WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Wearable Technology in the Workplace: Enhancing Employee Wellbeing and Organizational Performance.

Meenu Rathore[1], Dr Tejal Patel[2], Divyesh Patel[3]

[1]PhD Scholar P P Savani University Surat, Rathoremeenu416@gmail.com
[2]Associate Professor P P Savani University Surat Tejal.patel@ppsu.ac.in
[3]PhD Scholar P P Savani University Surat. Divyesh2800@gmail.com

ABSTRACT:

The integration of digital wearables in the workplace has significantly transformed the landscape of employee wellbeing and organizational performance. This review paper critically examines the relationship between digital wearables, employee wellbeing, and organizational performance, exploring the multifaceted impacts of wearable technology on individuals and businesses. The paper delves into various studies, and case examples to provide a comprehensive analysis of the subject matter.

Keywords: Wearable Devices, Employee Wellbeing, Organizational Performance.

Background For the Topic and Literature:

Within the last decade, workplace wellness programs have experienced a resurgence.

Unlike in the recent scientific management era, when business contemplated achieving efficiency through mastery of the job task by breaking it down into small parts that might be studied, workplace wellness programs represent the idea that efficiency in business lies in the health of the individual worker. Healthier workers mean fewer sick days and lower healthcare costs for the firm. The pendulum of organization science has now swung from mastering the job to managing the worker's mental attitude via for example, team-building exercises, and now, to mastering the worker's physical body via wellness programs. This swing correlates with a renewed American focus on public health and on prevention rather than treatment. While the wellness programs of today do not represent a novel phenomenon, wellness programs in the age of big data present new challenges in terms of the capture, use, and storage of the health data from workers. The increasing corporate embrace of Big Data technologies as a matter of business procedure places wellness programs squarely in the middle of new ethical quagmires when it comes to the handling of worker's health information. **(Ajunwa, I., Crawford, K., & Ford, J. S. (2016).**

Striving to both promote the health and well- being of their workforce and decrease insurance expenditures, many organizations are incorporating wearable fitness trackers into their corporate wellness programs. In order to improve workforce health and well-being, corporations have spent nearly $100 billion on workplace wellness programs since the 1970s **(Giddens, L., Gonzalez, E., & Leidner, D. (2016)**. Research indicates that well-designed corporate wellness programs can improve job satisfaction, employee mood, and employee fitness levels while also reducing job stress and employee absenteeism **(Falkenberg, L. E. (1987).** These programs may also improve certain health conditions such as diabetes **(Conn, V. S., Hafdahl, A. R., Cooper, P. S., Brown, L. M., & Lusk, S. L. (2009)**. However, corporate wellness programs have been historically plagued by a lack of employee participation and difficulty tracking employee progress. With the rapid emergence of wearable technology companies are turning to wearable devices to invigorate their corporate wellness programs **(Martin, J. A. (2014).**

Wearable devices are computers that are embedded into clothing or accessories that provide self-tracking data to the user. Among the most popular of such self-tracking devices for consumers are wearable fitness devices such as Fitbit, Jawbone, and Garmin Forerunner. These devices track the number of steps taken, sleep patterns, heart rate and calories expended through a wristband worn by the user. Already nearly 2,000 companies worldwide offer fitness tracking devices to employees **(Solon, O. (2015).** and more than 13 million wearable fitness devices are projected to be in use in corporate wellness programs by 2018 **(Martin, J. A. (2014).** Companies such as Barclays and Target distribute Fitbits to their employees and offer incentives to participants to use the devices and share their information **(Troiano, A. (2017)**. Fitness tracking devices offer unique features aimed at engaging individuals in a healthy lifestyle. By using these devices in tandem with corporate wellness programs, organizations hope to increase the effectiveness of their wellness initiatives.

Many corporate wellness programs incorporate wearable fitness devices in order to encourage employees to increase their physical activity, which is generally measured by a daily step count. Studies on health and fitness indicate that individuals who get 10,000 steps a day, which equals a distance of five miles, observe many health benefits **(Choi, B. C., Pak, A. W., & Choi, J. C. (2007).** As such, companies utilizing fitness trackers in their wellness programs typically encourage or incentivize participants to walk as many steps a day as possible, with a goal of at least 10,000 steps. Research suggests that wearable fitness devices encourage individuals to be more active and to make healthy choices. **(Etkin, J. (2016)** (**Giddens, L., Leidner, D., & Gonzalez, E. (2017)**

Evolution of Wearable Devices:

1960*: The concept of wearable technology emerged with the introduction of basic calculators that could be worn on the wrist. 1970*: Early experiments with wearable computers and digital watches laid the foundation for future developments. 1980*: Digital watches became popular, integrating basic functionalities like alarms, calendars, and calculators. 1990*: Casio introduced watches with more features, like touchscreens and the ability to store data. 2000*: Wearable devices started integrating with mobile phones, enabling features like call notifications and music control. 2010*: The rise of smartwatches from companies like Pebble, Samsung, and eventually Apple. 2015*: Introduction of the Apple Watch, which significantly popularized the concept of smartwatches and their integration with smartphones. 2020*: Health wearables became more sophisticated, measuring heart rate, ECG, sleep quality, and stress levels.

Impact on Employee Wellbeing:

Wearable devices, such as fitness trackers, smartwatches, and health monitoring devices, have gained significant popularity in recent years. These devices have the potential to positively impact employee wellbeing in several ways:

1. Increased Physical Activity:

Encouraging Exercise: Wearables often track steps, encouraging employees to meet daily activity goals. This can combat sedentary behaviour, which is common in office jobs. **Promoting Challenges:** Many wearables allow users to participate in challenges, fostering a sense of competition and motivation among employees to stay active.

2. Health Monitoring:

Real-time Health Data: Wearables can monitor vital signs like heart rate and sleep patterns, providing individuals with insights into their health and prompting them to make positive lifestyle changes. **Early Detection:** Continuous health monitoring can detect irregularities early, facilitating timely medical intervention and potentially preventing serious health issues.

3. Mental Wellbeing:

Stress Management: Some wearables track stress levels, offering guided breathing exercises or relaxation techniques, aiding in stress reduction. **Sleep Tracking:** Monitoring sleep patterns helps individuals understand their sleep quality, encouraging better sleep habits, which are vital for mental and physical health.

4. Promoting Healthy Habits:

Nutrition Monitoring: Certain wearables can track calorie intake and offer dietary suggestions, promoting healthier eating habits. **Hydration Reminders:** Some devices remind users to stay hydrated, which can positively impact overall health and productivity.

5. Increased Awareness:

Self-awareness: Wearables provide users with a comprehensive view of their habits, encouraging self-reflection and potentially motivating them to make healthier choices. **Educational Tools:** Wearable apps often provide health-related information, educating users about various aspects of wellbeing and empowering them to take control of their health.

6. Work-Life Balance:

Activity Reminders: Wearables can remind users to take breaks, fostering a healthier work-life balance by discouraging excessive work hours without breaks. **Encouraging Outdoor Activities:** Some wearables promote outdoor activities, encouraging employees to spend time in nature, which has known mental health benefits.

7. Organizational Impact:

Reduced Healthcare Costs: Healthier employees may lead to reduced healthcare costs for the organization due to lower rates of chronic illnesses and fewer sick days. **Improved Productivity:** Healthier, more active employees are generally more productive, leading to potential gains in overall work output.

Influence on Organizational Performance:

Wearable devices have the potential to significantly impact organizational performance in various ways. Here are some of the key areas where these devices can make a difference:

1. Health and Wellness:

Employee Well-being: Wearables can promote a healthier lifestyle among employees by encouraging physical activity, monitoring sleep patterns, and providing health-related data. **Reduced Healthcare Costs:** Healthier employees may lead to reduced healthcare costs for organizations due to lower rates of illness and chronic diseases.

2. Increased Productivity:

Efficiency: Wearables can improve efficiency by providing real-time notifications and alerts, enabling quick responses to emails, messages, or important updates. **Task Automation:** Some wearables can automate tasks, streamlining processes and saving time for employees, leading to higher productivity levels.

3. Safety and Risk Management:

Occupational Safety: Wearables equipped with sensors can monitor workplace conditions and employee movements, promoting safety and preventing accidents. **Compliance:** Wearables can ensure employees adhere to safety protocols and regulations, enhancing overall compliance within the organization.

4. Enhanced Communication:

Team Collaboration: Wearables can facilitate seamless communication among team members, regardless of their location, leading to improved collaboration and idea sharing. **Language Translation:** Wearables with language translation capabilities can bridge communication gaps in multinational organizations, promoting better understanding among employees.

5. Employee Engagement and Satisfaction:

Gamification: Wearables can introduce gamification elements into the workplace, making tasks more engaging and encouraging employees to achieve goals and targets. **Recognition and Rewards:** Wearables can track employee achievements and milestones, enabling organizations to recognize and reward outstanding performance.

6. Data-Driven Insights:

Data Analysis: Wearables generate vast amounts of data. Analysing this data can provide insights into employee behaviour, work patterns, and preferences, enabling data-driven decision-making. **Predictive Analytics:** Predictive analytics based on wearable data can help organizations anticipate trends, plan resources, and optimize operations.

7. Training and Skill Development:

Skill Enhancement: Wearables can be used for on-the-job training, providing employees with real-time guidance and instructions, enhancing their skills and knowledge. **Continuous Learning:** Wearables can facilitate continuous learning by delivering bite-sized educational content to employees, fostering a culture of learning within the organization.

Challenges:

Data Security and Privacy: Wearable devices collect sensitive data. Ensuring this data is secure and used responsibly is a significant challenge. Unauthorized access or data breaches could lead to severe consequences. **Data Accuracy and Reliability:** Wearables may not always provide accurate data. Relying on inaccurate data for decision-making can lead to problems, especially in contexts where precision is crucial, such as in healthcare or manufacturing. **Employee Privacy:** Employees might feel their privacy is invaded if employers have access to personal health or location data. Striking a balance between monitoring productivity and respecting privacy is challenging. **Compliance with Regulations:** There are legal regulations, like GDPR in Europe, that dictate how personal data should be collected and used. Ensuring compliance with these laws is complex, especially if the workforce is spread across different regions. **Integration and Compatibility:** Integrating wearable devices with existing workplace systems and ensuring compatibility can be technically challenging and time-consuming. **Employee Resistance:** Some employees may resist the idea of being constantly monitored, leading to a potential decrease in morale and productivity.

Ethical Considerations:

Informed Consent: Employees must be fully informed about what data is being collected, how it will be used, and they should have the right to opt out without facing consequences. **Data Ownership:** Clear policies about who owns the data - the employer or the employee - need to be established. Employees should have control over their personal data. **Data Usage:** Employers must ensure collected data is used ethically. It shouldn’t be used to

discriminate, harass, or unfairly evaluate employees. **Bias and Discrimination:** If the data collected by wearables is used for evaluation or decision-making, it's crucial to ensure that algorithms are not biased and do not lead to discriminatory practices. **Transparency:** Employers should be transparent about the purpose of using wearables, what data is being collected, and how it will be used. Open communication is essential in maintaining trust. **Employee Empowerment:** Employees should be given the opportunity to access their own data and understand how it is being used. This transparency empowers them and builds trust. **Social Implications:** Ethical considerations also extend to the societal impacts of widespread workplace surveillance. It could influence societal norms and our understanding of privacy in the digital age.

Case Studies:

Certainly, there are several real-life examples of wearable devices being successfully implemented in the workplace. One notable example is the use of fitness trackers and smartwatches to promote employee wellness and enhance productivity.

1. BP (British Petroleum): BP implemented a pilot program where employees were given fitness trackers to monitor their physical activity, sleep patterns, and overall health. The company used this data to encourage employees to adopt healthier lifestyles, leading to reduced healthcare costs and improved productivity. Employees were incentivized to achieve certain fitness goals, and the program resulted in better employee engagement and well-being.

One real-life example of the success of wearable devices in the workplace is the use of smartwatches and fitness trackers to promote employee wellness and improve productivity. Many companies have implemented wellness programs that leverage wearable technology to encourage healthier lifestyles among their employees. Here's an example:

BP, a multinational oil and gas company, implemented a wellness program for its employees to improve their overall health and well-being. As part of this program, they provided employees with fitness trackers and smartwatches, such as Fitbit devices, to monitor their physical activity, sleep patterns, and other health metrics.

Success Factors:

Healthier Employees: By encouraging employees to track their physical activity, monitor their sleep, and set fitness goals, BP saw a significant improvement in the overall health of its workforce. Employees became more aware of their health habits and were motivated to make positive changes.

Increased Productivity: Healthier employees tend to be more productive. By promoting physical activity and better sleep, BP noticed a decrease in absenteeism and an increase in employee engagement and performance.

Cost Savings: As employees became healthier and more engaged in their well-being, BP experienced cost savings related to healthcare expenditures and insurance premiums.

Employee Satisfaction: The introduction of wearable devices and the wellness program boosted employee morale and satisfaction. Employees appreciated the company's commitment to their health and well-being.

Data-Driven Decision-Making: The data collected from the wearable devices allowed BP to make informed decisions about the wellness program's effectiveness. They could identify trends, adjust program offerings, and target interventions to specific employee groups based on their health data.

2. UPS (United Parcel Service): UPS utilized wearable technology in the form of a ring scanner, which employees wear on their fingers to scan packages. This technology significantly improved the efficiency of package sorting and tracking. By allowing workers to have their hands free, UPS reduced errors, increased delivery speed, and ultimately enhanced customer satisfaction.

3. Boeing: Boeing implemented the use of smart glasses in the assembly line process. Workers wore augmented reality glasses that provided them with real-time information and instructions. This technology helped in streamlining the assembly process, reducing errors, and improving overall productivity. Workers could access information hands-free, allowing them to focus on the task at hand.

4. SAP: SAP, a technology company, introduced a pilot program where employees were given smartwatches to monitor stress levels and provide feedback on their emotional well-being. The company used this data to create a healthier work environment, offering resources and support to employees experiencing high-stress levels. This initiative resulted in improved employee mental health and overall job satisfaction.

5. Exoskeletons in Manufacturing: Several manufacturing companies have started using exoskeletons to assist workers in heavy lifting tasks. These wearable devices provide support to workers' muscles and reduce the risk of injury. Companies like Ford and Hyundai have implemented exoskeletons in their manufacturing plants, leading to a decrease in workplace injuries and improved employee safety.

Future Trends and Recommendations:

Predicting the future with certainty is challenging, but based on current trends and emerging technologies, several potential developments can be anticipated for wearable devices in the workplace:

1. **Health and Wellness Monitoring**: Wearables will become more advanced in monitoring employees' health and well-being, including metrics like heart rate, stress levels, and sleep patterns. Employers might use this data to create healthier work environments and offer personalized wellness programs.
2. **Safety Wearables**: Industries such as construction, manufacturing, and healthcare may adopt wearables that enhance worker safety. Devices with built-in sensors can detect hazardous conditions and alert workers or supervisors in real-time, preventing accidents.
3. **Augmented Reality (AR) Devices**: AR wearables like smart glasses will find applications in training and maintenance tasks. Employees can receive real-time guidance and instructions, leading to increased efficiency and reduced errors.
4. **Focus on Mental Health**: Wearables may incorporate features to monitor and support mental health, such as stress level tracking and guided meditation sessions. Employers could use this data to create a less stressful work environment.
5. **Productivity Tracking**: Wearables can be used to track employees' activities and work patterns. This data can be analysed to optimize workflows and enhance overall productivity. However, ethical considerations and privacy concerns will need to be addressed.
6. **Wearables as Access Control**: Wearables like smart badges or rings could replace traditional access cards and keys. These devices can also monitor attendance and help with secure entry into restricted areas.
7. **Customization and Comfort**: Future wearables will likely be more comfortable and customizable to individual preferences. Lightweight, flexible materials and ergonomic designs will enhance user experience, leading to higher adoption rates.
8. **Data Security and Privacy**: As wearable devices collect sensitive data, there will be a significant focus on enhancing security measures to protect this information from cyber threats. Employers will need to implement robust data protection policies and practices.
9. **Collaboration Tools**: Wearables could facilitate virtual collaboration by integrating communication features like video conferencing, voice commands, and messaging directly into the devices. This would enable employees to connect and collaborate more efficiently, regardless of their physical location.
10. **Regulatory and Ethical Considerations**: Governments and organizations will establish clear regulations and ethical guidelines concerning the use of wearables in the workplace, addressing issues like privacy, consent, and data ownership.

Conclusion:

The review paper concludes by summarizing the key findings and emphasizing the transformative potential of digital wearables in promoting employee wellbeing and enhancing organizational performance. It highlights the need for a balanced approach that considers both the advantages and challenges associated with wearable technology in the workplace.

However, there are challenges such as privacy concerns, data security issues, and the potential for wearables to cause stress or anxiety related to constant monitoring. Therefore, it's crucial for organizations to implement clear policies, ensure data security, and promote the voluntary and responsible use of wearable devices among employees to maximize the positive impact on wellbeing.

In conclusion, while wearable devices offer several benefits for organizational performance, successful implementation requires a strategic approach that considers the unique needs and challenges of the organization and its workforce.

References:

Ajunwa, I., Crawford, K., & Ford, J. S. (2016). Health and big data: An ethical framework for health information collection by corporate wellness programs. *The Journal of Law, Medicine & Ethics*, *44*(3), 474-480.

Choi, B. C., Pak, A. W., & Choi, J. C. (2007). Daily step goal of 10,000 steps: a literature review. *Clinical and Investigative Medicine*, E146-E151.

Conn, V. S., Hafdahl, A. R., Cooper, P. S., Brown, L. M., & Lusk, S. L. (2009). Meta-analysis of workplace physical activity interventions. *American journal of preventive medicine*, *37*(4), 330-339.

Etkin, J. (2016). The hidden cost of personal quantification. *Journal of consumer research*, *42*(6), 967-984.

Falkenberg, L. E. (1987). Employee fitness programs: Their impact on the employee and the organization. *Academy of Management Review*, *12*(3), 511-522.

Giddens, L., Gonzalez, E., & Leidner, D. (2016). I track, therefore I Am: exploring the impact of wearable fitness devices on employee identity and well-being.

Giddens, L., Leidner, D., & Gonzalez, E. (2017). The role of Fitbits in corporate wellness programs: Does step count matter?.

Martin, J. A. (2014). Pros and Cons of Using Fitness Trackers for Employee Wellness. *CIO Magazine*.

Solon, O. (2015). Wearable Technology Creeps Into The Workplace. Bloomberg. com: 1–6.

Troiano, A. (2017). Wearables and personal health data: putting a premium on your privacy. *Brooklyn Law Review*, *82*(4), 6.