0.01	0.00	0.12	3.60	<0.001
21,00 Poland	(Constant)	-0.56	0.16		-3.58	<0.001
	autonomy level	0.16	0.07	**0.09**	**2.44**	**0.015**
	gender	0.03	0.07	0.01	0.38	0.704
	seniority (number of years in company)	0.01	0.00	0.11	3.09	0.002
32,00 Turkey	(Constant)	-0.73	0.11		-6.51	<0.001
	autonomy level	0.31	0.05	**0.16**	**6.35**	**<0.001**
	gender	0.00	0.06	0.00	0.00	0.998
	seniority (number of years in company)	-0.01	0.00	-0.08	-3.22	0.001

a. Dependent Variable: well-being at work

Table 15 Correlation coefficients between level of autonomy and health (study A)

region			autonomy level
6,00 Czech Republic	Standardized Health /age, gender		0.119
			0.002
			679
11,00 Germany	Standardized Health /age, gender		0.076
			0.003
			1,550
13,00 Hungary	Standardized Health /age, gender		0.047
			0.214
			707
21,00 Poland	Standardized Health /age, gender		0.055
			0.182
			601
32,00 Turkey	Standardized Health /age, gender		0.153
			0.000
			983

Table 16 Anova, DV: emotional balance at work

Source	ss	df	MS	F	p
Corrected Model	35.067[a]	11	3,19	4,05	0,000
Intercept	1,943	1	1,94	2,47	0,118
achievement motivation	0,266	1	0,27	0,34	0,562
age	5,746	1	5,75	**7,30**	**0,007**
gender	2,431	1	2,43	3,09	0,080
education	2,761	1	2,76	3,51	0,063
autonomy	4,001	1	4,00	**5,09**	**0,025**
WIS	0,427	1	0,43	0,54	0,462
routinization	0,166	1	0,17	0,21	0,647
WIS * autonomy	4,613	1	4,61	**5,86**	**0,016**
autonomy * routinization	0,690	1	0,69	0,88	0,350
WIS * routinization	0,391	1	0,39	0,50	0,482
WIS * autonomy * routinization	7,391	1	7,39	**9,39**	**0,002**
Error	155,791	198	0,79		
Total	190,885	210	3,19	4,05	
Corrected Total	190,857	209			

a. R Squared = .184 (Adjusted R Squared = .138)

Table 17 Anova, DV: Emotional balance in leisure time

Source	ss	df	MS	F	p
Corrected Model	18.039[a]	11	1,64	1,76	0,062
Intercept	1,410	1	1,41	1,52	0,220
achievement motivation	1,973	1	1,97	2,12	0,147
age	5,321	1	5,32	**5,73**	**0,018**
gender	0,981	1	0,98	1,06	0,306
education	4,346	1	4,35	**4,68**	**0,032**
autonomy	0,380	1	0,38	0,41	0,524
WIS	2,750	1	2,75	2,96	0,087
routinization	0,057	1	0,06	0,06	0,805
WIS * autonomy	0,016	1	0,02	0,02	0,895
autonomy * routinization	0,042	1	0,04	0,05	0,832
WIS * routinization	0,001	1	0,00	0,00	0,979
WIS * autonomy * routinization	0,749	1	0,75	0,81	0,370
Error	184,052	198	0,93		
Total	202,097	210			
Corrected Total	202,091	209			

a. R Squared = .089 (Adjusted R Squared = .039)

Table 18 Anova, DV: work overload (reversed)

Source	ss	df	MS	F	p
Corrected Model	29.404[a]	11	2,67	2,92	0,001
Intercept	7,910	1	7,91	8,64	0,004
achievement motivation	7,586	1	7,59	**8,29**	**0,004**
Age	0,104	1	0,10	0,11	0,737
Gender	0,071	1	0,07	0,08	0,781
Education	2,821	1	2,82	3,08	0,081
Autonomy	0,153	1	0,15	0,17	0,683
WIS	0,193	1	0,19	0,21	0,647
Routinization	0,002	1	0,00	0,00	0,961
WIS * autonomy	8,179	1	8,18	**8,94**	**0,003**
autonomy * routinization	0,001	1	0,00	0,00	0,975
WIS * routinization	0,017	1	0,02	0,02	0,891
WIS * autonomy * routinization	5,759	1	5,76	**6,29**	**0,013**
Error	181,258	198	0,92		
Total	211,303	210			
Corrected Total	210,662	209			

a. R Squared = .140 (Adjusted R Squared = .092)

Table 19 Anova, DV: feeling appreciated

Source	ss	Df	MS	F	p
Corrected Model	33.041[a]	11	3,00	3,69	0,000
Intercept	1,819	1	1,82	2,23	0,137
achievement motivation	1,354	1	1,35	1,66	0,199
age	1,099	1	1,10	1,35	0,247
gender	1,199	1	1,20	1,47	0,227
education	1,060	1	1,06	1,30	0,255
autonomy	17,475	1	17,48	**21,44**	**0,000**
WIS	1,310	1	1,31	1,61	0,206
routinization	0,335	1	0,34	0,41	0,522
WIS * autonomy	0,883	1	0,88	1,08	0,299
autonomy * routinization	0,328	1	0,33	0,40	0,527
WIS * routinization	0,536	1	0,54	0,66	0,418
WIS * autonomy * routinization	3,368	1	3,37	**4,13**	**0,043**
Error	161,406	198	0,82		
Total	195,267	210			
Corrected Total	194,446	209			

a. R Squared = .170 (Adjusted R Squared = .124)

Table 20 Anova, DV: liking job

Source	ss	Df	MS	F	p
Corrected Model	31.739[a]	11	2,89	3,10	0,001
Intercept	3,011	1	3,01	3,24	0,074
achievement motivation	2,554	1	2,55	2,75	0,099
age	3,354	1	3,35	3,60	0,059
gender	0,021	1	0,02	0,02	0,880
education	3,279	1	3,28	3,52	0,062
autonomy	15,822	1	15,82	**17,00**	**0,000**
WIS	0,643	1	0,64	0,69	0,407
routinization	0,404	1	0,40	0,44	0,511
WIS * autonomy	2,893	1	2,89	**3,11**	**0,079**
autonomy * routinization	0,009	1	0,01	0,01	0,922
WIS * routinization	0,455	1	0,46	0,49	0,485
WIS * autonomy * routinization	5,785	1	5,79	**6,22**	**0,013**
Error	179,582	193	0,93		
Total	211,321	205			
Corrected Total	211,321	204			

a. R Squared = .150 (Adjusted R Squared = .102)

Table 21 Anova, DV: job satisfaction

Source	ss	df	MS	F	p
Corrected Model	22.637[a]	11	2,06	2,37	0,009
Intercept	2,227	1	2,23	2,57	0,111
achievement motivation	6,745	1	6,75	**7,78**	**0,006**
age	0,072	1	0,07	0,08	0,774
gender	1,435	1	1,44	1,65	0,200
education	0,594	1	0,59	0,69	0,409
autonomy	7,735	1	7,74	**8,92**	**0,003**
WIS	0,211	1	0,21	0,24	0,623
routinization	1,167	1	1,17	1,35	0,247
WIS * autonomy	2,685	1	2,69	**3,10**	**0,080**
autonomy * routinization	0,069	1	0,07	0,08	0,778
WIS * routinization	0,416	1	0,42	0,48	0,489
WIS * autonomy * routinization	0,994	1	0,99	1,15	0,286
Error	157,830	182	0,87		
Total	181,038	194			
Corrected Total	180,467	193			

a. R Squared = .125 (Adjusted R Squared = .073)

Table 22 Anova, DV: Aggregated index of well-being

Source	ss	df	MS	F	p
Corrected Model	33.210[a]	11	3,02	3,49	0,000
Intercept	0,297	1	0,30	0,34	0,558
achievement motivation	0,511	1	0,51	0,59	0,443
Age	0,349	1	0,35	0,40	0,526
Gender	0,755	1	0,76	0,87	0,351
Education	0,106	1	0,11	0,12	0,726
Autonomy	14,379	1	14,38	**16,63**	**0,000**
WIS	0,341	1	0,34	0,40	0,531
Routinization	0,331	1	0,33	0,38	0,537
WIS * autonomy	6,266	1	6,27	**7,25**	**0,008**
autonomy * routinization	0,084	1	0,08	0,10	0,755
WIS * routinization	0,205	1	0,21	0,24	0,627
WIS * autonomy * routinization	7,728	1	7,73	**8,94**	**0,003**
Error	166,873	193	0,87		
Total	200,084	205			
Corrected Total	200,084	204			

a. R Squared = .166 (Adjusted R Squared = .118)

Table 23 Correlation coefficients

	Need for Achievement	**WIS**	**Age**	**Gender**	**Education**	Job **Autonomy**	**JR**
Aggregated index of well-being	0,07	0,02	0,08	-0,06	-0,03	**0,37****	0,07
emotional balance at work	-0,06	-0,01	**0,17***	-0,13	**-0,17***	**0,26****	0,11
emotional balance leisure time	-0,11	0,12	**0,19***	0,04	-0,12	0,12	0,11
work overload (reversed)	**-0,18***	0,10	-0,08	0,01	**-0,15***	0,03	0,04
feeling appreciated	0,13	0,05	**0,15***	-0,05	0,05	**0,42****	0,08
liking job	0,12	-0,11	-0,09	0,03	0,09	**0,32****	-0,08
job satisfaction	**0,19***	0,02	0,10	-0,08	0,04	**0,33****	0,11

a. Listwise N=189 * p<0.05; ** p<0.001

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