Impact of employees' counterproductivity on interpersonal relationships in the context of company competitive potential: Application of SEM methodology for Poland

Dawid Szostek, Adam P. Balcerzak, Elżbieta Rogalska

Abstract

This article describes how the counterproductive work behaviors of employees (CWB) influence the quality of interpersonal relationships at work (QR). Additionally, the study enables an analysis of how this impact is moderated by the demographic features of employees (education, age, sex, length of service and type of job). These relationships were examined in the broad context of competitiveness of a company in the Central European environment. To reach the objectives of the study, survey results – collected among 1,488 workers in Poland – were analyzed. The structural equation modeling (SEM) approach was applied for data processing. This allowed a determination of how particular dimensions of CWB (behavior against other people or against the organization) affect particular categories of QR, taking also into account the moderating role of demographic variables. The study confirms that CWB usually negatively affected QR (the higher / lower the CWB, the lower / higher the QR). However, also some interesting paradoxes were verified, which can be of special interest in practice. From the perspective of managerial importance, it was confirmed that the relationship was statistically significantly moderated by education, age, sex and job type. These results provide important guidelines for human resource management as a main tool for building/maintaining the competitive advantage of a company.

Keywords: counterproductive work behaviors; quality of relationships at work; demographic features; SEM; Structural Equation Modeling; Central European managerial environment, human resource management objectives

JEL Classification: M5, M12, M54, C30

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1 INTRODUCTION

The studies on counterproductive work behavior (CWB) focus most often on their determinants, instead of their results within the context of human resource management (Qiu & Peschek, 2012). This situation can be considered as a kind of practical paradox, especially taking into consideration the growing role of human resources and intangible factors in the process of building competitive potential in the modern digital environment (Małkowska et al., 2021; Sun et al., 2022a, 2022b; Balcerzak & Pietrzak, 2017). However, this situation to some extent is explained and justified by methodological issues – especially important for the academic researchers who tend to concentrate on the coherent theory and not so much on practical objectives. There are strong interactions and often direct feedback between difficult-to-measure often intangible determinants and the results of counterproductive activities, which additionally tend to be difficult to distinguish and separate (Spector & Fox, 2010; Szostek et al., 2022a; 2022b).

In the recent literature, much less effort is given to presenting the direct implications of CBWs, including the results for the employees and human resource managerial context, thus, the main groups of stakeholders building competitive potential of every organization. The available empirical studies are mostly focused on the impact of CWB on performance, new product development or other measurable variables closely related to the organization's activities (e.g., Bagyo, 2018; Qiu & Peschek, 2012). Besides, researchers are more likely to deal with positive aspects of organizational behavior (e.g., organizational citizenship behaviors) or quality of work relationships, while negative aspects are often ignored.

Undoubtedly, CWBs have multiple non-quantifiable effects. It is especially worth mentioning their negative impact on the quality of interpersonal relationships at work. These interrelations seem to be logically justified, but they have not been empirically verified so far, especially in the Central European environment (mostly due to the intangible character of both constructs and thus, practical methodological limitations in terms of quantitative research). Therefore, their understanding is often based on intuition, unconfirmed paradigms, and at best, on fragmentary research results.

For example, the negative influence of CWB on company performance proved by Bagyo (2018) allows for the assumption that these behaviors affect the quality of relationships at work in a similarly negative way, as the main dimensions of the performance include interpersonal aspects, which are an important part of interpersonal relationships between employees. From a detailed perspective, Qiu and Peschek (2012) proved that CWBs directed at other people reduce the level of emotional integration and the tendency to share and acquire new knowledge within the team, where the abilities to build a vigorous knowledge sharing environment is considered as one of the most difficult to copy or imitate long term (Tsou et al., 2022; Mura et al., 2021). Moreover, from the perspective of the value added by this study, there are no comprehensive studies on factors moderating the dependence of CWBs on QR by such important, from the perspective of practical human resource management, demographic and socio-economic characteristics as sex, age, education, length of service and type of work.

However, as the main justification of this study from the perspective of its practical value, employee behaviors, including counterproductive behaviors, and their results for QR, are crucial for the competitiveness of a company (Pešić et al., 2012; Simbine & Tukamushaba, 2020). To be competitive, or even excellent in competitiveness, an organization must build an effective environment and culture for improving interpersonal relationships between employees (Fernandez & Moldogaziev, 2013). Currently, this postulation can be commonly considered as a truism or cliché. However, the research on factors influencing organizational competitiveness at an individual and micro level is still lacking, especially if one takes into consideration the work climate as a crucial factor in building competitive advantages (Wang et al., 2018).

Therefore, this article contributes to the literature in two fields. First, it describes the influence of CWBs on QR. Second, it clarifies how this relationship is moderated by demographic and main socio-economic features of employees (education, age, sex, length of service and type of work). What is important is that both elements are empirically verified for the Central European environment, with primary data from Poland, a relatively large "quasi" representative country for the region. Based on the conducted literature research, we claim that a study of similar scale has not been done before for the socio-economic and cultural environment of this part of Europe. From the latter perspective, especially when one tries to build conclusions and interpretations, which could be practically valuable, organizational and managerial environments can be strongly influenced by national or even local institutional context.

Therefore, any form of generalizations is vulnerable to misleading simplifications. However, many previous studies confirm that due to historical long term similarities, supported by the last three decades of socio-economic transformation, which was determined by highly unified globalized factors, the Central European countries form a cluster of economies characterized by many cultural, organizational and socio-economic similarities (see Janková, 2023; Durana et al., 2021). Therefore, a study performed on a reasonably large sample for the largest economy of the region, enables the construction of a modelling and conceptual framework, which will be of international value.

2 THEORETICAL BACKGROUND

Plenty of adjectives exist to describe counterproductive work behaviors, such as bad, erroneous, negative, pathological, deviant, dysfunctional or unethical. Although intuitive and commonly considered as synonyms, these terms are distinct from the academic term "counterproductivity at work." The source of the conceptual and definitional ambiguity of such behaviors is that they include many different manifestations (including serious and minor cases) (Parks & Mount, 2005; Qiu & Peschek, 2012; Szostek et al., 2020). Therefore, the approaches of many authors relate to the essence of CWB differently, depending on which manifestations of these behaviors they consider to be dominant (see Szostek, 2019). As a consequence, the results of research on the subject are difficult to compare directly, which makes it hard to precisely describe the state of knowledge in this area.

From this perspective, to clarify the issue and to find a common definition of CWB, behaviors are considered counterproductive when the following conditions are met (Spector & Fox, 2010; Marcus & Schuler, 2004; Lau et al., 2003): 1) the behavior violates the norms and rules of the organization; 2) it is undertaken voluntarily; 3) it harms or has the potential to harm the organization and / or its stakeholders (Szostek et al., 2022a; 2022b).

Some authors have made more or less successful attempts to organize and classify counterproductive behaviors in order to measure them. One of the most cited CWB typologies is the one proposed by Spector et al. (2006). These researchers, following Robinson and Bennett (1995), distinguished two dimensions of the behaviors under consideration, i.e., CWB-I (individual-oriented – behaviors against other people) and CWB-O (organizational-oriented – behaviors against the organization). They also suggested 5 subjective categories of these behaviors: 1) abuse against others – active and passive behavior aimed directly at other stakeholders of the organization with the purpose to cause physical or mental harm (e.g., lying, gossiping, harassment). Spector et al. (2006) associated this category of CWB with hostile aggression, including conflict and anger. In turn, Richman et al. (2001) distinguished five types of abuse: physical aggression (e.g., beating), verbal aggression (e.g., threats), disrespect (e.g., insulting other people), isolation / exclusion (e.g., ignoring someone), threats / bribes (e.g., activities that threaten the health / life of the employee); 2) production deviance – performing duties by an employee in such a way that it is impossible to complete the work properly; this situation has a negative impact on productivity, and therefore the quantity and / or quality of results. Production deviance covers mainly passive forms of behavior, such as non-compliance with orders, breaking procedures, failure to report defects; 3) sabotage – deliberate destruction of an organizational property (not only material but also non-material, e.g., corporate image). These are active forms of behavior aimed at the organization and are easier to observe than production deviance. According to Spector et al. (2006), both sabotage and production deviance are the result of hostile aggression; 4) theft – stealing property belonging to the organization or other stakeholders. It is rather a manifestation of instrumental aggression (for example, caused

by organizational injustice, securing one's own interests); 5) withdrawal – limiting the time and energy devoted to the work below the minimum necessary for the proper performance of duties (e.g., cyberloafing, false sick leave). It is a passive form of CWB caused by instrumental aggression.

Moving to relationships at work, each relationship includes two complementary elements: task-related and interpersonal. The first one refers to the realization of duties through the exchange of various types of resources (LePine et al., 2012). Hence, research on relationships between employees focuses on this component, including its determinants (Jehn et al., 2014). The interpersonal component refers to the personal relationships among the staff, and for this component it is necessary to know other factors – the more, the stronger this component is. When the interpersonal elements of the relationship prevail, the partners begin to perceive each other not only as partners, but even as friends (Jehn et al., 2014). The interpersonal nature of the relationship manifests itself in various forms, i.e., verbal (e.g., talks, gifts), non-verbal (e.g., facial expression) and physical (e.g., physical contact) (Laschober et al., 2012).

There are various definitions of interpersonal relationships at work (e.g., Gabarro, 1990; Hinde, 1997). Ragins and Dutton (2009) understood it as interactions between people that need mutuality, i.e., the behavior of one person takes some account of the behavior of other people. Going further, the quality of relationships between employees reflects the condition of the organization (Francis & Sandberg, 2000), and thus directly influence its performance and competitive potential (Nguyen et al., 2021).

The dual nature of work relationships means that they can be positive or negative (Heaphy, 2009; Quinn, 2009; Holliday, 2012). The first one means that both sides of a relationship can benefit (e.g., more energy, better well-being) (LePine et al., 2012; Schneider & Lundby, 2012), and in negative work relationships, at least one side experiences undesirable results (e.g., anxiety, stress, exhaustion, poor health) (Halbesleben, 2012; Mihalca, et al., 2021). High-quality relationships include personal, intimate, vital relationships, with frequent interactions, abound in in various emotions, and based on free communication, reciprocity, trust, honesty, respect, cooperation and mutual assistance (Naudé & Buttle, 2000; Kamdar & Van Dyne, 2007; Cameron, 2008; Ragins & Verbos, 2009; Roberts, 2009; Bono & Yoon, 2012). Low-quality relationships are impermanent, impersonal, task-limited, full of suspicions, over-formalized, less emotional (or dominated by negative emotions) (Kamdar & Van Dyne, 2007; Bono & Yoon, 2012).

Many factors complicate the understanding of the relationship quality at work. First of all, these relationships are a continuum, i.e., their quality is gradual and, what is more, they rarely take extreme forms. Additionally, relationships can be viewed as neutral or indifferent (Heaphy & Dutton, 2008). Hence, classifying relationships as high-quality seems to be easier than classifying them as low-quality. Negative aspects (or the lack of positive) do not necessarily mean that the relationship is negative. In turn – positive aspects (or the lack of negative) are insufficient to consider the relationship as positive. As a result, the QR is a dynamic construct (Laschober et al., 2012; Turner de Tormes Elby & Allen, 2012), and therefore the same relationship can include both positive and negative aspects. Besides, the intensity of particular aspects of the relationship can change. As a result, the construct is subjective and depends on the particular perception of prevailing aspects of the relationship and whether the expectations related to the relationship have been met (Atrek et al., 2014). This assessment concerns the costs and benefits for the parties thanks to the relationship (Halbesleben, 2012; Atrek et al., 2014). After all, QR is not the goal of the relationship, but the creation of value that will meet

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the needs of the parties (Skarmeas et al., 2016). From this perspective, empirical research on QR is hindered by the multidimensional nature of this construct – it includes various aspects of exchange, and additionally, it is influenced by various determinants of individual and contextual importance.

Taking into account such considerations, it is of no surprise that the concept of interpersonal relationship quality is not understood in the same way by different authors (see Szostek, 2019). In general, high quality means interpersonal closeness, mutual interest, sympathy, cooperation, positive work climate and trust. To summarize the definitions of QR, it is a "subjective assessment (feelings) of each party regarding the degree of fulfillment by these relationships of expectations regarding their effects. This quality is the result of many subjective and contextual conditions" (Szostek, 2019). The aforementioned determinants of this quality are obviously important, but the literature does not agree if and how they are important (Naudé & Buttle, 2000; Atrek et al., 2014). Nevertheless, these conditions do exist because the process of relationship development differs in individual cases on intensity (Gabarro, 1990).

The main determinants of QR are as follows: satisfaction, mutual dependence of employees, commitment, trust, similarity of the parties, relationship duration, frequency of interactions, emotions, investments in the relationship, communication, organizational culture and atmosphere, inclusiveness of the organizational culture, and non-work relationships (Dutton, 2003; Dutton & Heaphy, 2003; Holtzhausen & Fourie, 2009; Borisov & Vinogradov, 2022; Boczkowska, et al., 2022; Parmar et al., 2022). None of them alone explain the essence of the quality of relationship between employees (Palmatier et al., 2006).

Szostek (2019) operationalized the determinants of QR, dividing them into 4 categories. He also developed an instrument to measure this quality. These categories are as follows: 1) organizational climate – the employee's subjective perception of the team and workplace (e.g., work atmosphere, conflicts and their solving, mutual trust); 2) interpersonal ties – the personal nature of relationships between employees (including private contacts and conversations between employees, mutual honesty, affectivity of relationships, everyday help); 3) interpersonal relationship building methods – the activities of the organization aimed at strengthening the ties between employees (e.g., integration meetings organized by the employer, workplace equipment); 4) distance resulting from the management style – the impact on building relationships between employees through the type of management style preferred by superiors (including the personality of the superior, organizational justice, openness to the employee and his needs).

Finally, recently there has been a growing body of literature directly relating quality of interpersonal relationships to principal determinants of organization competitive potential. Competitiveness of employees is a dynamic construct, and people exhibit competitive behaviors in certain circumstances (Wang et al., 2018) under a specific work climate, called also an innovative climate (Bos-Nehles & Veenendaal, 2017). Thus, negative behaviors affecting interpersonal relations directly impact to a high extent the competitiveness of a company (Simbine & Tukamushaba, 2020), though, it may not be easily noticeable in the short term. However, ignoring such behaviors leads to a worsening work climate and more negative incidents. Thus, CWBs should be measured to prevent them (Wang et al., 2018), and preventing them should be considered as an important managerial task, considered as the standard element of internal competitive potential evaluation.

Then, a company's competitiveness can be also strengthened through high quality interpersonal relationships between employees that manifest in good communication and cooperation, creativity in solving problems, transformational leadership or customers' treatment (Simbine & Tukamushaba, 2020). What is more, a cooperative work team is more competitive than an individual employee or a less cooperative team. Thus, positive relationships between team members can be considered as an intangible competitive resource of a company (Wittchen et al., 2013). In the case of direct competitiveness determinants under a digital /knowledge-based economy, all these factors are currently unquestionable (van Laar et al., 2017).

3 RESEARCH OBJECTIVES, METHODOLOGY AND DATA

The main objective of this study is to describe how the counterproductive behaviors of employees (CWB) influence the quality of interpersonal relationships at work (QR). Additionally, the research concentrates on the research question concerning the moderation effects of the demographic and socio-economic features of employees (education, age, sex, length of service and type of job) on this impact. To summarize the literature review, two main research hypotheses were set (see Figure 1):

(H1): QR negative influences CWB.
At first glance, the H1 hypothesis seems to address an obvious fact, common sense, accepted in the literature and widely understood in business practice. However, when one relates this issue to the international practical experiences and the well-documented costs of counterproductive work behavior – with the common inability of organizations to face this problem, which has already been discussed in the current literature review (see Szostek, 2019, Szostek et al., 2020), the empirical verification of the H1 hypothesis can be considered as conducive with the objective of empirically confirming or rather verification of this fact. Additionally, the empirical paradoxes, which are discussed in the subsequent sections of this article devoted to results presentation, provide justification for empirical verification of the H1 hypothesis.
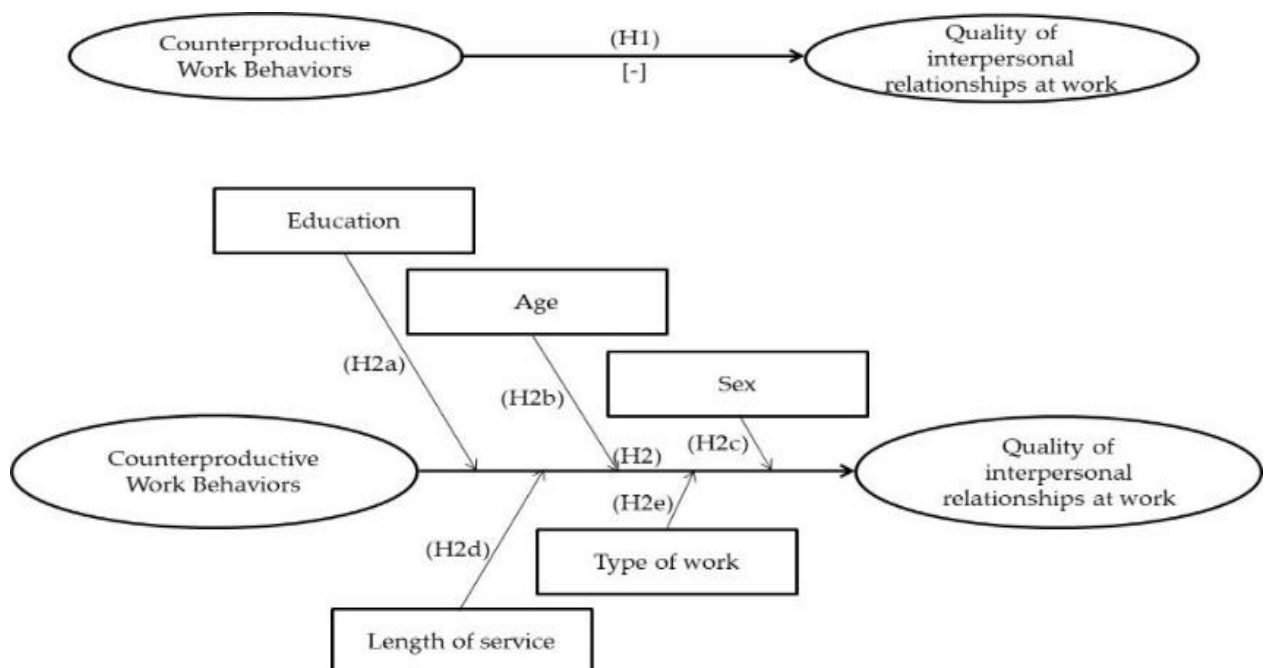

Fig. 1 – Visualization of the research hypotheses. Source: own work.

(H2): the influence of the CWB on QR is moderated by the demographic and socio-economic features of employees: (H2a) education, (H2b) age, (H2c) sex, (H2d) length of service and (H2e) type of job.

Sampling Procedures and Participant Characteristics

This study is the continuation of previous studies by Szostek (2019). Empirical data was collected with application of an online questionnaire that was originally conducted in 2018. The detailed questionnaire items are presented by Szostek (2019). The sample counted 1,488 employees from the private and public sectors. According to MacCallum et al. (2006), the required sample size and the achieved power based on RMSEA measure were calculated. For the desired statistical power level equal 0.8 (the value recommended in literature), the minimum sample size for proposed model structure was 1,027. The sample size for this study fulfills this condition. Additionally the achieved power level for RMSEA measure was calculated after SEM analysis, and it is equal 0.901, which once again confirms it is a good fit to data.

The selection of the respondents was non-random, and anonymity was guaranteed. As a result, the obtained statistical results cannot be generalized (in the case of both hypotheses with respect to the negative influence of CWB on QR and the moderation influence of demographic and socio-economic factors under evaluation), as they can be only directly applied to the group of individuals under investigation. Still, the scale of the research is large enough to provide empirical material sufficient for building a practical and conceptual framework. The current empirical analysis was done at the end of 2022, as the result of the feedback received to the following publications: Szostek (2019), Szostek et al. (2020; 2022a).

The demographic characteristic of the respondents is included in Table 1.

Tab. 1 – Demographic characteristic of the sample. Source: own study

Sex	Female	56.8% (844 employees)	Length of service	Mean	9.5 years
	Male	41.7% (620)		MIN	1 month
	Missing	1.6% (24)		MAX	48 years
Age	Mean	40.4 years		SD	9.8 years
	MIN	18 years		Missing	5.6% (84)
	MAX	67 years	Employment sector	Private	53.2% (791)
	SD	11.9 years		Public	46.6% (693)
	Missing	4.7% (70)		Missing	0.3% (4)
Education	Higher	55.1% (820)	Type of work	Office / clerical	49.2% (731)
	Secondary	22.1% (329)		Managerial	27.4% (407)
	Vocational	20.9% (311)		Blue collar	21.7% (323)
	Middle school	0.3% (4)		Missing	1.8% (27)
	No education	0.3% (4)			
	Missing	1.3% (20)			

Measurement Scales

The CWB-C scale (Counterproductive Work Behavior Checklist) by Spector et al. (2006) was used to measure counterproductive behaviors at work. It allows the measurement of many manifestations of such behavior at the same time (the most extensive version of this scale covers 45 items). Items are divided into 5 subjective categories (abuse against others, production deviance, sabotage, theft, withdrawal) and 2 other classes (behaviors against other people or the organization). The detailed presentation of the scale development process and its adjustment

to the Central European cultural environment is available in Szostek (2022). The respondent indicates the frequency of undertaking of CWB.

The interpersonal relationships quality was measured with the QIRT-S (Quality of Interpersonal Relationships in the Team Scale) (Szostek, 2019). This instrument includes 58 items divided into 4 categories (organizational climate, interpersonal ties, building of interpersonal relationships methods, and distance resulting from the management style) and 2 dimensions, i.e., the determinants and results of the quality of the relationship and the organizational vs. individual.

The statistical processing of data

In order to process the data, Structural Equation Modeling (SEM) was applied. The method is the result of a merger between confirmatory factor analysis and path analysis commonly used in econometrics. The choice of the method is directly related to the characteristics of the research problem and diagnostic variables developed in the research, namely speaking their intangible – latent character, and the main advantage of the SEM modeling related to this factor. Thus, the main strength of the applied method is its much higher elasticity than the case of regression models, and the fact that the method enables the investigation of interrelations between complex latent variables, which cannot be subject to direct measuring and are influenced by many factors (Brown, 2006; Balcerzak & Pietrzak, 2016a, 2016b).

In the case of economics, and especially management science, the latent character of variables is a common issue. Thus, recently, Mihalca et al. (2021) and Aslan et al. (2022) applied the SEM modeling to verify the consequences of the covid pandemic and distance working on exhaustion and job satisfaction. Such intangible factors as entrepreneurial orientation and entrepreneurial behavior were analyzed with application of SEM methodology by Loan et al. (2021), Meekaewkunchorn et al. (2021), Duong et al. (2022), and Wach et al. (2023). From the practical perspective, Inês and Moreira (2023) used SEM modeling for analyzing such intangible factors as perceived value, satisfaction and loyalty intentions. Finally, the method was successfully applied in the already mentioned previous stages of the research project on counterproductive work behavior (see Szostek; 2019, Szostek et al., 2020; Szostek et al., 2022a).

4 RESULTS AND DISCUSSION

Reliability Values

The completed questionnaires were analyzed with application of IBM SPSS Statistics and IBM SPSS Amos ver. 16. The variables on the CWB-C scale with the variance of 95% or more (high share of "never" answers) were eliminated from the analysis (one could find the following here: Purposely damaged a piece of equipment or property; Took money from your employer without permission; Stole something belonging to someone at work; Threatened someone at work with violence; Threatened someone at work, but not physically; Destroyed property belonging to someone at work; Hit or pushed someone at work). This was due to the nature of these variables, which mostly represented serious counter-productive behaviors. It could also be a consequence of the respondents' fear from sanctions when admitting to such radical behaviors (e.g., destruction of corporate property, theft, intimidation).

The next step of the research was a confirmatory factor analysis: the variables with the highest factor loadings and the most significantly influencing the categories of QR and CWB were

selected. The list of variables used in the structural equation models is presented in Table 2 (B – counterproductive work behavior and I – quality of interpersonal relationship with the item number).

Table 2 – Measurable variables describing counterproductive work behaviors and quality of interpersonal relationship with the Alpha-Cronbach statistic. Source: own study

Factor	Measurable variables	Cronbach's alpha
CWB-I	B26, B27, B28, B29, B30, B31, B33, B34, B37, B38	0.914
CWB-O	B1, B5, B7, B8, B9, B13, B15, B16, B19, B24	0.707
Organizational climate	R25, R27, R29, R30, R35, R38, R50, R51, R52, R58	0.897
Interpersonal ties	R2, R3, R4, R6, R7, R9, R10, R11, R13, R16	0.849
Distance resulting from the management style	R17, R18, R20, R21, R22, R23, R28, R46	0.806
Interpersonal relationships building methods	R39, R40, R41, R42, R43	0.759

Note: in order to keep the continuity of the research, the coding of the measurable variables is related to the ones given in the first article in the series, Szostek (2019).

The model was estimated with application of the maximum likelihood method, assuming a significance coefficient of 0.05.

Hypothesis Testing

<u>(H1): QR has a negative influence on CWB</u>

The hypothetical structural model is presented in Figure 2. It reflects the structural relationships between the dimensions of CWBs and the categories of QR. The model does not take into account the measurable variables that make up the individual factors, as these variables are consistent with the list in Table 2.
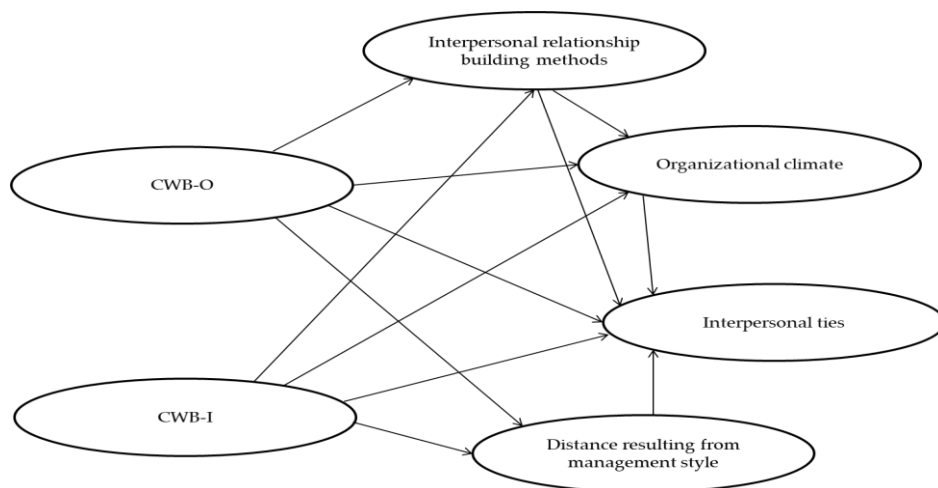

Fig. 2 – Visualization of the SEM model (influence of CWB dimensions on the categories of QR). Source: own work

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The factor analysis results are presented in Table 3, while the internal model (regression analysis) is presented in Table 4. The measures of the degree of model fit to the data can be found in Table 5. Then, the standardized total effects of the impact of both CWB dimensions on individual categories of interpersonal relationship quality are presented in Table 6.

Tab. 3 – Results of SEM model factor analysis. Source: own study

Relationship	Parameter	Parameter evaluation	P-value
R 25 ← Organizational climate	α_1	.675	
R 27 ← Organizational climate	α_2	.691	< .001
R 29 ← Organizational climate	α_3	.669	< .001
R 30 ← Organizational climate	α_4	.657	< .001
R 35 ← Organizational climate	α_5	.668	< .001
R 38 ← Organizational climate	α_6	.674	< .001
R 50 ← Organizational climate	α_7	.686	< .001
R 51 ← Organizational climate	α_8	.686	< .001
R 52 ← Organizational climate	α_9	.652	< .001
R 58 ← Organizational climate	α_{10}	.653	< .001
R 2 ← Interpersonal ties	α_{11}	.596	< .001
R 3 ← Interpersonal ties	α_{12}	.554	< .001
R 4 ← Interpersonal ties	α_{13}	.613	< .001
R 6 ← Interpersonal ties	α_{14}	.575	< .001
R 7 ← Interpersonal ties	α_{15}	.590	< .001
R 9 ← Interpersonal ties	α_{16}	.589	< .001
R 10 ← Interpersonal ties	α_{17}	.625	< .001
R 11 ← Interpersonal ties	α_{18}	.562	< .001
R 13 ← Interpersonal ties	α_{19}	.669	< .001
R 16 ← Interpersonal ties	α_{20}	.574	
R 39 ← Interpersonal relationships building methods	α_{21}	.658	
R 40 ← Interpersonal relationships building methods	α_{22}	.682	< .001
R 41 ← Interpersonal relationships building methods	α_{23}	.635	< .001
R 42 ← Interpersonal relationships building methods	α_{24}	.551	< .001
R 43 ← Interpersonal relationships building methods	α_{25}	.585	< .001
R 17 ← Distance resulting from the management style	α_{26}	.650	
R 18 ← Distance resulting from the management style	α_{27}	.657	< .001
R 20 ← Distance resulting from the management style	α_{28}	.618	< .001
R 21 ← Distance resulting from the management style	α_{29}	.724	< .001
R 22 ← Distance resulting from the management style	α_{30}	.474	< .001
R 23 ← Distance resulting from the management style	α_{31}	.492	< .001
R 28 ← Distance resulting from the management style	α_{32}	.602	< .001
R 46 ← Distance resulting from the management style	α_{33}	.472	< .001
B 26 ← CWB-I	α_{34}	.799	
B 27 ← CWB-I	α_{35}	.842	< .001
B 28 ← CWB-I	α_{36}	.641	< .001
B 29 ← CWB-I	α_{37}	.807	< .001
B 30 ← CWB-I	α_{38}	.858	< .001
B 31 ← CWB-I	α_{39}	.645	< .001
B 33 ← CWB-I	α_{40}	.725	< .001
B 34 ← CWB-I	α_{41}	.741	< .001
B 37 ← CWB-I	α_{42}	.544	< .001
B 38 ← CWB-I	α_{43}	.611	< .001
B 1 ← CWB-O	α_{44}	.492	
B 5 ← CWB-O	α_{45}	.542	< .001
B 7 ← CWB-O	α_{46}	.440	< .001
B 8 ← CWB-O	α_{47}	.364	< .001
B 9 ← CWB-O	α_{48}	.542	< .001
B 13 ← CWB-O	α_{49}	.404	< .001
B 15 ← CWB-O	α_{50}	.513	< .001
B 16 ← CWB-O	α_{51}	.428	< .001
B 19 ← CWB-O	α_{52}	.407	< .001
B 24 ← CWB-O	α_{53}	.472	< .001

Tab. 4 – Results of SEM regression analysis. Source: own study

Relationship	Parameter	Parameter evaluation	Assessment of standardized parameters	P-value
Interpersonal relationships building methods → Organizational climate	β_1	0.224	.219	< .001
Distance resulting from the management style → Organizational climate	β_2	0.605	.633	< .001
Distance resulting from the management style → Interpersonal ties	β_3	0.132	.168	< .001
Interpersonal relationships building methods → Interpersonal ties	β_4	-0.111	-.132	< .001
Organizational climate → Interpersonal ties	β_5	0.560	.681	< .001
CWB-O → Interpersonal relationships building methods	β_6	1.106	.365	< .001
CWB-O → Organizational climate	β_7	-0.317	-.102	.001
CWB-O → Distance resulting from the management style	β_8	0.988	.304	< .001
CWB-O → Interpersonal ties	β_9	0.461	.181	< .001
CWB-I → Interpersonal relationships building methods	β_{10}	-0.637	-.537	< .001
CWB-I → Organizational climate	β_{11}	-0.099	-.082	.034
CWB-I → Distance resulting from the management style	β_{12}	-0.830	-.654	< .001
CWB-I → Interpersonal ties	β_{13}	-0.147	-.148	< .001

Tab. 5 – Measures of the SEM model fit to the empirical data. Source: own study

Model	IFI	PNFI	RMSEA	CMIN/DF
Estimated	.841	.741	.051	4.934
Saturated	1	.000		
Independent	0	.000	.123	23.635

Tab. 6 – Standardized total effects of the influence of CWB dimensions on the categories of interpersonal relationship quality. Source: own study

	Interpersonal relationships building methods	Distance resulting from the management style	Organizational climate	Interpersonal ties
Organizational climate	.219	.633	.000	.681
Interpersonal ties	.017	.599	.681	.000
CWB-O	.365	.304	.170	.300
CWB-I	-.537	-.654	-.613	-.604

Factor analysis shows that all factor loadings are statistically significant. For some of the variables, it was not possible to calculate the P-value. This was due to the necessity of assigning a constant variance to them, which ensured the model's identifiability. In the largest number of cases, the impact of the dimensions of counterproductive work behaviors (mainly CWB-I) on the interpersonal relationship quality categories is negative, and it is a statistically significant relationship (parameters: β7, β10, β12, β13 – see Table 5). Generally, this means that increasing (reducing) such behaviors leads to lower (higher) quality of interpersonal relationships in the considered aspects.

CWB-I lead to a deterioration of the climate in the workplace (β7); mutual trust and satisfaction decrease, and employees are less willing to share knowledge and help each other in fulfilling their duties. This factor is directly related to the determinants of company competitive potential in the reality of a competitive knowledge-based economy (Kuczewska & Tomaszewski, 2022). This is especially noticeable when these behaviors are undertaken by some employees in a situation where others want to be loyal to the employer and care about their job. This leads to a kind of polarization in the team, especially when the negative consequences of CWB-O fall on all employees.

The category of "interpersonal relationships building methods" includes various activities undertaken by the organization in the field of building relationships between employees (e.g., enforcing teamwork; organizing meetings with employees; ensuring good workplace

equipment). It turns out that CWB-I negatively affect this category (β_{10}); in response to this type of CWB, the management is passive and means "it will be resolved somehow and employees will get along." This approach can be read by employees committing CWB-I as a kind of tacit consent to inappropriate behavior against other people. Certainly, this will not solve the problem, but rather escalate it, and the negative results will be felt by the organization.

CWB-I also increase the distance between the superior and their subordinates (β_{12}). This means that increasing the intensity of such behaviors leads, among others, to a greater formalization of vertical relationships; vertical communication becomes more formal (private topics are avoided), and the segregation of responsibilities is less clear. The manager is the representative of the organization and, if the team is involved in CWB-I, the supervisor should represent the organization's interests. The supervisor does not want to identify with employees who are counterproductive. Moreover, such behavior may be directed against management, hence it is understandable that the quality of vertical relations may deteriorate.

A statistically significant negative effect of CWB-I was also noted in the case of interpersonal ties (β_{13}), which seems to be the most understandable relationship. Undertaking CWB-I leads to the atrophy of interpersonal relationships. It can be manifested in distancing from other people and their needs, and shallowing contacts with coworkers.

In turn, the influence of CWB-O on the categories of "interpersonal relationships building methods," "distance resulting from the management style," and "interpersonal ties" is positive (β_6, β_8, β_9). These are *the main paradoxes* observed for the analyzed relationships, but some rational justification can be found for this outcome.

The positive impact of CWB-O on the "interpersonal relationships building methods" (β_6) can be explained by the organization's remedial actions. These decisions are met in connection with the observed manifestations of undesirable behaviors of employees, that mainly bring negative results for the employer. For example, consultations and meetings with employees may be aimed at understanding the determinants of the observed CWB-O, but also to see the effectiveness of corrective and preventive actions. In response to wasting company resources or doing work inappropriately, the organization may place greater emphasis on teamwork. This improves the functioning of the individual and, in a sense, increases the control over undertaken actions. On the other hand, the response to negative opinions disseminated by employees about the employer may be the activities of the organization in the field of making the workplace more attractive.

Another of *the observed paradoxes* is the positive influence of CWB-O on the distance resulting from the management style (β_8). Such a situation may take place when the manager identifies themselves not so much with the organization as with the team that is subordinate to them. Then, taking counterproductive behavior against the organization, especially when the superior themselves participates in CWB, vertical relationships are strengthened. The person engaged in CWB-O seems to be involved in some kind of collusion against the organization, thanks to which their relationships take on an informal character and communication to cover private issues. Moreover, in designating duties, the superior takes into account the interests of his subordinates. Similarly, but with reference to horizontal relationships, one can explain the positive influence of CWB-O on interpersonal bonds in the team (β_9).

The analyzed model also takes into account the interaction of categories of relationship quality. The categories of "interpersonal relationship building methods" and "distance resulting from the management style" have a statistically significant positive impact on the category

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"organizational climate" (β_1, β_2). It is a natural and understandable relationship, because the organization has the greatest impact on the work climate, and the two other categories are the essence of the organization's activities in the field of shaping the organizational climate.

The category of "interpersonal bonds" is positively influenced by the following three categories: "distance resulting from the management style," "interpersonal relationship building methods," and "organizational climate" (β_3, β_4, β_5). The way the supervisor treats subordinates affects the vertical and horizontal interpersonal ties (β_3) (e.g., organizational injustice leads to jealousy between employees, and a clear designation of work duties results in reducing conflicts among coworkers). The influence of the methods of building interpersonal relationships on interpersonal relationships at work is equally understandable (β_4). If the employer promotes teamwork or takes into account the relationships that already prevail in the team in the selection of new employees, it strengthens the ties between employees. Moreover, the effectiveness of activities in this regard can be maximized by the organization by consulting them with employees. It is also not surprising that the organizational climate has a positive influence on interpersonal ties at work (β_5) – if this climate is based on trust, cooperation, solidarity or discretion, the ties between employees are strengthened. The opposite situation will undermine such relationships.

Taking into account the standardized values of total effects (see Table 6), CWB-O had the strongest impact on the category "interpersonal relationships building methods" (0.365), and then on the category "distance resulting from the management style" (0.304). The second category is also influenced most strongly by the CWB-I dimension (-0.654), followed by the "interpersonal ties" category (-0.604).

The value of the IFI index is 0.841, while the RMSEA value is 0.051, which allows for the conclusion that the model is correctly and satisfactorily fitted to empirical data (see Table 6). The CMIN / DF statistics slightly deviate from the norm (it is more than 2), but in the case of SEM structural models, each of the measures of their quality has certain limitations, and the choice between them is usually subjective (Balcerzak & Pietrzak, 2016a; 2016b).

(H2): the influence of CWB on QR is moderated by the demographic characteristics of employees, including the following: (H2a) education, (H2b) age, (H2c) sex, (H2d) length of service and (H2e) type of job

To verify the hypothesis on moderating the impact of CWB on QR by the demographic characteristics of employees, the estimated models were analyzed in subgroups separated on the basis of the mentioned variables. Importantly, taking into account the value of the IFI, RMSEA and CMIN / DF indicators, it should be concluded that each of the models analyzed in subgroups was correctly and satisfactorily fitted to the empirical data (see Tables 7-11).

The respondents were divided into two groups according to type of education. More than half of them had higher education, hence, in order to ensure the equality of groups, two subgroups were distinguished: I – people with higher education, II – people with primary, vocational or secondary education. The results of the internal model estimation are presented in Table 8.

Tab. 7 – Internal model estimation results for subgroups by education. Source: own study

Relationship	Parameter	Subgroup I – higher education		Subgroup II – other education	
		Standardized parameter value	P-value	Standardized parameter value	P-value
Interpersonal relationships building methods → Organizational climate	β_1	.075	.047	.476	< .001

Relationship	Parameter					
Distance related to the management style → Organizational climate	β_2	.494	< .001	.476	< .001
Distance related to the management style → Interpersonal ties	β_3	.021	.647	.525	< .001
Interpersonal relationships building methods → Interpersonal ties	β_4	-.112	.001	-.043	.585
Organizational climate → Interpersonal ties	β_5	.811	< .001	.369	< .001
CWB-O → Interpersonal relationships building methods	β_6	.232	< .001	.552	< .001
CWB-O → Organizational climate	β_7	-.009	.786	-.342	< .001
CWB-O → Distance related to the management style	β_8	.106	.003	.558	< .001
CWB-O → Interpersonal ties	β_9	.142	< .001	.092	.263
CWB-I → Interpersonal relationships building methods	β_{10}	-.568	< .001	-.447	< .001
CWB-I → Organizational climate	β_{11}	-.313	< .001	.148	.020
CWB-I → Distance related to the management style	β_{12}	-.704	< .001	-.530	.007
CWB-I → Interpersonal ties	β_{13}	-.156	.041	-.063	.287
Assessment of the degree of model fit		CMIN/DF = 3.495 IFI = .837 RMSEA = .055		CMIN/DF = 3.148 IFI = .806 RMSEA = .057	

For people without higher education (subgroup II), the influence of CWB-I on the categories "organizational climate," "distance resulting from management style," and "interpersonal ties" is statistically insignificant (β_{11}, β_{12}, β_{13}). In the case of CWB-O, the same was noticed for the category "interpersonal ties" (β_9). With regard to subgroup I (people with higher education), only in two cases did the impact of CWB on QR turn out to be statistically insignificant (β_7, β_{13}). This does not necessarily mean that among people in subgroup II there is a lower quality of interpersonal relationships, but it can be concluded that CWB are not such an important factor shaping this quality as in the case of people in subgroup I. It may be a derivative of the type of work performed, where, in the case of people with higher education, it is more often a profession characterized by the need for more frequent interactions with others (e.g., managers). In such cases, the interactions and often intangible character of the work, where the core value added is based on "soft" skills and resources, require more sophisticated character of communication.

The respondents were also divided into two groups according to their age, assuming 40 years of age as censorship (thanks to this, the subgroups are more or less equal). The results of the internal model estimation are presented in Table 14. There were no significant differences in the influence of CWB on the quality of relationships in both subgroups, with one exception. In both subgroups, an insignificant impact of both dimensions of CWB on the climate in the organization was found (β_7, β_{11}). In addition, in the subgroup of people up to 40 years of age, the influence of CWB-I on the category "interpersonal ties" (β_{13}) was insignificant. This result can be attributed to the fact that older age may make employees more conservative and less likely to engage in negative behavior at work.

Tab. 8 – Internal model estimation results for subgroups by age. Source: own study

Relationship	Parameter	Subgroup I – up to 40 years		Subgroup II – at least 40 years	
		Standardized parameter value	P-value	Standardized parameter value	P-value
Interpersonal relationships building methods → Organizational climate	β_1	.224	< .001	.198	< .001
Distance related to the management style → Organizational climate	β_2	.575	< .001	.703	< .001
Distance related to the management style → Interpersonal ties	β_3	.096	.083	.266	< .001
Interpersonal relationships building methods → Interpersonal ties	β_4	-.112	.015	-.163	< .001

Relationship	Parameter				
Organizational climate → Interpersonal ties	β_5	.777	< .001	.573	< .001
CWB-O → Interpersonal relationships building methods	β_6	.375	< .001	.348	< .001
CWB-O → Organizational climate	β_7	-.091	.045	.198	.019
CWB-O → Distance related to the management style	β_8	.300	< .001	.299	< .001
CWB-O → Interpersonal ties	β_9	.143	< .001	.206	< .001
CWB-I → Interpersonal relationships building methods	β_{10}	-.508	< .001	-.576	< .001
CWB-I → Organizational climate	β_{11}	-.141	.007	-.023	.682
CWB-I → Distance related to the management style	β_{12}	-.607	< .001	-.689	< .001
CWB-I → Interpersonal ties	β_{13}	-.121	.006	-.167	.001
Assessment of the degree of model fit		CMIN/DF = 3.198 IFI = .815 RMSEA = .056		CMIN/DF = 3.449 IFI = .822 RMSEA = .056	

The division of the respondents into subgroups according to sex shows that, in the case of men, the influence of CWB-O and CWB-I on the category "interpersonal ties" (β_9, β_{13}), as well as CWB-I on the category "organizational climate" (β_{11}), were statistically insignificant. In turn, the significance of the influence of CWB dimensions on the quality of interpersonal relationships at work in almost all the considered combinations is higher in the case of women (lower P value). In I group, only the influence of CWB-O on the organizational climate (β_7) is statistically insignificant. This outcome can be explained by the psychological characteristics related to sex. In this respect, women tend to be more sensitive and less likely to engage in counterproductive behavior. Therefore, the impact of this type of behavior on the quality of relationships at work is stronger in their case. The model estimation results are presented in Table 9.

Tab. 9 – Internal model estimation results for subgroups by sex. Source: own study

Relationship	Parameter	Subgroup I – female		Subgroup II – male	
		Standardized parameter value	P-value	Standardized parameter value	P-value
Interpersonal relationships building methods → Organizational climate	β_1	.128	.002	.329	< .001
Distance related to the management style → Organizational climate	β_2	.538	< .001	.760	< .001
Distance related to the management style → Interpersonal ties	β_3	.162	.001	.239	.007
Interpersonal relationships building methods → Interpersonal ties	β_4	-.122	.001	-.079	.187
Organizational climate → Interpersonal ties	β_5	.663	< .001	.657	< .001
CWB-O → Interpersonal relationships building methods	β_6	.292	< .001	.451	< .001
CWB-O → Organizational climate	β_7	-.049	.181	.329	.003
CWB-O → Distance related to the management style	β_8	.252	< .001	.335	< .001
CWB-O → Interpersonal ties	β_9	.182	< .001	.128	.016
CWB-I → Interpersonal relationships building methods	β_{10}	-.552	< .001	-.482	< .001
CWB-I → Organizational climate	β_{11}	-.213	< .001	.070	.233
CWB-I → Distance related to the management style	β_{12}	-.662	< .001	-.627	< .001
CWB-I → Interpersonal ties	β_{13}	-.167	< .001	-.082	.115
Assessment of the degree of model fit		CMIN/DF = 3.697 IFI = .826 RMSEA = .057		CMIN/DF = 2.215 IFI = .791 RMSEA = .061	

The respondents were also divided into subgroups by the length of service (Median = 6 years). The results of the model estimation are presented in Table 10. Both in the case of persons with shorter and longer work experience, a statistically insignificant influence of CWB-O and CWB-

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I on the category "organizational climate" was observed (β_7, β_{11}). The remaining combinations of the influence of CWB on the quality of relationships at work turned out to be statistically significant. The length of service, therefore, does not seem to significantly differentiate the discussed relationships.

Tab. 10 – Internal model estimation results for subgroups by the length of service. Source: own study

Relationship	Parameter	Subgroup I – below 6 years of work experience		Subgroup II – at least 6 years of work experience	
		Standardized parameter value	P-value	Standardized parameter value	P-value
Interpersonal relationships building methods → Organizational climate	β_1	.311	< .001	.159	.003
Distance related to the management style → Organizational climate	β_2	.622	< .001	.643	< .001
Distance related to the management style → Interpersonal ties	β_3	.226	.001	.138	.016
Interpersonal relationships building methods → Interpersonal ties	β_4	-.142	.013	-.134	.007
Organizational climate → Interpersonal ties	β_5	.645	< .001	.692	< .001
CWB-O → Interpersonal relationships building methods	β_6	.361	< .001	.384	< .001
CWB-O → Organizational climate	β_7	-.122	.014	-.093	.028
CWB-O → Distance related to the management style	β_8	.282	< .001	.324	< .001
CWB-O → Interpersonal ties	β_9	.170	< .001	.193	< .001
CWB-I → Interpersonal relationships building methods	β_{10}	-.565	< .001	-.513	< .001
CWB-I → Organizational climate	β_{11}	-.051	.406	-.100	.045
CWB-I → Distance related to the management style	β_{12}	-.635	< .001	-.662	< .001
CWB-I → Interpersonal ties	β_{13}	-,189	< .001	-,133	,003
Assessment of the degree of model fit		CMIN/DF = 2.808 IFI = .813 RMSEA = .056		CMIN/DF = 3.757 IFI = .826 RMSEA = .055	

At the end of the discussion on moderating the influence of CWB on the quality of relationships at work by demographic variables, the respondents were divided into subgroups according to type of job. The results of the model estimation are presented in Table 11. With regard to blue collar workers, in as many as four cases the influence of CWB on the categories of relationship quality turned out to be statistically insignificant. This concerns the impact of both dimensions of counterproductive work behaviors on the organizational climate and interpersonal ties between employees (β_7, β_9, β_{11}, β_{13}). A similar situation took place in group III (managerial positions) with the exception of the influence of CWB-O on the category "organizational climate" (β_7) – here the impact turned out to be statistically significant. In the case of employees in clerical / office positions, only the influence of CWB-O on the organizational climate (β_7) turned out to be insignificant, which is conducive to results presented by Spector and Zhou (2014) and Salgado et al. (2022).

Tab. 11 – Internal model estimation results for subgroups by the type of job. Source: own study

Relationship	Parameter	Subgroup I – blue collar		Subgroup II – office / clerical		Subgroup III – managerial	
		Standardized parameter value	P-value	Standardized parameter value	P-value	Standardized parameter value	P-value
Interpersonal relationships building methods → Organizational climate	β_1	.423	< .001	.085	.046	.426	< .001
Distance related to the management style → Organizational climate	β_2	.695	< .001	.464	< .001	.841	< .001

Distance related to the management style → Interpersonal ties	β_3	.401	.002	-.007	.891	.499	< .001
Interpersonal relationships building methods → Interpersonal ties	β_4	.423	.049	-.111	.005	-.016	.852
Organizational climate → Interpersonal ties	β_5	.559	< .001	.776	< .001	.461	< .001
CWB-O → Interpersonal relationships building methods	β_6	.395	< .001	.286	< .001	.593	< .001
CWB-O → Organizational climate	β_7	-.154	.030	-.044	.263	-.343	.001
CWB-O → Distance related to the management style	β_8	.368	< .001	.208	< .001	.530	< .001
CWB-O → Interpersonal ties	β_9	.134	.055	.229	< .001	-.002	.984
CWB-I → Interpersonal relationships building methods	β_{10}	-.579	< .001	-.546	< .001	-.396	< .001
CWB-I → Organizational climate	β_{11}	.052	.502	-.314	< .001	.161	.034
CWB-I → Distance related to the management style	β_{12}	-.519	< .001	-.734	< .001	-.514	< .001
CWB-I → Interpersonal ties	β_{13}	-.125	.077	-.189	< .001	-.074	.270
Assessment of the degree of model fit	CMIN/DF =2.215 IFI = .791 RMSEA = .061		CMIN/DF =3.303 IFI = .830 RMSEA = .056		CMIN/DF 2.665 IFI = .755 RMSEA = .064	

When we take into account the analysis of demographic and socio-economic factors, especially age and gender, research on the relationship between counterproductive behavior and the quality of interpersonal relationships at work is rare and difficult to directly compare. Nevertheless, the discussed results are in line with the findings of Chiamaka et al. (2022), who proved the positive impact of the organizational climate on interpersonal relations at work. This climate includes the presence or absence of negative behaviors at work. In the case of these studies, gender turned out to be an important moderator of the described relationship. The presented results are also in line with the most recent findings of Chinedu and Chukwujekwu (2023), according to whom some manifestations of CWB (gender discrimination, workplace bullying) have a negative impact on business performance. Finally, the confirmation of the relationship (although the opposite one) between the quality of interpersonal relationships at work and CWB are also presented in the results by Szostek (2019) and Majova (2022).

From the overall perspective and managerial implications for human resource management practice, as the important tool for building competitive potential, the findings are supported by some previous recent international studies. Qiu and Peschek (2012) proved that counterproductive work behaviors against other people reduced the level of emotional integration in the team, the tendency to share, and the acquiring of new knowledge, therefore negatively affecting competitive potential form the perspective of knowledge-based economy, which is conducive to current results. With respect to the presented empirical outcome, also Bagyo (2018) proved that CWB decreases work performance, which is a component of QR and of the competitiveness of a company. Similarly to the presented results, Wang et al. (2018) proved that the organizational competitiveness is influenced by the work climate that is a component of the quality of interpersonal relationships at work. Thus, ignoring CWBs and negative results of such behaviors for QR, the company is less competitive.

5 CONCLUSIONS

This paper has been devoted to the impact of counterproductive work behavior on the quality of interpersonal relationships between employees within the context of challenges for human resource management as the basic tool in building intangible, difficult to copy competitive advantages of organizations. Specifically, the modelling also enables an examination of how this influence is moderated by the demographic characteristics of employees. Based on the research results, it can be concluded that the hypotheses were confirmed, i.e., (H1): there is a negative impact of counterproductive work behaviors on the quality of interpersonal relationships at work; (H2): the impact of counterproductive work behavior on the quality of interpersonal relationships at work is moderated by the demographic characteristics of employees, including the following: (H2a) education, (H2b) age, (H2c) sex, (H2d) length of service, and (H2e) type of job.

Interestingly, the relationship between both constructs is quite complicated, as evidenced by *the paradoxes* that were presented and discussed in detail, i.e., mainly such situations when some CWB dimensions positively affect some categories of relationship quality at work.

The current study is not free from limitations, which must be taken into consideration during interpretation of the results. At the same time, the acknowledged limitations open new avenues for futures studies. The sample was not random, but what is important for the value of the study is that it was relatively large (1,488 people) and demographically diverse. As a result, formally speaking, the obtained results can be only directly applied to the analyzed group of respondents (individuals), but still provide important information, which can be used for practice. Therefore, the current studies provide a good benchmark for future studies. Besides, self-monitoring is not a fully objective method. The responses of an employee who is to assess CWB or QR are certainly influenced by many factors limiting the reliability of the measurement (e.g., willingness to present themself from the better side, current conflicts at work, etc.). Nevertheless, no other method of measuring these constructs has been developed so far that would guarantee a greater objectivity of the data. Possible observations by others and their reporting may also be subjective. Moreover, many of the manifestations of both constructs are unobservable or difficult to observe and measure. Therefore, future studies should measure the impact of CWB on QR on a representative sample of employees, as well as ensure the diversity of the surveyed organizations (e.g., industry, size, internationalization, etc.). Interesting conclusions can be provided by a separate measurement and analysis of its results in a group of non-governmental organizations (NGOs), which have their own specificity (see Mikołajczak, 2021).

It is also worth considering the measurements over a longer time horizon, so that it can capture the dynamics of CWB and QR (longitudinal study). These constructs are relatively unstable – the same employee may engage in negative and positive behavior in a short period of time (see, e.g., Klotz & Bolino, 2013), and perceive QR as positive or negative.

In subsequent studies on the influence of CWB on QR, it is worth proposing an extended research model, which will take into account the impact of other determinants of these constructs. These determinants should also be operationalized, such as follows: satisfaction, mutual dependence of employees, commitment, trust, similarity of partners, duration of the relationship, frequency of interactions, emotions, investment in relationship, communication, culture and atmosphere in the organization, and non-work relationships (Dutton, 2003; Dutton & Heaphy, 2003; Holtzhausen & Fourie, 2009).

Besides, the scale-to-measure CWB, developed in specific cultural conditions, should always be adapted to a given cultural specificity. In the Central European environment, and especially the Polish reality, the number of CWB categories must have been limited to four (production deviance was not confirmed) (Szostek, 2022). However, the adjustments of scales should

always be an important methodological issue in the case of future international research for other socio-economic variables, diversified from the cultural perspective contexts. These factors confirm the objective limitation of any survey study relating to socio-economic factors, especially when they have the objective of building universal theories or managerial/organizational models applied within an unrestricted international context. Even so, the current research results provide a sufficient empirical outcome obtained on a large sample that can be of high interest for international management and decision makers within organizations, who are responsible for supporting the competitive potential of their human resources. The presented outcomes can be especially practically applicable in culturally and institutionally similar economies and societies of Central Europe.

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Contact information

prof. Dawid Szostek, Ph.D.
Nicolaus Copernicus University in Toruń, Poland
E-mail: dawid.szostek@umk.pl
ORCID ID: orcid.org/0000-0001-6743-854X

prof. Adam P. Balcerzak, Ph.D.
University of Warmia and Mazury in Olsztyn, Poland
European Centre for Business Research, Pan-European University, Czech Republic
E-mail: a.balcerzak@uwm.edu.pl
ORCID ID: orcid.org/0000-0003-0352-1373

Elżbieta Rogalska, Ph.D.
University of Warmia and Mazury in Olsztyn, Poland
E-mail: elzbieta.rogalska@uwm.edu.pl
ORCID ID: orcid.org/0000-0003-4995-5791