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Working Conditions and Employee Absenteeism: A Study on A Sample of Tunisian Agro-Food Workers

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Abstract: ***Absenteeism is a major challenge for many organizations today. Reducing absenteeism helps organizations achieve their goals and increases their productivity. To shed light on this issue, this study investigates the main causes of absenteeism using a regression analysis on a sample of agribusiness employees in Tunisia. Specifically, the main causes of absenteeism that were tested include socio-professional factors such as age, seniority, level of education and marital status, and ergonomic factors such as physical load, luminance, noise, stress, and accidents. However, the findings from this study indicate that only age and marital status were significant predictors of absenteeism from a socio-professional perspective, whereas only physical load and work accidents were significant predictors of absenteeism from an ergonomics standpoint. Implications of the findings conclude the paper.***

Keywords: Employee absenteeism, Socio-professional factors, Ergonomic factors, Covid-19 pandemic, Tunisia

JEL Classification: J28; I10

1. Introduction

The current context of globalisation involves sometimes relocation and internationalisation of work, which sometimes leads to work situations that are unfavourable to the preservation of workers' health. Indeed, technology transfer requires an understanding of contextual determinants that can influence work situations.

Moreover, the recent economic crisis related to the Covid-19 pandemic, caused by sanitary containment in many countries, has exacerbated the problem of absenteeism. The latter has become one of the major concerns of decision-makers in the industrial system because it has had adverse effects on the productivity and overall profitability of companies. They have had to implement multiple measures to reduce this phenomenon and its effects: attendance bonuses, use of subcontracting, temporary work, fixed-term contracts, etc. In all cases, the literature shows that absenteeism is a challenge and a big problem that threatens the economic growth of companies for the countries of the world. It always represents a cost, a loss of profit or a loss of image on the market.

The purpose of this study is to examine the factors that influence absenteeism in a sample of workers from a large agribusiness in Tunisia. Agribusiness is one of the sectors that generates development, jobs, and gross domestic product for the country, and stimulates family farming and exports. In this regard, in addition to a favourable universe of organisational growth, the concern for the health of workers is pertinent to the implementation of process and organisational innovations in ergonomics not only by the legalistic profile of a healthy environment, but also in the adoption of humanised managements.

Specifically, by studying the case of this large agribusiness, our research is intended to answer the following questions: (1) Are there statistically significant differences in absenteeism among socio-professional variables? (2) To what extent are ergonomic variables correlated with absenteeism? According to the literature, many important variables that may affect absenteeism were found to be highly relevant and considered for this research.

The remainder of the study is structured as follows. The following section focuses on the conceptual framework and the formulation of explicit assumptions based on existing theoretical and empirical literature. The third section deals with the methodology and results of the estimates and their interpretations. Finally, the final section presents the findings and recommendations of the study.

2. Conceptual framework and Hypothesis

Beyond the financial aspect, work stoppages have an impact on the work environment and affects productivity. Indeed, considered as a key indicator of the social performance of a company, the theoretical literature shows that high absenteeism generally reflects a dysfunction in the company and must lead the entrepreneur to question his organization and working conditions. Thevenet M. and Vachette J. L. (1992) consider that "*absenteeism is the symptom of some of the pathologies of business, and that it is not a disease that is cured with laws, but that must be controlled and combated primarily at the company level*".

The managerial literature has reported several types of factors that may or may explain absenteeism. But in this study we will try to identify the individual causes of voluntary absenteeism. Voluntariness is the fact that, on the one hand, the absentee is aware of his act and, on the other

hand, the absence constitutes "the habit that certain workers have of abstaining from going to their place of work (Hilde, 1959).

The empirical results on employee absenteeism with regard to socio-professional factors have been widely reported. But numerous studies were also intended to find out the impact of ergonomic factors on the behaviour of absences [Akgeyik T (2014)]. In this study, we will try to identify, among these factors, those that have a significant impact on voluntary absenteeism. Subsequently, it would be possible to propose some actions to be taken at the national, regional or business level, especially during the COVID-19 pandemic.

2.1. The socio professional factors of absenteeism

In our study we consider four socio-professional factors that are the most mentioned in the literature as predictors of absenteeism behavior such as age, seniority, marital status and educational attainment.

1) Age

Age is one of the few variables readily available to study absenteeism and corresponds to lifestyles and presumably to professional attitudes. Several authors believe that it is positively and linearly related to the duration and frequency of absenteeism [Cornieti B. & Van Cauwelaert C. (1975)]. The ageing workforce may impair productivity due to increased absenteeism and reduced performance [Schlick C. M. - Frieling E., and Wegge J. (2013); Streb C. – Voelpel S. - and Leibold M. (2008)].

In fact, we note that as employee's age, they tend to be absent more often and for longer. Absenteeism is a consequence of the increased risk of illness with age. Fritzsche and al. (2014) show that aging labor force is considered a productivity risk in manufacturing industries. This study shows that high physical workloads and consistent team composition are associated with higher absenteeism and error rates.

However, many studies link young age to high rates of absenteeism. Dépardieu D. & Lollivier S. (1985) show that for all categories, whether working or not, absenteeism among young people aged 18 to 20 is high. These young people, who have no family responsibilities, are less inclined to integrate into the productive system. Some may be absent to complete or complete their training.

However, if authors continue their reflections on the age factor, confirming its connection with absenteeism, but considering that it is not linear [Weiss D. (1979); Vatteville E. (1985); Nicholson and al., (1976)], others argue that the relationship is insignificant [Naylor J. C. & Vincent N. L. (1959)].

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Thus, there are several reflections to demonstrate the link between age and absenteeism: they have given different and scientifically justified results, but most authors have come up with the "subjective" reasoning that the link exists and is positive. So, in the light of these results, we can develop the following hypothesis:

H1: *Age has a positive impact on the increase in absenteeism rate*

2) Seniority

Seniority is another studied factor affecting absenteeism. It affects the employee's aspirations and professional behavior, on the one hand, and his status in the company, on the other. Compton P. (2001) found that years of experience were significantly related to absenteeism. Consistent with these results, Adebayo S. & Nwabuoku Ch. U. (2008) revealed that working experience was significantly and positively correlated with absenteeism. The study by Hoque E. and Islam M. (2003) supports the view that absenteeism is associated with experience. We therefore predicted the following:

H2: *The older the workers / employees are in the company, the more they are absent.*

3) The Marital status

The marital status of single is often considered a positive factor of absenteeism. The latter would grow with the size of the family. Women would be more affected by the daily obligations of their homes. Married people would be more absent than single people because of their family care.

Examining the relationship between family responsibilities and employee absenteeism, Westhuizen Ch. Vand Der (2006) demonstrated the significant impact of marital status and the number of dependents on the frequency of absenteeism. Adebayo S. & Nwabuoku Ch. U. (2008) also confirmed the significant correlation of absenteeism with marital status. Similarly Langenhoff W. (2011) noted a negative relationship between absenteeism and family size. We therefore predicted the following:

H3: *Married agents are more likely to be absent than singles.*

4) The level of Education:

Absenteeism would be a reaction to uninteresting positions and unsatisfactory working conditions. It decreases when the level of training increases. This is not surprising since the quality of working conditions is improving at the same time [Vlassenko E. & Willard J. C. (1984), Dépardieu D. & Lollivier S. (1985), Vatteville E. (1985)]. In this regard, Isambert M. & Jamati V. (1962) showed that highly qualified women with high responsibilities had low absenteeism even with the care of several children.

Many analysis revealed that level of education and the level of training were found to be the significant predictors of absenteeism [Langenhoff W. (2011); Akgeyik T. (2014)]. The qualification is undoubtedly at the hinge of the individual and organizational factors of the phenomenon of

absenteeism [Thévenet M. (1982)]. So, we can develop the following hypothesis:

H4: *The level of education has a positive effect on the phenomenon of absenteeism.*

2.2. The Ergonomic factors of absenteeism

Several studies have focused on another type of factor that has a significant effect on the phenomenon of absenteeism. These are ergonomic factors. Ergonomics deals with the adaptation of working conditions to the capabilities and characteristics of the active person, and the ability of this person to adapt to their function. Ergonomics is not only concerned with adapting work equipment to body dimensions; she is also interested in a human-based organization of work as well as in the content and working environment.

Poorly arranged workstations can cause physical pain. This problem affects all branches and workstations, whether working on machines, in offices, at the chain, for assembly operations or behind a trading desk. Physical pains greatly affect the performance of the workers concerned and cause absences. In extreme cases, an inadequate job or job arrangement may lead to incapacity for work and disability, which weighs heavily on the company's accounts as well as on society as a whole.

Also, poor working conditions can cause anxiety, tension, stress, disorders (including musculoskeletal disorders, the main cases of occupational disease in developed countries), and various pathologies in the employee.

In our study we consider four socio-professional factors that are the most mentioned in the literature as predictors of absenteeism behavior such as age, seniority, marital status and educational attainment.

We thus integrate in our empirical study "ergonomic" variables to show their positive impact on absenteeism of employees at work in Tunisian companies. We consider five ergonomic factors that are the most mentioned in the literature as predictors of absenteeism behavior such as stress or mental load, physical load, workplace accidents, noise and lighting in the workplace.

1) Stress or Mental load

Workplace stress has been one of the major risks organizations and businesses face. Today it has become one of the most pressing challenges for organizational leaders because it has a significant negative influence on the performance of the firm. Work stress has emerged as a topical issue, but difficult to analyze as well as define. In a European survey of 21,700 workers in the European Union in 2000, 28% of employees said they were stressed. In the same context Occupational stress causes mostly absenteeism, the causes of absenteeism are multiple but one of the main is of psychologist origin. Recent figures indicate that in Britain nearly 40 million days each year are lost due to stress.

Several studies have focused on stress as a factor that has a significant effect on the phenomenon of absenteeism. The works of Nisam (2010) and Darr W. A. (2004) stated that stress among employees, health problems, loneliness at workplace, non-cooperation of colleagues causes absenteeism at workplace. Therefore, we develop the following hypothesis:

H6: *Work stress has a positive impact on the phenomenon of employee absenteeism*.

2) The physical load

The level of physical ergonomic risks depends on the intensity, frequency and duration of exposure to physical work load factors such as heavy lifting, awkward postures, prolonged sitting or standing, repetitive motions, vibrations, as well as environmental factors such as temperature, humidity, noise and lighting [Otto A. & Battaïa O. (2017)].

All these factors are responsible for the nervous exhaustion and depression of the workers and are also responsible for the extent of absenteeism, often causing heavy losses for the company. In addition, fatigue or physical stress work-related accidents occur for many reasons related to the workplace, the organization of tasks, the equipment or even the condition of the worker, this has created a sense of dissatisfaction with employee safety and results in the absence of employees. So, we develop the following hypothesis:

H7: *The physical load has a positive impact on the development of absenteeism.*

3) Work accidents

Hill J. M. M. and Trist E. L. (1953) established a relationship between work-related accidents and absenteeism. This relationship has been confirmed with a number of accidents. This relationship was particularly significant for those accidents in which the victim was active in the same. Castle P. F. (1956) found that there was a positive correlation between accident frequency and unexcused absences, plus more total (planned) absences. More recently, Melamed S. and al. (1989) found results highlighting the role of aggregate work stress, coupled with individual sensitivity to environmental stressors, in increasing the risk of accidents and absences from work due to illness. In the light of these studies, we develop the following hypothesis:

H8: *Workplace accidents have a positive influence on the increase in the frequency of absenteeism among employees*.

4) The noise

The results of the studies of Cohen A. (1973; 1968) suggest that workers in departments with a high noise level (greater than 90 dBA) are subject to more disciplinary action and absenteeism and lower productivity than departments with exposure. At low noise (less than 90 dBA). Disciplinary actions showed the greatest difference between high and low noise departments. The accident frequency and severity rates in the high-noise departments were higher than those in the noise-level departments reduced. Indeed, Jerison H. J.

(1954) have been suggested that noise in the workplace may induce additional auditory effects in workers, which could result in an increase in accident rate, increased absenteeism and lower productivity. So we develop the following hypothesis:

H 9: *Noise positively affects the increase in absenteeism in companies.*

5) The lighting in the workplace

Good lighting can better see and affect the mood. Dynamic lighting helps create a feeling of well-being in the workplace, especially if they lack natural light. It allows better focus, to be less tired and in conditions of increased security.

Indeed, the question of lighting in the company is one of the first causes of dissatisfaction at work. And this is truly a global phenomenon that can be observed today. But the bright atmosphere at work is not only a source of dissatisfaction; it is also very intimately linked to the health of people. In fact, insufficient lighting can have many physical and psychological consequences, which in this context is a real responsibility for prevention for the company. Indeed, natural light has a particular importance with regard to circadian cycles. This biological balance is defined between the waking and sleeping phases and the activity phases in a typical day of an individual. However, less exposure to natural light would tend to unbalance our internal clock, which would have a proven impact on the ability to fall asleep and the overall quality of the slumber lack of natural light in the workplace is therefore a real subject.

All these factors are directly related to the rate of absenteeism that can be encountered in some companies. Light is intimately connected to many symptoms; one of the most common is chronic stress. That is why the European standard recommends a minimum illumination of 300 to 500 lux for writing or reading on workstations. Not to mention that a lack of light can have harmful consequences on the sight at term, the eyes getting tired very quickly in a closed everyday environment and without natural light, causing headaches and migraines repeatedly.

H10: *The luminance of the workplace has a positive impact on the frequency of absenteeism*.

3. Method and Estimations

3.2. Measures

The tables 2 and 3 show the definitions and the measures Socio-Professional and ergonomic variables.

Table 2: The definitions and measures of Socio-Professional variables

Variable	Meaning	Mesure
AGE	Age	It is measured through an indicator of 3 categories: 1 young: Under 30; 2 adults: [30-40 [; 3 aged: over 40
ANC	Seniority	Seniority The number of years the employee spent in the company
SMAT	Marital status	Marital status Variable binary: 0: single; 1: married
EDUC	The Level of education	It expresses the level of education of the employee whether primary, secondary or higher

The objective of the empirical study is to detect the factors that explain the absenteeism phenomenon that can be encountered in some Tunisian companies. We are looking at the "La Rose Blanche "Society, which operates in the agri-food sector. These factors are subdivided into two groups. The first concerns socio-professional factors (age, gender, seniority, marital status and educational level), while the second group includes ergonomic factors related to working conditions (noise, luminance, perceived fatigue, perceived stress, accident at work).

The dependent variable was absenteeism, which was measured by the number of uninsured days of work over a 12-month period.

3.1. Sample and data collection

In a continuing effort to conduct a well-grounded scientific study, we used the sampling technique to choose a representative sample of the population of the personnel studied. The statistical data used concern the company «La Rose Blanche». They are collected from a survey conducted in January and February 2015 on a population of 80 employees of different professional status, with different qualifications and who are sensitive to working conditions.

We have collected all the data relating to absenteeism: Social report, company journal and statistics of the scoring system, which have allowed us to collect information on the socio-professional factors of the workers (marital status, seniority, level of education, age) as well as data on ergonomic factors (stress, physical load, work accidents...). The distribution of the Sample by Socio-professional Factors is shown on the table 1.

Table 1: Distribution of the Sample by Socio-professional Factors

Variables	Statement	Results
Age	Young	35%
	Adult	47,5%
	Age	17,5%
Seniority	Little old	57,5%
	former	30%
	Very old	12,5%
Study level	Primary	15%
	Secondary	53,75%
	Superior	31,25%
Marital status	Single	46,25%
	married	53,75%

Table 3: The definitions and the measures of Ergonomics variables

Variable	Meaning	Measure
Noise	Noise	Measured by the Sound meter in (DB): [40-60 [: low; [60-80 [: average; [80-90]: high; > 90: intense
Light	lighting	This is a quantity corresponding to the visual sensation of brightness of a surface, measured by the application of "AP light sensor in lux"
PHYS	Physical load	Measured using a Borg CR10 scale (1972-1982): 6: No fatigue; [6-15 [: painful; [15-20 [: very painful; ≥ 20: exhaustion
MENT	Mental load	A perceived stress scale provided by Cohen and al. (1983-1988): [6-15 [: weak and positive; [15-30 [: medium; [30-40 [: high and negative
ACCID	Work Accidents	Binary Variable: 0 for employees suffering accidents and 1 for non-injured employees.

3.3. Bivariate Analysis

We proceed to make a bi-varied analysis while crossing the variables a few ergonomic variables with other socio-professional which seems to us most relevant to our analysis.

Cross between physical load and age: (PHYS and AGE)
The crossover between the two variables PHYS and AGE shows a test of α^2 significant at a threshold of 5%. So, these two variables are positively correlated. Therefore, the people the older people are the ones who perceive more fatigue.

Table 4: PHYS and AGE Correlation (Chi-square tests)

	Value	Degree of freedom	Asymptotique significance (bilateral)
Pearson's chi-square	847,222[a]	720	0,001
Likelihood ratio	351,639	720	1,000
Linear association per linear	0,340	1	0,560
Number of valid observations	80		

at. 775 cells (100.0%) have a theoretical size of less than 5. The minimum theoretical size is 0,01.

Cross between Physical Charge and Seniority (PHYS and ANC)
The intersection between the two **PHYS and ANC** variables shows a test of α^2 significant at a threshold of 5%. So, these two variables are positively correlated, therefore, the people the oldest people are those who perceive more fatigue.

Table 5: Correlation between PHYS and ANC (Chi-square tests)

	Value	Degree of freedom	Asymptotique significance (bilateral)
Pearson's chi-square	458,219[a]	390	0,010
Likelihood ratio	243,823	390	1,000
Linear association per linear	0,264	1	0,607
Number of valid observations	80		

at. 434 cells (100.0%) have a theoretical size of less than 5. The minimum theoretical size is 0.01.

Cross between Mental load and Age (MENT and AGE)
The crossing between the two variables MENT and AGE shows a test of α^2 significant at a threshold of 5%. So, these two variables are positively correlated. Older people are those who perceive more stress.

Table 6: Correlation between MENT and AGE (Chi-square tests)

	Value	Degree of freedom	Asymptotique significance (bilateral)
Pearson's chi-square	642,413[a]	528	0,000
Likelihood ratio	300,096	528	1,000
Linear association per linear	0,838	1	0,360
Number of valid observations	80		

at. 434 cells (100.0%) have a theoretical size of less than 5. The minimum theoretical size is 0.01.

Crossing between Work Accidents and Physical Charge: ACC and PHYS
Crossing between the two variables work accident and Physical load shows a test of α^2 significant at a threshold of 5%. These two variables are therefore positively correlated. The most tired people are the most confronted by accidents at work.

Table 7: Correlation between ACC and PHYS (Chi-square tests)

	Value	Degree of freedom	Asymptotique significance (bilateral)
Pearson's chi-square	41,855[a]	30	0,044
Likelihood ratio	44,395	30	0,044
Linear association per linear	2,397	1	0,122
Number of valid observations	80		

at. 62 cells (100.0%) have a theoretical size less than 5. The minimum theoretical size is 0.21.

Cross between the physical charge and marital status: PHYS and SMAT
The intersection between the two variables fatigue and Marital status shows a test of α^2 significant at a threshold of 5%. So, these two variables are positively correlated, therefore, married people are those who perceive more fatigue than singles.

Table 8: Correlation between PHYS and SMAT (Chi-square tests)

	Value	Degree of freedom	Signification asymptotique (bilatérale)
Pearson's chi-square	73,156[a]	44	0,004
Likelihood ratio	51,013	44	0,217
Linear association per linear	1,986	1	0,159
Number of valid observations	80		

at. 62 cells (100.0%) have a theoretical size less than 5. The minimum theoretical size is 0.21.

The results of the bivariate analysis seem to be relevant. Indeed, most ergonomic variables are strongly correlated with socio-occupational variables. This correlation encourages us to move to econometric modeling to better refine our study and to verify the empirical validation of our initial hypotheses.

3.4. Estimation of multiple linear regressions

The multiple regression analysis was conducted to identify the determinants of absenteeism. While the predictor variables in the model 1 involved age, ANC, EDUC, and SMAT (Socio-professional factors**)**, the model 2 included Noise; PHYS; MENT; LIGHT and ACCID (Ergonomic factors) as the explanatory variables. The findings of the regression analysis are respectively illustrated in Table 9 and 11.

3.4.1. Estimation of the model 1: Influence of Socio-professional factors on absenteeism

The results of the regression analysis are shown on the table 9:

Table 9: Results of the Regression Analysis (Model 1)

Modèle 1	Unstandardized coefficient		Standardized coefficient	T	Sig.	Collinearity Statistic	
	A	Standard Error	Bêta			Tolerance	VIF
Constant	8,303	2,973		2,792	0,007		
AGE	0,331	0,092	0,514	3,59	0,001*	0,497	2,011
ANC	0,199	0,130	0,179	1,528	0,131	0,740	1,352
EDUC	0,024	0,141	0,017	0,168	0,867	0,962	1,039
SMAT	1,735	1,582	0,168	1,097	0,015**	0,432	2,314

*: Significant at the rate of 1%; **: Significant at the rate of 5%

Moreover, the overall model was significant for sickness absenteeism ($p < 0.05$). R squared (R^2) is 0.302, meaning that the predictor factors of absenteeism can explain 30.2% of the total variance (see table 10).

Table 10: F-test of overall significance in Regression Analysis

R	R^2	R^2 adjusted	Standard error of estimate	Change in statistics				
				Variation de R^2	Variation de F	ddl1	ddl2	Sig. Variation of F
0,550	0.302	0,265	4,087	0,302	8,129	4	75	0,000

According to the table 10 (R^2 = 0.302, N = 80, FC = 8.129, K = 4) From the Fisher table, we can see the observed value of F = (4; 0.05; 80) = 2.49. As a result, we find that FC> F (k, α, n-k-1) = F (4, 0.05, 75) = 2.49 and therefore we can see that our first model is globally significant.

3.4.2. Estimation of the model 2: Influence of ergonomic factors on absenteeism

The results of the regression are shown in the following table 11:

Table 11: Results of the regression analysis (model 2)

Modèle 2	Unstandardized coefficient		Standardized coefficient	T	Sig.	Collinearity statistics	
	A	Standard error	Bêta			Tolérance	VIF
Constant	13,805	3,830		3,604	0,001		
Noise	0,071	0,046	0,178	1,550	0,125	0,771	1,298
PHYS	-0,065	0,047	-0,169	-1,381	0,046**	0,682	1,467
MENT	-0,024	0,111	-0,024	-,213	0,832	0,792	1,263
LIGHT	-0,001	0,001	-0,119	-1,083	0,282	0,847	1,181
ACCID	5,596	1,292	0,445	4,332	0,000*	0,960	1,041

*: Significant at the rate of 1%; **: Significant at the rate of 5%

Moreover, the overall model was significant for sickness absenteeism ($p < 0.05$). R squared (R^2) is 0.141, meaning that the predictor factors of absenteeism can explain 14,1% of the total variance (see the table 12)

Table 12: F-test of overall significance in Regression Analysis

R	R^2	R^2 adjusted	Standard error of estimate	Change in statistics				
				Variation de R^2	Variation de F	ddl1	ddl2	Sig. Variation of F
0,487[a]	0.141	0,083	4,567	0,141	2,422	5	74	,043

at. Predicted values: (constant), fatigue, number of accidents, luminance, stress, noise

In fact, according to the table 12, we notice that: R^2 = 0.141; N = 80; FC = 2,422; K = 5. From Fisher's table, we can see the observed value of F = (5; 0.05; 74) = 2.33. As a result, we find that FC > F (k, α, n-k-1) = F (5, 0.05, 74) = 2.33 and therefore we can see that our second model is globally significant.

4. Result and Discussion

The estimation of the model 1 shows that only AGE and SMAT contribute significantly and positively to the prediction of absenteeism. This result is confirmed by other works. For example, Fritzsche L. and al. (2014), for the car manufacturing, found that an increased average age and

marital status was strongly associated with longer absenteeism and increased error rates.

It should be noted that we did not find a significant effect of the level of education and seniority of the employees on their absenteeism behaviour in the case of this large company in the agri-food sector. However, several empirical studies have shown the importance of these two factors in explaining absenteeism behaviour. For example, the statistical analysis has done by Tekin A. (2014) shows the factors that influence absenteeism in a sample of workers from a leading textile company in Turkey. According to this study, the absenteeism was significantly correlated with age, tenure, type of work and marital status. Another interesting finding was that absenteeism was found to be positively and significantly related to astrological signs. Finally, the regression analysis revealed that tenure and level of education were found to be the significant predictors of absenteeism.

Consequently, it seems to be cautious in interpreting the results and taking into account the intrinsic characteristics of the company and its field of activity to identify other reasons for absenteeism. Nanjundeswaraswamy T. S. (2016) shows that other factors like wages, other source of income, and bad relationship with supervisors were contributing to the major absence of employees from work. This clearly indicates that work environment, relation and co-operation, facilities provided by the organization and job satisfaction were the main components which are causing the employee absenteeism.

Similarly, the estimation of the model 2 shows that only PHYS and ACCID contribute significantly and positively to the prediction of absenteeism. This result is confirmed by other studies. For example, Fritzsche L. and al. (2014), for the car manufacturing, found that high physical workload was strongly associated with longer absenteeism and increased error rates. Furthermore, Melamed et al. (1989) show that simultaneous exposure to a number of unfavorable working conditions and environments, known as ergonomic stress levels (E-S-L), has an impact on workers' accident and sickness rates. The factors that determined E-S-L were body movement and posture, physical exertion, active hazards and environmental stressors. Thus, innovations in process and organization related to ergonomics and focused on compliance with safety standards and improvement of the physical environment in the workplace through adaptations of machinery and equipment and the implementation of new work management methods should enhance the value of workers and their commitment to quality and productivity. Furthermore, controlling for physical workload and age diversity were related to shorter absenteeism.

Hignett S. and al. (2005) show the importance of participatory ergonomic interventions and summary examples from a range of industries, including health care, military, manufacturing, production and processing, services, construction and transport. It includes interventions at the macro (organization, systems) and micro (individual) levels. This approach gives workers the opportunity and power to use their knowledge to solve ergonomic problems related to their own working activities. The result is better communication between staff and management, reduced risk factors, and the development of new processes and designs for work environments and activities. Finally, these authors describe three cases in Canada and Japan where the participatory project was led by occupational health teams, suggesting that occupational health practitioners can play an important role in participatory ergonomics projects.

5. Conclusion

Absenteeism of employees in the agro-food industry is one of the major threats to the organization as well as employees. Absenteeism of employees not only influences on poor utilization of resources, it also influences on the gross income of employees, this reduced gross income of employees leads poor purchasing power of employees, poor family harmony, health and more physical and psychological stress. If we reduce the employee absenteeism, it leads to high purchasing power finally nation growth domestic products (GDP) rate increases [Nanjundeswaraswamy T. S. (2016)].

There is a large body of empirical research to identify the factors influencing absenteeism. The purpose of the current study is to contribute to the literature by analyzing the degree to which employee absenteeism is correlated with socio-professional variables in one hand and ergonomic variables on other hand in a sample of employees from the Compagny "La Rose Blanche". Lastly, Two models are proposed for evaluate the relative contribution of the independent variables to the prediction of employee absenteeism. It is possible to draw some conclusions from the present results.

The statistical analysis indicated that the increased age was significantly and positively correlated with absenteeism meaning that absenteeism level of older employees was higher than that of younger employees. This result is confirmed by other studies. For example, Weichel and al. (2009) show that the increasing average age of the workforce may lead to higher absenteeism and decreased productivity, especially in the manufacturing industry where most jobs are associated with high-physical workloads, low-decision latitude and short cycle times. Fritzsche L. and al. (2014) have proposed a solution that would deal with this issue. Practitioners are prompted to reduce ergonomics risks in production and introduce age- and gender-mixed teams to sustain productivity.

Also, our statistical analysis indicated the significant impact of marital status and the number of dependents on the frequency of absenteeism. This result is confirmed by other studies. According to Borda R. G. and Norman I. J. (1997) research, marital status are variables that represent affinity responsibilities and are considered a major contributor to absence.

Similarly, ergonomics addresses the ways to create a working environment that optimizes the worker's wellbeing and the overall performance of the organization. Workplace ergonomics depends on physical (e.g. repetitivity of work, the weight of handled loads), cognitive (e.g. variability and complexity of tasks) and organizational factors (e.g.

communication patterns, teamwork). Industrial ergonomics systems are designed to improve productivity and the work environment. Different regulations are considered to protect the health, safety and to improve the conditions of workers. In the field of clothing, the working conditions are still painful and cause occupational diseases especially the musculoskeletal disorders.

Previous studies have widely investigated the impact of human factors and worker behaviours on company performance and expected outcomes [Wygant R. M. et al., (1993); Resnick M. L. and Zanotti A. (1997); Shikdar, A. A., Sawaqed N. M. (2004); Dul J. and al. (2004); Othman M and al. (2012); Xu Z. and al. (2012)]. Based on such principles, the applied science of ergonomics analyses the importance of workstation and work process design and the effects on worker safety and health. Past and recent studies have widely discussed how ergonomics can optimize human performance and overall work system performance [Dul J. & Neumann W. P. (2009)]. The design of ergonomic workplaces and jobs reduces injury and absenteeism rates, while improving productivity, quality and reliability [Botti L. et al., (2014)]. Previous studies have shown that musculoskeletal disorders (MSDs) lead to significant loss of productivity due to higher absenteeism and injury rates [Cheshmehgaz H. R. and al. (2012)].

If absenteeism at work become a complex problem that can be caused by a variety of factors, which include job dissatisfaction, organizational environment, or personal problems, it is important to create a brief profile of absenteeism in companies in the context of the COVID-19 pandemic. The results found by Grigore O. M. (2020) revealed that employees working are prone to absent as a result of attitudinal factors, in particular, autonomy linked to decision making. Organizational factors did not have a significant contribution regarding absenteeism because managers offered support when employees faced difficulties. Working for a living was the personal factor that stood out; this thing being mainly influenced by the current pandemic period.

Radic A. et al. (2020) proposed a study aimed to gain a deeper understanding of the psychological effects of the COVID-19 pandemic on cruise ship employees stuck at sea. The findings obtained from their statistical analysis revealed that COVID-19 pandemic has managed to erase the feeling of joy from cruise ship employees who were stuck at sea while exposing weakness of cruise line companies such as poor human resource management leadership. Then, they conclude that is important for cruise lines to develop a comprehensive strategy to help their employees who are experiencing anxiety disorder and depression. Cruise companies need to hire onboard psychologists who could help employees with anxiety and depression disorders. Cognitive behavioral therapy (CBT) is a well-established psychological treatment with robust effectiveness in treating depression and anxiety disorders. Onboard leaders have to be approachable and they have to recognize crew members who are experiencing anxiety and depression.

These findings are important given the significant proportion that the current COVID-19 pandemic has reached today. COVID-19 influenced the employees' decision to miss a workday, the fear of getting infected, or the stress related to the pandemic outlined a behavior known as presenteeism or digital absenteeism for those that worked from home. Implementing social distancing rules prevented physical absenteeism, employees perceived the workplace as a safe environment.

Finally, and regarding the relation of process and organisational innovation in ergonomics and the reduction of absenteeism, Sabadin R. K. and al. (2020) highlight that they improve the performance of the organisation, the achievement of goals and the reduction of losses for the company. Indeed, the monitoring of absenteeism and the occurrence of multiple process and organisational innovations in ergonomics is a necessary and reliable method for evidencing changes and transformations, both for productive processes, as well as for data on absenteeism related to workers, which occurs in the business units. In this scenario, innovations with an ergonomic focus contribute to the satisfaction and well-being of employees, in addition to promoting a higher quality of life and less damage to health.

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