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Climate Changes and its Impact on Employee Productivity

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Abstract

Climate change is a global emergency that has an impact on human health. Global warming is characterized by increase in temperature and humidity. Many cities in India are becoming vulnerable to increase in heat. India is experiencing climatic changes in the form of water stress, heat waves and drought, severe storms and flooding. These changes have a negative consequence on health and livelihood. Several studies have demonstrated the ill effects of climate change on working population across many industries. Sectors like agriculture, manufacturing, construction, some service sectors etc. are affected due to the climatic changes.
The climatic changes impacts a person's health, emotions and feelings. Rising temperature in the environment presents many challenges for workforce. Being productive in work place calls for better health and high competence. The scope of this paper is to investigate the effects of climate change on employee's productivity. The paper attempts to study the how employee's knowledge and awareness about the climatic changes help them to adapt themselves and become more productive.

Keywords: climatic changes, rising temperature, productive, knowledge, workforce.

INTRODUCTION

Climate change is a global emergency that has an impact on human health. Global warming is characterized by increase in temperature and humidity. Many cities in India are becoming vulnerable to increase in heat. The country is on an average 0.6 degree Celsius hotter than a century ago, says India Meteorological Department (IMD). The rise in temperature is rapid. 13 out of 15 warmest years of India are after the year 2000. The IMD's climate summary in January said that 2017 was the "fourth warmest year on record since 1901". [1]. Increasing trends in greenhouse gases and the warming of the sea surface temperatures over the equatorial Indian and Pacific oceans are the reasons behind the increase in heat waves. India is experiencing climatic changes in the form of water stress, heat waves and drought, severe storms and flooding. These changes have a negative consequence on health and livelihood. The rising temperatures will have a severe impact on food security, economy and livelihood, human health, security, water resources and wildlife. Several studies have demonstrated the ill effects of climate change on working population across many industries. Exposure to extreme heat without sufficient protection in work place increases the risk of heat-related illness and also result in productivity loss. The question here is, as predicted, whether the workers' health and productivity shall be protected or shall be let down.

IMPACT OF CLIMATE CHANGE ON WORKING POPULATION

Increasing heat exposure in many workplaces is posing a lot of challenges for working population. Sectors like agriculture, manufacturing, fisheries, forestry, SMEs, construction, some service sectors etc. are affected due to the climatic changes, [2] [3]. The outdoor workers and indoor workers without efficient cooling systems are exposed to heat waves. The continuous exposure to heat affects the employees physically and mentally. The work capacity for many working people is affected.
The workers with some previous heat illness were ready to adjust work habits to adapt themselves to increasing hot weather. Several studies have been undertaken to understand the impact of climate change on working population. Climate change has and will continue to exacerbate workplace heat as highlighted in the IPCC assessment [4] Workers use self-pacing mechanisms i.e. adjusting work rate to avoid physiological heat strain to keep themselves away from heat stress when working in hot environments. [5] [6]. The slowing down of work as a defense mechanism during severe heat exposure is labelled 'autonomous adaptation' by climate change researchers, [7]. Exposure to extreme heat conditions has been found to be hazardous to health, [8]. Workers frequently exposed to heat in their workplace have been found to suffer heat exhaustion, heat stroke, kidney disease, heart or lung disease, accidents, and injuries. [9] The body heat balance is determined by factors such as air temperature, radiant temperature, humidity, air movement (wind speed); clothing and the metabolic heat generated by human physical activity, [10]. It is well known that physical work creates heat inside the body and that this affects occupational health and performance when combined with excessive workplace heat [11]. People performing physical outdoor laobur are exposed to higher temperatures combined with body heat generated by the jobs themselves, [12]. Increased occupational heat exposure due to climate change may significantly impact on

labor productivity and costs unless preventive measures are implemented [13]. To combat with the challenges posed by the climate changes either the workers may need to work longer hours, or more workers may be required, to achieve the same output. This will result in economic cost of lost production and/or occupational health interventions. The climatic changes impacts a person's health, emotions and feelings. Rising temperature in the environment presents many challenges for workforce

DRIVERS OF EMPLOYEE PRODUCTIVITY: HEALTH AND COMPETENCY

Being productive in work place calls for better health and high competence. Many factors impact productivity. Organizations are spending a lot of money on two important aspects: employee health and building their competencies. Employers must explore broad changes in their performance management and training programs to improve the overall productivity of their workforce. World Health Organization (WHO) defined health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. This phrase is still applicable today. Every organization strives to maximize the productivity of its workforce. The employees are stressed to work hard which calls for good health and competence. Rise in temperature have resulted in various ailments for employees and has a significant impact on productivity.

Various studies have been carried out to understand the importance of employee health and safety. Berry et al. (2010) illustrated that the increasing heat exposure on workers in tropical countries as an effect of climate change may indirectly cause psychological distress in workers due to reduced work productivity, lost income, and disrupted daily social activity [14]. Kjellstrom et al. (2009) have identified the potential occupational health problems viz heat stroke, heat stress etc. that climate change and associated increased heat exposure might cause, especially in low- and middle-income countries in tropical areas. [15]

Being competent in work place is vital for employee productivity. Competency is a cluster or related knowledge, skills and attitudes that reflects a major portion of one's job, that correlates with performance on job, that can be measured with well-accepted standards and improved with training and development [16]. In contrast to expectations of technical competencies, the business firms should roll out programs tangibly to make the productivity welded with climate. Technical competencies should be recalibrated with climate orientation.

CLIMATE CHANGE: EMPLOYEE'S KNOWLEDGE AND AWARENESS

The employees across different sectors are facing a lot of challenges due to rise in temperature. Their awareness about the climatic changes happening around them have an impact on their productivity. A study undertaken to understand the impact of worker's perception of heat risk identified five aspects such as concerns about heat exposure, attitudes towards more training, policy and guideline support, the adjustment of work habits, and degree of satisfaction of current preventive measures, [17]. The study revealed that respondents were moderately or very much concerned about workplace heat exposure. The study also tried to understand the factors associated with workers' heat concerns which include age, physically demanding work, personal protective equipment, heat illness history, and injury experience during hot weather etc. Strengthening worker's heat risk awareness and refining prevention strategies in a warming climate is the need of the hour. Also the study found that heat educational programmes and training should be more focused towards outdoor young workers and workers above 55 years with low educational level, [18].

A study was undertaken to make managers and employees learn the impact of climate change on natural resources, wildlife, vegetation and fisheries. Scientists and managers were involved to outline possible solutions for future regarding climate change adaptation [21]. The relationship between occupational heat exposure and productivity was studied by several researchers [20], but very little studies has been carried out aiming at trying to understand the employee's awareness level and knowledge about the climatic changes. The relevant knowledge will help them to adapt themselves and become more productive. The human resource has acquired the knowledge about climate change and learnt to adapt themselves to gear up their efficiency and effectiveness i.e. productivity. Having climate based performance management system in place is very much essential to enhance employee's productivity. Being aimed at better productivity, making the performance management with an agility to climatic requirements is to be strategized.

CLIMATE BASED PERFORMANCE MANAGEMENT

Economic and non-economic through positive and negative reinforcements: Environment and climate sensitive employees should relatively be incentivized through encouragement and discouragements. For example, an employee who uses water economically, conserves electricity, keeps the work environment cleaner etc. In another case, the usage of water, electricity, fuels etc. beyond the frugality will be crippled by higher authorities' financial sanctions.

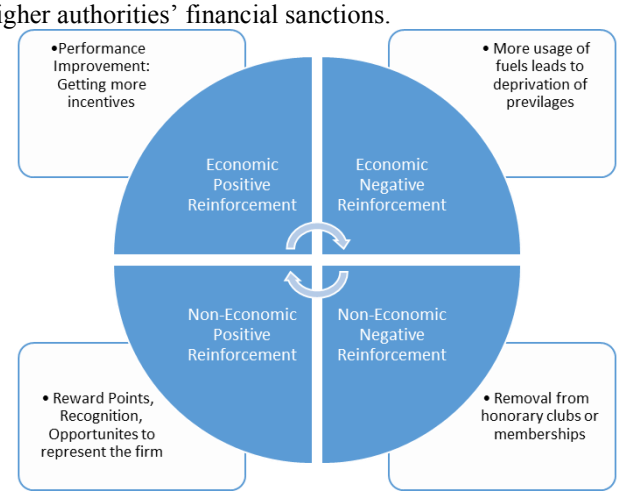

Figure 1: Strategies and outcomes – Climate based performance

In the above figure the strategies are explained in the quadrants and the examples of outcomes of the said strategies are tagged with respective quadrants.

CONCLUSION

The growth of the human resource in firms has touched a new age where the productivity and the environment has to be traded-off for the survival of mankind. If it is implemented there will not be a history that the past generation (us) has not despised the future generation. The movement of business philosophy has reached a point of trajectory where the climate based programs should be imbedded with the quantity based decisions. The human resource has acquired the knowledge about climate change so as to gear up its efficiency and effectiveness ingrained with individual behaviour change and performance enhancement. The existing performance management systems and training programs should be reweaved with environmental perspectives.

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