

THE International Labour Office (ILO) and International Ergonomics Association (IEA) developed the Ergonomic Checkpoints mobile app, which provides best practice recommendations for implementing effective improvements in the workplace. It also allows users to create interactive checklists of ergonomic checkpoints. As there are 132 checkpoints, I thought we might share a select few in this first instalment. For more detailed information on each, do go to the ILO website.

SPACE

Good fit
Make sure that the workplace accommodates the needs of different workers. Differences in body size and age, for example, may vary widely in any workplace.
Risks/symptoms: excessive reach, muscular strain, low-back pain, upper limb disorder, eye strain, repetitive strain, stress-induced disorder.

HOW
● Provide equipment and computer workstations with adjustable work surface height.
● Use a foot-stand to enable workers to reach items difficult for them to reach.
● Check knee and leg clearance of workstations used by the tallest worker – expand if necessary.
● Adjust table, chair, computer monitor and keyboard heights to preferred positions and arrange related computer peripherals within easy reach.

Refresh
Use air-conditioning systems to provide an indoor climate conducive to the health and comfort of people. Air conditioning is known to increase productivity, reduce accidents and absenteeism, and improve human relations.
Risks/symptoms: excessive heat or cold, thermal discomfort, upper limb disorder, stress-induced disorder, increased injury or illness rates, poor indoor air quality.

HOW
● Select the range of air temperature and humidity appropriate for the type of work.
● Avoid overcooling and uncomfortable draughts.
● Modify the position and parameters of the air-conditioning system and the direction of air flow by listening to the employees.

SUN

Let it in!
Increase the use of daylight and provide an outside view. Daylight is a cheap and environmentally friendly light source. With daylight, the distribution of light in the workplace, as well as the efficiency and comfort of workers can be greatly improved.
Risks/symptoms: eye strain, excessive fatigue, increased injury rates.

HOW
● Combine daylight with artificial lights.
● Separate switches for different sections so that lights can be switched off in sections with enough daylight.
● Expand the size of windows; keep them clean and remove obstacles.
● Install skylights with semi-transparent material.
● In hot countries like Malaysia, orient windows and openings away from the direct heat of the sun, protect them from direct sunlight and UV (ultraviolet) radiation.

Walls
Light-coloured walls and ceilings create a comfortable and effective working environment. Producing higher room illumination, it is also energy saving.
Risks/symptoms: eye strain, increased injury rates.

HOW
● Use very light colour for ceilings, such as white (90% reflectivity) and a pale tint for walls (50–85% reflectivity).
● For well-distributed general lighting, use a combination of a white ceiling and lighting units with upward openings so that the ceiling reflects light.

THE ECONOMICS OF ERGONOMICS

By **KAREN NEOH**
karen.neoh@leaderonomics.com

INVESTMENT in the health, safety and wellbeing of employees has increasingly been acknowledged as integral parts in building employee engagement, as well as the economic sustainability and organisational development of enterprises. In economic terms, the ILO (International Labour Office) estimates that more than 4% of the world's annual GDP is lost due to occupational accidents and diseases, with 313 million suffering non-fatal accidents, and more than 160 million people suffering from occupational and work-related diseases annually. In addition, one must consider the indirect costs of each incident, impact on families and consequential societal costs. *Barefoot Economics, The Economics of Health, Safety and Well-being*, a publication by the Department for Occupational Safety and Health of the Finnish Ministry of Social Affairs and Health with ILO Safework programme aims to provide information on costs and benefits of the development of work environments and by doing so, encourage behaviour which will develop the safety and health level of the organisations.

Over the years, studies have shown that ergonomic interventions at the workplace result in positive financial returns for organisations in some sectors.

In a review of recent studies, the Institute of Work and Mental Health of Canada found that participatory ergonomics programmes in which workers, supervisors and other workplace parties jointly identify and address work-related risks can be beneficial (to both employees and the organisation).

In a clothing manufacturer with 295 workers, there was a net benefit to the company of almost C\$295,000 (approximately RM858,000); and for a car parts manufacturer with 195 employees, a savings of C\$244,000 (approximately RM710,000).

Several studies demonstrate a positive relationship between company workplace practices and business success. These studies highlight workplace policies that demonstrate respect for employees' basic requirements:

- good external working conditions.



- job security.
- good relations between management and workers.
- fair pay and employee motivation.

PRODUCTIVITY AND OPERATIONAL EFFICIENCY

To improve productivity and operational efficiency, organisations should work towards creating an open and innovative working climate that nurtures employee engagement. In addition to delivering on its employee value proposition, if an organisation can empower its employees and encourage them to create and share knowledge on improving efficiency, it can increase safety and productivity, and ultimately business performance.

IN CONCLUSION

As with our personal health, we have an obligation to ourselves and to our co-workers to take charge of our (collective) health destinies. Speaking up and calling out unsafe and unhealthy practices, and then suggesting countermeasures demonstrate an employee's commitment and value to the organisation. And vice versa of course, leaders have to also commit to taking action to ensure a good working environment for all.

DIRECT COSTS

- Cost of accidents and work-related illnesses
- Wages during injury
- Cost of medical treatment

INDIRECT COSTS

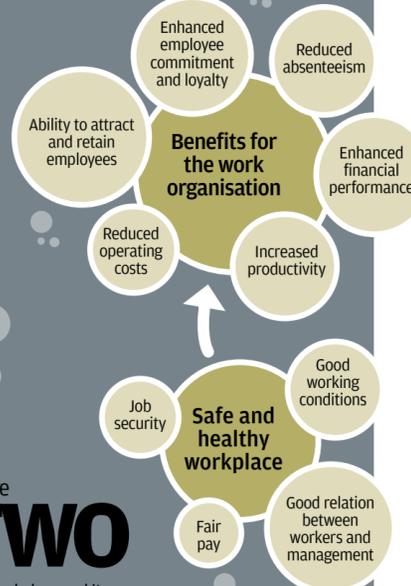
- Working hours of other employees
- Damage to property
- Loss of returns
- Productivity losses
- Company reputation
- Employee morale and potential effect on retention

Figure ONE

Direct and indirect costs of occupational accidents (adapted from *Barefoot Economics, The Economics of Health, Safety and Well-being* by the Department for Occupational Safety and Health of the Finnish Ministry of Social Affairs and Health with ILO Safework programme).

Figure TWO

Safe workplace and its benefits for the work organisation (adapted from *Barefoot Economics*)

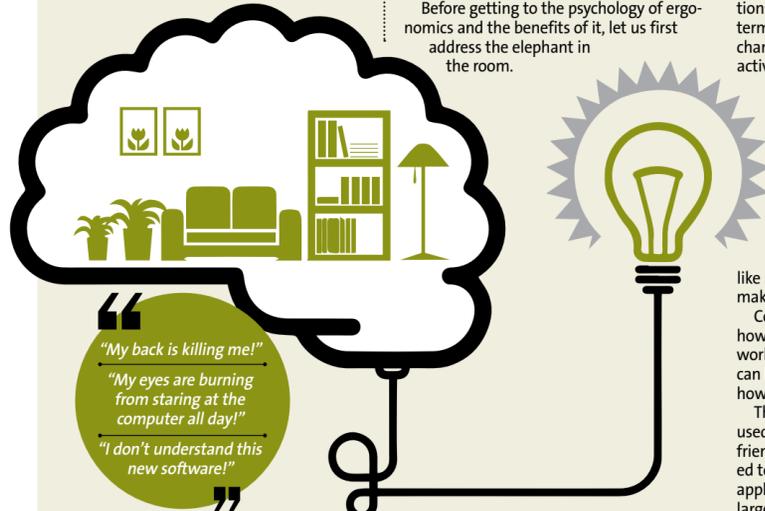


■ *Karen is really energised when speaking to business leaders who see the light (that bright natural daylight!) and take steps to invest in their people holistically. For more leadership content, do visit www.leaderonomics.com*

ERGONOMIC CHECKPOINTS

PSYCHOLOGY BEHIND OFFICE SPACES

ERGONOMICS – WHAT IT IS AND HOW IT BENEFITS ORGANISATIONS AND EMPLOYEES



By **TARA THIAGARAJAN**
tara.thiagarajan@leaderonomics.com

SOUND familiar to you? Needless to say, these are all common occurrences at our places of work. Our bodies and minds go through these stressors due to many physical and psychological factors within our office environment. These factors can be seemingly minor to us but in the long run, they can be time-consuming, stress-inducing, and physically strenuous for our bodies to handle. This is why, especially in recent years, ergonomics has played a big role in shaping our working environments to make us more comfortable and productive at work. Before getting to the psychology of ergonomics and the benefits of it, let us first address the elephant in the room.

WHAT ON EARTH IS ERGONOMICS?

In a workplace context, the study of ergonomics, according to the American Psychological Association, involves investigating a professional's strengths and limitations and using this information to enhance the design of items and resources they use at work. This is all in an effort to make work life less burdensome and more productive. There are many aspects of ergonomics in the workplace, but two of them will be the main focus of this article. One aspect of ergonomics, perhaps the most well-known, is **physical ergonomics**. This focuses on the human body's reactions to physical and biological stress in terms of anatomy, physiology and biomechanics and how they all relate to physical activity. Physical ergonomics typically involves designing items such as furniture, computers, and other tools used at work, while considering factors such as posture and anything to do with physical comfort. The other aspect is known as **cognitive ergonomics**, which focuses on one's mental processes like memory, attention span, decision-making, and reasoning. Cognitive ergonomics mainly considers how mentally strenuous an individual's workload (known as mental workload) can be, along with other things such as how humans interact with computers. This aspect of ergonomics is typically used for designing software that is user-friendly in an effort to reduce stress related to figuring out complicated computer applications. Easy-to-read documents with large fonts are another example of this.

WAIT! HOW IS PSYCHOLOGY INVOLVED?

Given what we know about ergonomics, you may be wondering, "where does psychology fit into all this?" Experts in ergonomics devote much of their time analysing and understanding employees' behaviour in the workplace. That is where psychology, the study of human behaviour, comes into play. Once they understand how humans work and what the physical and psychological effects of the strenuous work environment are, experts will know what aspects of that environment they should improve to alleviate those effects. Of course, it must be said that these effects differ for each individual in the same office space. But these effects are all similar to a certain degree, especially if they are all linked to specific elements within the work environment.

SO... WHY IS ERGONOMICS IMPORTANT?

Ergonomics is important in organisations because of its numerous benefits.

1 COMFORT

Improving both physical and other resources used in the workplace can leave us feeling less uncomfortable, letting us focus better on our work. Using ergonomically designed tools can help reduce the risk of us contracting problems such as backaches, neck pain, and eye-strain from using the computer incorrectly. From a mental perspective, an efficient and organised work environment that specifically caters to our daily tasks at work can give us some relief in terms of stress. Even if the changes are minute, it can make a world of difference to how we feel, as we do not have to expend energy on

small, sometimes unnecessary tasks. Those small amounts of saved energy can leave us feeling less drained at the end of the day.

2 PRODUCTIVITY

Yes, ergonomically enhancing the resources in our work environment can indeed improve our physical comfort and mental wellbeing. Thanks to the comfort that user-friendly software, comfortable chairs and other ergonomic tools give us, we are able to focus better. Not only can this improve the quality of the work we produce, it can also improve the pace at which we work. Apart from that, productivity can be fostered in the workplace depending on how elements of the office space are arranged. Activity-based office spaces are divided into many areas for different kinds of work. Some areas may be quiet and isolated for those who require a lot of focus. Other areas in the office space, however, can be open to encourage collaboration among employees. Office spaces that are flexible can help each employee accommodate in a way that is comfortable for them to work productively. An example is the Skullcandy office in Switzerland, which gives employees the freedom to move around to different environments within their office space. Employees there also have desks that can be moved around and even connected with the desks of their colleagues if they choose to collaborate for meetings or projects, thus fostering productivity.

Employees there also have desks that can be moved around and even connected with the desks of their colleagues if they choose to collaborate for meetings or projects, thus fostering productivity.

Employees there also have desks that can be moved around and even connected with the desks of their colleagues if they choose to collaborate for meetings or projects, thus fostering productivity.

3 EFFICIENCY

Ergonomics can improve how organised the office environment can be. Efforts can be made to arrange things such as important documents and tools in a way that makes them easily accessible.

Things can be organised in a way that can follow an employee's flow of tasks throughout the day, which can reduce the time needed for them to prepare for a new task once the previous one is accomplished.

4 EMPLOYEE MOTIVATION AND ENGAGEMENT

Having a physically comfortable, organised office that also gives you peace of mind can provide you with the clarity you need to start and complete good quality work. We would also be more willing to wake up early and endure heavy traffic every morning if we knew that an office that accommodates our physical and psychological needs awaited us every day. An article in the *Journal of Safety Research* investigated the effectiveness of ergonomics in the office environment and found that there was an average of 87% reduction in turnover. This shows that considering and making ergonomic changes in an office space can make a big difference in terms of employee engagement as well as their motivation to continue working in that organisation.

CONCLUDING THOUGHTS

Sometimes, it's the little details that tend to be overlooked. These minor points, over time, can affect our comfort, productivity, efficiency, and even our motivation. This is why it is important to be aware of these little things. By educating ourselves about ergonomics, we can understand more about the way we work and how we can change things to better suit our own personal working styles. ■ *Tara is a final year psychology student who is interested in learning about the industrial aspect of this wide, diverse field. She spends way too much time on the Internet reading up about anything that piques her interest.*