

MEASUREMENT AND TAXONOMY OF COUNTERPRODUCTIVE WORK BEHAVIORS

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Purpose: The aim of the article is to identify the dimensions of counterproductive work behaviors.

Design/methodology/approach: The article presents results of a questionnaire-based survey conducted among 385 working students of a private college of higher education in July 2021. The starting point was division into five categories of counterproductive work behaviors. The dimensions have been investigated in an iterative process.

Findings: An important conclusion is certain departure from the recreated dimensions in comparison with the five-factor model of counterproductive behaviors proposed by Spector. Thus, there appears physical aggression as a separately interpreted factor.

Research limitations/implications: Participation in the survey was voluntary. This limits representativeness. It is worth drawing attention to the basic limitation of this research, which is changeability of organizational behaviors at the time of connecting them with, among others, social acceptance (or a lack of such acceptance) or encouragement (or a lack of encouragement) of counterproductive work behaviors.

Social implications: A disregard for societal norms leads to antisocial behavior. All described behaviors contain a degree of malevolency that directly affects interpersonal behavior.

Practical implications: Measurement and taxonomy of the multifaceted, negative phenomenon which detrimental behaviors in organizations are, seem indispensable in order to work out effective methods of preventing such acts. This will have a flow-on effect in regards to performance at work.

Originality/value: Original contribution of the content to the body of knowledge. The results of this study encourage further discussion on physical aggression as a separately interpreted factor.

Keywords: Counterproductive Work Behavior, dimensionality of counterproductivity.

Category of the paper: Research paper.

1. Introduction

Measurement and taxonomy of the multifaceted, negative phenomenon which detrimental behaviors in organizations are, seem indispensable in order to better recognize the problem and work out effective methods of preventing such acts. In their different conceptions, researchers propose a diverse number of their dimensions (Baka et al., 2015; Gruys, Sackett, 2003; Salgado, 2002; Spector et al., 2006; Wiernik, Ones, 2018; Bruk-Lee, Spector, 2006; Penney, Spector, 2005; Fox et al., 2001; Barbaranelli et al., 2013).

As regards research on detrimental behaviors at work so far, different approaches have been used:

Individual negative acts, e.g. theft (Greenberg, 1990), brusque attitude towards customers and the like, were examined (Perlow, Latham, 1993),

Similar behaviors were grouped in types, such as deviation-like behaviors at work (Robinson, Bennett, 1995), organization-directed aggression (Neuman, Baron, 1998).

A drawback to the above-presented frameworks of behaviors is their narrow theoretical context and the lack of possibility of generalizing relevant research results to transfer them onto other areas of detrimental behaviors in organizations.

Facing the above, in order to define the behaviors in question, researchers use a broader term – Counterproductive Work Behavior (CWB), which – in the opinion of authors – refers to acts intended to do harm to the organization. In the form of abuse, such behaviors can – to an equal degree – do harm to persons – stakeholders of organizations, as well as take the form of deviation in production, sabotage, theft or worker's withdrawal and then – as such – be detrimental to the organization (Spector et al., 2006).

It has been proven that various types of harmful behaviors clearly correlate with one another. Hence, a five-factor model of counterproductive behaviors has been elaborated. Below, we present a short characteristic of the factors distinguished by Spector and his colleagues (Spector et al., 2006):

- Abuses – their aim is to do physical or psychological harm to shareholders of the organization. On the basis of data collected from their focus research, Richman et al. (2001) distinguished five types of acts of abuses committed by workers – physical aggression (e.g. beating, pushing), verbal aggression (e.g. shouting, calling names), offensive behaviors (e.g. humiliation, offensive gestures), ostracism (e.g. isolating persons, neglecting a person's contribution), instigating (e.g. forcing persons to perform dangerous or prohibited actions). Abuses can consist in active (taking action) or passive (failing to assist) hurting another person.

- Sabotage and production deviation – the aim of these two types of counterproductive behaviors is to harm the organization as a whole. The differences between them consist in the fact that the former (sabotage) is an active form of CWB and manifests itself in such actions as (Chen, Spector, 1992): destruction of the employer's property, damage to company equipment, purposeful making workplace dirty, using up larger amounts of material than necessary, e.g. for private use, creating a negative image of the company. In turn, deviation is included in the passive forms of CWB and its manifestations are harder to recognize, as they consist in the following: not complying with recommendations and procedures binding in the organization, conscious making mistakes, intentional lowering of productivity and quality of work, executing work and duties with very low effectiveness and not reporting problems or acts of misuse in the workplace to the superiors (Hollinger, 1986).
- Theft – similarly as sabotage and production deviation, stealing is categorized as manifestation of detrimental behavior towards the organization as a whole (Neuman, Baron, 1998). Here a series of sources of theft can be identified, beginning with demographic factors (Baumol, 1990), factors which stem from the work environment, that is poorly functioning system of control and supervising workers (Hollinger, Clark, 1983) and also personality traits, such as characteristics of the so-called dark triad: Machiavellianism, narcissism and psychopathy (O'Boyle et al., 2012).
- Worker's withdrawal, in other words – "purposeful doing nothing" (Bańka, 2011) which consists in limiting the energy spent on work and shortening time devoted to performing professional duties, prolonging breaks, leaving workplace (Spector et al., 2006), intentional executing work at a slower rate, taking days off which workers are not entitled to, simulating sickness, 'virtual idleness' – surfing the Internet during working hours (Lim, Chen, 2009).

The five-factor model of counterproductive behaviors proposed by Spencer et al. is widely known and applied, still the literature on the subject also inclines towards considering models of a lower number of factors (Wiernik, Ones, 2018; Carpenter et al., 2021; Zubaidah et al., 2019). For instance, studies by Baka et al. (2015) suggest a three- or four-factor model; in turn, Italian validation research has distinguished two notionally broader factors, that is counterproductive behaviors towards the organization and counterproductive behaviors towards people (Barbaranelli et al., 2013).

Taking the above into account, the aim of this article is to identify the dimensions of counterproductive behaviors on the basis of results of own research. The authors put forward the thesis that the model of counterproductive behaviors, which emerges as a result of own studies, will be based on fewer than five dimensions.

2. Methods

The authors embarked on learning opinions of people who are professionally active and represent organizations of different types. To achieve the goal a survey research was conducted with the use of *CAWI (Computer-Assisted Web Interviewing)* among working students of a private college of higher education in July 2021. The relevant link to the survey was sent to students' addresses via an e-learning platform. Upon clicking the link, students accessed the on-line questionnaire form. The respondents were requested, at the same time, to pass the questionnaire on to other professionally active people. In this way, the 'snowball' effect was obtained, which consisted in recruitment of respondents with the help from other participants (Castillo, 2009).

In order to measure the perception of counterproductive behaviors, an 11-grade measurement scale was used, by means of which the choice of intensity of a feature was to be made between its two opposite characteristics (from 0 – the behavior is not negative up to 10 – the behavior is very negative). The psychometric properties of the tool were checked as far as its reliability was concerned with the use of Cronbach's alpha as well as the exploratory factor analysis (EFA). The calculations were executed in STATISTICA program. Cronbach's alpha can take values from 0 to 1, still the greater the value of Cronbach's alpha, the greater the reliability of the scale. The literature on the subject accepts different desired values of this statistic (generally at least 0.7, although the authors occasionally accept 0.6 as the border value) (Ramli, 2019; Taber, 2018; Siswanti et al., 2020).

3. Results

There were altogether 385 persons, including 153 men (39.7%) and 232 women (60.3%) who took part in the survey. The majority of respondents were people in the age up to 38 years: 15.6% of the subjects represented the age group 18-23 years, while 50.1% of the questioned belonged to that of 24-38 years. As regards the level of education, 38.4% of the respondents held secondary education, 6.8% - post-graduate secondary education, 31.2% - Bachelor degree, and 23.6% - Master degree. The substantive questions asked in the questionnaire dealt with counterproductive behaviors at the current workplace (the respondents were asked about the length of their employment at the present workplace).

After carrying out the research, evaluation of the cohesion of the construct was made, as well as its components (dimensions) were pointed to. The statistical parameters of the 21-item version of the tool was assessed (reliability measured with Cronbach's alpha amounted to 0.944). The starting point was division into five categories of counterproductive behaviors as distinguished by Spector et al. (2006). Table 1 presents reliability coefficients (internal agreement) for individual categories (dimensions).

Table 1.
Internal agreement

Specification	No. of items	Cronbach's alpha
Abuses	5	0.625
Sabotage	5	0.873
Theft	1	-
Production deviation	4	0.837
Worker's withdrawal	8	0.932

Source: own elaboration on the basis of conducted research.

Cronbach's alpha defines cohesion of the items being components of the given scale. It needs remarking, though, that one of statements on the scale measuring abuses ("How negative, it seems to you, is a worker's act of using physical aggression, e.g. beating, pushing?") proved not correlated (coefficient of correlation 0.04; Cronbach's alpha: for the scale including this item 0.625, on removing the item 0.726). However, taking into account the theoretical foundations, despite the medium-satisfying indexes obtained for the scale measuring abuses (Cronbach's alpha 0.625), it was decided that the 21-item version of the tool should be maintained for further analyses.

To establish the number of factors, Kaiser criterion were applied (Table 2) as well as a scree test with analysis of break point (Figure 1). Kaiser criterion recommends retaining factors possessing eigenvalues greater than one. This points to the fact that one can keep five factors (main components), whereas the scree test suggests retaining rather two, three or four factors.

Table 2.
The Kaiser criterion

Value	Eigenvalue	% of total variance
1	11.19	46.63
2	2.08	8.68
3	1.43	5.97
4	1.16	4.84
5	1.03	4.31
6	0.91	3.79

Source: own elaboration on the basis of conducted research.

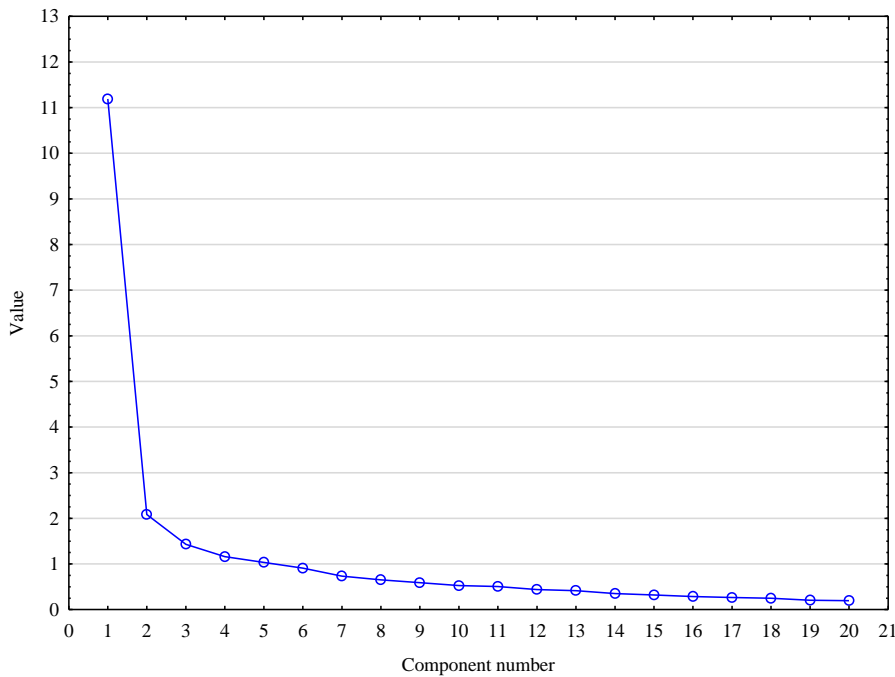


Figure 1. The scree plot.

Source: own elaboration on the basis of conducted research.

Distinguishing five factors with the use of the method of main components on the basis of Kaiser criterion did not yield satisfying effects (Table 3) – the picture of the factor structure was not readable to the end. The factor loadings were high in a few factors at the same time (e.g. for the purposeful lowering of productivity and quality of work, intentional making the workplace dirty, intentional being late for work).

Table 3.

Model 1 (5 factors), factor extraction method: Principal Components Analysis; rotation method: Varimax

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
physical aggression (e.g. beating, pushing)	0.04	0.01	-0.03	-0.01	0.91
verbal aggression (e.g. shouting, calling names)	0.17	0.55	0.26	-0.16	0.33
offensive behaviors (e.g. humiliating, offensive gestures)	-0.03	0.62	0.40	0.18	0.12
ostracism (e.g. isolating persons, neglecting a person's contribution)	0.15	0.74	0.04	0.22	-0.02
instigating (e.g. persuading to do dangerous or prohibited acts)	0.14	0.79	0.16	0.21	-0.02
purposeful lowering of productivity and quality of work	0.47	0.46	0.43	-0.22	-0.12
performing work with poor effectiveness	0.47	0.35	0.27	0.22	-0.16
not complying with recommendations and binding procedures	0.56	0.37	0.17	0.35	-0.10
conscious making mistakes	0.36	0.33	0.52	0.36	-0.08
not reporting problems or acts of abuse at the workplace to superiors	0.38	0.30	0.04	0.73	-0.09
destroying (completely) the property belonging to the employer	0.17	0.14	0.89	0.12	0.02
damaging (to a degree) the equipment	0.24	0.34	0.71	0.16	-0.12

Cont. table 3.

using up a greater amount of materials than necessary	0.49	0.25	0.27	0.63	-0.02
intentional making the workplace dirty	0.27	0.18	0.54	0.65	0.01
creating a negative image of the firm	0.43	0.05	0.63	0.36	0.02
intentional lateness for work	0.47	0.03	0.51	0.44	0.02
shortening the working time	0.75	0.08	0.22	0.27	0.02
prolonging breaks	0.83	0.16	0.10	0.32	0.06
leaving the workplace	0.66	0.14	0.19	0.41	0.07
intentional performing work more slowly	0.78	0.11	0.40	0.14	0.02
taking unscheduled days off work, e.g. due to having drunk alcohol	0.80	0.06	0.11	0.01	-0.04
simulating sickness	0.76	0.11	0.28	0.24	0.05
surfing the Internet during working hours, the so-called virtual loafing	0.83	0.08	0.13	0.22	0.01
appropriation of employer's property	0.34	-0.06	0.47	0.62	0.09

Source: own elaboration on the basis of conducted research.

An analysis of the content of the statements included in the five factors allowed giving them the following names:

- Factor 1 – with reference to the five-item classification proposed by Spector – stands the closest to worker's withdrawal.
- Factor 2 – with reference to the five-item classification proposed by Spector – stands the closest to abuse.
- Factor 3 – with reference to the five-item classification proposed by Spector – stands the closest to sabotage.
- Factor 4 – not reporting problems or acts of misuse in the workplace to superiors.
- Factor 5 – physical aggression (the factor includes only one statement).

In successive steps, it was checked whether there exists a factor structure which could explain the phenomenon of counterproductive behaviors in a less complex manner. Due to the fact that the scree test suggested retaining fewer than five factors, and – at the same time – the results of the exploratory factor analysis were not satisfying upon accepting five distinguished factors, it was decided to analyze alternative models (Table 4, Table 5, Table 6). In the case of the 5-factor model, the participation of the explained variation amounted to 70.4%, for the 4-factor model – 66.15, for the 3-factor one – 61.3%, whereas for the 2-factor model – 55.3%, respectively.

Table 4.

Model 2 (4 factors), factor extraction method: Principal Components Analysis; rotation method: Varimax

Item	Factor 1	Factor 2	Factor 3	Factor 4
physical aggression (e.g. beating, pushing)	0.11	0.04	0.02	-0.28
verbal aggression (e.g. shouting, calling names)	0.18	0.58	0.22	-0.26
offensive behaviors (e.g. humiliating, offensive gestures)	-0.01	0.63	0.41	0.11
ostracism (e.g. isolating persons, neglecting a person's contribution)	0.15	0.73	0.05	0.24

Cont. table 4.

instigating (e.g. persuading to do dangerous or prohibited acts)	0.15	0.79	0.16	0.22
purposeful lowering of productivity and quality of work	0.44	0.49	0.35	-0.22
performing work with poor effectiveness	0.46	0.36	0.27	0.22
not complying with recommendations and binding procedures	0.57	0.36	0.20	0.34
conscious making mistakes	0.36	0.34	0.55	0.29
not reporting problems or acts of abuse at the workplace to superiors	0.41	0.27	0.15	0.71
destroying (completely) the property belonging to the employer	0.17	0.18	0.89	-0.03
damaging (to a degree) the equipment	0.23	0.36	0.70	0.09
using up a greater amount of materials than necessary	0.53	0.23	0.37	0.55
intentional making the workplace dirty	0.30	0.17	0.64	0.52
creating a negative image of the firm	0.45	0.07	0.68	0.22
intentional lateness for work	0.49	0.04	0.58	0.32
shortening the working time	0.76	0.09	0.26	0.19
prolonging breaks	0.85	0.16	0.15	0.25
leaving the workplace	0.69	0.13	0.25	0.31
intentional performing work more slowly	0.79	0.13	0.41	0.05
taking unscheduled days off work, e.g. due to having drunk alcohol	0.79	0.07	0.10	-0.02
simulating sickness	0.77	0.12	0.31	0.15
surfing the Internet during working hours, the so-called virtual loafing	0.84	0.08	0.16	0.15
appropriation of employer's property	0.39	-0.07	0.57	0.47

Source: own elaboration on the basis of conducted research.

An analysis of the content of the statements included in four factors (Table 4) allowed giving them the following names:

- Factor 1 – worker's withdrawal.
- Factor 2 – abuses.
- Factor 3 – sabotage and theft.
- Factor 4 – not reporting problems or acts of misuse in the workplace to superiors.

In the case of the 4-factor model, physical aggression turned out not to be correlated with any of the four factors. As regards some items (e.g. "purposeful lowering of productivity and quality of work", "using a greater amount of materials than necessary"), factor loading distribution is even on both factors, not dominating strongly in one of the factors only.

Table 5.

Model 3 (3 factors), factor extraction method: Principal Components Analysis; rotation method: Varimax

Item	Factor 1	Factor 2	Factor 3
physical aggression (e.g. beating, pushing)	0.07	0.07	-0.11
verbal aggression (e.g. shouting, calling names)	0.13	0.62	0.06
offensive behaviors (e.g. humiliating, offensive gestures)	-0.01	0.65	0.38
ostracism (e.g. isolating persons, neglecting a person's contribution)	0.20	0.70	0.11
instigating (e.g. persuading to do dangerous or prohibited acts)	0.19	0.77	0.21
purposeful lowering of productivity and quality of work	0.39	0.55	0.20
performing work with poor effectiveness	0.48	0.36	0.32
not complying with recommendations and binding procedures	0.61	0.34	0.30

Cont. table 5.

conscious making mistakes	0.38	0.36	0.60
not reporting problems or acts of abuse at the workplace to superiors	0.51	0.20	0.42
destroying (completely) the property belonging to the employer	0.11	0.27	0.78
damaging (to a degree) the equipment	0.20	0.42	0.65
using up a greater amount of materials than necessary	0.59	0.21	0.54
intentional making the workplace dirty	0.35	0.18	0.79
creating a negative image of the firm	0.44	0.11	0.70
intentional lateness for work	0.50	0.07	0.65
shortening the working time	0.77	0.10	0.30
prolonging breaks	0.87	0.15	0.22
leaving the workplace	0.71	0.13	0.34
intentional performing work more slowly	0.76	0.16	0.37
taking unscheduled days off work, e.g. due to having drunk alcohol	0.77	0.09	0.07
simulating sickness	0.77	0.14	0.33
surfing the Internet during working hours, the so-called virtual loafing	0.85	0.09	0.19
appropriation of employer's property	0.42	-0.06	0.72

Source: own elaboration on the basis of conducted research.

An analysis of the content of the statements included in three factors (Table 5) allowed giving them the following names:

- Factor 1 – worker's withdrawal.
- Factor 2 – abuses.
- Factor 3 – sabotage and theft.

In the case of the 3-factor model, physical aggression turned out not to be correlated with any of the three factors. As regards some items (e.g. "using up a greater amount of materials than necessary"), factor loading distribution is even on several factors, not dominating strongly in one of the factors only.

Table 6.

Model 4 (2 factors), factor extraction method: Principal Components Analysis; rotation method: Varimax

Item	Factor 1	Factor 2
physical aggression (e.g. beating, pushing)	0.01	0.00
verbal aggression (e.g. shouting, calling names)	0.08	0.54
offensive behaviors (e.g. humiliating, offensive gestures)	0.08	0.75
ostracism (e.g. isolating persons, neglecting a person's contribution)	0.16	0.62
instigating (e.g. persuading to do dangerous or prohibited acts)	0.17	0.73
purposeful lowering of productivity and quality of work	0.38	0.52
performing work with poor effectiveness	0.53	0.41
not complying with recommendations and binding procedures	0.64	0.37
conscious making mistakes	0.54	0.57
not reporting problems or acts of abuse at the workplace to superiors	0.61	0.33
destroying (completely) the property belonging to the employer	0.37	0.62
damaging (to a degree) the equipment	0.39	0.67
using up a greater amount of materials than necessary	0.73	0.39
intentional making the workplace dirty	0.60	0.52

Cont. table 6.

creating a negative image of the firm	0.66	0.41
intentional lateness for work	0.70	0.33
shortening the working time	0.81	0.14
prolonging breaks	0.87	0.13
leaving the workplace	0.77	0.20
intentional performing work more slowly	0.82	0.24
taking unscheduled days off work, e.g. due to having drunk alcohol	0.73	0.02
simulating sickness	0.82	0.19
surfing the Internet during working hours, the so-called virtual loafing	0.85	0.07
appropriation of employer's property	0.66	0.27

Source: own elaboration on the basis of conducted research.

An analysis of the content of the statements included in two factors (Table 6) allowed giving them the following names:

- Factor 1 – behaviors towards the organization.
- Factor 2 – behaviors aimed at colleagues.

In the case of the 2-factor model, physical aggression turned out not to be correlated either with Factor 1 or Factor 2. As regards some items (e.g. “conscious making mistakes”), factor loading distribution is even on both factors, not dominating strongly in one of the factors only.

4. Discussion

The dimensions of counterproductive work behaviors can vary in severity and impact on an organization, but collectively they pose significant challenges to maintaining a productive work environment. Identifying the dimensions of counterproductive work behaviors (CWBs) can yield both similarities and differences in the results, depending on various factors such as the context, the measurement methods used, and the specific behaviors considered. Across different studies and research, there tends to be a core set of CWBs that are consistently identified. It follows from the conducted research that the factor structure only partially corresponds to that given in the theoretical part. Thus, the five-factor model of counterproductive behaviors, proposed by Spector et al. was not wholly confirmed in the empirical research.

An important implication resulting from the own research is the observation that the items composing sabotage, abuses and worker's withdrawal are to a great extent identical with the items loading these factors in the original research (Spector et al.). On the other hand, in the case of certain items, the distribution of factor loading is uniform over several factors, not saturating strongly only one of them.

An important conclusion is certain departure from the recreated dimensions in comparison with the five-factor model of counterproductive behaviors proposed by Spector. Thus, there appears physical aggression as a factor which can be interpreted separately and which was perceived as a very negative behavior by nearly 100% of the respondents.

The results of confirmatory factor analysis of Baka et al. showed that a four-factor model comprising sabotage, abuse, theft and withdrawal – is characterized by the best parameters fitting the data presented by Spector et al. and this model was accepted by the authors. It needs adding that Baka et al. asked their respondents in the questionnaire straight about the frequency of the manifested counterproductive behaviors, simultaneously emphasizing that the respondents were not willing to admit to displaying unethical behaviors, even anonymously. It is understandable in view of the fact that certain behaviors in this category, e.g. physical aggression (beating, a consequence of which can be damage to health) or theft, are subject to legal regulations and it is a fear of being prosecuted eventually that makes the questioned not to admit to committing such acts. In Baka's et al. research, the majority of respondents marked the answers pointing to the lack of counterproductive behaviors at work, or a minimal intensity of such. Hence, the researchers suggest that a "more apt" method to examine CWB is asking respondents if they perceive a concrete behavior as negative or not, like in the question formulated as follows: "How negative, in your opinion, is the behavior of a worker who is doing his/her work slower on purpose?"

Bearing the above in mind, the authors of the present article asked the participants of the survey about their reception of individual types of counterproductive behaviors and on this basis carry out the measurement and taxonomy of CWB, which made it possible to accept a two-factor model, that is:

- Factor 1 – behaviors directed towards the organization.
- Factor 2 – behaviors directed towards coworkers.

The authors put forward the thesis that the model of counterproductive behaviors, which emerges as a result of own studies, will be based on fewer than five dimensions. The thesis has been confirmed.

Finally, it is worth drawing attention to the basic limitation of this research, which is changeability of organizational behaviors at the time of connecting them with, among others, social acceptance (or a lack of such acceptance) or encouragement (or a lack of encouragement) of counterproductive behaviors in the organization and – at the same time – the changing level of manifesting as well as perception of this type of acts.

5. Conclusions

While there are core dimensions of CWBs that are consistently recognized due to their disruptive and unethical nature, there can be variations in the results based on context, measurement methods, cultural factors, and the evolving nature of work. As the nature of work evolves with technological advancements and shifts in the labor market, new forms of CWBs, such as cyberloafing, have emerged. These behaviors might not have been as prevalent or well-documented in the past. It is important to consider these differences when addressing CWBs in a specific organizational or cultural context.

Research on CWBs provides insights that can inform the development of effective human resources policies and practices. Understanding the dimensions of CWBs can guide leadership and management in identifying early warning signs and taking action before these behaviors escalate. It helps managers become more effective in maintaining a healthy work environment. Knowing the dimensions of CWBs is essential for creating and maintaining a healthy and productive work environment. CWBs can have a severe negative impact on productivity. By identifying and addressing these behaviors, organizations can reduce disruptions, improve workflow, and ultimately enhance overall productivity. Research on CWBs enriches organizational behavior theories by providing a deeper understanding of the factors that lead to these behaviors.

The results of the own study encourage further discussion on physical aggression as a separately interpreted factor. Research findings that point to the significance of physical aggression can have practical implications. Policymakers and intervention programs might need to address this aspect separately in order to develop targeted strategies for prevention or mitigation.

In conclusion, research on the dimensions of counterproductive work behaviors is vital for fostering a productive, ethical, and supportive work environment. Additionally, it contributes to the development of academic knowledge and practical solutions for addressing these challenges in the modern workplace.

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