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A Study on Sustainable Manufacturing Practices in RMG Industries of Bangladesh

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Abstract

Sustainable manufacturing has obtained attention and been redefined due to the fast modifications inside the improvement of global problem at the environmental degradation and greening attempt as well as striving for competitiveness. Sustainable manufacturing used environmentally pleasant treatment and useful resource recovery are presently very vital problems for governments and industries globally. The paper additionally discusses the key troubles of sustainable production, what are the level of awareness of sustainability and initiatives taken with the aid of manufacturers to make certain sustainable manufacturing. A conceptual framework was created consistent with the existing literature and published reviews of sustainable production practices by using established overseas corporations, researchers and practitioners. The finding of the studies is divided into two part: focus on sustainable manufacturing and common sustainable practices of ready-made clothes industry in which the commonplace practices is shown on waste management practices, sustainable production technique and sustainable materials procurements practices the various geared up-garments producers. The findings indicate that numerous companies have taken initiative to run their manufacturing system on sustainable manners and take numerous global certificates after satisfying sustainable practice standards.

1.1 Introduction

This paper discusses elaborately approximately the modern state of affairs of sustainable manufacturing practices in the RMG enterprise in Bangladesh. The have a look at goals to discover what are the common sustainable manufacturing practices among such businesses and to what volume aware efforts are made to enrich such measures. For this reason, the paper additionally discusses the key troubles of sustainable production, what are the level of awareness of sustainability and initiatives taken with the aid of manufacturers to make certain sustainable manufacturing. Sustainable production practices have obtained a truthful percentage of interest from researchers and practitioners alike. Sustainable production practices are seeking to optimize manufacturing performance while minimizing environmental effect and retaining social fairness.

1.2 Research Background

Climate alternate is one of the principal challenges of our time and adds substantial strain to our societies and to the environment. From shifting climate styles that threaten meals production, to growing sea levels that boom the risk of catastrophic flooding, the influences of weather trade are worldwide in scope and unparalleled in scale (Zahedi, 2013). Scientists have declared that the poor effect of global warming will retain to make dramatic adjustments to the earth, making it a piece less livable each day. The act of manufacturing and usage of environmentally detrimental products, poisonous emissions and irresponsible waste management through the producers and purchasers are a number of the key reasons at the back of the growing problem of weather trade. Beneath such instances, businessmen are compelled to reevaluate their definition of prosperity. Growing public problem and government guidelines are causing shifts within the earnings maximization orientation of agencies. Now-a-days, they are making conscious efforts to do enterprise with an extra "sustainable" method.

Production is the production of merchandise for use or sale the usage of labor and machines, gear, chemical and organic processing, or system. "Sustainable manufacturing" is behind the various green merchandise and methods in demand and celebrated round the world these days. Groups of all sorts are already concerned in tasks and improvements which might be helping to foster a healthier surroundings, enhance their competitive facet, reduce dangers, build agree with, force funding, entice clients and generate income.

Sustainable production Initiative sums it up as: "The introduction of manufactured products that use methods that reduce poor environmental affects, conserve electricity and herbal resources, are safe for employees, communities, and consumers and are economically sound." to position genuinely, sustainable production is all approximately minimizing the numerous business dangers inherent in any production operation even as maximizing the brand new opportunities that get up from enhancing your strategies and products.

There is very limited research available at the sustainable production practices in RMG industry. This examine will help shed light on the current situation of the extent of such practices inside the RMG enterprise in Bangladesh. Thru the findings of this take a look at, precious tips can be made concerning the regions where further enhancements can be made or how a way behind is Bangladesh RMG enterprise within the arena of sustainable manufacturing practices.

1.3 Research Objectives

This studies targets to shed mild on wherein Bangladesh RMG industry stands in regards retainable practices. It has the subsequent studies objectives:

1. To analyze the extent up to which RMG corporations are aware on sustainable manufacturing.
2. To perceive the common sustainable production practices in Bangladesh RMG area.

2. Literature Review

2.1 Introduction

Sustainable manufacturing has obtained attention and been redefined due to the fast modifications inside the improvement of global problem at the environmental degradation and greening attempt as well as striving for competitiveness. Between 1970 and 1990, public difficulty and focus about the social and environmental effects of the industrialization disasters improved which turned into specifically the result of the economic growth and the growing charge of resource consumption (Barber, 2007). Sustainable manufacturing used environmentally pleasant treatment and useful resource recovery are presently very vital problems for governments and industries global. Environmental guidelines for technical merchandise currently awareness on recycling ratios and prohibition of poisonous substances. The concept of making greater use-productivity with less useful resource intake has big ability to a sustainable society (Seliger et al., 2008).

2.2 What is Sustainable Production Practices

The sustainability or sustainable improvement in manufacturing and services has attracted the eye from numerous commercial enterprise practitioners and numerous studies initiatives and many files associated with them were published. Certainly, the theory and practices of sustainability inside production has become a vital problem in dynamic business improvement (Jayal et al., 2010).

Sustainable manufacturing practices amongst groups. Many corporations all over the international have taken an opportunity to enforce sustainable practices in term of competitive positioning (Pretorius et al. 2003), consumer relationship and product great (Szekely and Knirsch, 2005), environmental management and supply chains management (Kleindorfer and Saad, 2005), strategic plan and action and continuous growth and expansion (Gunasekaran and Spalanzani, 2011). Numerous works had carried out by using many researchers which is highlighted about many sustainable manufacturing practices consisting of sustainable fabric (Smith and Ball, 2012; Henry and Kato, 2012), waste management (Mohan Das Gandhi et al., 2006), pollutants prevention, green production (Rusinko, 2007), sustainable manufacturing procedure (Upadhye et al., 2010).

Waste control: The 3 R's are normally used phrases in waste management; they stand for "reduce, reuse, and recycle". As waste technology rates have risen, processing costs multiplied, and available landfill space reduced, the three R's have become a valuable guiding principle in sustainable waste management efforts (Hagggar, 2007; Tudor et al., 2011). Waste minimization is a procedure of increasing aid utilization or reduction of waste and extracting maximum from the waste move earlier than final disposal or recycling (Mohan Das

Gandhi et al., 2006). As globalization ends in improved knowledge and functionality standards, it's miles possible to gain an excessive first-rate of lifestyles and residing requirements through waste minimization without lengthy- term damage to the environment. Groups that adopt lean practices could decrease or take away wastes in all bureaucracy. In addition, lean practices are helpful for firms to put off pollutant and dangerous emissions via reduction in product cargo volumes and waste discounts (Hong et al., 2012).

Sustainable production process: imposing new production approaches within the business surroundings is also one of the strategies for companies to be extra sustainable. Many Manufactures have followed numerous procedures to enhance the sustainability of their products and evolved new additive formulations and technologies which could minimize the environmental effect. Different innovations include growing structures with particular homes and that specialize in decreasing waste manufacturing and electricity intake (Jayaraman et al., 2012). Upadhye et al. (2010) cautioned that humanity adopts era which makes use of renewable assets, reduces pollution wherein disintegrate could be prevented and therefore could offer excessive dwelling standards and human welfare.

Sustainable materials: New materials development is a essential part of assembly the developing call for infrastructure whilst decreasing the industry's environmental impact. Material technologies will provide the muse for transferring ahead and embracing sustainable exercise, whilst many other opportunities exist for brand new innovations (Henry and Kato, 2012). Sustainable materials or intermediate merchandise sustainability dimension indicators are non-sustainable substances intensity, restrained substances intensity, and recycled materials (OECD, 2012).

Gungor and Gupta (1999) provided an evaluate of the research improvement in Environmentally conscious manufacturing and Product healing (ECMPRO) and furnished a survey of published paintings. Not best does ECMPRO involve integrating environmental wondering into new product development consisting of design, fabric choice, production processes, and transport of the product to the clients, but additionally it covers the cease-of-life control of the product after its beneficial existence. O'Brien (1999) remarked the characteristics of a sustainable manufacturing system and mentioned that companies moving towards environmentally friendly and sustainable processes will get better costs quickly. Primarily based on a sustainable production paradigm, a new technique to product improvement which integrates the environmental requirements in every very stage of product's life cycle (Kaebernick et al., 2003).

Sustainable production measuring indicators. Joung et al. (2013) supplied a review of a set of indicators and a categorization of quantifiable signs primarily based on environmental stewardship, financial growth, social properly-being, technological development, and overall performance control- for measuring sustainability. It's also explained how those indicators may be used in assessing a corporation's manufacturing operations. Besides including technology and training as the 2 enablers of sustainability in manufacturing, an extensive photo of the research challenges inside the location of sustainable manufacturing based totally on the IMS2020 project has built (Garetti and Taisch, 2012).

There are some studies works had done in several industries around the world. Within the area of manufacturing structures layout, Nagel and Tomiyama (2004) mentioned the concept of layout for environment (DfE). By way of assessing 25 manufacturing systems inside the printed

board industry, it concluded that using less aid and producing less waste and emissions along with measuring and managing the environmental balance with statistics era will assist in making a sustainable and wise system. Having surveyed the contributors of the U.S. Industrial carpet industry, Rusinko (2007) addressed the consequences of incorporating environmental sustainability in production structures on their competitive effects which includes production fee and product exceptional.

2.3 Sustainable Manufacturing Practices in RMG industry

Sustainable production is a brand new line of have a look at each home and international. In keeping with Ovi (2014), Bangladesh's readymade garment (RMG) zone has stepped into making factories eco- pleasant as call for inexperienced merchandise has been on the rise from the worldwide shoppers. To put in force sustainable production practices, some manufacturers have up to now brought inexperienced factories reducing dangerous emissions, enhancing power efficiency, recycling byproducts and bettering waste control.

Waste control has emerged as an appealing proposition for sustainable commercial development. Waste control, apart from improving the procedure efficiency and consequently decreasing the fee of manufacturing, also brings down the pollution load that serves the dual motive of making the economic operations extra aggressive in addition to defensive the environment. Waste minimization is called Systematically decreasing waste at supply that means prevention and discount of waste generated, green use of uncooked substances and packaging, efficient use of gasoline, electricity and water, improving the quality of waste generated to facilitate recycling and encouraging re-use, recycling and recovery (Velmurugan and Ramaraj, 2014).

In keeping with Hassan (2015), Bangladesh RMG enterprise's principal sustainability troubles ground water depletion, floor water pollutants, energy performance, unsafe chemical control and strong waste control. This industry is already taken thus far steps forwards for making sustainable garments industry: IFC-SEDF - purifier manufacturing, water, timber - Environmental overall performance improvement challenge with German global Co-operation., textile era business Centre, fabric Sustainability Platform (TSP), 0 Discharge of risky chemical compounds (ZDHC), 0 Liquid Discharge (ZLD), studies on sustainability, Cluster based CETP, partnership with global magnificence era providers, green manufacturing facility building, coverage revisiting and fine exercise by factories.

Additionally, Kar et al. (2013) showed that water and strength saving great practices in Bangladeshi RMG industry that are put off water leaks and reduce hose pipe use. Reuse cooling water from dyeing system, reuse system water from rinsing and steam management, insulate pipes, valves, flanges, recover heat from drying operations respectively for water saving and power saving quality practices.

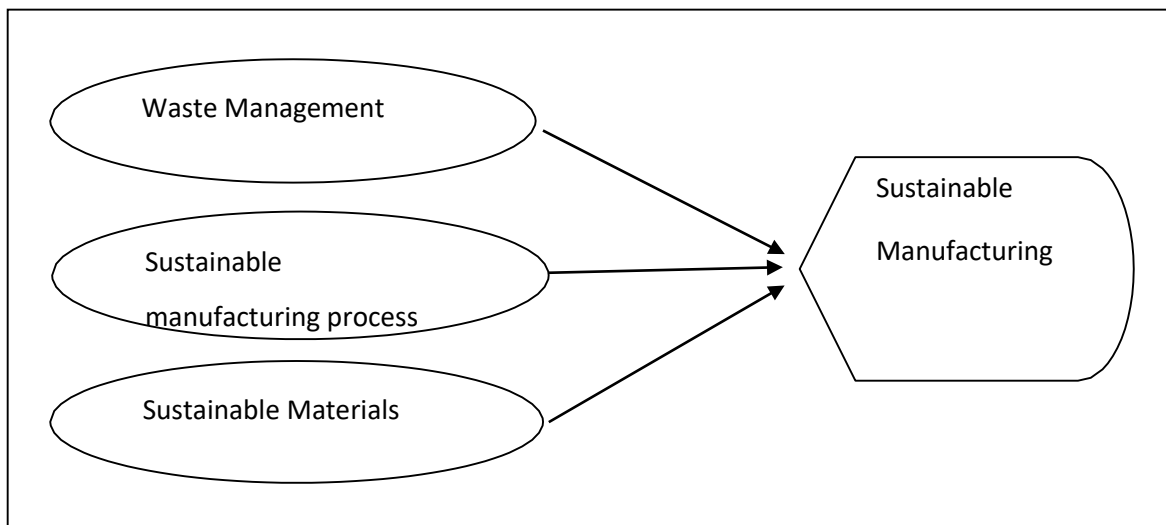
Sustainability factors within the garb enterprise must be evaluated alongside the goods overall life span (i.E. Starting from the layout for the surroundings, obtaining raw materials, generating clothing in addition to its effect on earth. The fashion designer need to make choice on which environmental consequences to consciousness in a try to make the goods green. Organic uncooked substances for textile are appeared as wholesome, herbal and are gown without cancer generating pesticide and insecticide which include natural cotton, cotton crafted from hemp, bamboo or soy fibers (Rajon, 2016).

2.4 Conceptual Framework

The present literature related to this topic, which has been reviewed within the literature review, helped to establish the conceptual framework for this paper. Previous studies have highlighted of sustainable production practices inclusive of waste control, inexperienced production, pollutants prevention, sustainable cloth and sustainable manufacturing system which might be adopted by using corporations. However, this studies only makes a specialty of 3 sustainable manufacturing practices specifically waste control, sustainable manufacturing process and sustainable material.

After a rigorous evaluate of the literature, it become discovered that scholars have advised numerous vicinity of sustainable manufacturing practices. With the help of the literature, particularly from Roni et al (2014) "Conceptual look at on sustainable production practices and firm overall performance", a proposed sustainable manufacturing practices for RMG industry is given here:

Figure1: Proposed theoretical framework sustainable manufacturing practices



For this paper which discussed about waste control exercise, sustainable manufacturing exercise and procurement of sustainable materials practice which could assist to measure RMG enterprise's sustainable manufacturing practices in Bangladesh. Right here this paper look into waste control system, energy discount, water consumption discount, noise pollutants discount gadget, usage of renewable system and sustainable raw materials buy, recycled/ reused materials utilization in addition to non-dangerous chemical compounds usage practice of different RMG organizations that help to find out the general situation approximately sustainable production practices in RMG enterprise of Bangladesh.

3. Research Methodology

3.1 Research Layout

A practical studies became accompanied to behavior this look at; that is a totally critical troubles in gift business international and plenty of researchers and practitioners nevertheless

operating on it. Beneath such situations, a conceptual framework was created consistent with the existing literature and published reviews of sustainable production practices by using established overseas corporations, researchers and practitioners. For the reason that research became carried out from a pragmatist factor of view, any appropriate approach or approach that can be used to answer the studies questions become adopted. The important thing motive is to accumulate typically qualitative records thru expertise sharing and dialogue.

3.2 Data Collection

In this studies topic data had been power reduction practices, water intake practices, using of renewable energy, noise reduction measurements, sustainable raw materials and add-ons, practices of the use of or procure non-dangerous chemical substances and packaging substances, and so forth. So as to collect initial knowledge about the study subject matter, various statistics resources which include studies reports, journals, local and overseas public procurement policies, procurement guidelines of international companies and company's posted inexperienced procurement rules were looked for the use of google and google scholar search equipment. These served because the secondary sources of statistics for the thesis. Uncooked information become accumulated thru a survey carried out through head to head interviews and telephone interviews. That primary information is usually qualitative in nature.

3.3 Target Population and Sample Distribution

The centered population of this paper had been 4286 RMG companies listed in BGMEA that conduct their operation within us of a. RMG groups which have at the least one global certificate on sustainability issues were pick out as a sampling frame. Because of time constraints, 20 companies may be viable to pick as sample. A combination of sampling techniques had been used comfort sampling and snowball technique. This implies that the samples had been selected in keeping with convenience and simplicity of access to the managers. Additionally, a string of references has been used to identify statistics rich samples and peruse them for an interview.

3.4 Questionnaire Layout and Analysis

A semi-dependent questionnaire (Appendix) became advanced as a means of carrying out the survey for accumulating uncooked records. The questionnaire contained four sections. The primary phase contained approximately fundamental information of agency, awareness of sustainable production and initiatives taken to ensure it. The second one component contained waste control problems of sustainable manufacturing, 0.33 portion contained sustainable production process together with energy reduction, utilization of renewable strength, discount of water usage and so on. And the final element contained procurement of sustainable materials like sustainable raw substances, recycled materials, usage of non-harmful chemical compounds.

At some stage in statistics series, freedom will be given to the respondent to add any extra facts they preferred to proportion. During the survey, utmost effort will be given to accumulate actual, applicable and accurate information. The facts gathered were analyzed the usage of descriptive information and offered inside the shape of percentages and bar charts, pie charts generated the use of Microsoft Excel.

4. Results and Findings

4.1 Sustainable Production Practices in RMG Industry of Bangladesh

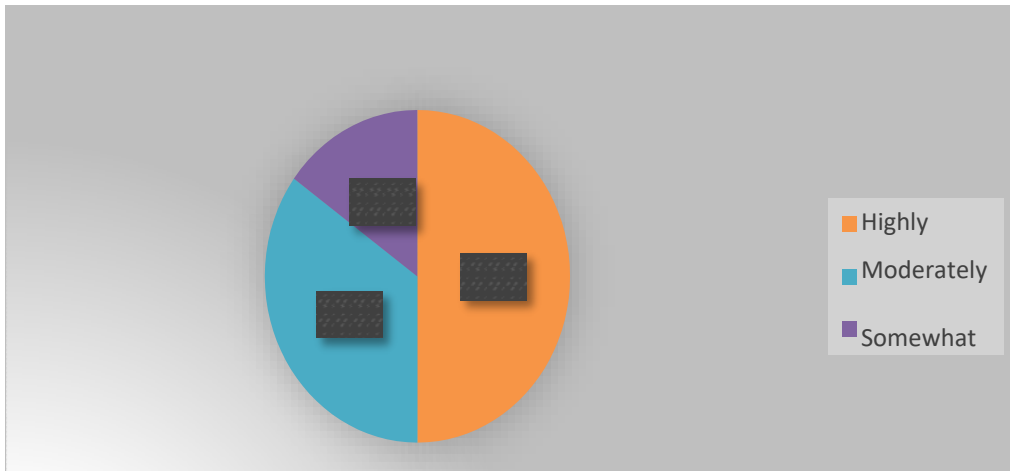
Sustainable manufacturing very new problems in RMG industry of Bangladesh. However daily RMG groups are looking to produce their product on sustainable approaches. Numerous companies take initiative to run their manufacturing system on sustainable manners and take numerous global certificates after satisfying sustainable practice standards.

In line with the predetermined questionnaire, the 20 decided on RMG companies which have as a minimum one related certificate are introduced to account for checking the circumstance of their Sustainable production practices. The gathered data from the questionnaire and the opposite sources are analyzed for reviews.

4.2 Organizations Consciousness on Sustainable Production

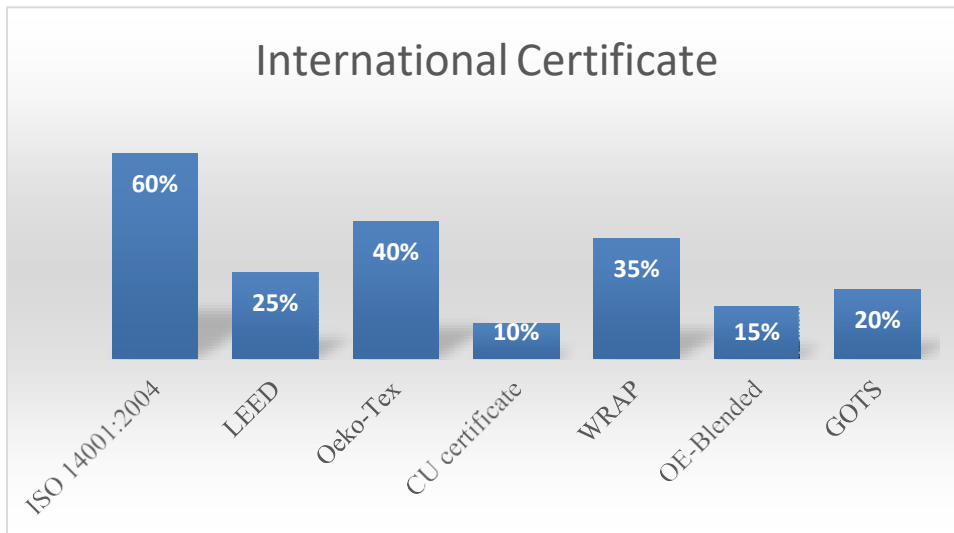
The figure 2 bellow suggests agencies attention on sustainable manufacturing in which 50% (10 out of 20) companies are exceedingly conscious on sustainable manufacturing. A few these 10 organizations have sustainable associated global modern-day LEED certificates, ISO 14401:2004 certificate and others certificates and a few organizations have suitability file and coverage. And rest 35% (7 out of 20) and 15% (three out of 20) companies are fairly and incredibly aware on troubles because they've different certificates together with ISO.

Figure 2: consciousness of RMG companies on sustainable production



This paper work is based totally on the ones groups which have at least one international certificate related to sustainable production. Most of the business enterprise have a couple of certificates. And those certificates are ISO 14001:2004, LEED, o.K.-Tex, CU certificates, WRAP, OE-one hundred & OE- mixed and GOTS. Companies received above citing certificate because of pleasing of standards which associated with sustainable production practice in RMG enterprise. Discern three suggests global certificate of surveyed firms. Right here surroundings control machine associated ISO 14001:20042 certificates is acquired by way of 60% (12 out of 20) corporations and US green constructing council furnished LEED3 is obtained via 25% (5 out of 20) firms.

Figure 3: international certificates related to sustainable production

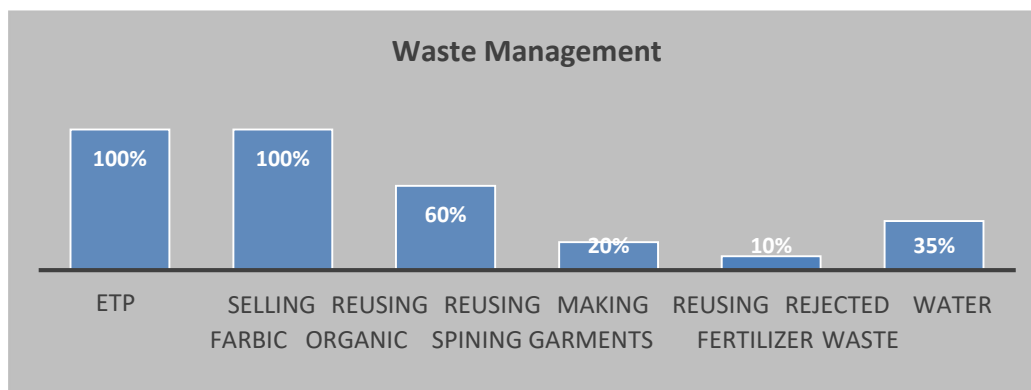


Parent additionally confirmed that forty% (eight out of 20) companies take textile associated O.K.-Tex one hundred standard⁴, 10% (2 out of 20) CU compliance certificate⁵. This parent further suggests that financial system & resource performance certificate WRAP⁶ is taken via 35% (7 out of 20) firms, OE-Blended⁷ 15% (3 out of 20) and GOTS⁸ (global natural textile standard) 20%(four out of 20).

4.3 Waste Management

The trash not noted after each technique all through production remains waste. Waste management is the human control of the gathering, treatment and disposal of different wastes (liquid and strong). Waste management serves twin purposes through making the economic operations more competitive as well as defensive the environment. The not unusual waste control procedure accompanied by way of RMG industry in Bangladesh are ETP for treating liquid waste and reusing water for washing toilet as well as sprinkling onto the gardens and plantations, reusing spinning waste, reusing material, making natural fertilizer and promoting rejected clothes to local markets or 0.33 parts. The survey result of waste management followed with the aid of the RMG selected manufacturers are given in figure 4:

Figure 4: Waste Management Practices



A hundred% (20 out of 20) producers used Effluent Treatment Plan for treating liquid waste coming from one of a kind generating procedure particularly death section. Additionally, one hundred% (20 out of 20) of the agencies promoting their rejected clothes to 1/3 birthday celebration or nearby markets.

60% (12 out of 20) groups answered that they have got used their ETPs handled water for gendering and plantation in addition to use as a flash water for their worker bathrooms. 35% (7 out of 20) organizations reported that they reused their spinning waste as raw substances and organic fertilizer. Natural fertilizer also created from citizen waste and different natural ingredients which are completed by way of 10% (2 out of 20) businesses. Waste control some other procedure is reusing fabric this is followed by using 20% (four out of 20) companies and this waste are coming from reducing segment.

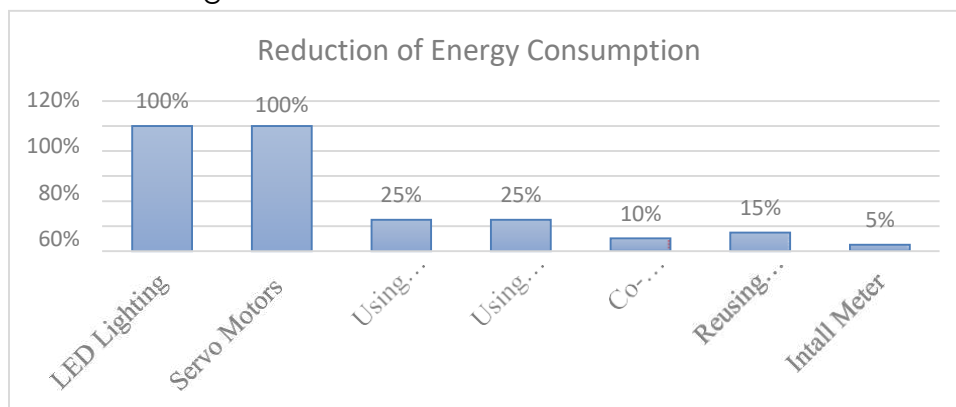
4.4 Sustainable Production Technique

This section includes discount of energy intake, utilization of renewable strength, reduction of water intake and reduction of noise pollution practices.

4.4.1 Reduction of Power Intake

According to discern 5, a hundred%(20 out of 20) agencies stated that they are using electricity efficient LED light as opposed to T-8 lighting and sewing machines geared up with servo vehicles which can be tested as green energy. Such tasks have resulted within the discount of energy intake by 35- forty%.

Figure 5: discount of strength intake Practices



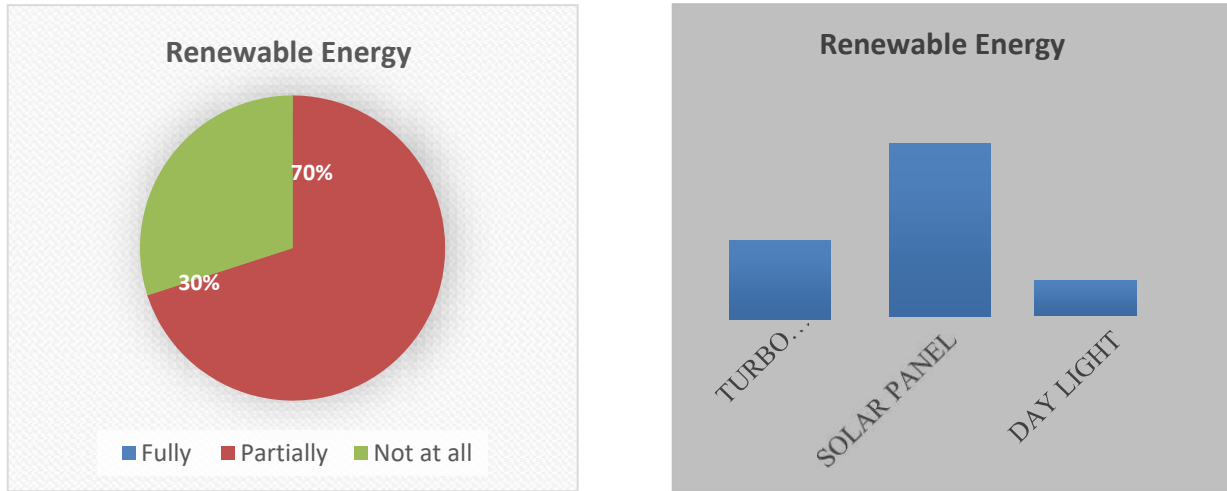
25% (5 out of 20) corporations claimed that they reused their condensed steam. This heated water is dealer to boiler to provide steam over again which save natural fuel. Best 10% (2 out of 20) used co-technology boiler which also shop fuel gasoline. The natural cooling pads is used by 25 % (5 out of 20) groups instead of air condition or hundreds of ceiling fans that saving strength. 15% (three out of 20) groups claimed that they set up dryer exhaust to save gasoline used in loss of life unit. Handiest five% (1 out of 20) enterprise installation meters (water drift meter, power meter, and steam go with the flow meter) to lessen electricity intake.

4.5 Renewable Electricity

Because of worldwide warming, world is emphasized more on renewable electricity. Now businesses in addition to industries attempt to convert renewable electricity system from

conventional gadget. The surveyed statistics confirmed on discern 6 that 70% (14 out of 20) companies partly deploy renewable electricity device of their industries and workplaces and 30 % (6 out of 20) nonetheless not take any initiative to install renewable power system.

Figure 6: usage of renewable strength

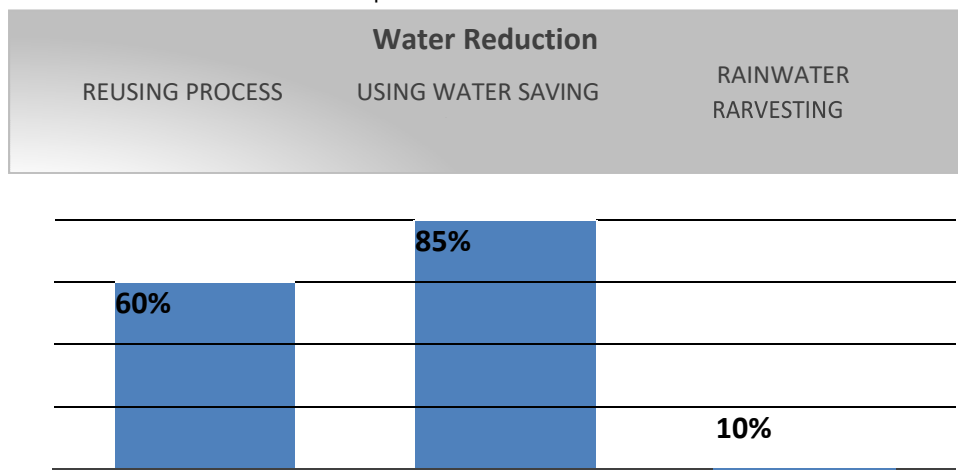


Amongst 20 RMG organizations, 35% (7 out of 20) used rapid air flow, sixty five% (13 out of 20) used sun panel and 20% (four out of 20) used day light as a renewable energy machine for meet up their partial strength demands.

4.6 Reduction of Water Consumption

60% (12 out of 20) organizations stated that they reused their manner water (ETPs treated) that may keep their water intake. Eighty-five%(17 out of 20) organizations used water saving equipment consisting of servo motors, air drying machine that may shop water intake in RMG enterprise.

Figure 7: Reduction of Water Consumption

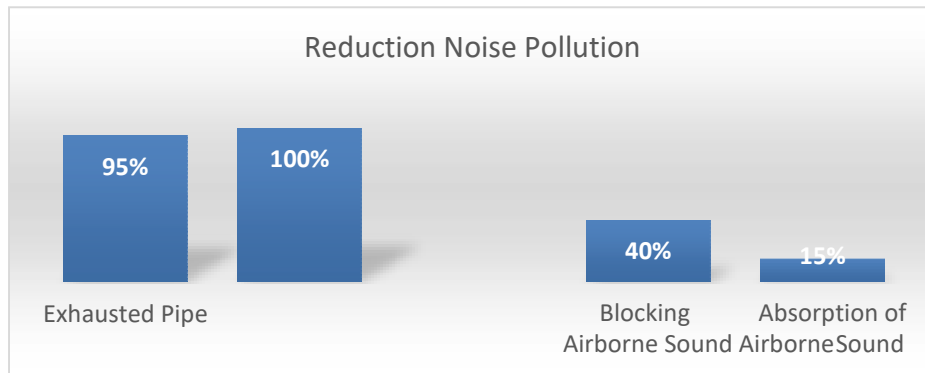


In Bangladesh 10% (2 out of 20) agencies used their roof top space or free area as rain water harvesting system to re-use the water for cloth dyeing, washing and other functions which in the long run lessen ground water usages.

4.6.1 Reduction of Noise Pollutants

RMG organizations take two kinds of degree to lessen noise pollution: lively degree and Passive measure. Maximum of the businesses normally take energetic measures to lessen noise pollutants. Figure 8 confirmed both lively and passive measure along with its percentage of utilization among the groups.

Figure 8: Reduction of Noise Pollutants Practices



One hundred % (20 out of 20) corporations stated that they supplied their labor specialized headphone to lessen noise pollutants harmful effect and 95 % (19 out of 20) groups used exhausted pipe to wipe out noise from the generator or boiler rooms. Forty% corporations used character protector for his or her hard work or the use of plastic system enclosure and 15% corporations take in airborne sound by using lining their indoors walls of the enclosure with an absorber.

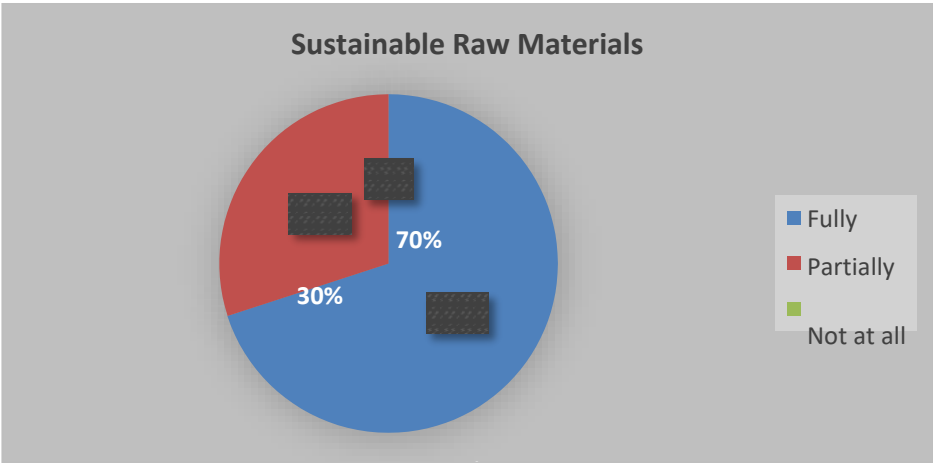
4.7 Sustainable Substances

This section discuss about purchase or use of sustainable raw substances, add-ons, non-harmful chemicals, and non-harmful, recyclable and reusable packaging substances.

4.7.1 Sustainable Uncooked Substances

Sustainable raw materials are those components that provide environmental, social and economic blessings at the same time as defensive public health and surroundings over their complete lifestyles cycle, from the extraction of uncooked substances till the very last disposal. RMG industry of Bangladesh is rather issue approximately sustainable uncooked substances due to the issues of the excessive-stop-brands as clients. The common sustainable raw materials of RMG industry are cotton, natural linen, recycled polyester, and polyamide.

Figure 9: Procurements sustainable raw materials practices

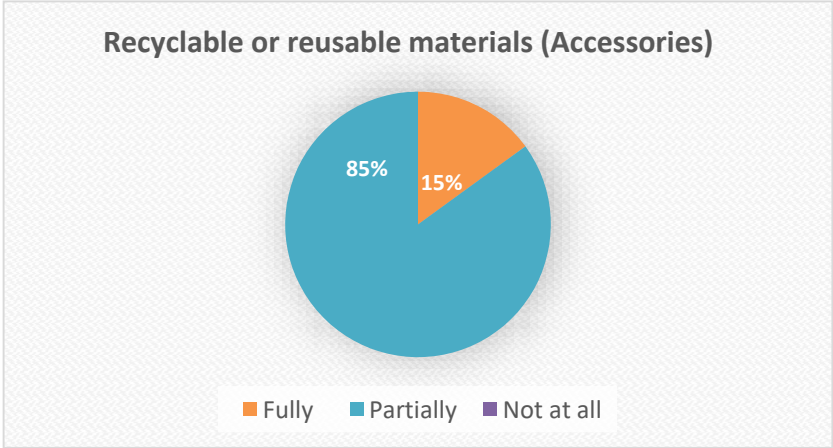


70% (14 out of 20) businesses claimed that they're absolutely used sustainable raw substances for his or her production house and relaxation of 30% (6 out of 20) groups claimed that they partially use sustainable uncooked substances.

4.7.2 Recyclable or Reusable Materials (add-ons)

Besides material of garment, the other substances are referred to as garment accessories. The not unusual garments add-ons buttons, zippers, interlining and so forth.

Figure 10: utilization/procurement of recyclable or reusable substances (add-ons) practices

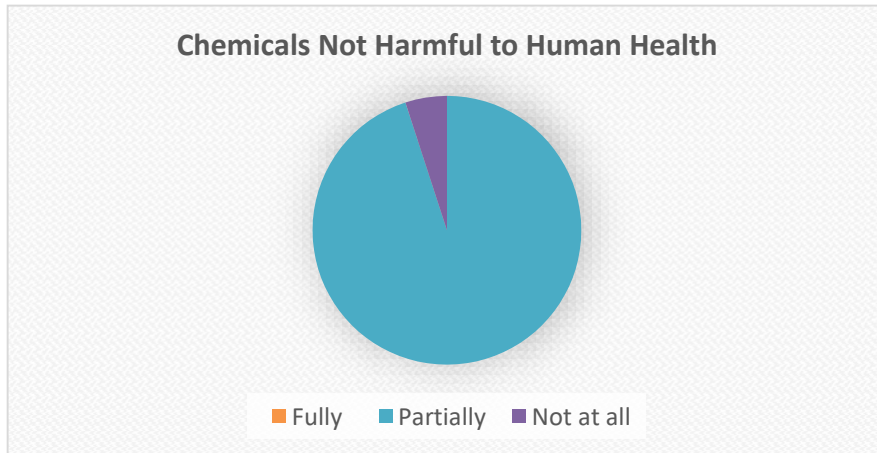


15% (three out of 20) manufacturers claimed said that they used recyclable or reusable accessories for his or her manufacturing house and eighty-five% (17 out of 20) claimed that they may be partly fulfil the recyclable accessories. However, maximum of the groups stated that it depends on buyers' requirements and Bangladesh RMG buyers are problem about sustainability in order that they typically demand sustainable add-ons materials.

4.7.3 Chemical Substances No Longer Dangerous to Human Health

RMG corporations want to use chemicals for material shade and washing of the clothes. In line with global standard corporation like all Right-Tex, a firm ought to use chemicals that are not harmful to human fitness.

Figure 11: purchase of chemicals now not dangerous to human fitness

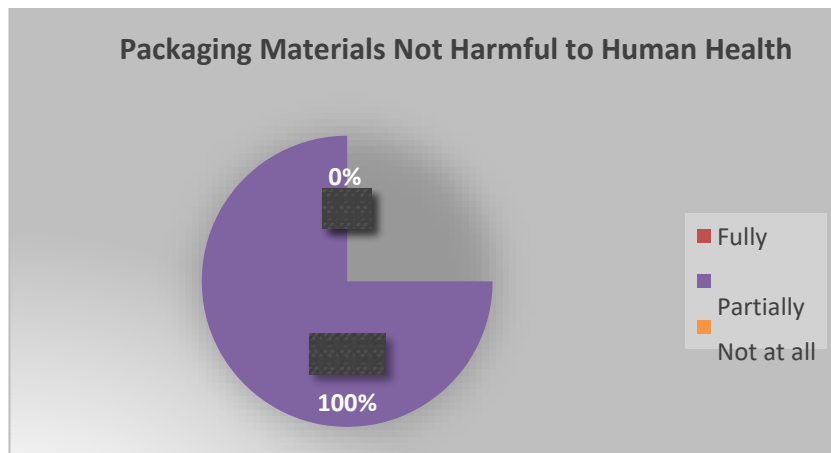


In Bangladesh, ninety-five% RMG firms partly procure chemical compounds that are not dangerous to human health. The rest five% partially not satisfy the worldwide standards of purchasing safe chemicals.

4.7.4 Packaging Materials No Longer Harmful to Human Health or Recyclable and Reusable

One hundred% (20 out of 20) organizations partially used packing substances which isn't dangerous for human fitness or environment and recyclable or reusable like shopping chemical substances with refutable unload, buy bulk among with refutable container and so on.

Figure 12: buy of packaging materials not harmful to human fitness or recyclable and reusable



5.1 Conclusions

Because of the progressively growing fees of energy, business contamination, deficiencies of strategic raw substances and natural sources, and ecological screw ups, sustainability has grown to be most taking problems these days. So, the awareness and movement for saving the environment and decreasing pollutions is growing anywhere over the world. Being one of the most polluting parties, the enterprise firms or industries are also being introduced to the point of saving environment from pollutions. The ready-made clothes are one of the key industries of Bangladesh. That is the largest and maximum effective enterprise which includes a huge quantity of corporations, personnel and capital. As environmental issues are very important nowadays, making the RMG industry problem approximately sustainable manufacturing practices where companies produce their product that limit poor environmental impacts, preserve strength and natural resources, are safe for personnel, groups, and customers.

The finding of the studies is divided into two part: focus on sustainable manufacturing and common sustainable practices of ready-made clothes industry in which the commonplace practices is shown on waste management practices, sustainable production technique and sustainable materials procurements practices the various geared up-garments producers.

5.2 Limitations and Future Work Instructions

One of the essential obstacles of this have a look at is its small pattern size that is best 20 sample while the whole populace is 4286. This isn't always enough to show the overall situation of appropriate production exercise in RMG industry of Bangladesh. Additionally, sample are taken only those organizations which have at the least one global certificates on appropriate manufacturing or related issues that confined this thesis paper to discover applicable facts about suitable manufacturing practices in RMG enterprise.

Additionally, data are amassed inside a brief time frame and interview is taken from the ones companies which situated in Dhaka, Narayanganj and Gazipur that constrained the scope of this thesis. This have a look at entirely works in RMG enterprise but sustainable manufacturing exercise is vital for any industry.

This observe could be extended to discover the connection of sustainable production exercise and performance in addition to financial impact inside the industry. Further could be prolonged to comparative evaluation between corporations or industries.

This have a look at has been carried out at a very initial level. But, appropriate manufacturing is a crucial a part of doing surroundings pleasant commercial enterprise. The government, subsidized with the aid of greater studies on this subject be counted, wishes to come forward to encourage and educate the RMG industry to undertake extra sophisticated appropriate manufacturing measures.

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