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INTERDISCIPLINARY APPROACH TO ECONOMICS AND SOCIOLOGY

ECONOMICS
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JOB SATISFACTION AND WORK ENGAGEMENT IMPACT ON COUNTERPRODUCTIVE WORK BEHAVIORS: MODERATING INFLUENCE OF DEMOGRAPHIC CHARACTERISTIC OF EMPLOYEES

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ABSTRACT. The purpose of the article is to determine how demographic characteristic (sex, age, length of service, type of work) moderate the impact of job satisfaction (JS) and work engagement (WE) on counterproductive work behaviors (CWB). The research objectives were met with application of a survey conducted in Poland. Structural equation modeling (SEM) was used to analyze the primary data. The proposed theoretical models were intended to determine how JS and particular categories of WE (vigor, absorption, dedication) affect organizational and personal CWB and subjective categories of such behaviors (abuse against others, theft, sabotage, withdrawal). We determined that JS was related to abuse against others, and WE tend to reduce such behaviors. There was also a negative impact of WE on CWB aimed at individuals (CWB-I) and a positive influence of WE on CWB aimed at organization (CWB-O). In turn, JS increased CWB-I, but reduced CWB-O. The article provides meaningful managerial implications for human resource management in Central European environment.

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Introduction

Employees are the engine of an organization, but dissatisfied or not-motivated employees may seize this engine down, or avoiding phonetic language, at least negatively affect competitive potential of organization and lead to subsequent increasing of costs. The current Artificial Intelligence revolution with its great potential for mechanization of many knowledge intensive jobs, is not going to solve this problem (Lazaroiu & Rogalska, 2023; Dabija & Vătămănescu, 2023). On the contrary, the current research confirms the growing importance of employees' attitudes, their organizational culture and quality of human resources (Metzker & Zvarikova, 2021; Cizrelioğulları & Babayiğit, 2022; Cramarenco et al., 2023; Łucjan et al., 2023; Fu, et al., 2023; Lorincova et al., 2024). Therefore, to prevent the mentioned negative results, the organizational sciences have paid much attention to the negative aspects of employee behaviors (Reijseger et al., 2012; Szostek et al. 2022a; 2022b; 2023). From the very short term perspective, counterproductive behaviors are of high interest due to the increasing costs of such behaviors for the organization and society as well (Mount et al., 2006). CWBs cost U.S. businesses approximately $12-25 billion annually (Parks & Mount, 2005). According to Coffin (2003), US organization lost up to up to $85 billion per year for employee's Internet misuse and $50 billion for internal theft and fraud. In turn, as reported by the Ethics & Compliance Initiative (2013), as many as 26% of American employees witness CWB in the workplace, with 41% say that these behaviors were repeated (Szostek et al., 2020).

Without doubt, CWB disrupts organizational values, undermines the welfare of an organization, it can bring significant communication gaps among employees and the managers, then negatively affect employee work attitudes or morale, decreasing work commitment (Bagyo, 2016; Borisov & Vinogradov, 2022; Rózsa et al., 2022, 2023). From this perspective, it is hard to argue with Bagyo (2016, p. 142), who stated that CWBs are „cancer threatening the life of organizations". Surely, no organizations are free from CWBs, but they differentiate in intensity of individual types of such behaviors. Therefore, CWBs should be as closely as possible under control of the organization, and this is not possible without a thorough understanding of the essence of these behaviors and their determinants.

CWBs are determined by many factors, which can be divided into individual, organizational and non-organizational. The first of them are, above all, psycho-demographic characteristics of employees, such as: sex, age, education, personality traits, job satisfaction, work engagement, seniority, self-control and past history (Furnham & Miller, 1997; Douglas & Martinko, 2001; Ones et al., 2003; Mount et al., 2006; Ng & Feldman, 2009; Salami, 2010; Ariani, 2013; Bagyo, 2016).

Organizational determinants include the perceived injustice in treatment by the supervisor, boredom at work, lack of control or the observation of counterproductive behavior among colleagues. Such conditions are mainly caused by CWBs directed at the organization (e.g. complaining about work, sabotage). Interpersonal causes (e.g., conflicts, low-quality relationships at work) result in CWBs directed at other people (Kwok et al., 2005; Mount et al., 2006; Bechtoldt et al., 2007; Berry et al., 2007; Everton et al., 2007; Szostek, 2019).

Non-organizational determinants of CWB can be divided into social (e.g. national culture), economic (e.g. income level, labour demand and supply), technological (e.g. popularization of social media), legal (e.g. no criminalization or counteraction of mobbing) and environmental (Fehr et al., 2017; Szostek, 2019; Dvorský, et al, 2023; Aliyev, 2022).

Recently, attention of researchers has been given to the impact of JS and WE on contextual performance of employees, which refers to behavior that is not a part of an employee's official work duties, but affect well-being of the organization and/or its members, such as CWB (Ariani, 2013). These two constructs are distinct although their definitions

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overlap. The main difference is that WE is a cognitive aspect and JS is an affective aspect of job involvement (Ariani, 2013). Current theoretical framework focuses more on WE instead of JS as a precursor of job performance, because WE is more active form of well-being and so it could lead to more consistent results compared to JS (Reijseger et al., 2012).

JS and WE have been found to be related to individual job performance and therefore also to CWB: engaged and satisfied employees are likely to show less negative work behaviors (Mount, 2006; Reijseger et al., 2012; Ariani, 2013; Bagyo, 2016; Sambung, 2019). Analyzing the effect of burnout on CWB, the negative relationship between WE (one of the burnout components) and such behaviors should be mentioned. The employees characterized by low WE have more negative attitudes towards the whole job context, including coworkers (Banks et al., 2012). Therefore, it is worth to follow Bagyo's (2016, p. 145) statement that „employee engagement is the effective strategy to keep the employees away from CWB". In turn, Sambung (2019) found JS to be „the most influential factor on employee performance" (Sambung 2019, p. 50). Finally, it is also worth to remember Kelloway's et al (2010) comments who perceive CWB as "a form of protest behavior in which individuals and groups attempt to redress, draw attention to, or express dissatisfaction with organizational events" (Kelloway et al 2010, p. 18).

Previous studies on the impact of job satisfaction and work engagement on CWB have distinguished individual- (CWBs-I) and organization-targeted behaviors (CWB-O) (Robinson & Bennett, 1995), where CWBs-I are behaviors directed at other people in or outside the organization (e.g. coworkers, customers) and CWB-O are behaviors that directly harm the organization. In that first stream of research the subjective CWB categories, such as: abuse against others, production deviance, theft, sabotage or withdrawal were ignored (Spector et al., 2006). The international research on the influence of JS and WE on CWBs practically did not take into account moderators in the form of demographic characteristics of employees (including sex, age, length of service or type of job; e.g., Ariani, 2013). To our best knowledge, based on the conducted literature review, the pointed gaps are especially visible from the perspective of empirical research done for Central European institutional and cultural environment (see Szostek et al., 2020; 2022a, 2022b; 2023).

Taking into account the existing empirical limitations and literature gaps in the current state of knowledge on moderating influence of JS and WE on CWBs by demographic characteristics of employees, the following goals were set:
1. to determine how JS influences CWB (including CWB-O, CWB-I and subjective categories of CWB),
2. to determine how the influence of JS on CWB is moderated by the demographic characteristics of employees (sex, age, length of service, type of work),
3. to determine how WE (and its categories: vigor, absorption, dedication) affects CWB (including CWB-O, CWB-I and subjective categories of CWB),
4. to determine how the influence of WE on CWB is moderated by the demographic characteristics of employees (sex, age, length of service, type of work).

In order to meet the pointed goals, we extend our previous research Szostek et al. (2022a) and Szostek et al. (2020), where based on the primary research for Poland, we analyzed the influence of personality traits on subjective categories of counterproductive work behaviors, and where we determined determine how the personality traits influence the extent of organizational and interpersonal counterproductive work. From the perspective of international audience, the empirical research for Poland can be especially valuable, as the country makes the biggest economy in the region with significant institutional and cultural similarities not only to commonly stressed Visegrad, but also other Central European countries (see Balcerzak & Pietrzak, 2017; Linhartová & Halásková, 2022; Ključnikov et al., 2022).

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We expect this study to make a significant contribution to the relevant literature in two key areas. First, this study describes the impact of JS and WE on CWB (including CWB-O, CWB-I and subjective categories of CWB). Therefore, this study also describes, how this impact is moderated by demographic characteristics of employees (sex, age, length of service, type of work). As mentioned, the research is based on primary data for the biggest Central European economy, which provides important practical implications for managerial perspective in the region. In the following sections, we first present the theoretical framework for the study. Next, we propose a suitable method to test our theoretical model. We also discuss the empirical results of this study and the contributions of those findings. Lastly, we discuss the limitations, future research directions and practical implications.

1. Literature review

1.1. Job satisfaction

Job satisfaction (JS), sometimes called "happiness at work", may relate to various aspects of the organizational life and is formally defined "(…) as the pleasurable or positive emotional state resulting from the overall evaluation of one's job or job experiences" (Elc & Alpkan, 2009, p. 299). Sambung (2019) defined JS as „the measurement of employee satisfaction on their work, whether they like their job or individual aspect or work aspect, such as the characteristics of the work or supervisor", so it „is an individual behavior on the work experienced in their workplace" (Sambung, 2019; p. 51).

JS has two basic forms (Jeon & Ha, 2016):

1. *economic satisfaction* – positive, affective response of employees to the economic results of work in the organization (e.g. higher turnover),

2. *non-economic satisfaction* – positive, affective response of employees to non-economic and psychosocial results of work in the organization. It refers to the extent to which work gives a sense of fulfillment and gratification.

The difference between the employee's expectations and actual experiences is decisive for the level of satisfaction (Sambung, 2019). Defining JS and identifying its determinants is difficult, because it is an extremely intangible and subjective category that depends on individual perception. The conditions of JS can be divided into personal and situational (organizational, cultural, economic, etc.), as well as the relationships between them. Situational circumstances in many cases are related to the organizational structure and management, which, in turn, differ by firm size (Mishchuk et al., 2021).

High job satisfaction turns into lower absenteeism and lower risk of job leaving, higher productivity, more work initiative and greater job commitment, customer satisfaction and loyalty, higher employee morale, lower employee resistance to changes and lower accidents rate at work, as well as less CWB and more organizational citizenship behaviors (OCB) (Harter et al., 2002; Elc and Alpkan, 2009; Jeon & Ha, 2016). This means that, although JS increases the efficiency of the organization, it brings not so much tangible benefits, but rather reduces the risk of negative results associated with job dissatisfaction. The advantages of having satisfied employees are visible only at a time of crisis. Moreover, JS translates into satisfaction in private life (Colbert et al., 2016). Recently, it is often pointed that building environment for JS can be directly placed in the relation between ESG-CSR in the field of human resource management (Belas et al, 2024; Dvorský et al., 2023).

An opposite to JS is job dissatisfaction (unhappiness at work), which can be understood as „unfavorable feeling that an employee has towards his/her job situations" (Locke, 1976, p. 1297). It is a form of negative emotional reaction towards one's job or job experiences. This

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unpleased feeling diminishes employee's motivation to work and to be productive (Locke, 1976).

However, job dissatisfaction results not only in the already mentioned lower productivity, but the dissatisfied employees actively or passively retaliate by engaging in behaviors that harm the organization or other employees and they are counterproductive (Mount, 2006; Yean et al., 2016). Dissatisfied employees tend to work not optimally and rarely make something extra to do their work (Sambung, 2019). Cohen et al. (2013) gave five examples of CWB that are always exhibited by unhappiness at work: spreading damage rumor at work and un-politeness toward customers, working incorrectly and purposely slow, causing damages to organizational equipment and supplies, stealing office materials and coming late to work without permission.

1.2. Work engagement

Work engagement (WE) is important to managers, as disengagement or alienation at work is commonly considered as a central problem of employees' leading to lack of commitment and low motivation (May et al., 2004). Work engagement is the degree of absorption with one's duties at work (Christian et al., 2011). It is a motivational concept that represents the active allocation of personal resources toward the different job tasks (Ariani, 2013). Thus, it can be called as focus, motivation or passion for work (Bagyo, 2016); and it is opposite to burnout (Schaufeli et al., 2002).

According to Khan (1990, p. 700), WE is „the simultaneous employment and expression of a person's preferred self in task behaviors that promote connections to work and to others, personal presence (physical, cognitive, emotional) and active, full performances". Bagyo (2016) understands WE as „an emotional condition and a behavioral action to a given work environment in an organization" (Bagyo, 2016; p. 141). Therefore, it is a certain mental state (not a feature) which consists of cognitive and affective components (Christian et al., 2011; Reijseger et al., 2012; Godkin, 2015). This state is not permanent, although it is not momentary, but is more persistent (Halbesleben & Wheeler, 2008). WE is not focused on any particular object, event, individual or behavior (Schaufeli et al., 2002).

The concept of WE should be distinguished from two synonymous terms: organizational commitment and job involvement. The first of them mainly means emotional attachment to the organization and identification with it, resulting from shared values and interests. On the other hand, organizational commitment relates to attitudes towards the workplace. However, WE is not an attitude (Reijseger et al., 2012). Anyway, engaged employees tend to be committed to their organizations and vice versa (Ariani, 2013; Šakytė-Statnickė et al., 2023). It is impossible to get engaged employees without a commitment within the organization (Bagyo, 2016). Therefore, Kumar and Swetha (2011, p. 232) concluded that employee engagement is „emotional and intellectual commitment to the organization".

Job involvement can be attributed to the cognitive belief that work meets the needs of employees and represents the degree to which a person identifies with it (Halbesleben & Wheeler, 2008; Christian et al., 2011). WE also differs from work embeddedness (Halbesleben & Wheeler, 2008), which represents the totality of factors keeping the employee in the organization and the factors that may be affective (e.g. having friends at work) or cognitive (e.g. attractive salary). The higher the perceived costs of job leaving, the greater the work embeddedness.

Macey and Schenider (2008) distinguished three types of WE, including: a) trait engagement (tendency to perceive the world in a certain way), b) state engagement (feeling energy and absorption when performing tasks), c) behavioral engagement (effort put into the

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role performed). In turn, Schaufeli et al. (2002) defined WE as „positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption", where vigor is understood as high level of energy and mental resistance at work, willingness to invest effort in work and perseverance, especially in facing obstacles and difficulties; dedication relates to a strong belief in the rightness and importance of the work actions. It is accompanied by enthusiasm, inspiration and pride. Finally, absorption makes a full focus on work and the happiness that comes from the job, as well as the experience of quickly passing time while performing work (called flow effect).

Many authors agree that an employee is engaged in work when they see it as essential to their needs, values and interests. There is also evidence than values can narrow the gap between job satisfaction and well-being perception (Vörös, 2022). Hence, the more employees are engaged in the work, the more willingly they will „stay" in the organization, as their individual goals will be more closely related to the organizational goals (Temminck et al., 2015; Bagyo, 2016). These features of work engagement are closely connected with the social capital influence on performance and competitiveness of firm (García-Perez et al., 2023; Mishchuk et al., 2023). Engaged employees are more vigilant and more focused on their work; they also tend more to organizational citizenship behaviors (OCB), to give extra and discretionary efforts which are beneficial for the organization (such like helping others, sharing ideas) (Ariani, 2013; Bagyo, 2016). According to Hewitt Associate (2004) engaged employees tend to perform "3S": Say (positively speaking about the organization), Stay (they want to be a members of the organization), and Strive (they perform much more effort for the success of the organization).

If the WE is below the real capacity of employees, then we face a so-called commitment gap. Disengaged employees withhold their physical, cognitive, and emotional energies, so their job activity is robotic, passive and detached (Khan, 1990). As a result, they may more likely engage in CWB (Bagyo, 2016).

According to Zaichkowsky (1985), the level of an individual's engagement at work is influenced by three types of determinants: a) personal representing interests, values and needs that motivate an individual; b) physical, which make characteristics that distinguish the work from occupations and arouse interest, c) situational understood as something that temporarily and significantly increases work interest.

Harter et al. (2002) indicate the following conditions of the WE:
- employees know what is expected of them,
- have what they need to work,
- have a sense of what they do and understand how the work influences the environment,
- perceive that they and coworkers are part of something important,
- trust colleagues,
- have the possibility to improve their skills.

To sum up, from the managerial perspective, the main benefits of the WE include (Wieselquist et al., 1999; Harter et al., 2002; Halbesleben & Wheeler, 2008; Christian et al., 2011): greater motivation to work and job quality, greater tendency to positive and less to negative behaviors, rejecting other job offers, dedication to the well-being of the organization (rejection of activities that could harm it), being polite and fair, thinking in terms of "we" instead of "me" (the so-called cognitive interdependence), positive evaluation of the organization (the so-called positive illusion), greater turnover, increased competitive advantage.

1.3. Counterproductive behaviors of employees

Counterproductive work behaviors are a form of extra-role/supra-role (Reijseger et al., 2012; Ariani, 2013) and „distinct acts that share the characteristics that they are volitional (as

opposed to accidental or mandated) and harm or intend to harm organizations and/or organization stakeholders, such as clients, coworkers, customers, and supervisors" (Spector et al., 2006, s. 447). According to Robinson and Bennett (1995, p. 556), it is „a voluntary behavior that violates significant organizational norms and in so doing threatens the wellbeing of an organization, its members, or both" (see also Sambung, 2019).

CWB are also called as: deviant behaviors (Robinson & Bennett, 1995), antisocial behaviors (Miller et al., 2003), unruliness at work, destructive or hazardous behaviors, unethical behaviors, audacious behaviors, vindictive acts or even organization attacks (Bagyo, 2016). It should be emphasized that these concepts are not synonymous, although they are more or less similar to CWB. For example, unethical behaviors break the ethical rules (so-called metanorms) in the society. Nevertheless, these rules do not have to be identical to organizational norms (see e.g. financial institutions using abusive clauses in their contracts). Hence, counterproductivity is a dominant term and it best reflects what negative behavior at work (Szostek et al., 2022a, 20222b). For behavior to be considered as counterproductive, a total of three conditions must be met (Spector & Fox, 2010): a) the behavior must violate the rules or norms in the organization, b) the behavior must be voluntary / intentional, c) the behavior must or is hypothetically harmful to the organization and / or its stakeholders.

CWB is a very broad concept, as it covers both innocent behavior (e.g. private telephone calls while working) as well as serious violations of organizational rules, and even crimes (e.g. drinking alcohol at work, sexual harassment) (Bagyo, 2016). There are many CWB classifications (see e.g., Robinson & Bennett, 1995; Gruys & Sackett, 2003; Vardi & Weitz, 2004), but few are both comprehensive and separable. One of the most frequently used classifications in empirical research is the one developed by Spector et al. (2006). Many authors distinguished CWB into aimed at individual (CWB-I) or organization (CWB-O) (see also Robinson & Bennett, 1995; Szostek et al., 2022a; 2022b), where five subjective categories of CWBs are also proposed:

1. abuse against others – behavior that is harmful to other people (e.g. blaming, beating),
2. production deviance – performing duties improperly, i.e. below the acceptable quality and / or quantity (e.g. inaccuracy, breaking safety rules),
3. sabotage – intentional devastation of the organizational property, including material and immaterial assets (e.g., company's image),
4. theft – taking property belonging to an organization or other people,
5. withdrawal – reducing the working hours below the minimum needed to achieve the goals (e.g. leaving work early without a permission, false sick leave).

The provided literature review confirms the multi-criteria and to high extent intangible nature of the key analyzed concept, which must determine the choice of the research methods presented in the next section.

2. Methods

2.1. Sampling procedures

The primary empirical data was obtained in 2020 using an online survey on a sample of 454 professionally active people in Poland. The selection of the sample was non-random; the invitation to participate was send to the following groups of employees: a) all municipal offices in Poland (about 2.5 thousand); b) 100 randomly selected non-governmental organizations in Poland; c) 200 enterprises included in the ranking of 200 largest companies in Poland for the "Wprost" magazine. The demographic characteristics of the respondents are presented in Szostek et al. (2022a).

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2.2. Measurement scales

Job satisfaction was measured using a 3-items scale by Price and Mueller (1981) and work engagement – using 9-items Utrecht Work Engagement Scale (Schaufeli et al., 2006).

In the measurement of CWBs the validated Counteproductive Work Behavior Checklist (CWB-C PL), proposed by Spector et al. (2006) and adapted to Polish cultural conditions by Szostek (2022) was applied. The Polish version of the scale was developed using in-depth group interviews, participating observations and an online survey. The CWB-C PL consists of four, not the original five, subjective categories (the category 'production deviance' was eliminated).

2.3. Hypotheses and modelling strategy

Based on the literature review presented in previous section, four research hypotheses were adopted. To provide verification procedure the model given in Figure 1 was proposed:

Hypothesis 1 [H1]: *JS has a significant influence on the degree of CWB (including CWB-O, CWB-I and subjective categories of CWB),*

Hypothesis 2 [H2]: *The influence of JS on CWB is moderated by the demographic characteristic of employees, including: (H2a) sex, (H2b) age, (H2c) length of service, (H2d) type of work.*

Hypothesis 3 [H3]: *WE has a significant influence on CWB (including CWB-O, CWB-I and subjective categories of CWB),*

Hypothesis 4 [H4]: *The influence of WE on CWB is moderated by the demographic characteristic of employees, including: (H2a) sex, (H2b) age, (H2c) length of service, (H2d) type of work.*
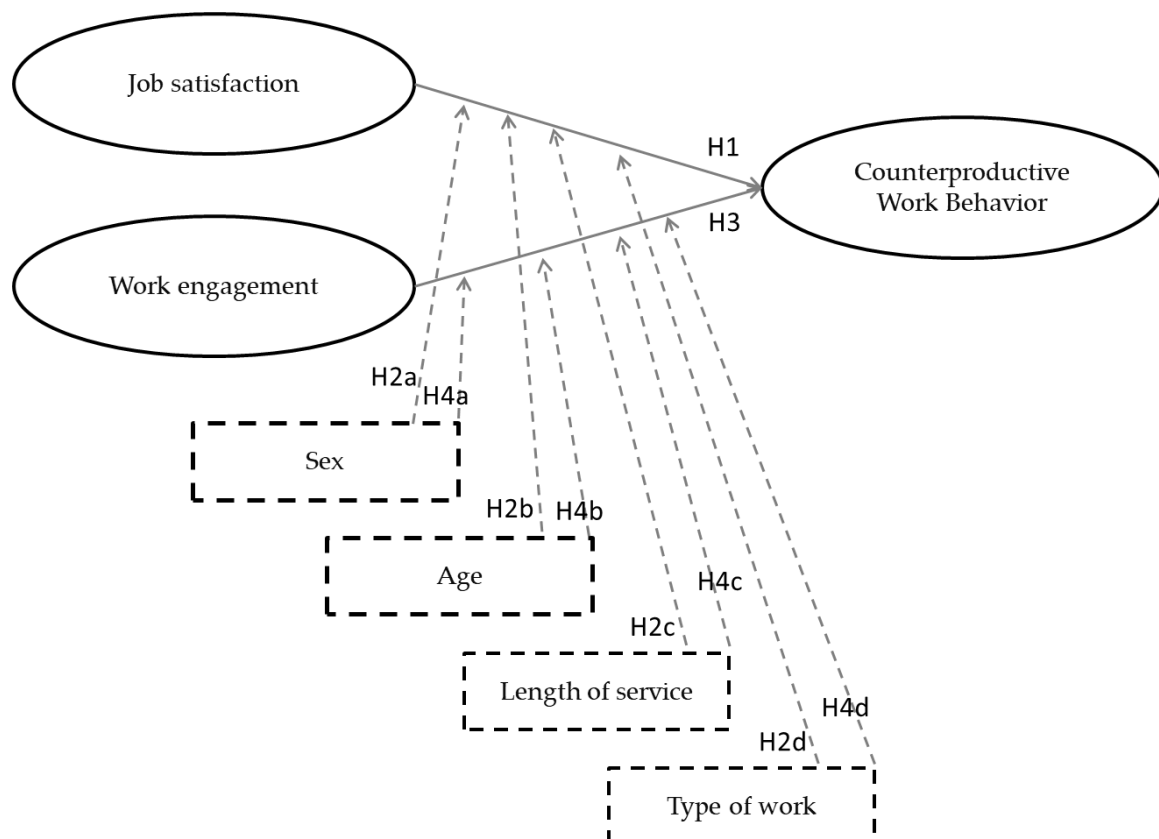

Figure 1. The visualisation of research hypotheses
Source: *own compilation*

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In order to verify the research hypotheses, two SEM models were estimated: SEM 1 with the objective of determining the structural relationships between JS / WE and the subjective categories of CWB; SEM 2 for determining the impact of JS and WE on CWB-O and CWB-I. The maximum likelihood method in the IBM SPSS Amos v.16 application was applied. The models adopted a significance coefficient of 0.05.

3. Results

3.1. Reliability values

The confirmatory factor analysis was the first stage of the modelling procedure. It made it possible to select from the variables comprising JS, WE and CWB those that shaped these constructs in the most significant way and had the highest factor loadings, which is crucial for obtaining high quality SEM model. Table 1 summarizes the individual factors with the list of observable variables shaping them.

Table 1. The list of factors with the measurable variables that describe them and the Alpha-Cronbach statistics

Factor	Measurable variable	Alpha-Cronbach statistics
JS	JS1, JS2, JS3	0,920
WEV (vigor)	WE1V, WE2V, WE5V	0,897
WED (dedication)	WE3D, WE4D, WE7D	0,805
WEA (absorption)	WE6A, WE8A, WE9A	0,769
WE (łącznie)		0,920
Sabotage	C1, C3, C4	0,669
Theft	C9, C19, C21	0,636
Abuse against others	C18, C25, C28	0,722
WIthdrawal	C2, C20, C33	0,819
CWB-I	C18, C25, C28, C35	0,756
CWB-O	C2, C20, C33, C33	0,845

Source: *own compilation*

The Cronbach's Alpha statistics for all analyzed factors were oscillating around the value of 0.7 or higher, which indicates at good reliability of the scales used. Only the statistical values for the sabotage and theft factors turned out to be slightly lower, but due to their significance, it was decided that they still should be used in further analysis.

3.2. Hypothesis testing

The first SEM model is presented in Figure 2. It is a hypothetical model adopted for the purposes of determining the structural relationships between JS / WE and the subjective categories of CWB. It also assumes the existence of relationships between the categories of counterproductive work behaviors. Based on scientific reflection and research results by other authors presented in the literature review, it is assumed that withdrawal leads to other CWB categories, abuse against others favors sabotage and theft, and sabotage is related to theft. In the model, the set of factors and variables that build them is identical to the list presented in Table 1.

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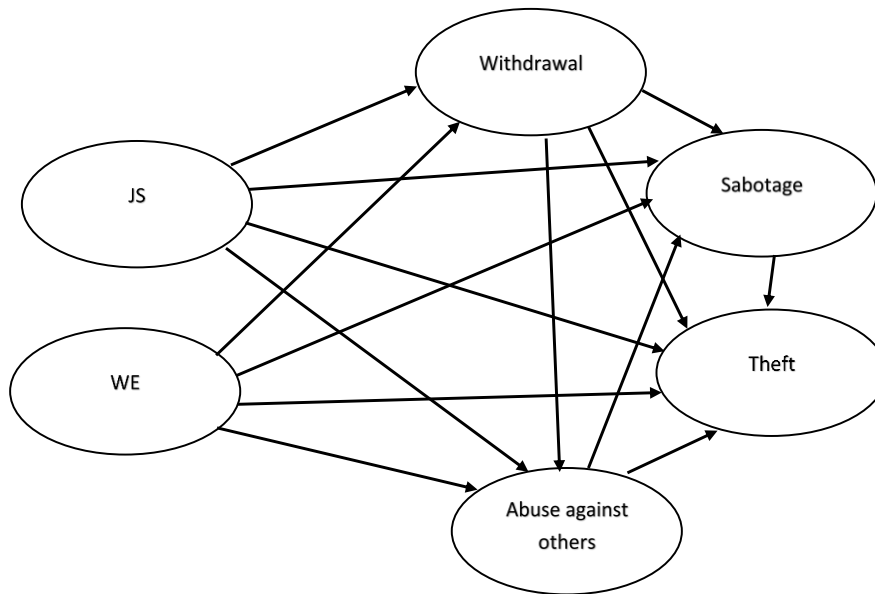**INTERDISCIPLINARY APPROACH TO ECONOMICS AND SOCIOLOGY**

Figure 2. The visualization of the research model – SEM 1 (impact of JS and WE on subjective categories of CWB)
Source: *own compilation*

Table 2 presents the results of the maximum likelihood estimation of the external model SEM 1 (factor analysis). Table 3 provides results of this estimation for the internal model (regression analysis), and Table 4 shows the values of the total effects (direct and indirect) of the impact of JS and WE on subjective categories of CWB. Table 5 contains measures of the degree of model fit to the empirical data.

Table 2. The results of the estimation of the external model SEM 1

Relatiojnship	Parameter	Parameter evaluation	P-value
JS1 ← JS.	α_1	0.926	
JS2 ← JS	α_2	0.834	0.000
JS3 ← JS	α_3	0.912	0.000
WE1V ← WE	α_4	0.862	
WE2V ← WE	α_5	0.885	0.000
WE3D ← WE	α_6	0.826	0.000
WE4D ← WE	α_7	0.606	0.000
WE5V ← WE	α_8	0.834	0.000
WE6A ← WE	α_9	0.809	0.000
WE7D ← WE	α_{10}	0.706	0.000
WE8A ← WE	α_{11}	0.694	0.000
WE9A ← WE	α_{12}	0.527	0.000
C1 ← Sabotage	α_{13}	0.334	
C3 ← Sabotage	α_{14}	0.865	0.000
C4 ← Sabotage	α_{15}	0.766	0.000
C9 ← Theft	α_{16}	0.617	
C19 ← Theft	α_{17}	0.779	0.000
C21 ← Theft	α_{18}	0.546	0.000
C18 ← Abuse	α_{19}	0.675	
C25 ← Abuse	α_{20}	0.708	0.000
C28 ← Abuse	α_{21}	0.694	0.000
C2 ← Withdrawal	α_{22}	0.793	
C20 ← Withdrawal	α_{23}	0.747	0.000
C33 ← Withdrawal	α_{24}	0.808	0.000

Source: *own compilation*

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Table 3. The estimation results of the internal model SEM 1

Relationship	Parameter	Parameter evaluation	Assessment of standardized parameters	P-value
JS → Sabotage	β_1	0.013	0.080	0.073
JS → Theft	β_2	0.000	-0.002	0.973
JS → Abuse	β_3	0.048	0.142	0.008
JS → Withdrawal	β_4	-0.041	-0.059	0.272
WE → Sabotage	β_5	-0.002	-0.014	0.752
WE → Theft	β_6	-0.0001	-0.002	0.967
WE → Abuse	β_7	-0.048	-0.143	0.007
WE → Withdrawal	β_8	0.071	0.102	0.055
Withdrawal → Abuse	β_9	0.239	0.494	0.000
Withdrawal → Sabotage	β_{10}	0.134	0.577	0.000
Withdrawal → Theft	β_{11}	0.134	0.381	0.000
Abuse → Sabotage	β_{12}	0.140	0.290	0.000
Abuse → Theft	β_{13}	0.365	0.499	0.000
Sabotage → Theft	β_{14}	-0.251	-0.166	0.119

Source: *own compilation*

Table 4. Standardized total effects of the model SEM 1

Type of impact	Withdrawal	Abuse	Sabotage	Theft
JS	-0.059	0.113	0.079	0.019
WE	0.102	-0.093	0.019	-0.013
Withdrawal		0.494	0.720	0.508
Abuse			0.290	0.451
Sabotage				-0.166

Source: *own compilation*

Table 5. Measures of the degree of fit of the model SEM 1

Model	IFI	PNFI	RMSEA	CMIN/DF
Estimated	0.830	0.635	0.095	5.535
Saturated	1			
Independent	0		0.215	21.995

Source: *own compilation*

Data presented in Table 2 for the external model confirm that all factor loadings are statistically significant. When interpreting the results (Table 3), it should be noted that the JS and WE had a significant influence only on abuse against others. The increase in JS promoted abuse against others (β_3), and WE led to a reduction of this behavior type (β_7). The influence of the WE on withdrawal is also significant, but it was negative (β_8).

In addition, withdrawal and abuse has been found to be related to sabotage and theft. Only the relationship between sabotage and theft turned out to be statistically insignificant (β_{14}).

Due to the fact that relationships between subjective categories of CWB were assumed in the model, it is worth considering also indirect effects resulting from JS and WE. When analyzing the total effects (table 4), it can be seen that JS has the strongest influence on abuse against others, increasing the tendency to such behavior, and WE promotes withdrawal.

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When assessing the degree of model fit to empirical data (table 5), it should be noted that the value of the IFI[1] is 0.830, while the RMSEA[2] is 0.095, which means that the model adequately fit to empirical data. However, it is worth to mention that the values of the measures of model fit differ slightly from the most desirable values, which may result from the heterogeneity of the sample. This is indicated by the fact that during analysis of the model results in individual groups, a large discrepancy in the significance of individual impacts was noticed.

In order to determine whether the impact of JS and WE on subjective categories of CWB is moderated by demographic characteristics of employees, the SEM 1 model was estimated by subgroups, including sex, age, length of service and type of work. The model was not estimated in subgroups divided by education, due to the fact that about 90% of the respondents have higher education.

The estimation results of the internal model SEM 1 in two subgroups distinguished by the respondents' sex are summarized in Table 6.

Table 6. The estimation results of the internal model SEM 1 in subgroups defined by the sex of the respondents

Relationship	Parameter	Men		Women	
		Assessment of standardized parameters	P-value	Assessment of standardized parameters	P-value
JS → Sabotage	β_1	0.122	0.033	-0.045	0.586
JS → Theft	β_2	-0.009	0.881	-0.167	0.127
JS → Abuse	β_3	0.154	0.010	0.122	0.317
JS → Withdrawal	β_4	-0.132	0.031	0.210	0.050
WE → Sabotage	β_5	-0.072	0.180	0.183	0.037
WE → Theft	β_6	-0.013	0.833	0.131	0.235
WE → Abuse	β_7	-0.144	0.016	-0.173	0.145
WE → Withdrawal	β_8	0.153	0.013	-0.104	0.315
Withdrawal → Abuse	β_9	0.527	0.000	0.383	0.007
Withdrawal → Sabotage	β_{10}	0.586	0.000	0.625	0.000
Withdrawal → Theft	β_{11}	0.361	0.001	0.287	0.200
Abuse → Sabotage	β_{12}	0.256	0.003	0.429	0.006
Abuse → Theft	β_{13}	0.543	0.000	0.131	0.476
Sabotage → Theft	β_{14}	-0.200	0.089	0.156	0.551
Measures of the degree of model fit		IFI = 0,924 RMSEA = 0,095		IFI = 0.842 RMSEA = 0.089	

Source: *own compilation*

Among women, only the influence of WE on sabotage is statistically significant and positive (β_3). In turn, in the group of men, the increase in JS leads to more sabotage (β_1). Moreover, in this group, the WE led to withdrawal (β_8). In both groups, the influence of job satisfaction on withdrawal was also statistically significant. However, only in the case of men

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[1] IFI (Incremental Fit Index) is one of many measures of the relative fit of the model, that is based on the comparison of the chi-square statistics and the degrees of freedom of the estimated and the base model. In this case, the base model is understood as an independent model in which the analyzed variables are not correlated with each other. The value of the IFI index is in the range <0; 1> and the higher it is, the better the model fits the data (see Balcerzak & Pietrzak, 2016; Pietrzak & Balcerzak, 2016).

[2] RMSEA (Root Mean Square Error of Approximation) is the discrepancy between the theoretical and population variance-covariance matrix corrected for the number of degrees of freedom. It is one of the few measures for which there are quite generally accepted thresholds, i.e. .: 0,05 good fit, 0,05-0,08 satisfactory fit, 0,08-0,10 mediocre fit, 0,1 unacceptable fit (Balcerzak & Pietrzak, 2016; Pietrzak & Balcerzak, 2016).

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did the increase in JS decrease withdrawal (β_4). Moreover, the influence of withdrawal and abuse on theft (β_{11} and β_{13}) turned out to be statistically insignificant only in the group of women.

The results of the SEM 1 model estimation for the subgroups distinguished by age of the respondents are presented in Table 7. When analyzing the data, it was found that the median age of the respondents was 41 years. Therefore, in order to maintain the greatest possible comparability of models in subgroups defined by age, subgroup 1 includes people under 41 years old, and subgroup 2 – people 41 or more years old.

Table 7. The estimation results of the internal model SEM 1 in subgroups defined by the age of the respondents

Relationship	Parameter	Under 41 years		At least 41 lat	
		Assessment of standardized parameters	P-value	Assessment of standardized parameters	P-value
JS → Sabotage	β_1	0.150	0.029	0.010	0.865
JS → Theft	β_2	0.103	0.171	-0.118	0.078
JS → Abuse	β_3	0.162	0.029	0.105	0.165
JS → Withdrawal	β_4	-0.007	0.926	-0.076	0.311
WE → Sabotage	β_5	-0.107	0.113	0.077	0.210
WE → Theft	β_6	-0.111	0.148	0.120	0.074
WE → Abuse	β_7	-0.215	0.004	-0.057	0.443
WE → Withdrawal	β_8	0.115	0.130	0.043	0.562
Withdrawal → Abuse	β_9	0.580	0.000	0.384	0.000
Withdrawal → Sabotage	β_{10}	0.608	0.000	0.585	0.000
Withdrawal → Theft	β_{11}	0.567	0.000	0.126	0.279
Abuse → Sabotage	β_{12}	0.185	0.082	0.355	0.000
Abuse → Theft	β_{13}	0.358	0.004	0.552	0.000
Sabotage → Theft	β_{14}	-0.279	0.057	0.062	0.658
Measures of the degree of model fit		IFI = 0.815 RMSEA = 0.101		IFI = 0.820 RMSEA = 0.094	

Source: *own compilation*

JS and WE do not have a significant impact on any of the CWB categories in subgroup of 41 and older. In the case of younger employees, JS increases the tendency to sabotage (β_1). Moreover, in the group of employees up to 41 years of age, the influence of abuse on sabotage (β_{12}) turns out to be insignificant, while in the group of older workers – the influence of withdrawal on theft is insignificant (β_{11}). Moreover, in the case of younger people, the influence of sabotage on theft (β_{14}) is at the borderline of the accepted level of significance, and this relationship is negative.

The respondents were also divided according to the length of service. The breakdown was based on the median of 10 years (Table 8). In this case, in the group of people with longer work experience, only the influence of JS on abuse is statistically significant (β_3). Moreover, in this group, the influence of withdrawal on theft (β_{11}) turns out to be insignificant, and in the group of employees with less job experience insignificant was the impact of abuse on theft (β_{13}).

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Table 8. The estimation results of the internal model SEM 1 in subgroups defined by the length of service

Relationship	Parameter	Under 10 years		At least 10 years	
		Assessment of standardized parameters	P-value	Assessment of standardized parameters	P-value
JS → Sabotage	β_1	0.059	0.352	0.108	0.088
JS → Theft	β_2	0.083	0.308	-0.086	0.229
JS → Abuse	β_3	0.192	0.014	0.152	0.035
JS → Withdrawal	β_4	-0.013	0.858	-0.107	0.154
WE → Sabotage	β_5	-0.020	0.754	-0.026	0.663
WE → Theft	β_6	-0.134	0.121	0.060	0.383
WE → Abuse	β_7	-0.276	0.000	-0.082	0.251
WE → Withdrawal	β_8	0.122	0.103	0.088	0.244
Withdrawal → Abuse	β_9	0.480	0.000	0.518	0.000
Withdrawal → Sabotage	β_{10}	0.633	0.000	0.516	0.000
Withdrawal → Theft	β_{11}	0.719	0.000	0.229	0.063
Abuse → Sabotage	β_{12}	0.219	0.037	0.371	0.000
Abuse → Theft	β_{13}	0.169	0.179	0.669	0.000
Sabotage → Theft	β_{14}	-0.243	0.146	-0.168	0.250
Measures of the degree of model fit		IFI = 0.830 RMSEA = 0.092		IFI = 0.808 RMSEA = 0.101	

Source: *own compilation*

The results of the SEM 1 model estimation for the subgroups defined by type of work are presented in Table 9. Blue collar work was omitted due to the negligible share of this subgroup in the sample. In subgroup 2, both JS and WE have no statistically significant effect on CWB. On the other hand, in subgroup 1, the positive influence of JS and negative influence of WE on abuse (β_3, β_7) turns out to be significant, as well as the positive influence of WE on withdrawal.

Table 9. The estimation results of the internal model SEM 1 in subgroups defined by the type of work

Relationship	Parameter	Subgroup 1 (office / clerical)		Subgroup 2 (managerial)	
		Assessment of standardized parameters	P-value	Assessment of standardized parameters	P-value
JS → Sabotage	β_1	0.067	0.205	0.162	0.129
JS → Theft	β_2	0.012	0.845	-0.099	0.282
JS → Abuse	β_3	0.166	0.007	0.079	0.442
JS → Withdrawal	β_4	-0.026	0.683	-0.125	0.221
WE → Sabotage	β_5	-0.062	0.244	0.080	0.360
WE → Theft	β_6	-0.015	0.811	0.144	0.110
WE → Abuse	β_7	-0.176	0.005	-0.093	0.367
WE → Withdrawal	β_8	0.129	0.039	0.027	0.790
Withdrawal → Abuse	β_9	0.482	0.000	0.500	0.000
Withdrawal → Sabotage	β_{10}	0.612	0.000	0.497	0.039
Withdrawal → Theft	β_{11}	0.247	0.035	0.453	0.003
Abuse → Sabotage	β_{12}	0.246	0.003	0.336	0.070
Abuse → Theft	β_{13}	0.439	0.000	0.693	0.000
Sabotage → Theft	β_{14}	-0.087	0.473	-0.259	0.180
Measures of the degree of model fit		IFI = 0.815 RMSEA = 0.100		IFI = 0.802 RMSEA = 0.097	

Source: *own compilation*

The second model is presented on Figure 3. This is a hypothetical model adopted for the purposes of determining the impact of JS and WE on CWB-O and CWB-I.

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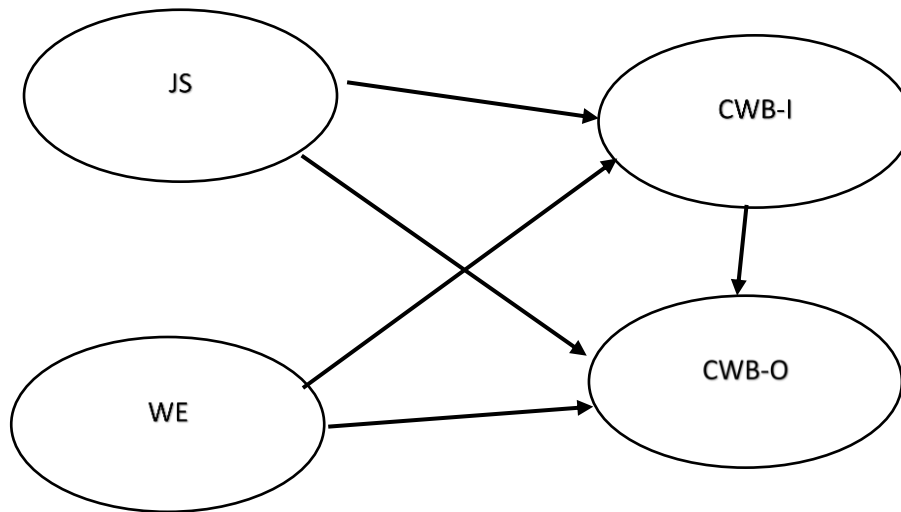**INTERDISCIPLINARY APPROACH TO ECONOMICS AND SOCIOLOGY**

Figure 3. The visualization of SEM 2 model (impact of JS and WE on CWB-O and CWB-I)
Source: *own compilation*

Table 10 presents the results of the maximum likelihood estimation of the external model SEM 2 (factor analysis), and Table 11 – the results for the internal model (regression analysis). In addition, Table 12 includes measures of the degree of model fit to the empirical data.

Table 10. The estimation results for the external model SEM 2

Relationship	Parameter	Parameter evaluation	P-value
JS1 ← JS	α_1	0.926	
SJ2 ← JS	α_2	0.833	0.000
JS3 ← JS	α_3	0.912	0.000
WE1V ← WE	α_4	0.862	
WE2V ← WE	α_5	0.885	0.000
WE3D ← WE	α_6	0.606	0.000
WE4D ← WE	α_7	0.834	0.000
WE5V ← WE	α_8	0.826	0.000
WE6A ← WE	α_9	0.706	0.000
WE7D ← WE	α_{10}	0.809	0.000
WE8A ← WE	α_{11}	0.694	0.000
WE9A ← WE	α_{12}	0.527	0.000
C18 ← CWB-I	α_{13}	0.700	
C25 ← CWB-I	α_{14}	0.697	0.000
C28 ← CWB-I	α_{15}	0.702	0.000
C33 ← CWB-I	α_{16}	0.616	0.000
C2 ← CWB-O	α_{17}	0.777	
C20 ← CWB-O	α_{18}	0.734	0.000
C39 ← CWB-O	α_{19}	0.732	0.000
C33 ← CWB-O	α_{20}	0.826	0.000

Source: *own compilation*

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Table 11. The estimation results for the internal model SEM 2

Relationship	Parameter	Parameter evaluation	Assesment of standarized parameters	P-value
JS → CWB-I	β_1	0.046	0.130	0.019
JS → CWB-O	β_2	-0.065	-0.095	0.054
WE → CWB-I	β_3	-0.040	-0.115	0.036
WE → CWB-O	β_4	0.099	0.146	0.003
CWB-I → CWB-O	β_5	1.000	0.515	0.000

Source: *own compilation*

Table 12. Measures of the degree of fit of the model SEM 2

Model	IFI	PNFI	RMSEA	CMIN/DF
Estimated	0,828	0,632	0,094	7,056
Saturated	1			
Independent	0		0,241	28,393

Source: *own compilation*

The results for the external model (Table 10) indicate that all factor loadings are statistically significant. When interpreting the results for the internal model (Table 11), it should be noted that the increase in WE decreased the tendency to CWB-I (β_3), and increased the frequency to CWB-O (β_4). JS turned out to have exactly the opposite effect. It increased CWB-I (β_1) and reduced CWB-O (β_2), but the relationship was borderline significant. Besides, CWB-I led to CWB-O (β_5).

When assessing the degree of model fit to empirical data (Table 12), it should be noted that IFI was 0.828, while RMSEA was 0.094, which means that the model fits sufficiently to the empirical data. However, the values of the measures of model fit differ slightly from the most desirable values, which may result from the already mentioned heterogeneity of the sample.

In order to determine whether the impact of JS and WE on CWB-O and CWB-I is moderated by demographic characteristics of employees, the SEM 2 model was estimated in subgroups defined by sex, age, length of service and type of work. The estimation results of the of the internal model SEM 2 for two subgroups distinguished by the sex of respondents is presented in Table 13.

Table 13. The results of the estimation of the internal model SEM 2 in subgroups defined by the sex of the respondents

Relationship		Men		Women	
	Parameter	Assesment of standarized parameters	P-value	Assesment of standarized parameters	P-value
JS → CWB-I	β_1	0.099	0.113	0.292	0.008
JS → CWB-O	β_2	-0.151	0.006	0.101	0.339
WE → CWB-I	β_3	-0.084	0.182	-0.258	0.016
WE → CWB-O	β_4	0.180	0.001	-0.014	0.888
CWB-I → CWB-O	β_5	0.518	0.000	0.449	0.000
Measures of the degree of model fit		IFI = 0.825 RMSEA = 0.095		IFI = 0.848 RMSEA = 0.084	

Source: *own compilation*

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Among men, the influence of JS and WE was statistically significant in the case of CWB-O (β_2 and β_4), and in the group of women the opposite, i.e. in the case of CWB-I (β_1 and β_3).

The results of the estimation of the model SEM 2 for subgroups defined by the age are presented in Table 14.

Table 14. The results of the estimation of the internal model SEM 2 in subgroups defined by the age of respondents

Relationship	Parameter	Under 41 years		At least 41 years	
		Assesment of standarized parameters	P-value	Assesment of standarized parameters	P-value
JS → CWB-I	β_1	0.145	0.067	0.111	0.151
JS → CWB-O	β_2	-0.078	0.257	-0.087	0.221
WE → CWB-I	β_3	-0.159	0.045	-0.066	0.385
WE → CWB-O	β_4	0.205	0.003	0.056	0.424
CWB-I → CWB-O	β_5	0.601	0.000	0.426	0.000
Measures of the degree of model fit		IFI = 0.808 RMSEA = 0.103		IFI = 0.827 RMSEA = 0.090	

Source: *own compilation*

In the subgroup of older workers, the influence of JS and WE on CWB-O and CWB-I is not statistically significant. In the subgroup of younger employees, only the influence of WE on both categories of CWB turns out to be statistically significant; in the case of CWB-I it was a negative relationship, and in the case of CWB-O – positive.

The results of the SEM 2 model estimation for both subgroups defined by the length of service are included in Table 15.

Table 15. The results of the estimation of the internal model SEM 2 in subgroups defined by the length of service

Relationship	Parameter	Under 10 years		At least 10 years	
		Assesment of standarized parameters	P-value	Assesment of standarized parameters	P-value
JS → CWB-I	β_1	0.184	0.023	0.113	0.134
JS → CWB-O	β_2	-0.091	0.203	-0.135	0.048
WE → CWB-I	β_3	-0.232	0.004	-0.059	0.431
WE → CWB-O	β_4	0.247	0.000	0.088	0.193
CWB-I → CWB-O	β_5	0.529	0.000	0.527	0.000
Measures of the degree of model fit		IFI = 0.822 RMSEA = 0.094		IFI = 0.820 RMSEA = 0.095	

Source: *own compilation*

In the case of people working in the company for at least 10 years, only the influence of JS on the reduction of CWB-O is statistically significant (β_2). On the other hand, in the case of employees with shorter work experience, JS leads to more CWB-I (β_1), while WE decreases this behavior (β_3). At the same time, in this subgroup, WE influences the increase of CWB-O (β_4).

The results of the SEM 2 model estimation for the subgroups defined by type of work are presented in Table 16.

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Table 16. The results of the estimation of the internal model SEM 2 in subgroups defined by the type of work

Relationship		Subgroup 1 (office / clerical)		Subgroup 2 (managerial)	
	Parameter	Assesment of standarized parameters	P-value	Assesment of standarized parameters	P-value
JS → CWB-I	β_1	0.150	0.021	0.137	0.186
JS → CWB-O	β_2	-0.063	0.280	-0.195	0.037
WE → CWB-I	β_3	-0.118	0.066	-0.163	0.117
WE → CWB-O	β_4	0.165	0.005	0.119	0.203
CWB-I → CWB-O	β_5	0.503	0.000	0.530	0.000
Measures of the degree of model fit		IFI = 0.812 RMSEA = 0.097		IFI = 0.845 RMSEA = 0.079	

Source: *own compilation*

In subgroup 1, JS significantly increases the tendency to CWB-I (β_1), and WE – to CWB-O (β_4). In the case of respondents from subgroup 2, only the influence of JS reduces statistically significantly the CWB-O.

In conclusion, it should be emphasized that, due to the relatively high value of IFI and the value of RMSEA in the range of 0.08-0.10, it can be said that the individual SEM 1 and SEM 2 models, distinguished due to demographic characteristics of respondents, are sufficiently matched to empirical data.

4. Discussion

Summarizing the presented results, it should be noted that the increase in JS did not always lead to a reduction in CWB. Many paradoxes have been found in this relationship. Firstly, referring to the subjective categories of counterproductive work behaviors, JS was conducive to the formation of abuse against others and it was the only statistically significant relationship between job satisfaction and these categories. One more significant relationship identified is the negative effect of the WE on abuse against others.

This means that employees, after exceeding a certain level of JS, are more willing to engage in various types of abuse against other people related to the organization. On the other hand, highly committed employees are more likely to avoid such abuses.

Some analogy may be found in the identified negative effect of WE on CWB-I. It seems paradoxical, however, that WE increased CWB-O at the same time. The effect of JS was exactly the opposite, i.e. it increased CWB-I but reduced CWB-O.

Therefore, despite the paradoxes noticed, the hypothesis H1 was partially confirmed, i.e. JS has a significant influence on the degree of CWB (including CWB-O, CWB-I and subjective categories of CWB); partially confirmed was also the hypothesis H3, i.e. WE has a significant influence on the degree of CWB (including CWB-O, CWB-I and subjective categories of CWB).

To some extent these results are in line with the findings of the study provided by Ariani (2013), who indicated a significant negative impact of WE on CWB. The similar context can be seen in the research by Dalal (2005) and Bagyo (2016). In turn more recently, Sambung (2019) found that JS negatively affects CWB (r = .143; $\rho\hat{} = -.393$). A meta-analysis by Dalal (2005) based on 25 studies and a sample size of 6,106 reported also a negative correlation between JS and CWB-I ($\rho\hat{} = -.36$). According to research of Yean et al. (2016) who made a research among 266 university staff members, job dissatisfaction was an important factor influencing employees to be engaged in CWB ($\rho\hat{} = .199$). However, in this study JS only

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explained 4% of the variance of CWB, so the authors concluded that there must be other factors likely to influence the involvement in CWB of respondents.

Some explanations regarding the observed paradoxes are provided by the results of the research by Czarnota-Bojarska (2015). She noticed that higher JS was associated with greater involvement in CWB. According to the author, these behaviors were a form of relieving stress related to difficulties at work. The same explanation can be used in the case of the positive influence of WE on CWB. Besides, certain types of inappropriate behavior are socially acceptable and the employees practice them regardless they are satisfied with the job or not.

Finally, hypotheses 2 and 3 were confirmed, i.e. the influence of JS / WE on CWB is moderated by the demographic characteristic of employees, including sex, age, length of service, and type of work. To a greater or lesser extent, the variables moderated the differences in the impact of job satisfaction and work engagement on subjective categories of CWB and CWB-O / CWB-I.

Conclusion

The results presented in the current article are the part of the bigger research agenda on the counterproductive work behaviors determinants and consequences in Central European environment (Szostek et al., 2020; 202a; 2022b; 2023). In the current case, the purpose of the article was to determine how demographic characteristic moderate the impact of job satisfaction and work engagement on counterproductive work behaviors. To sum up shortly, the research indicates that job satisfaction is related to abuse against others, and work engagement tends to reduce such behaviors. The current research indicates the possibility of a negative impact of work engagement on counterproductive work behaviors aimed at individuals and their positive influence on counterproductive work behaviors aimed at organization. Finally, the research shows that job satisfaction can increase counterproductive work behaviors aimed at individuals, but what is important, it can reduce counterproductive work behaviors aimed at organization.

The research agenda devoted to counterproductive behaviors and current specific outcome have important practical implications for most important organization stakeholders. From the managerial perspective, the organization must care about job satisfaction and work engagement of its employees to avoid counterproductive work behaviors and to gain many of benefits. This statement may be seen as a cliché, but its importance is going to be unquestionable with the new wave of generation and current demographic changes. From this perspective, the organizational training programs must be build, where such trainings should include a component that conveys to managers the pervasiveness and expense associated with counterproductive work behaviors and how to avoid them using management of job satisfaction and work engagement. Finally, it must be stressed that the ability to detection of counterproductive work behaviors is gaining importance, as most of counterproductive work behaviors are less observable than formal behaviors at work. Therefore, organizations may benefit from the development of electronic monitoring systems designed to detect counterproductive work behaviors.

The final consideration of this paper must be devoted to its main limitations and possibilities for future research, which is opened with the current outcome. The main and most obvious limitation of the study is the sample for obtaining the primary data, which was not random and limited to a single country. Therefore, in the future it would be good to eliminate these two factors. On the other hand, from the perspective of the quality of the information, which is possible to obtain, in measuring counterproductive behavior, it would be better to use not only self-reports, but also reports by supervisor or other employees (Mount et al., 2006). Of course, observations by others – especially supervisors – have also many obvious limitations

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(Skarlicki et al., 1999), but it must be remembered that employees are reluctant to admit to counterproductive work behaviors in self-reports as subconsciously they fear possible sanctions (Skarlicki et al., 1999). Hence, the measurement should guarantee anonymity. Using other's ratings of CWB enables to minimize the common method bias problem.

Finally, for building conclusions, possible generalizations and forming possible managerial implications on the basis of the research results, it should also be mentioned that other perceptual variables could moderate some of the presented relationships. Various variables (not only demographical, but also situational) influence counter productive work behaviors. Hence, in subsequent studies, the model should be extended with such variables. Last, but not least, there are many other types of behaviors that could be considered counterproductive. Therefore, it is always worth to look for possibilities of broadening their measurement possibilities.

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