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**The effect of Emotional Exhaustion on the Relationship
between Workplace Cyberbullying and Interpersonal
Deviance
"An Empirical Study on Egyptian Governmental Universities"**

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Abstract

The main objective of this dissertation is to determine the effect of emotional exhaustion on the relationship between workplace cyberbullying and interpersonal deviance in Egyptian governmental universities. By reviewing previous studies in this regard, a proposed model for the research hypotheses was developed to illustrate causal relationships between the research variables. Hence, the structural equation modeling (SEM), and path analysis are used to assess the strength of the relationships between the research variables by using (SmartPLS 4) program.

To collect the primary data, the researcher designed a questionnaire that includes three main constructs are the workplace cyberbullying, emotional exhaustion and interpersonal deviance. The necessary tests were conducted to assess the validity of the research variables models and the survey was directed to a sample of teaching staff & their assistants in 7 Egyptian governmental universities and the sample size was 382 units. The number of respondents was 371, approximately 97% of the total sample size.

The findings illustrate that there is a positive effect of workplace cyberbullying on interpersonal deviance, also there is a positive effect of workplace cyberbullying on emotional exhaustion and there is a positive effect of emotional exhaustion on interpersonal deviance. Further, there is a positive effect of emotional exhaustion on the relationship between workplace cyberbullying and interpersonal deviance.

Finally, there are non-significant differences between the perception of the respondents for the dimensions of workplace cyberbullying, emotional exhaustion and interpersonal deviance according to the following demographic and organizational variables (gender, age, current job and years of experience). In contrast, there are significant differences between years of experience groups' perceptions toward work-related cyberbullying.

Keywords: Workplace cyberbullying, Emotional exhaustion and Interpersonal deviance.

1- Introduction

Today, information technology plays an important role around the world in all activities of people in the recent age. Due to the increasing use of digital media such as e-mails, text messages and social network sites, new forms of harassing behaviors in workplaces have emerged, referred to as cyberbullying (Borstorff et al., 2007; Smith et al., 2008).

Cyberbullying is a new form of hostility in organizations and appear in such forms as sharing photos and videos, forwarding emails, threatening behaviors and comments, spreading gossip and hurtful or embarrassing a coworker via social media. It is a negative, repeated behavior using electronic technology. The use of social media means that such actions can be done openly and be widespread to a large audience. It also means that the perpetrator has access to the victim beyond the usual working hours – the victim is weak to secure themselves or escape (Loh et al., 2020).

Victims of workplace cyberbullying in the forms of harassment and irritation reported inferior levels of organizational commitment, increased absence, increased emotional exhaustion , lower levels of self-confidence and intention to leave work (Lim & Teo, 2009; Bartlett & Bartlett, 2011; Taylor et al., 2012).

Emotional exhaustion refers to “the feeling of being emotionally tired and fatigued,” which is an important component of job burnout. Hobfoll and Ford (2007) referred that workplace burnout occurs when employees realize that their valuable resources are threatened.

Workplace cyberbullying can also cause deviant work behaviors, where as employees become deviant as a consequence of cyber victimization (Anwar et al., 2020). Cyberbullying that targets particular individuals can directly shape employees’ interpersonal relationships (Giumetti et al., 2012). In addition, Individuals who endure emotional exhaustion may engage in various types of deviant behaviors such as organizational and interpersonal deviance.

Interpersonal deviance refer to a voluntary deviant behavior targeted toward individuals (such as theft from coworkers, gossip and violence), which violate organizational norms and harass the well-being of the victims (Bennett and Robinson, 2000). Maintaining helpful interpersonal relationships and inhibiting one’s impulsive hostile behavior demands that one get one’s finite resources for self-control (Koopman et al., 2020). Interpersonal deviance occurs when employees have deficient cognitive resources to do so.

Hence, the current research seeks to determine the effect of emotional exhaustion on the relationship between workplace cyberbullying and interpersonal deviance.

2-Literature Review

The literature review is divided into four main parts according to the nature of the study:

2.1: Literature review of Workplace cyberbullying:

Workplace bullying is repeated behavior that abuse, humiliates, sabotages, terrifies, or negatively affects someone’s work when there is an inequity of power. Both face-to-face bullying and cyberbullying are about relationships, power, and control. Workplace cyberbullying is considered to happen when one or more individuals identify themselves to be the target of repeated and systematic negative acts. In Table (1) below, some of these prominent researchers and their contributions are outlined.

**Table (1)
Literature review of Workplace cyberbullying**

No.	Author/year	Purpose	Results
1	Oguz et al.,(2023)	Submit a unified picture of cyberbullying in the workplace through developing a cohesive theoretical framework to understand the relationship between cyberbullying, its effects on organizations and regulatory controls that have been performed to include these effects. The sample size was 54 empirical researches which contains theoretical review literature of the cyberbullying in the workplace between 2005 and 2021.	The theoretical framework of cyberbullying in the workplace was developed, which emphasizes main antecedents of cyberbullying in the workplace and its effect on employees in addition to organizations.
2	Bedrosova et al.,(2022)	Examine the relationship between two forms of cyberaggression: cyberhate and cyberbullying. Data collected from teenagers from the Czech Republic, Poland, and Slovakia (N = 3,855, aged 11–17).	The common risk factor was related with higher age, emotional troubles, and time spent online. Group-based bias was related with cyberhate and cyberbullying. Individual-based bias was related with cyberbullying and the common risk factor. Exposure to harmful online

No.	Author/year	Purpose	Results
			content was related with all factors.
3	Kapitány-Fövény et al., (2022)	Investigate gender dissimilarity and the mediating role of age, impulsivity and difficult internet use about the outcomes of an elementary school cyberbullying program. Data collected from 933 respondents in elementary schools.	The study revealed that three of the intervention consequences – alteration in (1) helpline information, (2) empathy towards the victims of cyberbullying, and (3) risk awareness of online dangers - were best predicted by gender. A gender-specific path analysis model revealed that higher amount of time spent online might put a barrier to alterations in risk information among females and in help-seeking motivations among males.
4	Kalyar et.al.,(2021)	Investigate the effects of workplace cyberbullying on creativity directly and with the mediating role of psychological distress. In addition, this study suggested that psychological capital (PsyCap) mitigates the injurious effects of workplace cyberbullying on psychological distress and Creativity. Data was collected from 329 nurses in hospitals in Pakistan.	Cyberbullying negatively affects creativity through increased psychological distress. The findings also indicate that PsyCap moderates the effects of cyberbullying on psychological distress.
5	Wang & Nagi , (2021)	Developing an integrated framework to examine the effects of power inequity, the online disinhibition outcome, inner states, and parental mediation on	The ability in technology use was directly associated with cyberbullying. Social status among teens was established to be not only directly associated with

No.	Author/year	Purpose	Results
		cyberbullying among Chinese teens. Data was collected from 18 middle schools and 8 high schools in Zhenjiang.	cyberbullying but also to operate throughout low self-control to expect cyberbullying. The online disinhibition effect did not directly associate with cyberbullying but operated through moral disengagement and low self-control to predict cyberbullying. Particularly, the results illustrated that physical power was neither directly associated with cyberbullying nor ethical disengagement or low self-control to expect cyberbullying. The multiple-group assessment analysis revealed that parental mediation moderated the effects of the online disinhibition effect on cyberbullying. Nevertheless, this study found that parental mediation had no barrier effects when investigating the relationships between physical power, social status, technology use, and cyberbullying.

Source: prepared by the researcher.

2.2 Literature review of Emotional exhaustion:

Emotional exhaustion is the key point of the concept of burnout. It refers to the tension dimension of the fatigue and is defined as the reduction in the psychological and physical resources of the individual (Maslach et al., 2001). The studies which include emotional exhaustion are illustrated in Table 2.

Table (2)
Literature review of Emotional exhaustion

No.	Author/year	Purpose	Results
1	Yan et al.,(2023)	Examine the relationship between family rudeness, in-role performance and proactive customer service performance through the mediating role of emotional exhaustion and moderating roles of emotional intelligence & alertness. The sample size was 337 hotel workers and managers in Kuala Lumpur, Malaysia.	The family rudeness reduced in-role performance and proactive customer service performance, which were partly mediated by emotional exhaustion and moderated by emotional intelligence and alertness. Furthermore, emotional intelligence and alertness moderated not only the relationship between family rudeness and emotional exhaustion nevertheless the mediating role of emotional exhaustion on family rudeness and the two outcomes mentioned above.
2	Bayighomog et al.,(2021)	Examine the mediating role of psychological distress between mindfulness and emotional exhaustion, and the moderating role of workplace bullying. The sample size was 365 full-time employees from 3 to 5 stars hotels in North Cyprus.	The mindfulness could considerably decrease psychological distress and therefore emotional exhaustion when workplace bullying was low to moderate.
3	Jiang et al.,(2020)	Explain the relationship between workplace ostracism and deviant behavior, and also examine the mediating role of emotional exhaustion and the moderating role of resilience. Data was collected from 409 first-line production workers in four industrialized	Emotional exhaustion mediates the relationship between workplace ostracism and deviant behavior. Furthermore, the results from the moderated mediation analysis propose that the mediation of emotional exhaustion is controlled by resilience with

No.	Author/year	Purpose	Results
		companies in China.	a higher level of resilience; the mediation effect of emotional exhaustion decreases.
4	Kong et.al.,(2020)	Determine how coworker's own i-deals, separately from and in cooperation with their employees' i-deals, reveal their emotional exhaustion and consequent deviant behaviors. Data was collected from 131 coworker dyads in the U.S. via the Study Response Project.	The emotional exhaustion not only mediated the positive relationship between upward social evaluation of i-deals (i.e., a coworker's vs own task i-deals) and deviant behaviors but also mediated the negative relationship between employees' own i-deals and deviant behaviors.

Source: prepared by the researcher.

2.3 Literature review of Interpersonal deviance:

Workplace deviance has become the focus of several research studies. It is defined as “intentional behavior that transgresses significant organizational rules and, in this manner, intimidates the welfare of an organization, its members, or both”.

Robinson and Bennett (1995) classified two main types of deviance in the workplace into Interpersonal deviance and organizational deviance. Interpersonal deviance is aimed at organization members and contains behaviors such as stating something harmful or acting impolitely to a coworker. Some of studies which include interpersonal deviance are illustrated in Table 3.

Table (3)
Literature review of Interpersonal deviance

No.	Author/year	Purpose	Results
1	Hua et al.,(2023)	Suggest and assess the positive impact of ostracism in the workplace on interpersonal deviance, which is negatively moderated by self-control (two-way) as well as negative impact (three-way). Data was collected from 233 workers of	The ostracism in workplace is positively associated with interpersonal deviance. This positive relationship is stronger when employees are low in self-control. Moreover, this moderating effect only comes out when negative impact of employees is high.

No.	Author/year	Purpose	Results
		private petrochemical manufacturing company in China.	
2	Mackey et.al.,(2021)	Using an exploratory meta-analytic approach and the horizontal contrasting method of theory explanation to present an accurate understanding of the relationship between interpersonal and organizational deviance, in addition to verify the extent and popularization (i.e., external validity) of relationships in their nominal networks. This study derive from 235 empirical samples of data.	This study presented some facts of dissimilarity (i.e., heterogeneity) in the measurement and extent of relationships in contexts. Overall, it performs a state-of-the-art meta-analysis that influences current meta-analytic techniques and the extensive body of empirical workplace deviance research available to develop our understanding of the measurement of workplace deviance and relationships in its nominal network.
3	Ogunfowora et.al.,(2021)	Examine how and under what circumstances composing teams with ethically detaching members (i.e., team ethical detachment composition) affects team performance. The sample size was 459 undergraduate business students in Canadian university.	The team moral detachment composition is positively related to team-level interpersonal deviance and negatively related to team cooperation and team performance. The result also showed that team moral detachment composition harmfully affects team performance mostly through (low) team cooperation.
4	Erkutlu & chafra, (2020)	This study hypothesizes that leader's integrity decreases employee's interpersonal deviance by increasing ethical efficacy in the workplace. The	This study emphasized the negative effect of leader integrity on employee's interpersonal deviance in addition to the mediating role of ethical efficacy.

No.	Author/year	Purpose	Results
		sample size was 693 faculty members from 10 universities in Turkey.	Furthermore, the relationship between leader integrity and interpersonal deviance is strong, when the level of ethical identity is high, but the relationship is weak when the level of ethical identity is low.

Source: prepared by the researcher..

2.4 Summary of literature review and research gab:

From the previous review of literature it is shown that:

- 1) Several studies revealed that workplace cyberbullying have physical and psychological effects on employees. It can lead to anxiety, fear, depression, low self-esteem, isolation powerlessness, thoughts of suicide and psychological distress.
- 2) Some researchers determined workplace cyberbullying dimensions as work-related cyberbullying and person-related cyberbullying.
- 3) Several studies determined that emotional exhaustion is influenced by a variety of determinants, such as personal resources, coping strategies, emotional culture and supervisory regulation of display rules.
- 4) Several studies revealed that abusive supervision, ostracism, diminished well-being, defensive silence, psychological contract and conflict have a significant effect on interpersonal deviance.
- 5) Some researchers determined the dimensions of interpersonal deviance as personal aggression and political deviance.
- 6) Previous studies agreed that there is a negative effect of workplace cyberbullying, interpersonal deviance and emotional exhaustion.

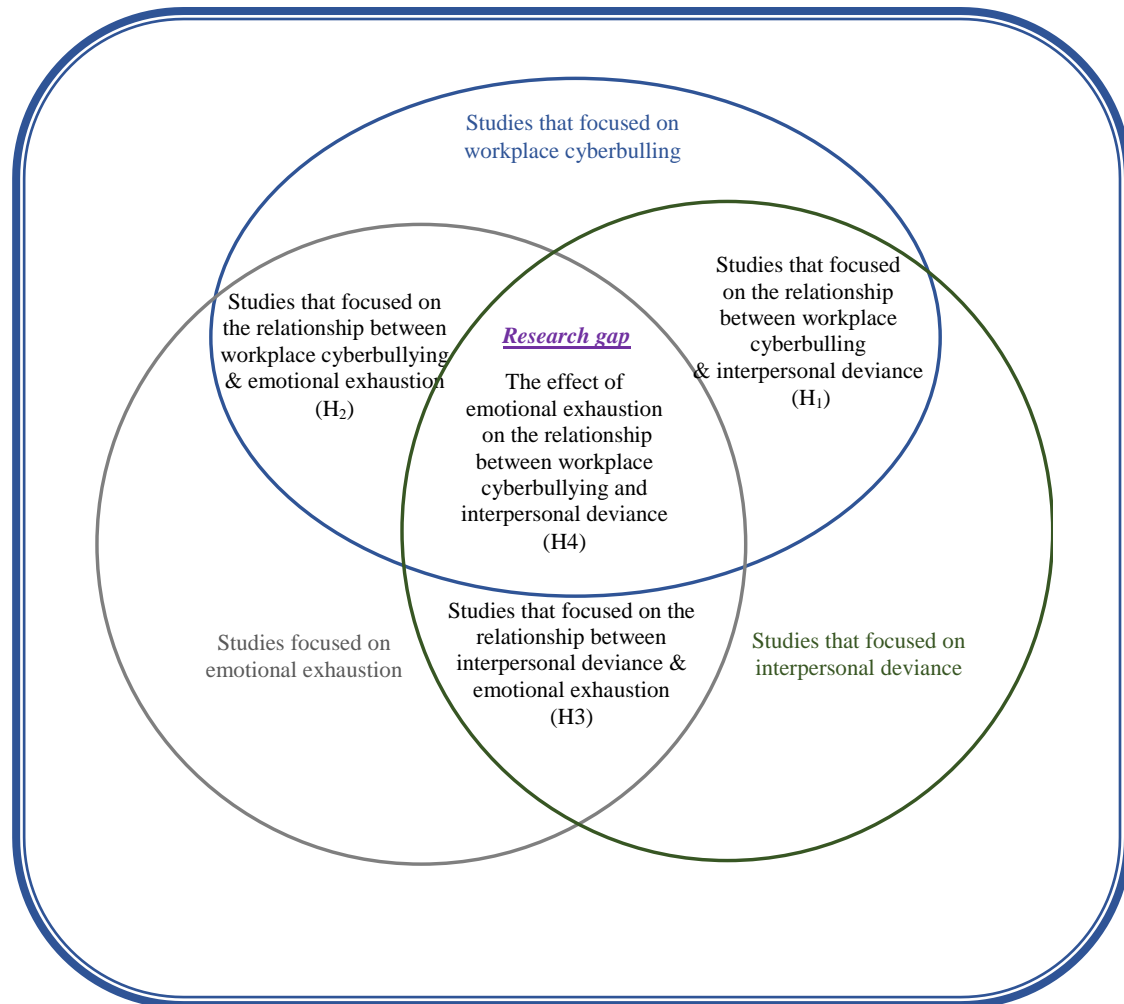
The current research differs from the previous studies in the following aspects (Research gap):

- 1) There are few studies to the best of my knowledge, which are interested in three variables (workplace cyberbullying, interpersonal deviance and emotional exhaustion) due to the novelty of topics.
- 2) To the best of my knowledge, there are no studies that determined the dimensions of emotional exhaustion but they determined the indicators and measures of emotional exhaustion. So the researcher will present the dimensions which she has reached.
- 3) Despite the importance of the findings of previous studies, these studies were conducted in foreign environments and these results don't agree with the reality of the Arab environment, which reflects the importance of discussed this topic.

4) To the best of my knowledge, there are no studies that focused on determining the effect of emotional exhaustion as a mediator of the relationship between workplace cyberbullying and interpersonal deviance.

From the previous review, the research gap can be identified as shown in Figure 1.

Figure 1
The research gap



Source: prepared by the researcher.

3- Research Problem

Due to prevalence of information and communication technologies (ICTs) in the business world, workplace cyberbullying has become a major problem (Zhang et al., 2022).

Cyberbullying is a form of persistent stress, which has long-term psychological and physical consequences. The victim may suffer from declining the energy, commitment and inspiration, which causes decreasing in work performance and job satisfaction. Furthermore, they may feel harassed, nervous and miserable, resulting in an intension leave the job (Loh & Snyman, 2020).

Previous studies illustrated that workplace cyberbullying leads to counterproductive work behaviors, by which employees become deviant because of cyber victimization (Anwar et al., 2020). Victim suffers from emotional exhaustion which refers to “the feeling of being emotionally fatigued and exhausted”. Individuals who suffer from negative emotions may voluntarily choose to indulge in one or more different types of deviant behavior such as Interpersonal deviance.

Through the literature review and the exploratory study, the researcher can determine the research problem which can be summarized through the following questions:

The major question:

To which extent workplace cyberbullying affects on interpersonal deviance with the mediating role of emotional exhaustion?

The sub questions:

- 1) What is the effect of workplace cyberbullying on work interpersonal deviance?
- 2) What is the effect of workplace cyberbullying on emotional exhaustion?
- 3) What is the effect of emotional exhaustion on interpersonal deviance?
- 4) To which extent emotional exhaustion mediating the relationship between workplace cyberbullying and interpersonal deviance?
- 5) Are there substantial differences between the perception of the sample in the community under study for the dimensions of workplace cyberbullying, emotional exhaustion and interpersonal deviance according to the following demographic variables (gender, age, current job and number of years of experience)?
- 6) What are the recommendations and suggestion which decrease signs of workplace cyberbullying, emotional exhaustion and interpersonal deviance in Egyptian Governmental Universities?

4- Research Objectives

In the light of the nature of the problem and the questions that the study seeks to answer, the objectives of the study are as follows:

- 1) Determining the effect of workplace cyberbullying on interpersonal deviance.
- 2) Determining the effect of workplace cyberbullying on emotional exhaustion.
- 3) Determining the effect of emotional exhaustion on the interpersonal deviance.
- 4) Determining and measuring to which extent emotional exhaustion mediating the relationship between workplace cyberbullying and interpersonal deviance.
- 5) Determining the significant differences between the perception of the respondents for the dimensions of workplace cyberbullying, emotional exhaustion and interpersonal deviance according to the following demographic and organizational variables (gender, age, current job and number of years of experience).

6) Submitting the recommendations and suggestion which reduce signs of workplace cyberbullying, emotional exhaustion and interpersonal deviance in Egyptian Governmental Universities.

5- Research hypothesis and conceptual model:

5.1 The research hypotheses

In light of the review of previous studies, the problem and objectives of the study, the hypotheses can be formulated as follows:

Hypothesis one (H₁):

There is a positive effect of workplace cyberbullying on interpersonal deviance in the Egyptian Governmental Universities.

Hypothesis two (H₂):

There is a positive effect of workplace cyberbullying on emotional exhaustion.

Hypothesis three (H₃):

There is a positive effect of emotional exhaustion on interpersonal deviance.

Hypothesis four (H₄):

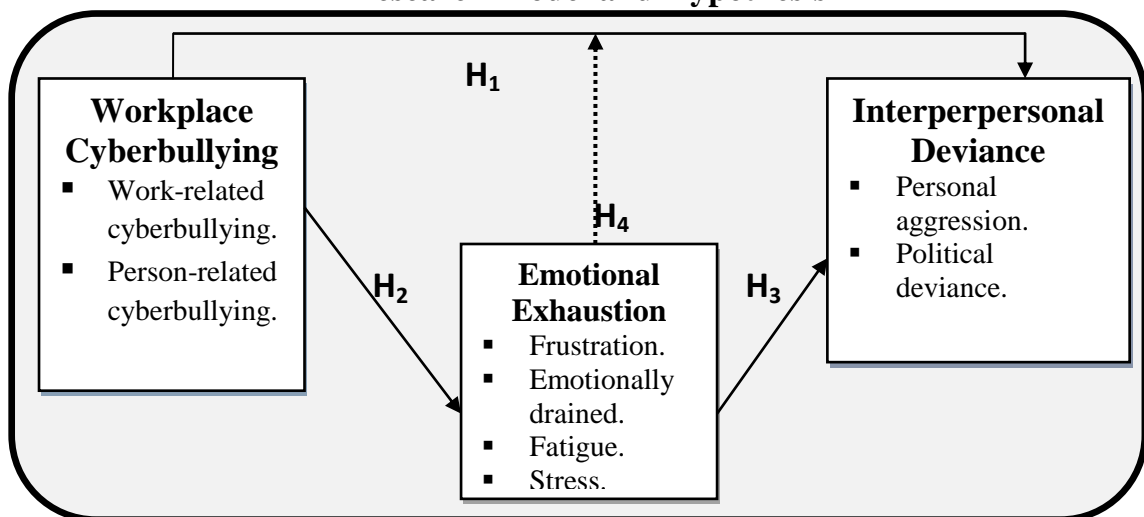
There is a positive effect of emotional exhaustion on the relationship between workplace cyberbullying and interpersonal deviance in the Egyptian Governmental Universities.

Hypothesis five (H₅):

There are significant differences between the perception of the respondents for the dimensions of workplace cyberbullying, emotional exhaustion and interpersonal deviance according to the following demographic and organizational variables (gender, age, current job and number of years of experience).

5.2 Research Model:

**Figure 2
Research Model and Hypothesis**



Source: prepared by the researcher.

6-Research Importance

The importance of the study is divided into scientific importance and practical importance shown as follows:

The scientific importance:

- 1) The study drives its important – in the beginning – from the importance of the topic it deals with, as it is concerned with the effect of emotional exhaustion in the relationship between workplace cyberbullying and interpersonal deviance.
- 2) This study deal with three relatively recent concepts – to the best of the researcher knowledge – in the field of organizational behavior and human resource management.
- 3) This study attempt to find ways to eliminate workplace cyberbullying, emotional exhaustion and interpersonal deviance in Egyptian Governmental Universities.
- 4) The scarcity of foreign studies in Arab environment - to the best of the researcher knowledge – which include workplace cyberbullying, interpersonal deviance and emotional exhaustion.

The practical importance:

Helping teaching staff & assistants to realize the concept of workplace cyberbullying and its effect on interpersonal deviance through the mediating role of emotional exhaustion.

- 1) Identifying the main reasons of workplace cyberbullying.
- 2) Helping teaching staff & assistants to become aware of interpersonal deviance.
- 3) Identifying the main reasons that lead to emotional exhaustion.
- 4) Providing some the recommendations that contribute to reducing the spread of workplace cyberbulling, emotional exhaustion and interpersonal deviance in Egyptian Governmental Universities.

7- Research Methods

The research depended on the descriptive analytical approach to describe the problem and the relationship between variables. The researcher focuses on two types of data to determine and test the research hypotheses.

7.1 Secondary data

Secondary data refers to the data that has been collected to illustrate and describe the research variables and its dimensions. So the research depends on books, journals, reports and thesis that related to the research variables (workplace cyberbullying, interpersonal deviance and emotional exhaustion).

7.2 Primary data

Primary data represents the data that are collected directly from the data source for the first time through a survey by using a questionnaire.

7.2.1 The questionnaire design

To collect data, the researcher depends on a questionnaire which designed for this purpose in the light of previous studies, where it includes 46 questions are divided into three parts.

The first part consists of 17 questions and it is related to workplace cyberbullying dimensions (work-related cyberbullying and person-related cyberbullying), the second part includes 19 questions which are related to emotional exhaustion dimensions (frustration, emotionally drained, fatigue and stress) and the third part includes 10 questions related to interpersonal deviance dimensions (personal aggression and political deviance). Furthermore, the questionnaire consists of the following demographic and organizational variables (gender, age, current job and number of years of experience).

7.2.2 Research population.

The target population consists of teaching staff & their assistants in some Egyptian Governmental Universities, where there are 28 universities. According to reports of the Central Agency for Public Mobilization and Statistics, the total number of teaching staff & their assistants in the Egyptian Governmental universities are 106.932 teaching staff but the researcher focus on 52.276 teaching staff & their assistants from 7 universities.

7.2.3 The research sample

According to the research objectives and hypotheses and due to the limitations of cost, time and efforts, the researcher depends on a sample consists of 7 Governmental Universities (Cairo university, Alexandria university, Ain Shams university, Tanta university, El Mansura university, Benha university, El Zagazig university) out of 28 Governmental universities. The sampling units consist of 382 teaching staff & their assistants.

7.2.4 Statistical analysis techniques

The data was analyzed using SPSS V.25 and SmartPLS 4 after coding the responses into Excel spreadsheets. The following techniques were used to analyze the collected data:

- Measure the reliability and validity of the measurements using:
 - ✓ Cronbach's alpha coefficient.
 - ✓ Composite Reliability (CR).
 - ✓ Average Variance Extracted (AVE).
 - ✓ Confirmatory Factor Analysis (CFA).
- Modeling Structural Equations through Path Analysis.
- Descriptive statistics of data by calculating some measures such as the mean, and standard deviation as well as tabulating the characteristics of the sample in frequency and percentage distributions tables.
- T-test to assess the significance of the path coefficients.
- Pearson correlation matrix to measure the strength and direction of the relationship between the study variables.

- Mann-Whitney and Kruskal Wallis tests to study the differences between the groups of demographic and organizational variables.

8-Research Limitations

The research is conducted and the hypotheses are tested in the light of the two types of the limitations:

8.1 Scientific limitations :

This research depends on determining and measuring the effect of emotional exhaustion in the relationship between workplace cyberbullying and the interpersonal deviance in the light of the following.

- 1) The research based on three variables as following:
 - (a) Workplace cyberbullying as an independent variable,
 - (b) Interpersonal deviance as a dependent variable and
 - (c) Emotional exhaustion as a mediator of the relationship between workplace cyberbullying and interpersonal deviance.
- 2) The research deals with workplace cyberbullying represented in two dimensions are (work-related cyberbullying and person-related cyberbullying).
- 3) The research deals with interpersonal deviance represented in two dimensions are (personal aggression and political deviance).
- 4) The research deals with emotional exhaustion represented in four dimensions -to the best of researcher knowledge- as (frustration, emotionally drained, fatigue and stress).
- 5) The research depends on asking the sample units about gender, age, current job and years of experience, to determine the effect of the demographic factors on the three variables.

8.2 Field survey limitations:

Due to the limitations of cost, time and efforts, the researcher depends on a Sample consists of 7 Governmental Universities from 28 in the Egyptian Governmental Universities.

The number of teaching staff & their assistants in 7 Egyptian Governmental universities equals 52.276, hence the researcher relies on a sample consists of 382 teaching staff & their assistants in Some Egyptian Governmental Universities to test the research hypotheses.

9- Theoretical Framework

In this part, the researcher will deal with the theoretical framework of the research variables in terms of concept and dimensions.

9.1 Definition and dimensions of Workplace cyberbullying

During the Information and Communication Technology (ICT) revolution over the last decade, there has been a quick growth in the number of people who use modern technologies such as the Internet and mobile phones. The dark side of using Internet and related technological expansion is the risk of bullying others or being bullied online, called cyberbullying - deliberate aggressive behaviour,

occurring frequently and over time through the use of electronic technologies between a perpetrator and victim who are unequal in power (Smith et al., 2008).

In recent years, more companies use Internet-based workplace communication, it has become clear that many adults experience workplace cyberbullying. It increasingly occurs across shared networks and becomes a major problem for many organizations, with a possible to cause short-and long-term negative outcomes and even severe suicidal ideation among adolescent.

There are few definitions of workplace cyberbullying found in the literature; the researcher can define workplace cyberbullying as follows:

Repeated & irrational actions of employees with intention of intimidating, degrading and undermining others by using electronic technology such as (email, telephone calls, text messages, chat rooms and video conferencing), or harming the health and safety of employees including their physical, emotional, and psychological safety. It Includes:

- *Work-related cyberbullying*
- *Person-related cyberbullying*

These dimensions are shown in table 4 as follows:

Table 4

Dimensions of Workplace cyberbullying

Dimensions	Work-related cyberbullying	Person-related cyberbullying
Definition	Work-related cyberbullying is an unreasonable work pressure which is defined as receiving unattainable task, impossible deadlines, uncontrollable workloads, meaningless task or providing unclear information, threat about security etc via electronic devices. It cause embarrassment, shame and distress, and that may overlap with work performance and cause an unpleasant working environment.	Person-related cyberbullying is considered as a form of stress that cause negative effects on the health of workers, potentially leading to psycho-physical symptoms, changing in mood and personality, psychiatric disorders such as nervousness-hopelessness disorder, persistent adjustment disorder and post traumatic stress disorder. Person related bullying behaviors are public embarrassment, ignoring, offensive, spreading rumours or gossips, intrusion into privacy, yelling etc.

Source: prepared by the research.

9.2 Definition and dimensions of Emotional exhaustion

Emotional exhaustion has been commonly studied in the burnout literature. It could be defined as *the key dimension of burnout, which is mainly related to work stress and includes feelings of fatigue and low energy, meaning that the exhausted individual feels that his emotional resources are depleted and suffer from low energy to perform his work. It also includes feelings of frustration, depression and physical & mental tiredness.*

There are four dimensions of emotional exhaustion which are illustrated as follows:

- **Frustration:** is a common emotional reaction to resistance which is associated with irritation, disturbance and disappointment. Frustration results from the perceived resistance to the achievement of an individual's volition or goal and is likely to increase when a volition or goal is denied or prohibited (Edú-Valsania et al., 2022).
- **Emotionally Drained (Used up):** is defined as a feeling of emotionally worn out and having no energy to work. It occurs when a person's demand exceed their personal resources and perceived ability to cope (Maslach & Leiter, 2008).
- **Fatigue:** is defined as extreme tiredness and decreased functional ability that is practiced during and at the end of the workday (Maslach & Leiter, 2008).
- **Stress:** is a feeling of psychological or physical tension. It results from any event or idea that makes person feels aggravated, annoyed, anxious (Edú-Valsania et al., 2022).

9.3 Definition and dimensions of Interpersonal deviance:

There are few definitions of interpersonal deviance found in the literature, Interpersonal deviance could be defined as *actions that are harmful to members of an organization, such as embarrassing colleagues, gossiping about colleagues, silent treatment, raising voice at colleagues, stealing from co-workers, blaming others, harassing other people sexually and withholding official information from colleagues. It Includes:*

- **Personal aggression**
- **Political deviance**

These dimensions are shown in table 5 as follows:

Table 5
Dimensions of Interpersonal deviance

Dimensions	Personal aggression	Political deviance
Definition	Serious dimension which is defined as behaving in a violent or aggressive manner toward other co-workers (e.g., verbal abuse, sexual harassment, rape, physical assaults, stealing from others, endangering co-workers).	Minor dimension which is defined as behaviors that violate the officially prohibited rules determining the minimum quality and quantity of work to be done (e.g., gossiping about others, blaming colleagues, showing favoritism, competing unhelpfully).

Source: prepared by the research.

10- Field Study

10.1 The survey groups

The total sample size can be determined by the following formula:

$$n = \frac{Np(1-p)}{(N-1)(d^2/z^2) + P(1-p)}$$

Where:

n	sample size = 382
N	population size = 52276
p	the estimated value of the population proportion which equals 0.50
d	maximum allowed error that is acceptable which equals 0.05
z	z value corresponds to 0.05 level of significance which equals 1.96

Table 6
The sample size

No.	University	Teaching staff & their assistants	Percentage	Sample size
1	Cairo	12533	23.98%	92
2	Alexandria	6671	12.76%	49
3	Ain Shams	12014	22.98%	88
4	Tanta	4872	9.31%	35
5	El Mansura	4906	9.39%	36
6	Benha	4360	8.34%	31

No.	University	Teaching staff & their assistants	Percentage	Sample size
7	El Zagazig	6920	13.24%	51
Total		52276	100%	382

Source: prepared by the researcher.

The researcher has checked all responses of survey to ensure their validity and excluded the items not sufficiently answered. Then entered the data and analyzed it by using SPSS V.25 and SmartPLS 4.

10.2 Evaluation of the measurement models:

10.2.1 Evaluation of Workplace cyberbullying:

The following table presents the results of reliability, validity, and CFA for the workplace cyberbullying measure and its two dimensions: work-related cyberbullying and person-related cyberbullying.

Table 7

Reliability, validity, and factor loadings for workplace cyberbullying

Dimension	Items	factor loading	Cronbach's alpha	CR	AVE
Work-related cyberbullying (x1)	x1_01	0.881	0.970	0.974	0.786
	x1_02	0.912			
	x1_03	0.890			
	x1_04	0.892			
	x1_05	0.901			
	x1_06	0.879			
	x1_07	0.876			
	x1_08	0.838			
	x1_09	0.906			
	x1_10	0.889			
Person-related cyberbullying (x2)	x2_11	0.932	0.974	0.978	0.865
	x2_12	0.893			
	x2_13	0.903			
	x2_14	0.951			
	x2_15	0.947			
	x2_16	0.946			
	x2_17	0.934			

Source: prepared based on statistical analysis results.

The previous table illustrates that:

The values of factor loadings for work-related cyberbullying ranged between (0.838, 0.912), and their values for person-related cyberbullying ranged between (0.893, 0.951). This means that there is construct validity for workplace cyberbullying variable and its two dimensions.

- The values of Cronbach's alpha coefficient and CR for work-related cyberbullying were (0.970, 0.974), and their values for person-related cyberbullying were (0.974, 0.978). This means that internal consistency is highly acceptable.
- The value of AVE for work-related cyberbullying was (0.786), and its value for person-related cyberbullying was (0.865). This means that convergent validity has been achieved.

10.2.2 Evaluation of Emotional exhaustion:

The following table presents the results of reliability, validity, and CFA for the emotional exhaustion measure and its four dimensions: emotionally drained, frustration, fatigue, and stress.

Table 8
Reliability, validity, and factor loadings for emotional exhaustion

Dimension	Items	factor loading	Cronbach's alpha	CR	AVE
Emotionally drained (m1)	m1_18	0.841	0.786	0.875	0.700
	m1_19	0.872			
	m1_20	0.795			
Frustration (m2)	m2_21	0.909	0.905	0.931	0.730
	m2_22	0.903			
	m2_23	0.883			
	m2_24	0.696			
	m2_25	0.864			
Fatigue (m3)	m3_26	0.840	0.839	0.887	0.613
	m3_27	0.822			
	m3_28	0.840			
	m3_29	0.650			
	m3_30	0.745			
Stress (m4)	m4_31	0.805	0.879	0.909	0.624
	m4_32	0.732			
	m4_33	0.787			
	m4_34	0.829			
	m4_35	0.781			
	m4_36	0.802			

Source: prepared based on statistical analysis results.

The previous table illustrates that:

- The values of factor loadings for emotionally drained ranged between (0.795, 0.872), their values for frustration ranged between (0.696, 0.909), their values for fatigue ranged between (0.650, 0.840), and their values for stress ranged between (0.732, 0.829). The factor loadings of items (24, 29) are less than (0.7) but removing them will not lead to an increase in CR and AVE. This means that there is construct validity for emotional exhaustion variable and its four dimensions.
- The values of Cronbach's alpha coefficient and CR for emotionally drained were (0.786, 0.875), their values for frustration were (0.905, 0.931), their values for fatigue were (0.839, 0.887) and their values for stress were (0.879, 0.909). This means that internal consistency is highly acceptable.
- The value of AVE for emotionally drained was (0.700), its value for frustration was (0.730), its value for fatigue was (0.613), and its value for stress was (0.624). This means that convergent validity has been achieved.

10.2.3 Evaluation of Interpersonal deviance:

The following table presents the results of reliability, validity, and CFA for the interpersonal deviance measure and its two dimensions: personal aggression, and political deviance.

**Table 9
Reliability, validity, and factor loadings for interpersonal deviance**

Dimension	Items	factor loading	Cronbach's alpha	CR	AVE
Personal Aggression (y1)	y1_37	0.780	0.863	0.901	0.646
	y1_38	0.847			
	y1_39	0.817			
	y1_40	0.810			
	y1_41	0.764			
Political Deviance (y2)	y2_42	0.775	0.908	0.932	0.732
	y2_43	0.851			
	y2_44	0.901			
	y2_45	0.894			
	y2_46	0.853			

Source: prepared based on statistical analysis results.

The previous table illustrates that:

- The values of factor loadings for personal aggression ranged between (0.764, 0.847), and their values for political deviance ranged between (0.775, 0.901). This means that there is construct validity for interpersonal deviance variable and its two dimensions.

- The values of Cronbach's alpha coefficient and CR for personal aggression were (0.863, 0.901), and their values for political deviance were (0.908, 0.932). This means that internal consistency is highly acceptable.

The value of AVE for personal aggression was (0.646), and its value for political deviance was (0.732). This means that convergent validity has been achieved.

10.3 Descriptive statistics of the study variables:

The following table illustrates the mean and standard deviation of the study variables and their dimensions.

Table 10
Descriptive statistics of the study variables and their dimensions

Dimension and variables	Mean	Std. Deviation	Opinion
Work-related cyberbullying	3.21	1.021	Neutral
Person-related cyberbullying	3.15	1.107	Neutral
Workplace cyberbullying	3.19	1.043	Neutral
Emotionally drained	3.70	0.812	Agree
Frustration	3.46	0.909	Agree
Fatigue	3.66	0.739	Agree
Stress	3.57	0.774	Agree
Emotional exhaustion	3.59	0.735	Agree
Personal Aggression	3.51	0.798	Agree
Political Deviance	3.50	0.900	Agree
Interpersonal deviance	3.50	0.806	Agree

Source: prepared based on statistical analysis results.

10.4 Evaluation of the structural model:

To test the hypotheses, the researcher designed the structural model to study the direct and indirect causal relationships between variables after evaluating the reliability and validity of the measurement models. The following table shows CFA results of the proposed structural model.

Table 11
CFA for the proposed structural model

Variable	Dimension	Factor loading	Cronbach's alpha	CR	AVE
Workplace cyberbullying (x)	x1	0.987	0.973	0.987	0.974
	x2	0.987			

Variable	Dimension	Factor loading	Cronbach's alpha	CR	AVE
Emotional exhaustion (m)	m1	0.901	0.930	0.950	0.826
	m2	0.911			
	m3	0.905			
	m4	0.919			
Interpersonal deviance (y)	y1	0.953	0.890	0.948	0.901
	y2	0.946			

Source: prepared based on statistical analysis results.

The previous table illustrates that all values of Cronbach's alpha, CR, AVE, and factor loadings indicate the reliability, convergent validity, and construct validity of the proposed model. The goodness of fit criteria that will be discussed when testing the study hypotheses also supports the models' fit.

The following table shows the correlation matrix between the study variables and their dimensions:

Table 12
Correlation matrix between dimensions and variables

Dimension and variables	x1	x2	X	m1	m2	m3	m4	m	y1	y2	Y
Work-related cyberbullying	1										
Person-related cyberbullying	.948**	1									
Workplace cyberbullying	.990**	.983**	1								
Emotionally drained	.622**	.608**	.624**	1							
Frustration	.752**	.748**	.760**	.764**	1						
Fatigue	.547**	.551**	.556**	.759**	.753**	1					
Stress	.646**	.657**	.659**	.762**	.772**	.802**	1				
Emotional exhaustion	.712**	.714**	.722**	.877**	.915**	.909**	.929**	1			
Personal aggression	.720**	.729**	.733**	.686**	.728**	.653**	.737**	.774**	1		
Political Deviance	.673**	.690**	.689**	.610**	.690**	.596**	.711**	.725**	.802**	1	
Interpersonal deviance	.732**	.746**	.748**	.680**	.746**	.656**	.762**	.788**	.943**	.955**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Source: prepared based on statistical analysis results.

The previous table illustrates the following:

- There is a significant positive correlation between the two dimensions of workplace cyberbullying (0.948), there is a significant positive correlation between the four dimensions of emotional exhaustion where it lies

between (0.753, 0.802), and there is a significant positive correlation between the two dimensions of interpersonal deviance (0.802).

- There is a significant positive correlation between workplace cyberbullying dimensions and emotional exhaustion dimensions. The highest correlation is between work-related cyberbullying and frustration (0.752). The lowest correlation is between work-related cyberbullying and fatigue (0.547).
- There is a significant positive correlation between workplace cyberbullying dimensions and interpersonal deviance dimensions. The highest correlation is between person-related cyberbullying and personal aggression (0.729). The lowest correlation is between work-related cyberbullying and political deviance (0.673).
- There is a significant positive correlation between emotional exhaustion dimensions and interpersonal deviance dimensions. The highest correlation is between stress and personal aggression (0.737). The lowest correlation is between fatigue and political deviance (0.596).
- There is a significant positive correlation between workplace cyberbullying and emotional exhaustion (0.722).
- There is a significant positive correlation between workplace cyberbullying and interpersonal deviance (0.748).
- There is a significant positive correlation between emotional exhaustion and interpersonal deviance (0.788).

10.5 Tests of hypotheses

Table (13) illustrates the results obtained from the path analysis of the structural model, which shows the effect of workplace cyberbullying on interpersonal deviance with the roles of emotional exhaustion as a mediator. This model is used to test the hypotheses from the first to the fourth.

Table 13
Path analysis results of the structural model

Hypotheses		Path	Path coefficient	Standard deviation	T statistics	P values
First	Direct	x -> y	0.381	0.046	8.234	0.000
Second		x -> m	0.721	0.025	29.424	0.000
Third		m -> y	0.513	0.049	10.574	0.000
Fourth	Indirect	x -> m -> y	0.370	0.040	9.195	0.000
	Total	x -> y	0.751	0.024	31.145	0.000
Goodness-of-fit indicators			R ²	f ²	Q ²	
		X				
		M	0.520	0.409	0.517	
		Y	0.691		0.562	
		SRMR = 0.05				

Source: prepared based on statistical analysis results.

The First hypotheses test

The first hypothesis refers to “There is a positive effect of workplace cyberbullying on interpersonal deviance in the Egyptian governmental universities”.

Table (13) illustrates that the direct path from workplace cyberbullying to interpersonal deviance is statistically significant as ($T=8.234 > 1.96$) and ($P\text{-value} = 0.000$), at a significance level of 5%. The value of the path coefficient was (0.381). The path coefficient sign was positive, which means that workplace cyberbullying has a statistically significant positive effect on interpersonal deviance. These results support accepting the first hypothesis.

The second hypotheses test

The second hypothesis refers to “There is a positive effect of workplace cyberbullying on emotional exhaustion in the Egyptian governmental universities”.

Table (13) illustrates that the direct path from workplace cyberbullying to emotional exhaustion is statistically significant as ($T=29.424 > 1.96$) and ($P\text{-value} = 0.000$), at a significance level of 5%. The value of the path coefficient was (0.721). The path coefficient sign was positive, which means that workplace cyberbullying has a statistically significant positive effect on emotional exhaustion. These results support accepting the second hypothesis.

The third hypotheses test

The third hypothesis refers to “There is a positive effect of emotional exhaustion on interpersonal deviance in the Egyptian governmental universities”.

Table (13) illustrates that the direct path from emotional exhaustion to interpersonal deviance is statistically significant as ($T=10.574 > 1.96$) and ($P\text{-value} = 0.000$), at a significance level of 5%. The value of the path coefficient was (0.513). The path coefficient sign was positive, which means that emotional exhaustion has a statistically significant positive effect on the interpersonal deviance. These results support accepting the third hypothesis.

The fourth hypotheses test

The fourth hypothesis refers to “There is a positive effect of emotional exhaustion on the relationship between workplace cyberbullying and interpersonal deviance in the Egyptian governmental universities”.

Table (13) illustrates that the indirect path from workplace cyberbullying to interpersonal deviance with the roles of emotional exhaustion as a mediator is statistically significant as ($T=9.195 > 1.96$) and ($P\text{-value} = 0.000$), at a significance level of 5%. The value of the indirect path coefficient was (0.370) and the direct path coefficient was (0.381) so the total effect is ($0.381 + 0.370 = 0.751$).

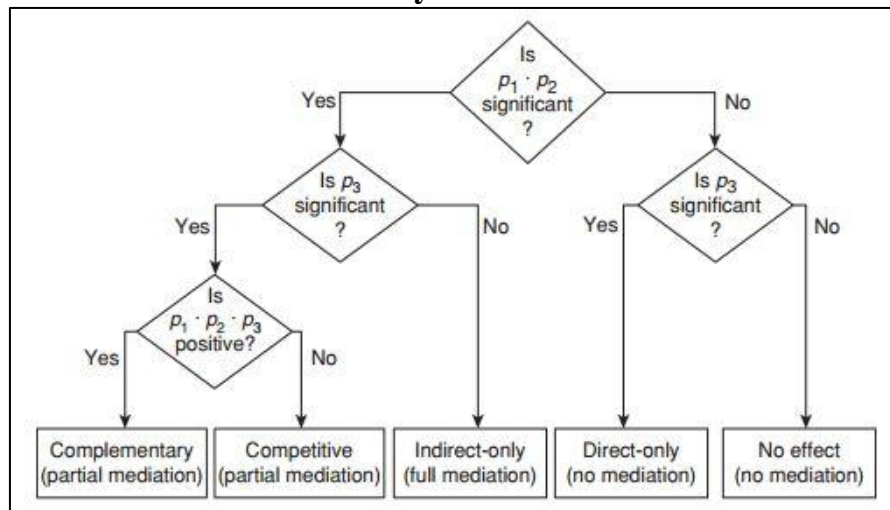
The path coefficients' signs were positive, which means that workplace cyberbullying has a statistically significant positive effect on interpersonal deviance with the roles of emotional exhaustion as a mediator. The coefficient of determination value was (0.691), which means that the independent variable

(workplace cyberbullying) explains 69.1% of the changes that occur in the dependent variable (interpersonal deviance) with the roles of the mediator variable (emotional exhaustion) and the rest are due to random changes.

Effect Size of the emotional exhaustion ($f^2 = 0.409$), which means that its contribution to the R^2 value indicates a large effect. Predictive relevance Q^2 values are larger than 0 which indicate that the independent and the mediator variables have predictive relevance for the dependent variable under consideration. The SRMR value is equal to 0.05 (< 0.08) which indicates a good model fit.

The following figure illustrates types of mediation:

Figure 3
Mediation Analysis Procedure



Source: Hair et al., 2017.

Where:

p_1 is the path between the independent and the mediator variables.

p_2 is the path between the mediator and the dependent variables.

p_3 is the path between the independent and the dependent variables.

It can be concluded that there is a complementary partial mediation. These results support accepting the fourth hypothesis.

The fifth hypotheses test

The results of the statistical analysis reject the fifth hypothesis partially, which states that “There are significant differences between the perception of the respondents for the dimensions of workplace cyberbullying, emotional exhaustion and interpersonal deviance according to the following demographic and organizational variables (gender, age, current job and years of experience)”. The results of each one illustrates as follows.

- a) **Differences between genders:** the significant level of Mann-Whitney test is greater than 0.05 for all variables and their dimensions. So, there are no significant differences between both males' and females' perceptions toward the research variables and dimensions.

- b) **Differences between age groups:** the significant level of Kruskal Wallis test is greater than 0.05 for all variables and their dimensions. So, there are no significant differences between age groups' perceptions toward these variables and dimensions.
- c) **Differences between current job:** the significant level of Kruskal Wallis test is greater than 0.05 for all variables and their dimensions. Thus, there are no significant differences between current job groups' perceptions toward the research variables and dimensions.
- d) **Differences between years of experience:** there are no significant differences between years of experience groups' perceptions toward the research variables and dimensions but there are significant differences between years of experience groups' perceptions toward work-related cyberbullying. The respondents whom years of experience are greater than 15 years have the greatest perceptions toward this variable.

11- Research Recommendations

In light of the theoretical framework of the study and based on results of the statistical analysis of the data, the research recommendations are as follows:

- 1) Holding training programs and courses to train teaching staff and their assistants on the use of technology and ways to prevent its risks.
- 2) Providing psychologists in universities to improve the work environment and deal with the negative effects of cyberbullying immediately.
- 3) Establishing specific and well-known communication channels for reporting violations, while ensuring the protection for victims of cyberbullying.
- 4) Providing a work environment that helps to reduce stress and fatigue resulting from work.
- 5) Improving the rewards and incentives system for teaching staff and their assistants.
- 6) Conducting surveys and measuring the level of emotional exhaustion periodically and taking the results of these surveys as a basis for designing improvement programs in universities.
- 7) Promoting an Ethical organizational culture in universities.
- 8) Consolidating ethical leadership in universities.

12- Directions for Future Research

Some of the research directions for the future research are illustrated in the following points:

- 1) There is still a need for more studies to verify the reliability and validity of measures of emotional exhaustion and interpersonal deviance in the Egyptian environment.
- 2) Although this research is considered the first attempt to determine the dimensions of emotional exhaustion, there is a need for other studies that investigate other dimensions of emotional exhaustion.

- 3) The current research was limited to dealing with deviance from the personal perspective, so it is possible to address the same research topic, but by dealing with deviance from the organizational perspective.
- 4) Studying the effect of workplace bullying on the employee retaliation with the mediating role of job burnout.
- 5) Studying the effect of workplace cyberbullying on the cyberslacking with the mediating role of job dissatisfaction.
- 6) Testing the same variables in other sectors such Banking sectors and Medical sectors.

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