



# Indoor Plants Increase Employee Job Satisfaction and Help Reduce Employee Attrition

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**Abstract.** The tendency of modern workers to their job as a temporary place companies in a dilemma with employee development. Employee development that does not meet workers' growth needs will lead to lower commitment and job satisfaction, and companies will fall out of the competition in the long run. A great deal of investment in employee development places businesses at risk of having employees walk out the door with the company's investment. The importance of employee development has increased, and retaining employees is the key to success. People's willingness to stay with a company is significantly influenced by their level of job satisfaction. Despite the fact that there are many ways to improve employee satisfaction, including wage increases, compensation reform, and flexible scheduling, employers are disregarding the benefits of improving the workplace environment. It is both effective and efficient to improve the work environment by bringing plants into the office. Research has shown that plants have a positive effect on employee well-being by reducing anxiety and stress levels. The presence of plants in the workplace is also noted to improve employees' perceptions of air quality in the workplace. The purpose of this paper is to provide a literature review that examines the benefits of placing indoor plants in the office to enhance employee satisfaction and reduce employee turnover.

**Keywords:** Job Satisfaction · Indoor Plants · Employee Attrition · Working Environment · Employee Stress Reduction

## 1 Introduction

Employee attrition is one of the challenges that modern businesses face. Modern workers tend to view their work as a temporary or "stepping stone." As the need for employee development increases, the risk of organizations losing valuable employees who leave with their skills and company investments also increases [1]. Therefore, it is imperative that businesses implement sophisticated strategies to attract and retain employees. While increasing employee wages, reform company policies, and providing additional compensation may be good ways to increase employee satisfaction, managers often overlook or do not pay sufficient attention to the physical environment of the workplace. Having

a satisfying workplace can also have a significant impact on the ability of a company to recruit and retain talented employees [2]. The findings of research investigating the relationship between physical environment and various aspects of quality of life indicate that people with access to natural settings are more satisfied at home, at work, and with life in general [3]. Most offices are located in urban areas, it is hard for office workers to access greenery or other natural scenes through windows. The alternative to outside window natural scenes in many offices is bringing in indoor plants. Using a literature review approach, this paper examines the positive relationship between having indoor plants in a workplace and job satisfaction. As an artifact in the workplace environment, indoor plants improve employee well-being, improve working environment, lead to higher job satisfaction and ultimately lower employee turnover rates.

## 2 Indoor Plants Improve Employee Well-Beings

There is a growing concern about employee well-being in the business world, and stress is one of the greatest factors influencing employee well-being. The most common stress-related illnesses that employees develop are depression, anxiety, headaches, and heart problems. Most of the researchers are focusing on improving management practices to give employees more control over their work and schedules, improve interpersonal skills, and provide palliative stress reduction treatments. Only a few organizational and management studies have examined the impact of the actual work environment itself on employees [4]. Since many people spend more awake time at work than at home, and many daily activities that cause stress or require sustained attention take place in the workplace, it is imperative to integrate elements that promote employee well-being in the work environment.

Natural exposure has favorable effects on stress reduction. Having small indoor plants on the office table for employees to look at when they feel fatigued contributes to decreasing State-Trait Anxiety Inventory (STAI) score. An individual's STAI score will range from 0–69, where a score of 0–9 is defined as having low to no anxiety, a score of 10–18 as mild to moderate anxiety, a score of 19–29 as moderate to severe anxiety, and a score of 30–63 as severe anxiety. After plants were placed on workers' tables in a private electronic company in Japan, the percentage of employees with high STAI scores decreased from 31.7% to 30.2%, while the percentage of employees with low STAI scores increased from 28.6% to 36.5% [5]. In addition to lowering employee anxiety, exposure to natural elements also influences mood, which contributes to job satisfaction [4]. The mood of employees at work influences their satisfaction with their jobs. In order to improve employee satisfaction, employers should assist their employees with maintaining a positive mood and minimizing mood swings while at work. The presence of plants can have a calming effect on a person's mood. A mood swing can be detected by the pulse rate. Sympathetic sedation is characterized by a decrease in pulse rate, while sympathetic excitement is characterized by an increase in pulse rate [5]. In a study, researchers found that greenery can reduce the rate of rapid pulse. The use of plants as a distraction from work is able to slow the pulse rate and enable employees to remain calm and restore inner harmony when needed.

The implementation of plants is not the replacement of meditation sessions or other palliative stress reduction treatments, however, providing natural exposure breaks for

employees is an effective auxiliary that avoids anxiety and stress stacks up too quickly, it will potentially lower the frequency companies need to provide meditation sessions and other palliative stress reduction treatments and improve general well-being for employees.

### 3 Indoor Plants Improve Indoor Air Quality

A comfortable working environment is essential for workers. Most offices are designed to be space-efficient, but a more compact office leads to higher levels of carbon dioxide, which reduces the freshness of the air inside the office. A poor indoor air quality may contribute to sick building syndrome, as well as increase sick leave and employee dissatisfaction. Mechanical ventilation systems can be used to control problems associated with indoor air quality, such as high concentrations of carbon dioxide and low relative humidity, but they are costly and energy-intensive. It has been shown that plants can reduce ambient CO<sub>2</sub> concentrations and add moisture through CO<sub>2</sub> assimilation (photosynthesis) and evapo-transpiration [6]. Air purifiers are the most common mechanical ventilation systems employed in offices. Air purifiers attract unwanted particles in the air, filter out pollutants, and use fans to release fresh air. With the implementation of high efficiency particulate air (HEPA) filters, effective air purifiers are able to attract smaller particles. Dyson is a well known brand that produces HEPA-filter air purifiers. According to the official Dyson website, Dyson air purifiers range in price from \$300 to 900 dollars per unit. The operation of air purifiers is not completely silent, which could cause distractions and irritation among employees. The performance of air purifiers depends on regular maintenance and the replacement of filters. The ozone produced by some air purifiers can cause lung irritation in individuals with sensitive respiratory systems. Plants perform photosynthesis in the daytime. In the process of photosynthesis, plants absorb carbon dioxide in order to synthesize food and emit oxygen as a byproduct, which resembles the mechanism used by air purifiers to provide fresh air in offices. Plants, however, purify the air in a quiet and organic manner. In addition, they are not energy-intensive or expensive.

A common indoor air pollutant is formaldehyde. According to the Agency for Toxic Substances and Disease Registry (ATSDR), formaldehyde is a chemical found in flooring, furniture, and fabrics. Individuals living in buildings with high levels of formaldehyde may experience irritation of their eyes, noses, throats, and skin. People who suffer from breathing problems, such as asthma, are more likely to develop symptoms. According to Peng et al. [7], phytoremediation remains the most efficient, readily applicable, and environmentally friendly method for remediation. Phytoremediation involves the use of plants to reduce the toxic effects of a contaminated environment. It has been reported that many potted plants can effectively remove formaldehyde from the air through absorption, metabolism, and degradation. A study conducted by Kim et al. [8] examined the effectiveness of 86 indoor plants species for the removal of formaldehyde. The formaldehyde removal properties of *Osmunda japonica*, *Selaginella tamariscina*, *Davallia mariesii*, *Polypodium formosanum*, *Psidium guajava*, *Lavandula* spp., *Pteris dispar*, *Pteris multifida*, and *Pelargonium* spp. were excellent. Additionally, there are woody foliage plants that are effective in removing formaldehyde, including *P. guajava*,

Rhapis excels, Zamia pumila, Dizygotheca elegantissima, Ficus elastica, and Gardenia jasminoides. In the study of 86 species, *O. japonica* was found to be the most effective for removing formaldehyde. The plants mentioned above are all species that can be brought into the office and are suitable for indoor use. As a result of the wide variety of species available, companies are able to choose plants that are appealing to their employees.

It has been found that employees who are satisfied with their workplace environment have a lower intent to leave the organization and a higher level of job satisfaction [9]. In the absence of adequate indoor air quality, a number of sick building syndrome symptoms can develop, such as headaches, irritated eyes or noses, blocked noses, etc. The spread of the syndrome will lessen the motivation of employees to come to work since they will feel ill once they enter the building. Consequently, as workers feel unexcited to come to the office, they will experience a decrease in productivity. This is because they will be unable to concentrate on delivering their work [10]. When employees continue to fail to achieve the work goals, this may have an adverse effect on their psychological well-being, resulting in high levels of stress and low job satisfaction, and employees may consider quitting the organization.

#### **4 Working Environment and Productivity**

While many employees may not be aware of how plants improve the quality of air through photosynthesis, this does not impact their perception of the working environment improved when plants are present. According to a study conducted as early as 1998, the presence of plants within an office is significantly associated with participants' assessments of the attractiveness of the office. When a large number of plants were present in the office, it was rated as the most attractive. It is clear from this research that plants have a positive impact on perceptions of the attractiveness of an environment [11]. Recent systematic review on 50 published papers exploring the effects of indoor plants on subjective psychological perceptions indicated that an indoor space with plants more strongly and positively affects participant psychological perceptions than a space without plants [12]. Employees generally think that rooms with plants are more comfortable and help generate positive emotions such as happiness, cheerfulness, calmness and relaxation. According to Kamarulzaman et al. [13], research consistently demonstrated that the characteristics of the office environment have a significant impact on the behavior, perception, and productivity of employees. Better performance is likely to result from employees who are more satisfied with their physical environment. There is a direct positive correlation between employees' job satisfaction and their work environment, as well as an indirect correlation between organizational commitment and turnover intentions. Employee morale is improved and turnover is reduced when satisfaction levels are higher.

#### **5 Indoor Plants and Improvement of Company Image**

As well as improving employee well-being and air quality, indoor plants can improve the image of a company to consumers by demonstrating care towards its employees. There have been studies examining the relationship between corporate social responsibility

(CSR) and consumer buying behavior since the late 1990s. Although Gildea [14] noted that customers are still concerned with price quality and service, they are also evaluating a company's business practices, how it treats its employees, whether it invests in the community, whether it cares for the environment. Those factors add up to an emphasis on being socially responsible. The concept of corporate social responsibility has an impact on consumer buying behavior, which continues to persist in today's contemporary business environment. Brunk [15] points out that employee treatment is at the top of consumers' ethical choices, and the way in which employees are treated is likely to evoke strong feelings among them. Bringing plants into the office to reduce stress is an example of how organizations have taken care of their employees. This can increase corporate social responsibility (CSR) and encourage consumers to view the company in a positive manner. The use of plants as an alternative to mechanical ventilation systems demonstrates an organization's commitment to saving energy and being environmentally conscious, which also contributes to a positive image of the company.

## 6 Challenges and Potential Solutions

Despite the benefits listed above, there may be some challenges for organizations to bring in plants. Some companies may be concerned about the effort required for taking care of the plants. However, studies have shown that allowing the employees to care for the plants in the study enhanced their satisfaction and contributed to the mitigation of stress in the workplace. In addition, it develops ownership, and employees reported that seeing their plants grow is fun and taking care of the plant was recreational [5]. The effect on stress reduction does not have big differences between species, organizations may also choose plants less fragile and require less maintenance.

## 7 Conclusion

In this paper, sufficient evidence is presented to support the physical and psychological benefits plants provide to their employees. Raising wages and other forms of compensation are effective methods for retaining employees, however they are not efficient. This paper emphasizes the importance of improving the working environment, which many leaders have overlooked for a long time, as well as its impact on employee satisfaction. The purpose of this paper is to encourage companies to bring plants into the workplace as an alternative to increasing wages and other compensation. This method has the advantages of showing care, being cost-effective, and being environmentally friendly.

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