

# The Impact of Green Building Interior to Employee Productivity with the Special Reference to the Apparel Industry in Sri Lanka

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**Abstract** – This research investigated the influence of Green Building Interior on Employee Productivity within the Apparel industry, with a specific focus on MAS Thurulie, a Green clothing factory in Sri Lanka. The study addressed the growing importance of sustainable practices in the apparel industry and aimed to identify the potential benefits of Green Building designs on Employee Productivity. The research problem revolved around exploring the relationship between Indoor Air Quality, Lighting, and "Look and Feel" within Green Buildings and their impact on creating Productive work environment for employees. The study aimed to contribute valuable insights to the Apparel industry, emphasising the significance of incorporating sustainable design principles to enhance workforce Productivity and overall organisational success. To achieve the research objectives, data was collected through surveys conducted among employees at MAS Thurulie and interviews with relevant stakeholders. The methodology involved analysing the collected data to identify correlations between Green Building interior features and employee productivity levels. The key findings of this research shed light on the effectiveness of Green Building Interior design elements in influencing employee productivity. By creating a well-designed, aesthetically pleasing, and comfortable work environment, organisations can positively impact Employee Productivity, potentially leading to increased efficiency and competitiveness. The implications of this study provided valuable information to apparel industry organisations aiming to improve employee well-being and productivity through sustainable design practices

Keywords: Green building, indoor air quality, lighting, look and feel, MAS Thurulie

## I. Introduction

Green building is a holistic approach that aims to minimise the negative impact of the built environment on nature and people. It involves strategic planning, design, and construction with a focus on energy and water efficiency, indoor environmental quality (IEQ), sustainable materials, and site considerations. By integrating these principles, Green Buildings promote environmental preservation and healthier living spaces for occupants (USGBC, 2014). Green Building has gained global popularity for its focus on sustainable practices in construction and design. However, in Sri Lanka, the adoption of Green Building principles has been relatively slow compared to other regions (Jayaratne, 2018) with limited LEED and GREENSL certified buildings. This highlights the necessity for increased efforts to promote and implement environmentally conscious practices in the country's construction sector (Karunasena, 2016).

The research focuses on the Apparel industry in Sri Lanka, given its crucial role in the country's economy (ITA,2022). The Apparel industry is known for its high-stress environment, characterised by tight deadlines and demanding workloads (Jayaratne, 2018). It employs nearly 1 million people, comprising approximately 15% of the nation's workforce, and is a significant contributor to export revenue, reaching \$5 billion in 2018, projected to reach \$8 billion by 2025 (CGDSRSL, 2020). Despite these achievements, the industry faces economic and productivity challenges. While previous research has shown that Green Building concepts can enhance productivity in workspaces, there is a lack of specific research pertaining to the Apparel industry in Sri Lanka. This study seeks to enhance existing knowledge by exploring the correlation between Green Building interiors and productivity within the apparel industry and aims to promote the adoption and popularity of Green Building concepts.

Productivity in the Apparel industry is closely linked to the attainment of personal goals (Elliott,2009). Further, this Productivity can be considered as having both physical and mental components (Wanyama & Mutsotso, 2010). This Productivity can be assessed through subjective and objective productivity measures. Subjective productivity measures (SPM) become crucial in situations where obtaining OPM data is limited. SPM encompasses evaluating employee task and goal achievement within deadlines, their ability to exceed expectations, and their self-perceived productivity levels. In this research, productivity will be measured through these factors, enabling a comprehensive understanding of the Apparel industry workforce's Productivity.

To study the impact on Green Building Interior on the Employee Productivity, World Green Building Council (WGBC) highlights the key areas in building interior. In particular, the study delves into three crucial aspects: Indoor air quality (IAQ), Lighting, and "Look and Feel". As first, the research endeavours to meticulously examine the influence of specific factors related to IAQ on productivity within the Apparel industry. IAQ encompasses several factors that contribute to the overall air quality within buildings. These factors include the presence of air pollutants, the efficiency of ventilation systems (both artificial and natural), and the impact of aroma (UN Foundation, 2023). Understanding and analysing these aspects of Employee productivity were crucial parts of this research.

Apparel workspace lighting serves multiple purposes, extending beyond mere visibility to encompass various aspects of well-being, such as comfort, communication, mood, health, safety, and aesthetics (Simona, 2023). This essential aspect of office design primarily consists of artificial and natural lighting, both of which can be investigated based on their quantity and direction. Addition to these, the research explored specific factors associated with each lighting type. For natural lighting, the research focused on glare and shadow, while for artificial lighting, the investigation centred on the type of light used. By delving into these factors, the research aims to shed light on their impact on overall workplace productivity.

"Look" in interior design refers to visual appeal and aesthetics, including colour, texture, materials, and overall design. "Feel" encompasses the sensory and emotional aspects, such as ambiance, comfort, and emotional responses evoked among occupants (WGBC, 2014). To cover

all the particular aspects, this research focused on interior arrangement, interior finishing materials, and design elements within the Thurulie.

To investigate the impact of above interior factors on productivity in Green Buildings, this research has selected MAS Thurulie as a case study. The flagship factory of MAS Holdings, Thurulie, stands as a pioneering achievement in the apparel manufacturing industry. It is the world's first clothing factory powered entirely by carbon-neutral sources. Recognized for its exceptional commitment to sustainability, Thurulie has been honoured with the prestigious LEED Platinum status, making it the first establishment in Sri Lanka to achieve this distinction (Roar Media, 2022).

# II. Methodology

To investigate the influence of IAQ, lighting, and "Look and Feel" on employee productivity, it is essential to design a comprehensive framework for the study. beginning with the philosophical stance of positivism. The positivist approach was selected to maintain objectivity and focus on empirical evidence while investigating the impact of Green Building Interiors on productivity at MAS Thurulie. To achieve the research objectives, a deductive approach was employed. Utilising a theoretical framework based on established theories on the relationship between Green Building Interiors and Productivity. To gather comprehensive insights, the study utilised a combination of case study and survey methods. The case study approach provided a detailed examination of the green building interior's influence on Productivity in a real-life setting, while the survey enabled the collection of data from a larger sample of employees, ensuring diverse perspectives and experiences within the Green Building environment. Additionally, structured interviews with the site designer, Mr. Sanjeewa Lokuliyana, and a representative from MAS Thurulie enriched the study by incorporating insights from key stakeholders in MAS Thurulie. Employed cross-sectional research design allowed data collection at a single point in time. This approach provided a snapshot of the relationships between these variables at a specific moment, aiding in understanding the immediate impact of green building interiors on productivity. Data collection involved the selection of a sample of 230 employees through simple random sampling. By using this technique, each employee had an equal chance of being included in the survey, ensuring the sample's representativeness and enhancing the generalizability of the research findings.

The study at MAS Thurulie adhered to strict ethical considerations, obtaining informed consent, ensuring confidentiality and anonymity, and respecting the privacy of the participants and the company. However, the research has some limitations, including the deductive approach's potential restriction of exploring novel relationships, context-specific findings, and the inability to establish causal relationships or account for long-term effects due to the cross-sectional design. Additionally, the study's generalizability may be affected by potential unaccounted variations within the employee population despite efforts to ensure representative sampling.

# III. MAS Thurulie, Green Buildings and LEED

In order to investigate the impact of green building interiors on employee productivity, it is imperative to comprehend the interconnection between green building principles, the LEED certification system, and the specific context of MAS Thurulie. Green building practices, driven by organisations like the U.S. Green Building Council, have gained global popularity for promoting sustainability and environmental responsibility. The Leadership in Energy and

Environmental Design (LEED) certification program, a widely recognized rating system, evaluates building environmental performance and encourages sustainable practices. By following LEED principles, construction projects can minimise their environmental impact, improve energy efficiency, and create healthier indoor spaces. Buildings earn certification levels such as certified, silver, gold, or platinum based on their adherence to LEED guidelines (USGBC, 2022).

MAS Thurulie stands as a pioneering example in Sri Lanka being the first building to achieve the prestigious above LEED Platinum status. Its location was meticulously selected to optimise open space and minimise its carbon footprint. Remarkably, the factory boasts a reduction of 25% in power consumption and 50% in potable water usage compared to other factories of similar size and function. The facility relies on two primary energy sources, namely photovoltaic and hydroelectric, and takes pride in being the first building in Sri Lanka to implement net metering (Holcim Foundation, 2009). The design philosophy behind the factory centred on utilising natural resources and harmonising with the surroundings to create a serene and invigorating environment for its workforce (Lokuliyana, 2022; Weerasinghe, 2022).

## A. Indoor air Quality (IAQ)

To understand the impact of Green Building Interiors on Employee Productivity at MAS Thurulie, Indoor Air Quality (IAQ) is a crucial aspect in the Green building interior. IAQ pertains to the quality of air inside and around buildings, impacting the well-being and comfort of occupants. It encompasses factors such as ventilation, Aroma and exposure to air pollutants (Albers, 2022). The study investigated IAQ, including the presence of air pollutants, effectiveness of ventilation systems (both artificial and natural), and the influence of aroma within the building environment, to understand its correlation with Employee Productivity.

Air pollution within buildings is a concerning issue that involves the presence of harmful contaminants and pollutants in the indoor air (Nathanson, 2023). A study conducted in China reported that employees in two apparel factories performed poorly as air pollutant levels increased. The adverse effects of air pollution led to increased coughing, breathlessness, and eye irritation, impacting their overall productivity (McCarthy and Sánchez, 2019). Research conducted by Rosone (2021) showed that Improved air quality, with reduced concentrations of volatile organic compounds (VOCs) and CO2, positively influenced employees' decision-making, strategic thinking, and planning abilities.

Inside the MAS Thurulie, efforts are made to minimise air pollutants. The factory employs an efficient ventilation and cooling system, which draws in fresh air, filters it, and maintains a high air-exchange rate. Using these measures reduced the presence of pollutants and ensured a healthy workplace environment for employees (Holcim Foundation, 2009). Additionally, the selection of non-hazardous materials such as On site earth blocks (Fig.1 Left), Bamboo, Steel and finishes contributes to the prevention of air pollutants, aligning with the factory's commitment to sustainability and worker well-being (Lokuliyana, 2022; Weerasinghe, 2022). The survey results demonstrate that MAS Thurulie maintains high-quality and non-polluted air, which is positively perceived by the employees. The open spaces, courtyards (Fig.1 middle), and interior finishes within the building contribute to clean air and reduced air pollutants. Employees who express satisfaction with the air quality also exhibit higher levels of productivity, while those who remain neutral about air pollution experience lower productivity levels. The cross tabulation and Chi-square charts provide strong evidence of the significant

relationship between air pollution level and employee productivity at MAS Thurulie. In conclusion, this research confirms that the Level of air pollution at MAS Thurulie significantly impacts the productivity of its employees (Fig.2). With the evidence of air pollution and Employee Productivity, Next, the research focused on the relationship between ventilation and Employee Productivity. Ventilation involves intentionally providing 'clean' air, usually from the outdoors, to a space while removing stale air, and it can be achieved through natural or artificial means (M. Kapsalaki, 2022). A meta-analysis conducted in 2006, which included 24 studies, suggest that the minimum ventilation standards, typically set at 8-10 I/s, may not be sufficient to optimise employee productivity (WGBC, 2014). In a laboratory test conducted in 2011 to simulate an office environment, it was demonstrated that increasing ventilation from 5 I/s to 20 I/s resulted in a remarkable improvement in productivity, with gains of up to 8% (WGBC, 2014). According to Carnegie Mellon, adopting mixed-mode air conditioning or natural ventilation systems could lead to substantial energy savings ranging from 47% to 79%. Additionally, these strategies have the potential to generate productivity gains of 3% to 18% (Storee Construction, 2020).

### Figure 1

MAS Thurulie techniques to increase IAQ



Note. Figures are sourced from https://www.archnet.org/sites/7128

In MAS Thurulie, ventilation plays a crucial role in maintaining a healthy and productive indoor environment. The facility incorporates a combination of natural and artificial ventilation systems to ensure optimal air quality for its occupants. The innovative design leverages natural airflow through strategically placed openings and courtyards, promoting the circulation of fresh air throughout the building. Additionally, the plant utilises artificial ventilation units to supplement the natural airflow when necessary, further enhancing IAQ. The factory's ventilation system operates with a balanced approach, providing a perceptible indoor air movement of about 0.8 metres per second. The harmonious integration of both ventilation methods ensures a comfortable and pollutant-free atmosphere, contributing to the Productivity of the employees (Lokuliyana, 2022; Weerasinghe, 2022; Holcim Foundation, 2009). The survey conducted at MAS Thurulie showed that both natural and artificial ventilation significantly impacted employee productivity. Employees expressed high satisfaction with the ventilation system, particularly appreciating factors such as window location and airflow arrangement for natural ventilation, and the well-planned artificial ventilators with user control. There was a clear positive correlation between employee satisfaction with ventilation and their subjective productivity levels. The chi-square analysis confirmed the significant relationship between ventilation and productivity, supporting the alternative hypothesis (Fig.2). The incorporation of green building strategies in ventilation planning contributed to the high level of employee productivity in MAS Thurulie.

Continuing the analysis of IAQ, aromas also play a significant role in this study. Workteck academy (2020) explored that, Aroma can positively influence behaviour and productivity of occupants and According to the Clearchoice (2022) pleasant aroma can enhance creativity and overall employee performance, while unpleasant smells may hinder productivity and innovation in the workplace. According to a Japanese study, certain scents have the ability to boost alertness, leading to increased productivity rates among employees. Smells can play a crucial role in influencing cognitive functions and motivation, contributing to a more productive work environment (Initial, 2021).

In Thurulie Natural ventilation allows fresh air to circulate, carrying scents from the surrounding greenery (Fig.1 Right), while indoor plants release natural fragrances, promoting a calming ambiance (Lokuliyana, 2022). Regular maintenance and cleaning practices ensure the elimination of unpleasant odours, ensuring a consistently fresh and inviting atmosphere that positively impacts employee morale and productivity (Weerasinghe, 2022). The survey conducted at MAS Thurulie confirms a positive relationship between aroma and employee productivity. Employees reported higher levels of subjective productivity when expressing greater satisfaction with the aroma inside the workplace. The cross-tabulation and chi-square analysis also support this finding, further demonstrating a significant relationship between aroma within the workspace appears to contribute to a more favourable working environment, positively influencing employee productivity levels at the facility.

#### Figure 2

SPSS Analysis of IAQ and Employee productivity in Thurulie

De	scriptive	Statistics				
	N	Minimum	Maximum	Mean	Bar Chart	Bar Chart
Employee satisfaction with indoor environment's quality	238	1	5	3.74	Peal at the event freed preduct XH by the program of the program o	5- oral fiber oral bett from the set oral better from the set from
Air Clean Inside the factory without pollutants	238	1	5	3.87	iseria Arresta Arresta Arresta	and the second s
What effect to the air quality inside the workspace	238	1	5	3.88	G	6 **
Effect of interior finishes to the Air quality inside the workspace	238	1	44	4.00		
Employee preference to work in different ventilation types	238	1	5	3.86	Strongly Disagree Human Agree Strongly Disagree Agree Altr Classa Lander the Jactury without polluteate	<ul> <li>Fieldy Dissentied Nutral Second Highly developed</li> <li>Satisfaction with natural confilation</li> </ul>
Satisfaction with natural ventilation	238	1	5	3.71		
What effect does the quality of the natural ventilation have?	238	1	5	4.03	Har Chart Pechart overall (Pre) of podult Nay	Bar Chart Fool of the evental level of productivity
Satisfaction with Artificial ventilation	238	1	5	3.58	Ex. Deserve Deserve Harris	50 50 50 50 50 50 50 50 50 50
What effect does the quality of the Artificial ventilation have?	238	1	5	3.78	Amore Transfer April	Brough Ages
Control over the air conditioning	238	1	5	3.87		
Satisfaction with Aroma	238	1	5	3.56		
What effect does the quality of the Aroma have?	238	1	5	3.88	Highly Branched Branch Branch Egity and Statement Statement of Statement Sta	Hafty Description Recent Science Fighty description Satisfaction with Arrena

## B. Lighting

The second key aspect chosen for study was Lighting. Lighting serves multiple purposes in the workplace, encompassing tasks such as safe, comfortable visual work, fostering the health and well-being of employees (Digitalstorm\_Hsm, 2023). The study on lighting distinctly divides into two main factors, artificial lighting and natural lighting (Vedanta, 2022). The research examined both types of lighting in MAS Thurulie, focusing on their quantity, direction. Additionally, for natural lighting, the investigation delved into glare and shadow, while for artificial lighting, the type of light was analysed as well.

Natural lighting in a workspace refers to the use of sunlight to illuminate the interior environment (Frenz, 2021). Researchers indicate that access to natural light and views outside,

particularly those that connect with nature, have a significant positive impact on productivity levels (WGBC, 2014). Study published by the National Sleep Foundation in 2017 sheds light on the substantial influence of natural light on the sleep quality of employees and this enhanced sleep quality plays a crucial role in elevating employee productivity (HMC Architects, 2019). Further, According to the Harvard Business Review (2023), natural lighting is a key element of a highly productive office as well.

In MAS Thurulie design incorporates large windows and skylights strategically positioned to allow ample daylight to penetrate deep into the building. The orientation of the windows (Fig.3 right) is carefully considered to maximise the direction of natural light. To further enhance the quantity of natural light, interior courtyards are intelligently integrated into the building layout. These open spaces not only create a pleasant environment but also facilitate the diffusion of daylight to interior spaces (Holcim Foundation, 2009). In MAS Thurulie, meticulous attention is given to minimising glare and shadows within the workspace. This objective is accomplished through the Orientation of the building playing a significant role to control shadow and glare. Moreover, the strategic placement of blinds and trees also contributes to the reduction of glare, while carefully controlling the presence of shadows (Lokuliyana, 2022; Weerasinghe, 2022).

#### Figure 3

Lighting and Lighting improve techniques in MAS Thurulie



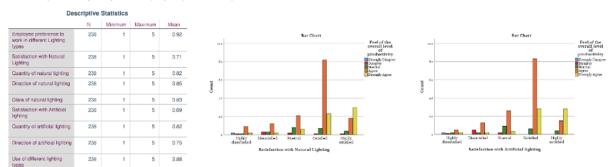
Note. Figures are sourced from https://www.archnet.org/sites/7128

The data analysis conducted at MAS Thurulie revealed a significant relationship between natural lighting and employee productivity. The findings indicate that employees who expressed high levels of satisfaction with the natural lighting also reported higher levels of productivity, while those with lower satisfaction showed lower productivity levels. The study further confirmed that the direction of natural lighting is meticulously arranged, allowing for ample natural light to permeate the workspace, which positively influences productivity. Moreover, the data collected demonstrated minimal effects of glare and shadows, contributing to a comfortable and conducive working environment. As a result, this research affirmed the positive correlation between natural lighting and employee productivity at MAS Thurulie (Fig.4). In combination with natural lighting, artificial lighting also plays a significant role in a workspace. Moore (2023) highlights the crucial role of artificial lighting in influencing employee productivity. Properly designed and well-managed artificial lighting can significantly impact the working environment, focus, and Productivity. Lazarus (2023) highlights that properly implemented artificial lighting solutions can enhance visibility, reduce eye strain, and create a comfortable and Productive work environment. Further, LF (2021) Highlight that, carefully designing and implementing artificial lighting solutions can positively influence the productivity of employees.

In MAS Thurulie, where artificial lighting (Fig.3 middle) is necessary, the plant employs a smart lighting strategy to ensure energy efficiency. A combination of high-efficiency T5 tubes and LED lamps is mounted on sewing machines, providing task lighting that focuses the correct amount of light at the needlepoint. This targeted approach requires fewer light fixtures and allows each worker to easily adjust the lighting intensity as needed (Holcim Foundation, 2009). Lokuliyana (2022) emphasised that the lighting arrangements throughout the facility are tailored to match particular activities and the lighting requirements of the occupants (Fig.3 left and right). This approach ensures that lighting is used efficiently and only when necessary, in line with the principle of energy conservation. Additionally, Weerasighe (2020) highlighted that even during daytime operations, artificial lighting is utilised in the production areas to maintain standard illuminance levels. This careful consideration of lighting needs ensures that the plant maintains a comfortable and productive working environment while keeping energy consumption to a minimum. The data collected at MAS Intimates Thurulie showed that employees are highly satisfied with the artificial ventilation and lighting in the workplace. While they prefer natural lighting, they also agreed that the well-arranged artificial lighting offers an excellent balance. Employees confirmed that appropriate lighting types are used for different spaces. The cross-tabulation and chi-square analysis demonstrated a positive relationship between artificial lighting and employee productivity at MAS Thurulie. This finding emphasises the significance of proper lighting design in enhancing productivity within the factory. (Fig.4)

#### Figure 4

SPSS Analysis of Lighting and Employee productivity in Thurulie



## C. Look and Feel

As a final key aspect, investigation of "Look and Feel" is an inherently subjective and broad area to explore. "Look and feel" encompasses the entire visual and sensory experience of a space or environment. In the context of interior design and architecture, "look" pertains to the visual appeal and aesthetics, including colour choices, textures, materials, and overall design. Meanwhile, "feel" encompasses the sensory and emotional aspects, such as ambiance, comfort, and occupants' emotional responses (WGBC, 2014). To cover all these factors, this research focuses on interior arrangement, finishing materials, and design elements within the workspace, examining their impact on productivity.

#### **Figure 5** Look and Feel inside the MAS Thurulie



Note. Figures are sourced from <a href="https://www.archnet.org/sites/7128">https://www.archnet.org/sites/7128</a>

In the conducted study, interior arrangement played a pivotal role in determining how occupants used and perceived the space. The research further investigated this aspect by delving into space planning and furniture arrangements. As stated in Becker's research in 1981, workplace interior design emerges as a critical factor influencing job satisfaction and significantly impacting the manner in which employees perform their tasks (Becker, 1981). Gankananda (2016) indicates that a well-organised furniture arrangement leads to enhanced employee Productivity as well.

In case of MAS Thurulie, production halls are thoughtfully organised into five separate areas, each housing a complete value stream for efficient workflow and reduced energy consumption. The layout is free from obstacles and columns, allowing production teams to arrange their machinery optimally. To promote collaboration and impromptu interactions, meeting areas and lounges are strategically placed throughout the building. Managers are encouraged to work directly with their teams on the production floor, facilitating smooth communication and teamwork. Lokuliyana (2022) highlights that the space design in Thurulie designed to enhance the team work and productivity in the employees as well. Overall, the interior arrangement of MAS Intimates Thurulie combines worker comfort, functionality, and ecological consciousness, creating a harmonious and eco-friendly workspace for its employees (Holcim Foundation, 2009). The comprehensive analysis of the gathered data unequivocally demonstrated that the meticulous interior arrangement of MAS Thurulie has a profoundly positive effect on employee productivity. The consensus among employees was resolute, as they concurred that their satisfaction with the interior arrangement, including furniture arrangement and space planning, exerted a discernible influence on their overall work Productivity (Fig.6).

Further, the selection of interior finishing materials plays a crucial role in shaping the overall look and feel of the environment. Farooque (2021) highlights that materials used in interior spaces go beyond mere aesthetics and significantly influence the mood, health, and productivity of occupants. The article emphasises in Interior (2023) highlights that interior finishing materials have a substantial impact on employee productivity. By making informed choices and considering factors like comfort and sustainability, can create a positive work environment that enhances Productivity.

In the case of MAS Thurulie, for interior walls, compressed stabilised-earth blocks (Fig.1 left) were utilised. The walls require no plaster finish, further minimising environmental impact and giving uncommon aesthetic pleasing to the occupants (Lokuliyana, 2022). Bamboo was chosen for window blinds and various forms of sunscreen, providing a sustainable and renewable alternative to conventional materials (Holcim Foundation, 2009). Further explaining

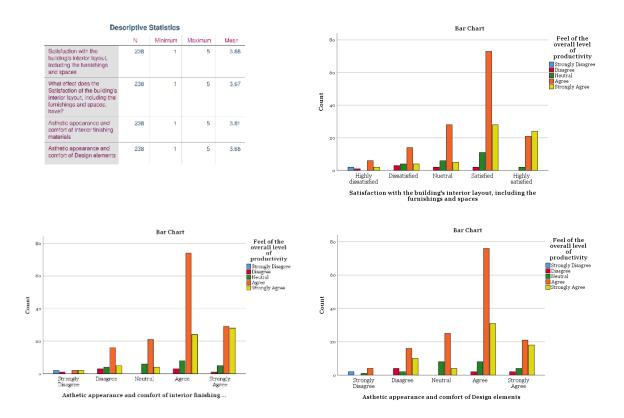
reasons behind the material choosing, Lokuliyana (2020) highlights that The interior finishing materials used at MAS Intimates (Fig.5 left) Thurulie were carefully chosen to promote a comfortable, productive working environment. Weerasinghe (2022) Highlight that the selection of finishing materials perfectly aligned with the employees' preferences, creating a look and feel that contributed to a pleasant and comfortable working environment. The analysis of the collected data unequivocally confirms the positive effect of interior finishing materials on employee productivity. The data conclusively demonstrates that employees exhibit a high level of satisfaction with the interior finishing materials, and this satisfaction is closely associated with recorded high productivity levels as indicated in the survey (Fig.6).

As a final aspect of the look and feel, the design elements inside the workspace were thoroughly investigated. This involved studying and analysing the arrangement of elements such as Colors, Shapes, lines, textures, forms (MasterClass, 2021). According to Kwallek (2019) Rashid (2021) Appropriate use of design elements can create a comfortable and motivating environment, leading to higher levels of productivity, creativity, and overall job performance. Ouyang (2022) highlighted that, by optimising design elements in the workspace, organisations can create an atmosphere that fosters employee engagement and contributes to their overall success.

At Thurulie, the use of natural colours and earthy tones creates a calming and soothing environment, promoting a sense of tranquillity and focus among the workers. These colours also complement the lush greenery outside, providing a seamless connection with nature and further enhancing the overall aesthetics of the workspace (Lokuliyana, 2022). The placement of large windows (Fig.5 middle) allows ample natural light to flood the workspace, creating a sense of openness and connection to the surrounding greenery. The use of straight lines (Fig.5 right) in the architecture and interior design further promotes a sense of order and organisation, contributing to a structured and focused working environment (Lokuliyana, 2022). The calming colours and natural elements foster a sense of well-being and reduce stress levels, promoting a more focused and creative mindset. The use of these elements enhance workflow and teamwork, and overall productivity as well (Weerasinghe, 2022; Lokuliyana, 2022). The survey conducted at MAS Intimates Thurulie revealed a significant relationship between the use of design elements and Employee Productivity. The employees reported high levels of satisfaction with the incorporation of design elements in the workspace, and they also recorded heightened productivity levels. The statistical analysis, specifically the chi-square test, further validated the significant relationship between the utilisation of design elements in green buildings and employee productivity. This analysis supported the alternative hypothesis, indicating that the presence and thoughtful application of interior design elements positively influence the productivity of employees in the factory (Fig.6).

Further, the observations on overall "Look and Feel" at MAS Intimates Thurulie revealed that only few employees expressed lower satisfaction, yet most of them reported high productivity. Further investigation showed most of their positive satisfaction with indoor air quality and lighting. This highlights the potential link between Look and Feel and productivity, leading to interesting final conclusions for the research.

#### Figure 6 SPSS Analysis of "Look and Feel" and Employee productivity in Thurulie



# **Conclusion and Recommendation**

In conclusion, the data analysis at MAS Thurulie indicates that indoor air guality, lighting, and "Look and Feel" significantly influence employee productivity. The majority of employees perceive the indoor air quality as non-polluted, with open spaces, ventilation circulation, and interior finishes playing a positive role. Employees prefer natural lighting but also express satisfaction with well-arranged artificial lighting. Both lighting types have a significant relationship with employee productivity. Employees at MAS Thurulie show high levels of satisfaction with the building's interior layout, interior finishing materials, and design elements. The satisfaction with these aspects also correlates with employee productivity. It is proving that creating a well-designed, aesthetically pleasing, and comfortable work environment positively influences employee productivity as well. It is interesting to note that even few employees who are satisfied with indoor air quality and lighting but neutral about the overall look and feel of the building still achieve a high level of productivity. This indicates that while "look and Feel" play a role in influencing productivity, they might not be the sole determining factors. The research on "The Impact of Green Building Interior on Employee Productivity: With the Special Reference to Green Buildings in the Apparel Industry in Sri Lanka" highlights the significant influence of Indoor Air Quality, Lighting, and "Look and Feel" on Employee Productivity in green buildings, specifically at MAS Thurulie. The study recommends that companies in the apparel industry adopt green building principles to create well-designed, aesthetically pleasing, and comfortable work environments. Prioritising Green Building features can lead to improved employee productivity in the apparel industry.

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