



Using a Decent Working Environment, International Working Practices, and Advanced Technologies to Mitigate Labor Risk of COVID-19 pandemic.

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ABSTRACT

COVID-19 has huge side effects on people living around the world. All countries around the globe have decided to lock-down their organizations to minimize the rate of COVID-19 outbreak. The international standards, practices, and recommendations from specialized bodies like the World Health Organization (WHO), International Labor Organization (ILO), and International Monetary Fund (IMF) adopted by all countries. This research aims to explore how working in a decent environment that applying the best safety procedures, working arrangements, international measures, and advanced technologies helps organizations to mitigate the workers' risk, especially during the COVID-19 pandemic. The research uses a literature review as well as empirical evidence and results provided in the secondary data prepared by the ILO database. The study finds a positive correlation between the adoption of international measures, advises practices and, the mitigation of the negative impact of COVID-19 on the work as well as employees. The literature reviewed was also used in this study and it shows a positive relationship between employees' health & safety and the application of international health & safety standards, measures, flexible work arrangements, Artificial Intelligence (AI), and new technologies at work.

Keywords: Decent Working Environment, International Practices, Advanced Technologies, COVID-19

1. INTRODUCTION

Many tools provided by management to help organizations create and sustain a healthy and safe working environment. There are many working strategies like flexible working arrangements, teleworking, telecommuting, compressed-week hours, etc. used by organizations to help employees work in safe and decent working conditions. These strategies help employees to work safely, healthy and doing meaningful work. The decent working as a concept developed by the ILO to reflect the working environment, working conditions, and security in the workplace (ILO, 1999). Many authors used the decent work concept and its indicators to raise the issue of health and safety in the workplace (Anker, Chernyshev, Egger, & Mehran, 2003; Auer & Somavia, 2003; Somavia & General, 1999; Thore & Tarverdyan, 2009; Tomei & Belser, 2011; Vosko, 2002). The implementation of

decent work regulations might help organizations to reduce the injuries rate, illness, disease infection. It helps to create a working environment where employees feel safe and healthy. The application of ILO working practices as well as WHO protocols might lead to reducing any risk related to the workplace especially during and after COVID-19.

This paper aims to highlight the main reasons that lead to create a decent working environment. The issue of health and safety is very important to explore specially during the COVID-19 pandemic. The findings of this paper might lead to raise the organizations' awareness about the importance of using a decent working environment and adopting the latest health and safety procedures.

2. LITERATURE REVIEW

Health and safety management is one of the fundamental functions that is used by the Human Resource Department in all organizations. The regulations of health and safety are applied in all sectors and organizations types. The general mission of health and safety office at all organizations is to make all stakeholders safe and healthy. Besides, the health and safety function provides stakeholders with welfare tools and facilities that make them more productive. These tools include safe working design, light, equipment, washing, cleaning etc.

2.1 Health Procedures at Work

Many authors define the concept of health at work. The majority of these concepts concentrate on employees' and workers' protection from any illness resulting from their working environment (Dawson, Bamford, Willman, & Clinton, 1988; Hughes & Ferrett, 2011). Many authors tried to study the effects of health arrangements on employees, workers, stakeholders, and organizations (Bjerkkan, 2010; Murphy, Kiernan, & Chapman, 1996; Pouliakas & Theodossiou, 2013; Vassie, Tomàs, & Oliver, 2000; Walters & Nichols, 2007). Effective health procedures and policies might affect the rate of illness, accidents, and disease infections. According to a recent report by ILO, about 2.3 million workers have lost their lives because of the poor health system in organizations. This result leads to high social and economic costs (ILO, 2015). Human resource management plays a crucial role to formulate and implement an organization's health policies as well as strategies. The majority of studies found a correlation between effective health procedures and illness at work (Calnan, 1987; Dixon, Goldberg, Lehman, & McNARY, 2001; Nettleton, 2006). The negative effect of improper health procedures might increase the lost-working hours, absenteeism rate, and decreasing overall productivity. Countries around the globe use to follow international health protocol for opening their organizations and returning to work.

H1: Effective health procedures lead to decrease the illness rate at the workplace.

2.2 Safety Procedures at Work

Besides, many authors have studied the impact of safety procedures at work. They used to study the impact of safety arrangements on the workplace and employees' perceptions (Edmondson, 2002; Griffin & Neal, 2000; Nahrgang, Morgeson, & Hofmann, 2011; Neal & Griffin, 2004). The majority of these studies have found a correlation between safety arrangements and the level of illness, accidents, and injuries (Buica, Antonov, Beiu, & Iorga, 2012; Lu, Li, Mead, & Xu, 2020; Seo, 2005; Shalini, 2009; Wei, Zhou, Wang, & Wu, 2015). These studies also have studied the costs of ineffective safety arrangements on employees, workers, organizations, and economics. Many organizations use to formulate

and implement a safety policy that aligns with their mission and strategy. The effective implementation of this strategy might reduce accidents, illness infections, and stakeholders' lives. Keeping business and stakeholders safe might lead to having a competitive advantage in the market.

H2: Effective safety procedures lead to decrease the accidents and injuries rate at the workplace.

2.3 Flexible Work Strategies

Organizations around the world started to adopt new working arrangements to meet external environmental changes. The majority of organizations used these Flexi-arrangements to create a healthy, safe, family-friendly, employee's life and conducive working environment (Dex & Scheibl, 2001; Lewis, 2003; Maxwell, Rankine, Bell, & MacVicar, 2007; Russell, O'Connell, & McGinnity, 2009). It seems very interested for organizations to use these strategies, especially during the COVID-19 pandemic. These flexible systems help employees to maintain social distancing while they perform their jobs. It also helps employees and workers to create a balance between their family life and job requirements (Berkery, Morley, Tiernan, Purtill, & Parry, 2017; Kotey, 2017; Maxwell et al., 2007).

Teleworking, telecommuting, mobile-work, satellite office as new work arrangements help employees to work remotely and protect themselves from diseases and infection. Studies found great benefits like increasing productivity, lowering absenteeism, lowering turnover, protect employees from physical presence infection, and better morale (Bailey & Kurland, 1999; Offstein, Morwick, & Koskinen, 2010). These arrangements might protect employees during a crisis like the COVID-19 pandemic.

H3: Adoption of flexible working strategies lead protect employees from disease infections at the workplace.

2.4 International Work, Health and Safety Practices

Many international organizations used to recommend on regular bases certain health & safety procedures for organizations around the globe. These standards and practices are adopted as part of the quality system of organizations. The quality management standards (ISO 9000), occupational health, and safety (OHSAS 18001) are examples of these standards and practices. Many organizations use to follow and integrate these standards into their daily working processes. Many studies explore the impact of these standards on health & safety issues (Bennett, 2002; De Oliveira Matias & Coelho, 2002; Dyjack & Levine, 1996; Honkasalo, 2000). International labor organization (ILO) use to update organizations about the best practices as well as labor standards to improve the employees' and workers' lives. The ILO standards and COVID-19 design to provide practical advice for organizations about health and safety issues during and after COVID-19. If organizations follow these recommendations and apply them effectively, they might reduce the risk of infection among their workers. As shown in table (1), ILO developed many indicators to help organizations manage, assess, and monitors the level of work protective regularly.

H4: Adoption of work, health and safety practices lead improve health and safety at the workplace.

Table (1): Overview of Decent Work Indicators for Safe Work Environment

Statistical Decent Work Indicators	Concepts	Coverage	Preferred data source
SAFE-1. Occupational injury frequency rate, fatal - (M)	Occupational injury Occupational accident	Workers in the reference group	National systems for the notification of occupational injuries Administrative data Household surveys Establishment surveys
SAFE-2. Occupational injury frequency rate, non-fatal - (A)	Fatal and non-fatal occupational injury		
SAFE-3. Time lost per occupational injury - (A)	Days lost by cases of temporary incapacity		
SAFE-4. Labour inspection (Inspectors per 10,000 employed persons) - (A)	Employment Labour inspection	Employed persons	
Legal Framework Indicators			
L 14- Employment injury benefits			
L 15- Occupational Safety and Health (OSH) labour inspection			

Source: ILO

The ILO also focuses on advanced technologies, practices, and measures in work and how organizations integrate new technologies like robots, artificial intelligence, etc., in jobs with high risk for human beings. Several studies have explored how artificial intelligence as well as robots affect the job market and the working environment (Acemoglu & Restrepo, 2019, 2020; Chessell, 2018; Dauth, Findeisen, Südekum, & Woessner, 2017; Qureshi & Syed, 2014). Other studies found that the application of robots leads to safety improvement (Trevelyan, 1997). During the COVID-19 pandemic, many organizations in the healthcare industry use robots to minimize the risk of infections for their workers. World Health Organization (WHO) use to publish and circulate standards and practices to improve individual, group, organizations, public and countries from the spread of COVID-19 (WHO, 2019). They include Infection Prevention and Control Measures (IPC), which formulated to protect organizations from any possible spread of diseases. This medical advice provided by WHO is used as standards and best practices for all organizations to minimize and contain the risk of COVID-19 infection and outbreak at workplaces. The organizations' lockdown might affect countries economic in the short and long-term period. The WHO also has recommended the adoption of certain measures and practices. These measures might help countries and organizations to manage the side effects of COVID-19. These measures include testing & tracing, isolation, and care. According to WHO, if these measures followed and adopted it might reduce the costs of COVID-19.

A recent study by Society for Human Resource Management (SHRM) aims to navigate COVID-19 finds that over 1 in 4 of organizations allow workers to do their work remotely (26%) and to work from home full-time (29%). Table (2) summarizes the main findings in SHRM research and the international work practices adopted by organizations during and after COVID-19.

Table (2): Implementation Changes to Make Social Distancing Between Workers More Visible and Safety

Changes Strategies	% of Organizations adopted
Enforcing space seating in common areas	85
Reducing available seating in common areas	83
Setting limits on the number of employees in common areas	83
Spacing workstations further apart	79
Removing shared workspaces	78
Adding floor markers of physical barriers	71
Adding partitions between workers and customers	69

Source: SHRM, 2020

Also, the SHRM study finds the majority of organizations have started to implement health & safety measures to minimize the risk of COVID-19 after organizations' reopen. These measures are advised by WHO and other American experts in health & safety.

In a research on the costs of COVID-19, which was done by SHRM and Oxford Economics in May 2020, their findings show that as U.S. workers have lost an estimated \$1.3 trillion—roughly \$8,900 per worker. It seems high shock to the international economy generally and the American economy is specifically (SHRM Research, 2020).

Figure (1): Health & Safety Measures Implemented by American's Organizations



Source: SHRM, 2020

3. METHODOLOGY

This research aims to explore how working in a decent & safe environment by applying the best working arrangements and international measures might help organizations to mitigate the workers' risk, especially during the COVID-19 pandemic. The research uses a literature review method as well as empirical pieces of evidence through the secondary data provided by the ILO database. A searching method through Google Scholars focuses on the international journals that publish research related to the title of this study used by the researcher to cover relevant publications during 1987-2020. The keywords used in searching through Google Scholars include health & safety, decent work, flexible work strategies, robots, and artificial intelligence at work are used in this study. The literature searching and sorting find about 42 relevant studies published in recognized journals. Also, this research used the data provided by ILO, ILOSTAT database (2020). This data analyzed by ILO and prepared in statistical indicators relative to study variables. The adoption of

international work standards and practices used as independent variables and the work outcomes as the dependant variable.

Ref.	Reference Authors & Date	Decent Work, Health & Safety	Health Procedures and Employees Protection	Safety Procedures at work	Flexible Work, Health & Safety	International Practices and New Tech., (Robots, AI), Health & Safety
1	Acemoglu, 2019					+
2	Acemoglu, 2020					+
3	Anker, R., 2003	+				
4	Auer, P., 2003	+				
5	Bailey, N., 1999				+	
6	Bennett, D., 2002		+			
7	Berkery, E., 2017				+	
8	Bjerkkan, A. M., 2010					
9	Buica, G., 2012			+		
10	Calnan, M., 1987		+			
11	Chessell, D., 2018					+
12	Dauth, W., 2017					+
13	Dawson, S., 1988			+		
14	De Oliveira Matias, 2002					+
15	Dex, S., 2001				+	
16	Dixon, L., 2001		+			
17	Dyjack, D. T., 1996					+
18	Edmondson, A. C., 2002			+		
19	Griffin, M. A., 2000			+		
20	Honkasalo, A., 2000		+			
21	Hughes, P., 2011		+			
22	Kotey, B. A., 2017				+	
23	Lewis, S., 2003				+	
24	Lu, 2020			+		
25	Maxwell, G., 2007				+	
26	Murphy, D. J., 1996		+			
27	Nahrgang, J. D., 2011			+		
28	Neal, A., 2004			+		
29	Nettleton, S., 2006		+			
30	Offstein, E. H., 2010				+	
31	Pouliakas, K., 2013		+			
32	Russell, H., 2009				+	
33	Seo, D.-C., 2005			+		
34	Shalini, R. T., 2009			+		
35	Somavia, J., 1999	+				
36	Thore, S., 2009	+				
37	Tomei, M., 2011	+				+
38	Trevelyan, J., 1997					+
39	Vassie, L., 2000		+			
40	ILO, 1999	+				
41	Qureshi, 2014					+
42	ILO, 2015	+				
43	ILO, 2020	+				
	Total	8(19.0%)	9(21.5%)	9(21.5%)	8(19.0%)	8(19.0%)

4. FINDINGS

According to a literature review investigation, there is evidence that creating a decent work environment might help organizations to reduce the risk of workplace injuries, death, accidents, and infections.

Also, the majority of research reviewed in this study found positive correlations between health&safety standards and the reduction of illness at the workplace. It finds that organizations with high safety standards are always associated with a low level of accidents, injuries, and death.

The study also finds that new working arrangements like teleworking, telecommuting, mobile working have positive effects on the spread of diseases as well as financial performance. It also finds that new technologies like artificial intelligence and robots might reduce the possibility of any risks and hazards in the workplace.

As shown in table(2), there are about 19.0% of the journals reviewed showed positive correlations between decent work and employees' health& safety. This result reflects the important role played by HR managers, managers, and supervisors for creating and maintaining a conducive working environment to save people and help them working healthily.

In the same table, results show that about 21.5% of the reviewed journals found positive relationships between the health's procedures and employees' health & safety situation. During and after this pandemic, it is highly recommended for all managers and workers to follow and comply with their health's policy, rules, and procedures to work in a healthy& safe working environment.

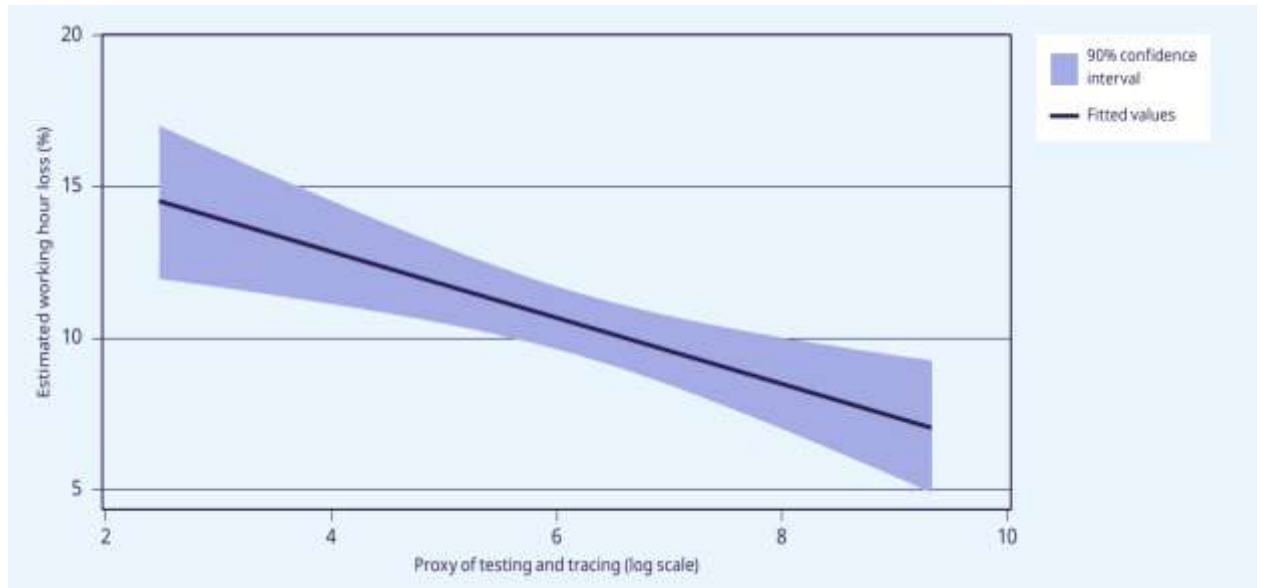
About 19.0% of the journals reviewed also found a relationship between safety procedures and the level of safety, 19.0% of the journals used in this study have found that flexible working arrangements like teleworking, telecommuting, and mobile working affect the employees and workers health positively.

Finally, the reviewed literature shows that about 19.0% of all journals used in this study have found a positive relationship between the organizations that used and apply international work standards, new technologies like robots and Artificial Intelligence(AI), and the level of employees' health and safety. It is highly recommended to use AI in all manufacturing sites to minimize any risk related to the workplace.

Table (3): Results and Findings from the Literature Review (1997-2020)

World Health Organization(WHO) and the International Labor Organization(ILO) have highly recommended adopting international safety procedures, measures, and recommendations. According to the ILO data that used in this research, testing and tracing as an international recommendation of WHO, might help organizations to reduce the loss in working hours by 50%. This is one of the direct impact of COVID-19 on workers' productivity. As it appears in figure(1), testing and tracing of infections are strongly correlated with the labor market disruption. ILO estimated that the average loss of hours for 45 countries with the lowest intensity of testing and tracing is around 14%, compared with 7% for those with the highest intensity(ILO,2020).

Figure (2): Expected loss in working hours (%) is strongly correlated with testing and tracing (45 countries)



Source: ILO database.

Figure (2), shows how the exceptional effect of COVID-19 on the working hours around the globe. This decrease in the working hours started in the first quarter of 2020 when countries started to adopt physical distancing measures. In the second quarter, the percentage increased with a high rate in America (13.1%) and Europe (12.9%). The figure shows the negative sequences for the COVID-19 when countries late in the implementation of safety regulations. Thus, the international labor market is negatively affected because of this change in working hours.

Therefore, when some countries started to adopt intensive testing and tracing, their businesses and organizations start to reopen and they improve the working hours as appeared in figure(1). This result also indicates that applying the international measures, standards, and practices related to health and safety might lead to improving the working environment and thus the labor market's outcomes.

Figure (3): Drop-in Working Hours in the First and Second Quarter of 2020.



Source: ILO database.

5. DISCUSSION&RECOMMENDATIONS

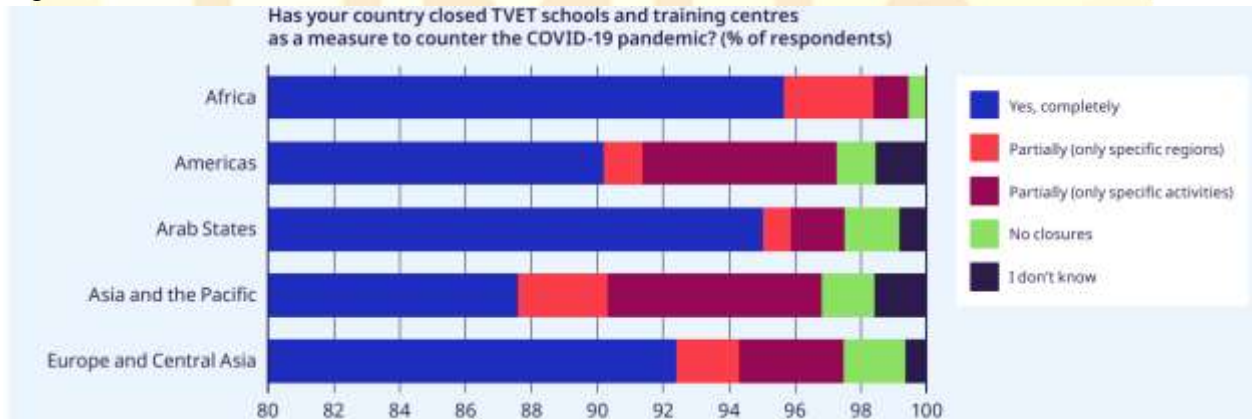
According to literature review investigation, and pieces of evidence collected from the ILO, WHO data, there is a great need to apply the decent work guidelines, the best flexible working strategies as well as the international practices as recommended by ILO, WHO, and ISO.

Manystudiesused in the research have shown positive outcomes as aresult of applying the guidelines and standards recommended to create a decent working environment. This result requires that all organizations' management start to review their existing working environment to assess the weaknesses related to this environment. An evidence-based management system should be adoptedby using researches findings in daily management functions.

Different authors have found a positive impact on health and safety procedures on the labor market and the working environment. People at organizations are considered as the most valuable assets, therefore, we should make sure that they work health and safety.

Studies in the management field used in this research have shown the positive impact of the new working arrangements like teleworking, telecommuting, and mobile working which improve the level of injuries, accidents, illness, and infections. These working strategies should beadopted by all organizations especially during the lockdown stage. It seems very effective in all industries like education. The education sector is considered as the most affected sector during the COVID-19 pandemic. The below figure(3) supported this result. Also, this study also finds that using AI and Robots by many organizations help workers to be safe and productive.

Figure (3): The Closure of Educational Institutions.



Source:ILO database.

Studies reviewed in this research found a positive impact of applying the international practices, recommendations, measures, and quality standards. The period of COVID-19 required that all organizations have a link with international organizations like WHO, ILO, and ISO. Studies found that the application of this advice might improve working life, work outcomes, and economic condition.The quality management standards (ISO 9000), occupational health and safety (OHSAS 18001) are examples of these international standards and practices.

Today organizations face the challenge of returning to work safety and health. This challenge will not be passed successfully unless these organizations use evidence-based

management and rely heavily on their research centers' findings. It is time to use data and evidence properly especially when talking about COVID-19.

This research provides the following recommendations:

- Organizations in the public or private sector should adopt all standards of a decent working environment in their workplaces to improve health & safety levels during and after the COVID-19 pandemic.
- Employers in all sectors should use the latest flexible working arrangements like teleworking, telecommuting, and compressed weekdays to minimize any operational loss and to avoid any drop in working hours.
- All organizations should nominate a specialized person to monitor, review, and apply the international measures, recommendations, research findings, and advice provided by international professional bodies like WHO, ILO, and SHRM.
- It is time to use AI and Robots side by side with people to keep organizations more productive and competitive during the crisis period.

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