Journal of Contemporary Issues in Business and Government Vol. 30, No. 01, 2024
https://cibgp.com/
P-ISSN: 2204-1990; E-ISSN: 1323-6903

ASSESSING THE EFFECTIVENESS OF ISO 45001 STANDARD ON SUSTAINABLE INNOVATION MANAGEMENT IN A CERTIFIED ALGERIAN PORT COMPANY-CASE STUDYOF INTERNATIONAL DJEN DJEN PORT-

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Received:12/2023 Published: 02/2024

ABSTRACT:

The ISO 45001 relates to sustainable development goals. ISO 45001 management standard focuses on occupational health and safety. This study was conducted to examine the relationship between ISO45001 standards and sustainable innovation management about the implementation of the ISO 56000 standard in the port company DJEN DJEN, Jijel, Algeria. Data was collected using questionnaires from a random sample 26 responds. A quantitative methodology has been chosen and treated by SPSS.v26. The findings imply that the port is already certified of ISO 45001 standard in order to consistently balance the economics with the environment and enhance skills and staff's involvement in the company.

Keywords: innovation management, sustainable development, ISO45001, company.

1. INTRODUCTION

Every company prioritises having a productive and safe workplace. Nonetheless, workplace fatalities and accidents do occur. ISO 45001 was designed by a council of occupational health and safety specialists. This standard defines the components of a management system for occupational health and safety management.ISO45001 focuses on the following sustainable development goals

P-ISSN: 2204-1990; E-ISSN: 1323-6903

in order to promote a safer workplace: Implementing ISO 45001 can help to support the United Nations' SDGs. Organizations may now use health and safety management guidelines to limit the number of workrelated fatalities and accidents (Practice, 2022).

And for this reason, innovation is fully attached to environment because these two elements make a vital and a modern company which can survive in an uncertain economic world in the future.

In 1987, The World Commission on Environment and Development has introducing the term of sustainability as “the successful meeting of present social, economic, and environmental needs without compromising the ability of future generations to meet their own needs” (Gobble, 2012).

As a result, the notion of sustainable development has grown strongly in recent years, with the goal of preserving economic, social, and environmental concerns (Chofreh et al., 2018).

Likewise, Sustainable development fits very well with innovation models in terms of renewing products and also studding their impacts on the world because it actually plays a big role in creating business advantages for companies and improving the way they act. This is why sustainable development fits very well with innovation models in terms of renewing products and also studding their impacts on the world.

To restrict the concept of sustainability better because of the vast scope; this study focus on the social pillar develop measures to improve society's access to fundamental resources for a decent existence with health, safety, and education. Companies can adopt initiatives to respect diversity and equal opportunities, health and safety at work, ethical and transparent actions, philanthropy, and social aid to the community in which they operate, among other things, in order to promote integration and social fairness (Nunhes et al., 2021).ISO 45001 is a standard created to assist companies manage their occupational health and safety risks, improve their OH&S performance, and integrate other aspects of health and safety, such as workforce health, in order to gain greater high level of commitment to sustainability (KACZMAREK, 2017).Moreover, The ISO 45001 standard is often regarded as the most effective tool for ensuring economic progress.

P-ISSN: 2204-1990; E-ISSN: 1323-6903

The purpose of ISO 45001 is to decrease workplace-related injuries and illnesses. Because it focuses on the following sustainable development goals: Good Health and Well-Being, Decent Work and Economic Growth, in order to create a safer workplace. Internally and externally context challenges, including cultural, social, political, and legal aspects, introduction of new competitors, stakeholders, suppliers, partners, and providers, new technologies, organizational culture, form and extent of legal agreements, work hours arrangements, and so on, are all addressed in the ISO 45001 standard (Darabont et al., 2017).

According to ISO, ISO 45001:2018 brings added value in terms of sustainability in companies, since the certification will have an impact on the better performance of employees, on stimulating innovation, on the involvement of all stakeholders and the continuous improvement of their processes (Morgado et al., 2019).

While some common methods are already in place, ISO 45001 adoption was more simpler if the company already has an ISO Management System (such as ISO 9001 or ISO 14001).ISO 45001 is centered on PDCA cycle (Plan-DoCheck-Act), which again is usual to others management systems and treats health and safety management as an essential aspect of effective management in particular (Neag et al., 2020b).

And then, it is underlined that the subject dealt with constitutes a topical subject which is developing rapidly, in particular with the progress experienced by the Algerian logistics sector on the one hand and the expansion of the role of the involvement of companies in the certification of activities in the other hand.

The overall interest of this study is to assess the impact of the ISO 45001 standard already established on the increase of innovation management processes on a certified company. As a result, this study aims to perform a case study of DJEN DJEN port international to evaluate the impact of ISO45001 on innovation management processes.

This case study of is chosen for the study because of two reasons; at first, DJEN DJEN port is the largest port in Algeria and ranks among the largest port works in the Mediterranean.Thus, it has been certified for its SMI integrated management system since November 2018: ISO 45001 version 2018, this worthily testifies to

P-ISSN: 2204-1990; E-ISSN: 1323-6903

the Port's commitment to constantly reconciling the economy with the environment and to improving the safety of people, goods and facilities.

Against this background, the guiding research question is:

"What is the reality of the ISO 45001 standard and its impact on innovation management processes in the Algerian Djen Djen port company? "

Based on this guiding question, it is hoped that this study will answer the following questions:

Q1: what is the relation between innovation management and sustainability in the company?

Q2: how ISO 45001 standard can impact innovation processes in the company?

Therefore, this research makes the following hypothesises:

H1: Owing to the positive relationship between innovation management and sustainable growth.

H2: ISO 45001 have a positive impact on innovation management processes.

This article is structured as follows: The first part explains literature review and the methodology used. Next, we find results of our survey talking about innovation and sustainable growth. Then, the fourth contains the discussion based on the results derived from this research and finally the last part contains the conclusion of the study.

2. LITERATURE REVIEW

According to Lee et al. (2020b), the occupational accident rate decreased in Korea after the introduction of Occupational Health and Safety Management System (OHSMS). For the effective implementation of the ISO45001 standard, emphasis is placed on social demand, recognition training as part of management, and the reduction of certification and consultancy costs to promote the introduction of ISO45001.Incentives such as insurance premium reductions and exemptions from health and safety checks are needed.

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In research from Hua et al. (2021), the findings demonstrate that the port's dangerous cargo explosion was caused by a complex set of causes, including management, human factors, environmental elements, and infrastructure factors. The study can help port businesses decrease hazardous cargo accidents at ports and give a strong foundation for companies to develop emergency management and decision-making techniques for dangerous cargo incidents at ports.

In a particular study, the authors looked at how the International Organization for Standardization (ISO) 45001 was used in hospitals during the COVID-19 epidemic. They discovered that ISO 45001 can be beneficial to medical personnel's occupational health and safety. Instructing hospitals on what to detect threats (COVID-19), assess their risks, and adopt appropriate preventative and control methods is critical and necessary.

2.1 Critical analysis

His study provides significant contributions. First, though research on the impact of quality management on sustainability has been extensive for more than a decade, only a limited number of studies focus specifically on the impact of quality management on green innovation. Green innovation is one of the key factors to achieve environmental sustainability (Dangelico, 2016). One way in which companies can contribute to the achievement of environmental sustainability objectives is the development of green products. Due to its doubleexternality nature and importance to sustainable development, green innovation deserves further investigation (Rennings, 2000, Dangelico, 2016, Li et al., 2017). To the best of our knowledge, this study is among the first to theoretically and empirically explore the impact of quality management on green innovation. Second, on the basis of institutional theory, the moderating effects of environmental regulation are evaluated. China currently faces increasingly serious environmental problems with a lax regulation, which is important to test whether the government is playing the role it should be.

Thus, only a few sources have been found fully explaining the application of ISO45001 principles. Then, there is lack studies combining the two terms: innovation management and iso45001 especially in ports where we find a lot of work accidents. Thus, this paper researches the impact of integrating ISO 45001 standards after being certified on innovation management processes. Moreover,

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the goal of this paper is to explore how a large port-export company deal with sustainable development through implementing the principals of innovation management.

METHODOLOGY

After we presented in the previous two chapters the various theoretical concepts related to the study variables, projecting these concepts to reality, we will conduct a study based on a questionnaire that was prepared for this specific purpose.

Sample tool: The questionnaire was distributed to the different human resources of the Algerian port company of Djen Djen,Jijel, Algeria., and it was designed based on previous studies related to the subject. Divided: The first section: includes personal data, namely: gender, age, experience, job title and department. The second section: included two axes to identify the impact of ISO45001 certification on sustainable innovation in the company.

From one hand, the first axe includes 14 items talking about sustainable development pillars and innovation management capacity. On the other hand, the second axe is about ISO45001 application and its impacts presented by 15 items.

A 5point Likert scale was used, ranging from ‘strongly disagree to ‘strongly agree’, to gather the interviewees’ sentiment towards each proposition.

After collecting these questionnaires and entering them into the statistical program SPSS V26. We will get a set of data which will be analysed statistically using many Statistical methods to know the reality of the study sample's opinions about the sections of the questionnaire, in addition to their use in the test study hypotheses.

RESULTS AND DISCUSSION

An overview of the respondents who are sampled and reply to the questionnaire is given by the results of the frequency descriptive data processing for the characteristics of the respondents.

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In order to analyze the study sample and test the validity of the hypothesis using 26.V. SPSS program, using the solution several statistical methods, through which we were able to present the following results:

4. 1. Analysis of the characteristics of the study sample: The following is the analysis of demographic characteristics for the study sample, the results showed the following:

Table1. characteristics of responds

		Frequency	percent
Gender	Male	16	61.5
	Female	10	38.5
	Total	26	100.0
Age	Between 30 and 40 years old	15	57.7
	Between 40 and 50 years old	10	38.5
	Between 50 and 60 years old	1	3.8
	Total	26	100.0
Experience	Between 5 and 10 years	9	34.6
	Between 10 and 15 years	10	38.5
	15 years and over	7	26.9
	Total	26	100.0
Job title	head of department	5	19.2
	head of service	5	19.2
	Administrator	13	50.0
	Other	3	11.5
	Total	26	100.0
Department	Direction	4	15.4
	Humaines ressources	6	23.1
	Finances	3	11.5
	IT	1	3.8
	Other	12	46.2

P-ISSN: 2204-1990; E-ISSN: 1323-6903

	Total	26	100.0

Given that the organisation is a port, Table 1 demonstrates that the male gender makes up 61.5% of those participating in the execution of innovation management towards sustainability initiatives.

According to Table 2, the majority (57.7%) of the study participants are between the ages of 30 and 40, followed by those between the ages of 40 and 50.Young adults make up the majority of the senior managers and decision-makers in these two categories that apply innovation management.

According to Table 3, the majority of survey participants (38.5%) have experience for a period Between 10 and 15 years. This demonstrates that they are sufficiently informed on the innovation management capability of the company and its relation with sustainable development.

The majority (50%) of research respondents are administrators, according to the findings in Table 4. This shows that the majority of the respondents were able to read the questions, comprehend them, and then offer thoughtful comments.

According to the results in Table 5, the majority (46.2%) of the respondents to the research belong to the others department such as captaincy, domains and maintenance. This indicates that the study affected almost all the departments of the port and also, they are concerned about management and innovation and sustainable development by using these two concepts in their work.

4.2 Testing the reliability and validity test: Cronbach's alpha test was used to measure the extent of Stability of the study tool.

Table2: measuring the stability and validity of the variables

Reliability Statistics	
Cronbach's Alpha	N of Items
.887	28

The value of Cronbach's alpha coefficient is high, because it is higher than the accepted value 0.6 Referring to the validity coefficient of the study tool, it shows that the scale measures what it was designed to measure It is calculated by calculating the square root of the stability coefficient, which is known as the test

P-ISSN: 2204-1990; E-ISSN: 1323-6903

validity. The test is true It is noticeable that the credibility of the test is very high, which indicates that a good measure to study.

4.3 Testing the hypotheses of the study:

The respondents were asked to give their opinion on questions regarding the relation between between the application of ISO45001 and sustainable innovation.

4.3.1 Correlation measurement between the application of ISO45001 and sustainable innovation:

Hypothesis: 'There is a linear relationship between the application of ISO45001 and sustainable innovation. If this hypothesis is correct, we put the following hypotheses:

H0: There is no linear relationship the application of ISO45001 and sustainable innovation**.**

H1: There is a linear relationship between the application of ISO45001and sustainable innovation.

To determine the degree and direction of the correlation between the application of ISO45001 and sustainable innovation, correlational analysis using the Pearson method was conducted.

The results are shown in Table 7.

Correlations

		Iso 45001 application	Sustainble innovation
Iso 45001 application	Pearson Correlation	1	.274
	Sig. (2-tailed)		.175
	N	26	26
Sustainble innovation	Pearson Correlation	.274	1

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	Sig. (2-tailed)	.175	
	N	26	26

Table 7 gives a Pearson correlation coefficient of 0. 274, with a p-value of 0.175. P > 0.05 This shows that the correlation coefficient is statistically insignificant. Thus, we accept the null hypothesis H0 and reject the existence hypothesis H1 . The coefficient shows the existence of a positive association between the application of ISO45001 standards and sustainable innovation in the company, which is statistically insignificant.

4.3.2 Regression Analysis of the application of ISO45001 and sustainable innovation:

The research sought and generated regression equation on the application of ISO45001 and sustainable innovation. This led to a regression model whose coefficients are discussed in the subsequent sub-themes.

4.3.2.1 Model Summary of Regression of the application of ISO45001 and sustainable innovation:

The model summary sought to determine how the application of ISO45001 standards as predictor significantly or insignificantly predicted sustainable innovation. The regression model summary is presented in Table 8.

Table8. Model summary of the application of ISO45001 and sustainable innovation:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.274[a]	.075	.037	.51102	.075	1.949	1	24	.175

a. Predictors: (Constant), iso

Table 8 of the model summary shows that there was a strong positive correlation

P-ISSN: 2204-1990; E-ISSN: 1323-6903

(R=0. 274) between ISO45001 application and sustainable innovation with those predicted by the regression model. In addition, only 7.5% of the variation on sustainable innovation was explained by the application of ISO 45001 certification while the remaining 92.5 % is explained by other variables not in the model.

5.4.2.2 Regression Coefficient of the application of ISO45001 and sustainable innovation:

The study sought to establish whether there was an impact of the application of ISO45001 on sustainable innovation. The regression coefficient results are presented in Table 10.

Table10. Regression Coefficient of the application of ISO45001 and sustainable innovation:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.984	.452		6.608	.000
	iso	.161	.116	.274	1.396	.175

a. Dependent Variable: inov

Table (10) show, the level of significant correlation between ISO 45001application and sustainable innovation management (sig) was 0.175, its bigger than 0.05. So, there is no significant correlation, between ISO 45001application and sustainable innovation management. The table also points out that the regression equation between ISO45001 application (x) and sustainable innovation (y) can be written by: Y= 2.984 +0.161x

Conclusion

Based on what was presented through the theoretical and applied study, the following results were reached: There is a positive impact of the ISO 45001 certification on sustainable innovation; from one point of view.it looked at the

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study sample, and this indicates that whenever there was an enhancement and interest in the ISO 45001, social dimensions of sustainable development will increase the innovation process at the port company.

The evaluation of the research sample of the ISO 45001 and sustainable innovations to them by DJEN DJEN Port Company was positive.

The results of the study showed that there is no significant relationship between ISO45001 certification and sustainable innovation, and this may explain that ISO 45001 only focus on the social pillars of sustainable innovation by protecting employees in their workplaces and not on the economic and environmental innovations.

Recommendations:

Workers must be properly trained prior to operating any type of lifting equipment. A competent person must also be involved in planning the lift to ensure safety and efficiency.

The ISO45001 Standard aligns specifically with social pillars including Good health and well-being, Gender equality, decent work and economic growth and Industry, innovation and infrastructure.

REFERENCES

1. Abulrub, A. H. G., & Lee, J. (2012). Open innovation management: challenges and prospects. *Procedia - Social and Behavioral Sciences*, *41*, 130–138. https://doi.org/10.1016/j.sbspro.2012.04.017
2. Altenburg, T., & Pegels, A. (2012). Sustainability-oriented innovation systems – managing the green transformation. *Innovation and Development*, *2*(1), 5–22. https://doi.org/10.1080/2157930x.2012.664037
3. Chofreh, A. G., Goni, F. A., & Klemeš, J. J. (2018). Sustainable enterprise resource planning systems implementation: A framework development. *Journal of Cleaner Production*, *198*, 1345–1354. https://doi.org/10.1016/j.jclepro.2018.07.096
4. Darabont, D. C., Antonov, A. E., & Bejinariu, C. (2017). Key elements on implementing an occupational health and safety management system using ISO 45001 standard. *MATEC Web of Conferences*, *121*, 11007.

P-ISSN: 2204-1990; E-ISSN: 1323-6903

https://doi.org/10.1051/matecconf/201712111007

5. Gobble, M. M. (2012). Innovation and Sustainability. *ResearchTechnology Management*, *55*(5), 64–67. https://doi.org/10.5437/08956308x5505005
6. Hua, W., Chen, J., Qin, Q., Wan, Z., & Song, L. (2021). Causation analysis and governance strategy for hazardous cargo accidents at ports: Case study of Tianjin Port's hazardous cargo explosion accident. *Marine Pollution Bulletin*, *173*, 113053. https://doi.org/10.1016/j.marpolbul.2021.113053
7. KACZMAREK, M. J. (2017). Sustainable Development and New Revision of ISO Management Standards. *DEStech Transactions on Social Science, Education and Human Science*, *icss*. https://doi.org/10.12783/dtssehs/icss2016/9113
8. Leach, M., Rockström, J., Raskin, P., Scoones, I., Stirling, A. C., Smith, A., Thompson, J., Millstone, E., Ely, A., Arond, E., Folke, C., & Olsson, P. (2012). Transforming Innovation for Sustainability. *Ecology and Society*, *17*(2). https://doi.org/10.5751/es-04933-170211
9. Lee, J., Jung, J., Yoon, S. J., & Byeon, S. H. (2020a). Implementation of ISO45001 Considering Strengthened Demands for OHSMS in South Korea: Based on Comparing Surveys Conducted in 2004 and 2018. *Safety and Health at Work*, *11*(4), 418–424. https://doi.org/10.1016/j.shaw.2020.08.008
10. Lee, J., Jung, J., Yoon, S. J., & Byeon, S. H. (2020b). Implementation of ISO45001 Considering Strengthened Demands for OHSMS in South Korea: Based on Comparing Surveys Conducted in 2004 and 2018. *Safety and Health at Work*, *11*(4), 418–424. https://doi.org/10.1016/j.shaw.2020.08.008
11. Maier, D., Maier, A., Aşchilean, I., Anastasiu, L., & Gavriș, O. (2020). The Relationship between Innovation and Sustainability: A Bibliometric Review of the Literature. *Sustainability*, *12*(10), 4083. https://doi.org/10.3390/su12104083
12. Morgado, L., Silva, F., & Fonseca, L. (2019). Mapping Occupational Health and Safety Management Systems in Portugal: outlook for ISO 45001:2018 adoption. *Procedia Manufacturing*, *38*, 755–764.

P-ISSN: 2204-1990; E-ISSN: 1323-6903

https://doi.org/10.1016/j.promfg.2020.01.103

13. Neag, P. N., Ivascu, L., & Draghici, A. (2020a). A debate on issues regarding the new ISO 45001:2018 standard adoption. *MATEC Web of Conferences*, *305*, 00002. https://doi.org/10.1051/matecconf/202030500002
14. Neag, P. N., Ivascu, L., & Draghici, A. (2020b). A debate on issues regarding the new ISO 45001:2018 standard adoption. *MATEC Web of Conferences*, *305*, 00002. https://doi.org/10.1051/matecconf/202030500002
15. Nunhes, T. V., Campos, T. L. R., Francisco, F. E., & Oliveira, O. J. D. (2021). Contributions of Annex SL to Corporate Sustainability. *Frontiers in Sustainability*, *2*. https://doi.org/10.3389/frsus.2021.745350
16. Practice, B. (2021, June 1). *How Can ISO 45001 Improve Sustainable Development*. Best Practice. https://bestpractice.biz/how-can-iso-45001improve-sustainable-development/
17. Truffer, B., & Coenen, L. (2012). Environmental Innovation and Sustainability Transitions in Regional Studies. *Regional Studies*, *46*(1), 1–21. https://doi.org/10.1080/00343404.2012.646164