Title: Personality and impulsivity as antecedents of occupational safety in the construction industry

Abstract:

Background: In health and safety at work two main groups of causes of occupational accidents have been identified: unsafe conditions or technical factors and the causes related to safe behavior or the human factor. The objective of this study is to analyze the predictive variables (Emotional Intelligence, Personality, Impulsivity and Safety of the work environment) for three factors of the CONS-32 scale (criterion variables: Use of protections, Personal risk behavior and Personal physical workload) in the construction sector. **Method:** Using a sample of 256 Spanish workers from this sector, we analyzed the significant correlations between the three criterion variables and a set of variables extracted from various instruments, as well as the regression models that explain most of the variance. **Results:** The results show that the main predictive variables that explain the three factors are those related to responsibility as a personality trait, impulsivity, and safety of the work environment. **Conclusions:** Based on the empirical evidence found, the most explanatory factor in all cases is the safety climate in the work environment.

Keywords: Safety; Work environment; Personality; Impulsivity; Construction sector; Predictive study.

1. Introduction

According to the latest report of the European Construction Industry Federation (1), in 2019 construction accounted for 9.5 % of the European gross domestic product (GDP) and employed 6.1 % of the total employment, accounting for 27.4 % of industrial employment. In 2019 there were 3.16 million companies in the sector, directly employing 12.7 million people and directly or indirectly employing a total of 43.7 million people. In Spain in the same year, there were 422,000 companies in the construction sector, employing 1,278,000 people.

While occupational health refers to disorders, illness and damage to health, occupational safety refers to occupational accidents. However, the two areas combine to study different facets of the same object, so that people and organizations are healthy and safe (2). Therefore, it was decided to integrate the two terms into one concept: health and safety at work.

In health and safety at work two main groups of causes of occupational accidents have been identified. On the one hand, there are unsafe conditions or technical factors, among which are the environment, machines and materials that can contribute to or directly generate accidents. And on the other hand, there are the causes related to safe behavior or the human factor, which involves any action or omission of the members of an organization, irrespective of their hierarchical level, that allows, sets the conditions for, facilitates, contributes to, or directly generates accidents (2). The unsafe behavior of a worker is part of organizational behavior, which is closely linked to productivity, quality and safety in the organization, and its value in the organization's culture (3).

Psychology has developed several explanatory models of labor accidents based on the human factor, one of which is Meliá and Becerril (2009)(4), which aims to show the role of unhealthy behavior as the source or the result of safety and risk in construction. In this model,

the authors relate the supervisor's safety response and exposure to risk to unhealthy behaviors and stress at work and show that they are sources of micro-accidents.

The annual report of work accidents in Spain indicates that the sector of activity with the highest incidence rate was Construction, which, with 8,505.8, more than doubled the average of the sector indices (5). Already in 2013, Pomares et al. (6) indicated that According to statistics from the Ministry of Labour in Spain, averaging the last 5 years, and due exclusively to falls at different levels, there were 2,042 serious accidents and 114 fatal accidents annually, which represent 26.7% of the total serious and 13.5% of total fatalities, respectively.

Likewise, the culture and climate of organizational safety are often related to work accidents, the results of safety audits and safe work behavior (7). The safety climate has proven to be a predictor of employee safety compliance, participation in safety and accident rates (8). In addition, in terms of the level of education in health and safety at work, Fuentes-Barguesa et al. (9) indicate that the bigger the company is or the more highly trained the person responsible for safety is, the more the company's staff will be aware of safety issues.

1.1. Personality

In the present study we have used the five-factor model, which proposes the existence of five factors or basic dimensions of personality. Also known as the Big Five Model, it describes the five main bipolar personality dimensions that are considered to be the basis of all the other personality traits and explain most of the human personality (10). These factors are: Extraversion, which refers to the amount and intensity of interaction between people, the level of activity, the need for stimuli and the ability to enjoy social relationships; Agreeableness, which refers to interpersonal interactions but in their qualitative aspect. People with high scores stand out for being generous, trusting, helpful, forgiving, and sincere. They tend to be kind and pleasant and cordial with others. They tend to trust others. They are

empathetic, capable of emotionally resonance with others and of adequately perceiving and interpreting both their own emotions and those of others; Conscientiousness, which refers to sense of responsibility for one's own actions and goal-oriented behavior; It involves self-control, both of impulses and in the planning, organization, and execution of tasks. It also involves careful planning and persistence in goals and with punctuality. People who score high for conscientiousness tend to be willful and determined and have clearly defined purposes. People with lower scores are laxer and more informal; Emotional stability, which refers to the capacity to endure tension. Stable people are those who tend to answer in a controlled and proportionate way, return to their emotional state quickly after an emotional elevation and are balanced, calm, and controlled; Openness, which refers to a taste for novelty, curiosity and being open to change. People who score high for openness are not afraid of new ideas and values. They love trying new things and traveling. People with low scores tend to be conservative, to stay with the familiar and to find it difficult to think of new solutions to deal with problems.

There are few studies that relate personality to occupational safety in the construction industry, among them we can highlight the research of Beus et al. (11) who confirmed that safe behavior can be partly explained through the features of conformity, conscientiousness and emotional stability, so personality traits constitute a key correlate of safety in the workplace. Recently (12), showed that agreeableness and conscientiousness were positively correlated with workers' safety behavior whereas extraversion and neuroticism were negatively correlated with workers' safety behavior. However, in another study (13), although conscientiousness was positively related to safety compliance, agreeableness was negatively related to it. Other authors have demonstrated that agreeableness and conscientiousness and neuroticism are related to occupational/non-occupational accidents. Openness and extraversion are more closely related to non-work accidents (14).

1.2. Impulsivity

Low risk perception and high impulsivity are associated with the occurrence of injury in the general population (15). Impulsivity has been linked to the lack of decision-making (16), to risky behaviors while driving (17), and to crimes and car accidents (18). Other research establishes how biological markers in alcohol use and impulsivity can be associated with risky behaviors (19). Impulsivity has been extensively studied in driving safety (17,20), but there are hardly any studies on impulsivity in the construction sector, a notable exception being Beus et al. (11), who found a relationship between safe behavior and impulsivity, specifically that a greater tendency towards impulsivity may lead to irrational decisions on safety behavior.

In our research we used Dickman's model. Dickman (1990) (21) determined that impulsivity is divided into two types of behaviors: on the one hand, functional impulsive behavior and, on the other, dysfunctional impulsive behavior. Thus, not all impulsive behavior is counterproductive; that is, impulsivity can be beneficial aspects for the individual, for example, when there is a need to make quick and effective decisions, which requires energetic behavior and a high capacity for resolution, etc. Functional impulsivity, therefore, is a fast and effective style of processing in which individuals benefit from their quick actions. On the contrary, dysfunctional impulsivity refers to the tendency to make decisions without reflecting on the negative consequences that they can have for the individual (21,22).

1.3. Emotional Intelligence

Emotional Intelligence (EI) is a construct that refers to the ability of individuals to recognize their own emotions and those of others, discriminate between different feelings and

label them appropriately, use emotional information to guide thought and behavior, and manage or adjust emotions to suit the environment or achieve goals (23). EI is one of the essential competences for safety coaching, the aim of which is to analyze risk situations, understand their antecedents and consequents, and cause a change in the environment and behavior that will lead to safer job environments (24). Mayer and Salovey's (25) model of skills considers emotional intelligence to be a skill that combines emotions with reasoning (that is, it uses emotions to facilitate more effective reasoning and to think more intelligently about our emotions) (26). As reported by Guerrero-Barona et al. (27), EI seems to have a protective effect against stressful situations, leading to better individual and organizational performance. EI at the team level and at the individual level helps people to work more effectively. Both individual performance and team performance improve (28).

1.4. Objective and hypothesis

The present predictive study aims to determine the predictive variables for the factors "2. Use of Protections", "3. Personal Risk Behavior" and "4. Personal Physical Workload" from the CONS-32 scale.

The use of protective equipment at work, refers to wearing gloves, protective suits and hard hats, protection against noise, and wearing masks to cover the mouth and nose. It also involves reviews equipment and instruments such as cranes and scaffolding before starting work.

H_1: If the Use of Protections is influenced by Emotional Intelligence, Personality, Impulsivity and Safety of the work environment, then a model that incorporates these predictors will be able to make a good prediction of the Use of Protections.

The factor related to personal risk behaviors on site refers to aspects such as walking through dangerous areas, handling tools carelessly, failing to correctly store the tools that

have been used, throwing objects into space without checking if colleagues are working there and not correctly placing nets.

H_2: If Personal Risk Behavior is influenced by Emotional Intelligence, Personality, Impulsivity and Safety of the work environment, then a model that incorporates these predictors will be able to make a good prediction of Personal Risk Behavior.

And personal physical workload, according to the CONS-32 scale, refers to aspects such as carrying excessive material on forklifts, lifting bags by hand, carrying loads on the shoulders, adopting dangerous and non-ergonomic postures when working, and doing marathon working days.

H_3: If Personal Physical Workload is influenced by Emotional Intelligence, Personality, Impulsivity and Safety of the work environment, then a model that incorporates these predictors will be able to make a good prediction of the Personal Physical Workload.

INSERT FIGURE 1 HERE

2. Method

2.1. Participants

The sample was made up of 256 Spanish workers in the construction sector. This sector is highly masculinized (99.2% men), and professionals have a basic level of formal education (83.4%). The mean age was 38.78 years (*SD* = 11.74). Marital status: Married or partnered (58.6 %), single (28.5 %), divorced or separated (8.6 %) and widowed (4.3 %).

2.2. Measures

The CONS-32 scale (29) measures personal prevention and workplace hazards in the construction sector. The scale consists of 32 items that are answered on a Likert scale of 5

points (1 = *Never*, 2 = *Hardly ever*, 3 = *Sometimes*, 4 = *Almost always*, 5 = *Always*), and whose total reliability is 0.90. The scale includes four factors, each of which has eight items: "F1. Safety of the work environment" (α = 0.85, e.g.: "3. I know the safety rules at work"); "F2. Use of protections at work" (α = 0.83; e.g.: "28. I use protective goggles to cut glass"); "F3. Personal risk behavior at work" (α = 0.79; e.g.: "18. When I dismantle a scaffold, I remove the counterweights and let them fall down"); "F4. Personal physical workload" (α = 0.79; e.g.: "26. When laying floor tiles, my posture can cause dizziness").

Dickman's Impulsivity Inventory (DII; Dickman, 1990) (21), in its Spanish version (30) consists of 23 items and two subscales and the response format is dichotomous (1 = *True* / 0 = *False)*. The first subscale evaluates "Functional impulsivity" with 11 items (α = 0.77; e.g.: "4. I am good at taking advantage of unexpected opportunities, where you have to do something quickly or you lose your chance"); the second subscale consists of 12 items and evaluates "Dysfunctional impulsivity" (α = 0.76; e.g.: "7. I frequently buy things without thinking about whether I can afford them").

The impulsivity scale (I7; Luengo et al., 1991) (31) has a total of 35 items that are answered on a scale of four points (1 = *Strongly disagree*, 2 = *Disagree*, 3 = *Agree* and 4 = *Strongly agree*) and its total Cronbach α is 0.70. It consists of two factors with 19 and 16 items, respectively: "F1. Impulsivity" (α = 0.78, e.g.: "6. I usually say and do things without stopping to think"); "F2. Daring" (α = 0.82; e.g.: "2. I usually prefer to continue with a brand that I know is reliable rather than try new brands to look for something better").

The Overall Personality Assessment Scale (OPERAS, Vigil-Colet et al., 2013) (32) has a total of 42 items that are answered with a 5-point scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither agree nor disagree*, 4 = *Agree* and 5 = *Strongly Agree*). The scale has a good fit of the structure of five factors, consisting of 7, 7, 8, 8 and 7 items respectively: "F1. Neuroticism" (α = 0.86; e.g.: "32. My mood changes often"); "F2. Extraversion" (α = 0.86;

196 e.g.: "8. I do well in social situations"); "F3. Openness to experience" (α = 0.81; e.g.: "24. I
197 like to try new things"); "F4. Agreeableness" (α = 0.71; e.g.: "34. I accept people as they
198 are"); "F5. Conscientiousness" (α = 0.77; e.g.: "28. I am a perfectionist").
199 The Trait Meta-Mood Scale (TMMS; Salovey et al., 1995) (33), in the Spanish
200 version (34,35). This scale measuring perceived emotional intelligence, is an instrument
201 consisting of 24 items with a 5-point response format (1 = *Strongly disagree*, 2 = *Somewhat*
202 *disagree*, 3 = *Quite agree*, 4 = *Somewhat agree* and 5 = *Strongly agree*). The scale consists of
203 three dimensions, each of which consists of eight items: "F1. Emotional attention" (α = 0.90;
204 e.g.: "4. I think it is worthwhile paying attention to my emotions and mood"); "F2. Clarity of
205 feelings" (α = 0.90; e.g.: "13. I often notice my feelings in different situations"); "F3.
206 Emotional repair" (α = 0.86; e.g.: "21. If I'm thinking about things too much and making
207 them more complicated, I try to calm myself down").
208
209 ***2.3. Procedure***
210 Non-probabilistic sampling (36,37), also known as accidental-random sampling (38),
211 was used to obtain the sample. The response rate was about 60 %. The participants answered
212 voluntarily and did not receive any kind of gratification. A protocol (PAPI) was prepared for
213 the participant that included a cover letter, informed consent, and the questionnaires to be
214 answered. Participants answered the questionnaires at their usual workplace. The
215 confidentiality of the data provided by participants was fully guaranteed.
216
217 ***2.4. Data analysis***
218 First, the Kolmogorov-Smirnov test was used to check the normality of the data and
219 found this to be a good fit. Pearson's correlation coefficients were calculated in the predictive
220 study to ascertain the significant relationships between the predictive variables and the

criterion variables. Then, a multiple regression using the stepwise option was performed so the program introduces each predictive variable into the model depending on its contribution to explaining the variance. Data were analyzed with the SPSS 25.0 software.

3. Results

3.1. Reliability analysis

Table 1 shows the instruments used. The indices for internal consistency are appropriate given that they range between 0.72 (DII.2. Dysfunctional impulsivity) and 0.79 (I7.2- Daring and TMMS1. Emotional attention).

INSERT TABLE 1 HERE

3.1. Correlation analyses

The correlations found between the criterion variables and the predictive variables are shown in Table 2. If the three most significant correlations are considered, it can be seen that the Use of Protections correlates positively with Safety in the work environment ($r = 0.371$; $p < 0.01$) and with Conscientiousness on the OPERAS scale ($r = 0.235$, $p < 0.01$), whereas it correlates negatively with Daring ($r = -0.251$, $p < 0.01$). Personal Risk Behavior correlates directly and significantly with the factor Impulsivity on the I7 scale ($r = 0.299$; $p < 0.01$), and inversely and significantly with Safety of the work environment ($r = - 0.424$, $p < 0.01$) and Conscientiousness on the OPERAS scale ($r = -0.225$, $p < 0.01$). Finally, Personal Physical Workload correlates directly with Impulsivity ($r = 0.244$, $p < 0.01$) and Daring ($r = 0.226$; $p < 0.01$), but inversely with Safety of the work environment ($r = -0.270$, $p < 0.01$).

INSERT TABLE 2 HERE

3.2. Multiple regression analysis

Three multiple regressions were performed for the predictive study, one for each of the three factors on the CONS-32 scale used as criterion variables and predictive variables.

Table 3 shows that the stepwise model for Use of Protections consists of three variables: Safety of the work environment, Daring, and Emotional perception (F = 10.555; p <0.01). The multiple correlation between the predictive variables and the criterion variable is 0.423 and the percentage of variance of the criterion variable they explain is 17.9%. The variable Safety of the work environment is the best predictor of Use of protections and explains 10.8% of the variance.

INSERT TABLE 3 HERE

Table 4 shows that the stepwise model for Personal Risk Behavior consists of two predictive variables: Safety of the work environment and Impulsivity (F = 29,279; p <0.01). The multiple correlation between the predictive variables and the criterion variable is 0.530 and the percentage of variance of the criterion variable they explain is 28.1%. The variable Safety of the work environment is the best predictor for Personal risk behavior and also Use of protections and explains 24.2% of the variance.

INSERT TABLE 4 HERE

Finally, Table 5 shows the result of the multiple regression analysis for Personal physical workload. The resulting stepwise model consists of two predictive variables: Safety of the work environment and Daring (F = 11.101; p <0.01). The multiple correlation between the predictive variables and the criterion variable is 0.363, and the predictive variables explain 13.2% of the variance of the criterion variable. The variable Safety of the work environment is the best predictor of Personal physical workload and explains 8.7% of the variance.

INSERT TABLE 5 HERE

4. Discussion

The present study made a predictive analysis of the three factors of the CONS-32 scale that are related to personal variables. The results obtained allow us to draw the following conclusions.

4.1. Summary and discussion of the results

4.1.1. Use of Protections

Hypothesis 1 is partially supported by the results. The best predictive model includes a total of three variables, which are directly correlated with Safety of the work environment and Emotional perception, and inversely correlated with Daring. Safety of the work environment is the factor that has the greatest predictive capacity. Direct correlations were found between the factors Clarity of feelings and Emotional repair (Emotional intelligence) and Use of Protections. These results are similar to those obtained by Wiegand (24), who regards emotional intelligence to be linked to safe behavior, prompting the individual to make greater efforts to achieve safety in different areas of their life. Therefore, workers who are more able to understand their own emotional states and those of others, and who are also able to regulate their emotional states, will make a greater effort to achieve a degree of safety in the workplace that can lead to a greater use of protective material. Similarly, Vílchez (39) found that emotional state and emotional intelligence play a fundamental role in safe behavior at work, especially when work is monotonous and repetitive. We found a direct linear relationship between the Use of protections and the Conscientiousness factor (Personality); that is, people with the highest score on responsibility make greater use of protective measures at work. The study by Rodríguez-Garzón et al. (40) confirms that certain personal variables influence workers' perception of risk.

In the area of Impulsivity, there is an inverse correlation between the Use of protections and Impulsivity and Daring. We conclude that the greater a person's level of impulsivity and daring, the less likely they are to use safety measures in the workplace. These results are supported by Ryb et al. (15), who found that a low perception of risk added to high dysfunctional impulsivity are associated with a greater number of risk behaviors, such as not using safety measures to minimize the risk of the job. Beus et al. (11) observed that impulsivity was associated with safety and unsafety at work.

Safety of the work environment correlates directly with the Use of protections, which indicates that in those organizations that give greater importance to safety, people are more likely to use protective measures. This is similar to the results of Neal and Griffin (41) who found a relationship between a safe climate and the safety culture of an organization, and the safe behavior of workers. Likewise, Koh et al. (42) emphasize the importance of the safety of the work environment insofar as it determines the safe behavior of workers in organizations.

4.1.2. Personal Risk Behavior

Hypothesis 2 is partially supported by the results. The best predictive model includes two variables, which are directly correlated with Impulsivity, and inversely correlated with the variable Safety of the work environment, which is the factor that contributes most to the predictive capacity of the criterion variable.

An inverse linear relationship was observed between Personal risk behavior and Clarity of feelings and Emotional repair (Emotional Intelligence). This is linked to the relationship between Emotional Intelligence and the Use of protections in the sense that risk behavior is directly related to job safety, so people with a greater ability to understand emotions and repair them in a way that is appropriate to the current situation, are less likely to engage in behavior involving a risk to their person.

In terms of Personality, a direct correlation between Personal risk behavior and Dysfunctional impulsivity was found, which means that the higher the level of dysfunctional impulsivity the greater the probability that the worker will carry out a series of risk behaviors in their job.

Direct correlations were found between Personal risk behavior and Impulsivity and Daring. This implies that the higher the levels of daring and impulsivity, the greater the likelihood of associated risk behaviors. These results support those of Ledesma et al. (43) who found a relationship between impulsivity as an impulsive search for sensations and risk behaviors in driving.

Finally, Safety of the work environment correlates inversely with Personal risk behavior, which implies that in organizations that are concerned about creating a climate of safety, people are more likely to have a lower rate of risk behavior. Melià (44,45) related the safety climate and culture to the unsafe behavior of workers. Hernández-Fernaud et al. (46) also found that the organizational culture and climate are key factors in the management of health and safety in working environments.

4.1.3. Personal Physical Workload

Finally, hypothesis 3 is also partially supported. The best predictive model includes two variables, which are directly correlated with Daring, and inversely correlated with Safety of the work environment. This second factor is the one that contributes most to predictive capacity. An inverse linear relation was found between Emotional intelligence and understanding of emotions. This means a lower incidence of physical workload is expected in those workers with a greater capacity to understand emotions.

Personal physical workload correlates directly with Dysfunctional impulsivity and daring. As with the other two factors, impulsivity seems to be related to risk behavior in the

workplace, whether in the form of risky conduct, neglect in the use of protections or physical load at work. We expect that at higher levels of dysfunctional impulsivity or daring, there is a greater probability of behaviors that involve risk at work, and therefore, a greater likelihood of work accidents or other injuries. The studies by Hansen (47) and Sutherland and Cooper (48) show that people with higher levels of impulsivity are more likely to take risks.

To conclude, Safety of the work environment correlates inversely with Personal physical workload; therefore, in those organizations that are more concerned about safety there is a greater probability that people will have less physical workload. This is in accordance with López-Araújo and Osca-Segovia (49), who found that psychosocial factors of an organizational nature, including the safety climate, social support and work stress, have an influence on the psychological and physical health of the worker and affect their accident level.

4.2. Limitations and suggestions for future research

This study is not without limitations. Firstly, the data were obtained through self-reports, which can produce bias ranging from social desirability to lack of sincerity (50). Secondly, the methodology should also be examined since bias may occur in the results since the participants were unaware of the symptoms or the effects of some of the variables we were measuring.

This research has some features that can be applied to the labor situation of workers and companies in the present productive sector. The results invite us to reflect on the importance of defining a safety culture that involves enhancing and optimizing healthy organizational conditions. Thus, it is necessary to evaluate the organizational climate (51), the organizational culture (29) and the safety climate (52). It would also be of great interest

for organizations and human resource managers to understand the complex relationships between Strategic Human Resources Policies (53) and workers' occupational health.

4.3. Practical implications

Our results highlight the importance of designing individual interventions to increase the occupational health in construction industry. This would provide greater well-being and lead to a reduction in sick leave. In addition, these findings present important practical implications that construction companies must consider in the strategic management of human resources to help employees achieve a better psychosocial well-being. It is necessary to take into account certain personality variables during the selection so that a good choice can be made between the job position and the candidate. In addition, it is important that those responsible for Human Resources and Occupational Health evaluate the workers beyond what is required by current legislation to reduce both the accident rate and absenteeism.

4.4. Conclusion

This predictive study presents an overview of the predictive variables that may be antecedents of occupational health in construction industry. Our results indicate that the Safety at work variable is important in the three factors investigated. Additionally, impulsivity, daring, and emotional attention also act as predictors. Our findings suggest that it would be necessary to design prevention programs to reduce the work accidents. Finally, the present investigation increases the literature, in the field of construction, on the link between occupational health and Personality factors.

Data Availability Statement

All data, models, and code generated or used during the study appear in the submitted article.

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Table 1
Descriptive statistics and reliability values with Cronbach's α coefficient.

Variable	Minimum	Maximum	Mean	*SD*	α
CONS-32.1. Safety of work environment	17	38	32.56	3.63	0.76
CONS-32.2. Use of protective equipment at work	10	40	29.50	6.29	0.73
CONS-32.3. Personal risk behavior at work	8	25	13.56	3.83	0.75
CONS-32.4. Personal physical workload	8	37	21.64	5.63	0.74
DII.1. Functional impulsivity	0	11	5.24	2.33	0.73
DII.2. Dysfunctional impulsivity	0	12	2.95	2.73	0.72
I7.1- Impulsivity	19	76	38.10	9.02	0.77
I7.2- Daring	17	58	37.27	9.76	0.79
OPERAS.1 Neuroticism	23	75	51.80	9.51	0.78
OPERAS.2 Extraversion	19	73	48.70	10,32	0.79
OPERAS.3 Openness to experience	0	67	45.14	10.78	0.74
OPERAS.4 Agreeableness	2	77	48.91	10.30	0.78
OPERAS.5 Conscientiousness	12	72	49,39	11.38	0.76
TMMS1. Emotional attention	11	40	24.99	6.66	0.79
TMMS2. Clarity of feelings	13	40	28.37	6.01	0.78
TMMS3. Emotional repair	10	40	37.27	9.76	0.77

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585

586 **Table 2**
587
588 *Correlations between factors 2, 3 and 4 (Use of protections, Personal risk behavior and*
589 *Personal physical workload) of the CONS-32 scale and predictive variables*

590

	Criterion Variable		
Predictive Variable	CONS-32.2 Use of protections	CONS-32.3 Personal Risk Behavior	CONS-32.4 Personal Physical Workload
OPERAS.5-Conscientiousness	**0.235****	**-0.225****	-0.063
OPERAS.4 Agreeableness	0.076	**-0.197****	-0.085
CONS-32.1. Safety of the work environment	**0.371****	**-0.424****	**-0.270****
DII.2- Dysfunctional impulsivity	-0.072	**0.176***	**0.224****
TMMS.2. Clarity of feelings	**0.178***	**-0.165***	**-0.173***
TMMS.3. Emotional repair	**0.179***	**-0.168***	-0.109
I7.1- Impulsivity	**-0.145***	**0.299****	**0.244****
I7.2- Daring	**-0.251****	**0.217****	**0.226****

Note: Bold marks significant numbers.
***p*<. 01; **p*<.05
Variables used in this study: CONS-32.1. Safety of the work environment, CONS-32.2. Use of protections at work, CONS-32.3. Personal risk behavior at work, CONS-32.4. Personal physical workload, DII1. Functional impulsivity, DII2- Dysfunctional impulsivity, I7.1- Impulsivity, I7.2- Daring, OPERAS.1. Neuroticism, OPERAS.2. Extraversion, OPERAS.3. Openness to experience, OPERAS.4 Agreeableness, OPERAS.5. Conscientiousness, TMMS1- Emotional attention, TMMS2. Clarity of feelings, TMMS3. Emotional repair

Table 3

Summary of predictive models whose criterion variable is Use of protections, and coefficients of the resulting model.

Model and Variable	Model						Coefficient				
	R	R^2	R2 Adjusted	SE	F Change	Sig	B	SE	β	t	Sig
Model-1	0.329	0.108	0.102	5.881	17.851	0.000					
Model-2	0.390	0.152	0.140	5.755	13.070	0.000					
Model-3	0.423	0.179	0.162	5.681	10.555	0.000					
CONS-32.1. Safety of the work environment							0.481	0.127	0.293	3.797	0.000
I7.2- Daring							-0.132	0.047	-0.215	-2.795	0.006
TMMS.1. Emotional perception							0.150	0.068	0.166	2.200	0.029

Excluded variables: DII1. Functional impulsivity, DII.2- Dysfunctional impulsivity, I7.1- ImpulsivityOPERAS.1. Neuroticism, OPERAS.2. Extraversion, OPERAS.3. F3. Openness to experience, OPERAS.4 Agreeableness, OPERAS.5. Conscientiousness, TMMS2. Clarity of feelings, TMMS3. Emotional repair.

Table 4

Summary of predictive models whose criterion variable is Personal risk behavior, and coefficients of the resulting model.

Model and Variable	Model						Coefficient				
	R	R^2	R2 Adjusted	SE	F Change	Sig	B	SE	β	t	Sig
Model-1	0.492	0.242	0.237	3.348	48.150	0.000					
Model-2	0.530	0.281	0.271	3.271	29.279	0.000					
CONS-32.1. Safety of the work environment							-0.453	0.073	-0.443	-6.209	0.000
I7.1- Impulsivity							0.088	0.031	0.203	2.852	0.005

Excluded variables: DII1. Functional impulsivity, DII.2- Dysfunctional impulsivity, I7.2- Daring, OPERAS.1. Neuroticism, OPERAS.2. Extraversion, OPERAS.3. F3. Openness to experience, OPERAS.4 Agreeableness, OPERAS.5. Conscientiousness, TMMS1. Emotional attention, TMMS2. Clarity of feelings, TMMS3. Emotional repair.

Table 5

Summary of predictive models whose criterion variable is Personal physical workload, and coefficients of the resulting model.

Model and Variable	Model						Coefficient				
	R	R^2	R2 Adjusted	SE	F Change	Sig	B	SE	β	t	Sig
Model-1	0.296	0.087	0.081	5.056	14.082	0.000					
Model-2	0.363	0.132	0.120	4.948	11.101	0.000					
CONS-32.1. Safety of the work environment							-0.346	0.110	-0.248	-3.137	0.002
I7.2- Daring							0.113	0.041	0.216	2.738	0.007

Excluded variables: DII1. Functional impulsivity, DII.2- Dysfunctional impulsivity, I7.1- Impulsivity, OPERAS.1. Neuroticism, OPERAS.2. Extraversion, OPERAS.3. F3. Openness to experience, OPERAS.4 Agreeableness, OPERAS.5. Conscientiousness, TMMS1- Emotional attention, TMMS2. Clarity of feelings, TMMS3. Emotional repair.

626 **Figure 1**

627 *Model followed in this research*

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