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Era of Sustainability in Textile Industry: A study on Rising Concerns towards Sustainable Fabrics in Indian Fringe

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Abstract: ***Introduction: The textile industry is one of the biggest and most complex businesses in the world, confronting numerous environmental and social challenges. Feasible textile generation is getting to be progressively imperative to decrease the negative environmental and social impacts of textile generation. The scale and productivity of economical textile generation is key to guaranteeing that textile generation meets natural guidelines and social responsibility.***
Aim of the Research: Is to understand the behavioral pattern of consumers towards accepting and purchasing Sustainable Fabrics and apparels, and under different circumstances.
Research Methodology & Analysis Tool: Various approaches have been developed to achieve sustainability in textile production, such as mainly through Primary Data collected through n online survey using a self made questionnaire targeting the critical points of use of Sustainable textile production and use. While, some data was picked from previous research papers as secondary data. As a whole data was analysed using MS Excel for analyzing the statistical data.
No. of respondents & demography: Through the online survey which was undertaken using the custom questionnaire, in which data was collected from 124 respondents, majority of whom resided in South India .
Findings: The efficiency of sustainable textile production is also important as it ensures that the production process meets environmental and social standards. Validity can be achieved through the use of third-party certifications such as the Global Organic Textile Standard (GOTS) and the Blue sign system. The certification ensures that textile production meets environmental and social standards, including the use of sustainable materials, reduced water and energy consumption, and fair labour practices. Finally, the scale and efficiency of sustainable textile production is key to solving the environmental and social issues associated with textile production. The adoption of sustainable production practices, the use of environmentally friendly materials and third-party certification are essential to achieve sustainable textile production.
Keywords: Sustainable Textile Production, Sustainable Development, Textile Industry, Environment friendly fabrics.

I. INTRODUCTION

Economical materials are materials created in an ecologically and socially dependable way, with an accentuation on minimizing natural affect all through their life cycle, from generation to transfer. Economical material generation has picked up energy in later a long time as customers and businesses have gotten to be progressively mindful of the negative natural and social impacts of conventional material generation strategies. Maintainable material generation incorporates utilizing naturally neighborly and non-toxic materials, decreasing squander and contamination, and guaranteeing reasonable work hones all through the supply chain. The viability of maintainable material generation is upheld by logical proof of the negative impacts of customary material generation on the environment and human wellbeing. For example, traditional cotton production involves the use of large amounts of pesticides and water, which can lead to soil and water pollution, while synthetic fabrics such as polyester release microplastics into the environment. environment when washing. In addition to environmental concerns, the textile industry has social and ethical issues, such as the use of constrained labour and poor working conditions for garment specialists. The adequacy of maintainable textile production is additionally based on the need to address these issues and advance reasonable labor practices. Natural sustainability issues are getting to be progressively imperative within the apparel industry. Key practices incorporate replacing harmful chemicals with environmentally friendly materials and decreasing waste volume and resource consumption by reusing garments. The most recent maintainable development within the industry is slow fashion. It may be a socially conscious development that shifts the customer attitude from quantity to quality, empowering individuals to buy quality items less habitually. Moderate design includes moderate generation and moderate utilization.

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Slow production does not take advantage of natural and human resources to produce faster and slow consumption means a longer lifespan for products, from manufacture to disposal. While the concept of slow fashion is not limited to environmental sustainability, the conceptual distinction between slow fashion and environmentally sustainable fashion remains blurred. This may be due to the very limited academic understanding of slow fashion despite the growing interest in it in practice. The purpose of this study is to explore the dimensions of slow fashion in the light of Churchill's measured development paradigm. By measuring the scale of development of consumer orientation projects towards slow fashion, this study attempts to theoretically define the fundamental dimensions of slow fashion. The initial scale items were generated from a literature review and an open-ended survey. These elements were then purified and validated by two surveys (i.e. samples of students and non-students). Thus, the five dimensions explain slow fashion: fairness, authenticity, functionality, localism and exclusivity.

The five dimensions identified make it clear that slow fashion is a broader concept than environmental sustainability, including:

1) Concern for producers and local communities to live sustainably (equity and localism);
2) Historical implication of the perceived enduring value of products (authenticity);
3) Finding diversity for a sustainable fashion world (exclusivity);
4) Maximum product longevity and efficiency for sustainable environments (functionality).

This study is one of the first attempts to find the potential dimensions of slow fashion through scale development. This process could serve as a basis for a theoretical definition of the concept of slow fashion. Additionally, slow fashion can expand the range of choices for consumers. When the innovative spirit of young, independent designers combines with local resources, slow fashion is likely to surpass stereotypical fashion trends and lead fashion diversity.

Overall, the scale and efficiency of sustainable textile production is a key factor in solving environmental and social issues in the textile industry and in promoting a more sustainable and ethical fashion industry.

II. LITERATURE REVIEW

The literature review moreover gives knowledge into reasonable scales that can be utilized for this reason. The literature audit concludes with an outline of the hypotheses to which a feasible utilization step might contribute. Sustainable consumption from a large scale and miniaturized scale viewpoint the term “sustainable consumption” was presented into the worldwide political field amid the plan 21 of the joined together countries conference on environment and improvement, held in 1992 in rio de janeiro, brazil. The 2002 world summit on economic advancement in Johannesburg, South Africa called for a comprehensive set of programs centered on feasible utilization and generation. Twelve long years have passed since the world summit on sustainable development in Johannesburg in 2002, and feasible utilization and generation are still in their earliest stages. The center of the trouble of the issue lies in that political, biological, social and mechanical issues are included and more time is required to reply to the issue or give an idealized and down to earth arrangement to the issue (Fuchs & lorek, 2002; seyfang, 2007). Feasible utilization has as of now gotten to be a major arrangement issue broadly and universally inside the joined together countries division of financial and social undertakings (undesa). In scholarly and approach debates related to maintainable generation and utilization, two common approaches have been utilized to think about this theme: macro-level approaches/perspectives and micro-level approaches/perspectives.

From a large scale point of view, feasible utilization investigate looks at collective macroeconomic behaviors such as suitable acquirement behaviors, supply chain decision-making or corporate social obligation, or macroecological behaviors such as corporate utilization of common assets (heap, kent and klug, 2000; spaargaren , 2003). Various analysts have dissected sustainable consumption based on the taking after measurements: political, innovative, natural, and macroeconomic measurements, item life cycle examination (lca), input and yield show (io) and exponential development of growth11 and conveyance of riches inside and between nations (fuch & lorek, 2002; hertwich, 2005; kilbourne, mcdonagh & prothero, 1997; wolff & schönherr, 2011). From a smaller scale point of view, sustainable consumption research analyzes the utilization behavior of people, e.g. B. Customer characteristics, customer reactions to natural boosts, and buyer decision-making processes (hertwich, 2005; seyfang, 2007). Employing a large scale or small scale viewpoint to outline their investigate, the analysts centered on distinguishing the component or components that may really persuade society as a entirety to move towards maintainability (comim, tsutsumi and varea, 2007; kilbourne, mcdonagh and prothero, 1997; spaargaren, 2011).the literature review shows that the concept of sustainable consumption includes both macro and micro dimensions. For example, fuchs and lorek (2001) state that sustainable consumption can refer to two categories: sustainable consumption on the supply side and sustainable consumption on the demand side. In fact, masera (2001) states that in order to recognize the sort of sustainable consumption, individuals ought to distinguish between the utilization of assets such as materials and vitality and the utilization of items and administrations to fulfill current needs and needs.

Which viewpoint, large scale, or small scale, is more suitable for the investigation truly depends on the investigate address being inspected. Perspectives for sustainable consumption at the macro level. Fuchs and loreck (2002) focus on the macro level and mention that globalization is the main parameter that has changed the neoclassical model of consumption. They emphasized that globalization is affecting the determinants of unsustainable consumption patterns in contemporary society. The global economic model and the unstoppable trend of technological development are expanding consumers' consumption options.

In addition, globalization has changed the world, changing not only the organization of production and the format of transactions, but also affecting the characteristics of political networks between countries. Thus, fuchs and loreck (2002) found that policy interventions aimed at manipulating the relationship between globalization and localization are crucial to the pursuit of sustainable consumption. As specified over, globalization has not as it were changed the worldwide financial framework, but too today's legislative issues and political changes. On the off chance that we see economic utilization and generation from a large-scale point of view, open and political bolster is basic, and lawmakers and decision-makers play a pivotal part in quickening the pace towards a maintainable society. In truth, a few rules are being made to execute feasible utilization more viably. The results of these approaches point to bringing almost positive natural, financial and social change by changing shopper behavior (dolan, 2002; kilbourne, mcdonagh and prothero, 1997; spaargaren, 2011; wolff and schönherr, 2011).

However, a change in consumer behavior does not only mean a change in the consumption behavior of individuals or households, but also a change in the consumption behavior of institutions, companies and even countries. (fox and lorek, 2002). Therefore, the formulation of a sustainable consumption policy is a complex issue.

In order to achieve the goal of sustainable consumption, many macro-level studies have examined which policy instruments are actually changing consumption behavior in a sustainable direction.

Kletzan, köppl, kratena, schleicher and wüger (2002) suggest that in a sustainable consumption policy not only economic factors but also psychological and socio-demographic aspects at the micro level should be included in the policy framework and guidelines. Wolff and schönher (2005) assessed the rebelliousness of maintainable utilization approaches and inspected their impacts. They pointed out that feasible utilization arrangements exist all over, from natural approaches to agrarian and charge arrangements. These arrangements target, specifically or by implication, the behavior of person shoppers. Consistent with different governance mechanisms, howlett, ramesh and perl (2003), wolff and schönherr (2011) concluded that there are four types of regulatory tools in sustainable consumption policy: economic tools, communication tools, procedural tools and social self-help. - regulations. Social communication, procedural and self-regulatory tools are important and based on a micro-level governance mechanism covering some social aspects such as social standards, consumer education, social responsibility, sustainable consumption and campaigns. Footprint.

Researchers have used ecological economics to study sustainable consumption and production. Wiedmann, minx, barrett, and wackernagel (2006) used the input-output (io) model, a quantitative economics technique, to study sustainable consumption patterns in industry. Takase, kondo, and washizu (2005) presented an input-output model of waste that includes the phases of purchase, use, and disposal by the supplier to assess sustainable consumption. Researchers estimate co2 emissions and landfill use to study sustainable household consumption. Hertwich(2005) drew on life cycle analysis (lca), a tool that uses both process analysis and input-output analysis to promote sustainable production and consumption patterns. The life cycle assessment is a tool for evaluating the environmental impact of products, systems and services, taking into account emissions and resource consumption during the manufacture, distribution, use and disposal of products (iso 14040).

Another important component that is seen as influencing sustainable consumption is technology. The use of sustainable technologies has a significant effect on sustainable development, consumption, and production, according to numerous empirical studies. (heap, kent & klug, 2000; kilbourne, mcdonagh & prothero, 1997; spaargaren, 2003).

The most well-known and iconic example of a sustainable energy source used by consumers is a photovoltaic solar panel, also known as a solar photovoltaic (pv), which uses a photovoltaic cell to capture energy from the sun. However, spargaren (2003) found that when social connections are combined with the use of sustainable technologies, citizens respond differently. Therefore, it is impossible to understand sustainable consumption by concentrating solely on technological advancements without also considering the various social dynamics. According to Kletzan et al. (2002), economics was the primary factor influencing the rise of mass manufacturing and materialintensive consumption. A possible side effect of this is an environmental crisis like climate change, environmental degradation, and water and air pollution (brown and cameron, 2000; douglas and isherwood, 1980; rpke, 1999). Economic competition forces producers to increase their productivity in order to increase their income. A society may be able to move toward more sustainable production and consumption by increasing general awareness of environmental issues.

However, the capacity to move toward sustainability is being weakened by rapid economic growth, processes of industrial development and urbanization, population growth, and other global issues.

Although consumers have a lot of fundamental or general environmental knowledge, their lack of familiarity with sustainable production and consumption slows the pace of sustainable development. (gilg, barr & ford, 2005; haron, paim & yahaya, 2005; mont, 2004) Although the word "sustainable consumption" was officially defined at the 1994 Oslo Symposium on

Sustainable Consumption, it is still difficult to define. According to Eberle et al. (2004), sustainable consumption is a social activity connected to the processes of purchasing, using, and discarding goods and services. The theoretical meaning of sustainable consumption is based more on an environmental evaluation of a product or products. According to Wolff and Schönher (2011), it is difficult to define sustainable consumption in just a few words; instead, it is best understood by taking economic, social, and ecological performance indicators into account collectively. In order to alter consumption patterns, sustainable consumption is a concept that must be incorporated into daily behavior patterns. (seyfang, 2006).

The topic of sustainable consumption has been studied in various methods. A group of researchers focused on examining whether the social, economic, and psychological stress of individual consumers reduces some of their consumption, the key issue and solution of sustainable consumption (gilg, barr, & ford, 2004; kletzan, köppl, kratena, schleicher, & wüger, 2002), after a sustainable consumption and production agenda was put in place to address this problem at the micro level. According to a different set of researchers, promoting sustainable consumption can be more effectively done by informing and enticing consumers to engage in "green consumption." (hertwich, 2005; seyfang, 2007).

It has been suggested that "responsible consumption" needs to be defined more precisely as scholars study sustainable consumption. It is common practice to use the term "sustainable consumption" in research studies without first defining or debating what it means, according to Comim, Tsutsumi, and Varea (2007). Sustainable consumption is actually described conceptually and practically in the Oslo definition alone 18 and the European Commission's theoretical meaning. It is necessary to conceptualize and operationalize the term "sustainable consumption" in order to develop and assess the effects of such programs successfully.It is acknowledged that the exact meaning of sustainable consumption is a little hazy. (seyfang, 2006).

Sustainable consumption is integrated at the micro level with a number of dimensions in addition to the three well-known facets of social, environmental, and economic factors (Kletzan, Köppl, Kratena, Schieicher, & Wüger, 2002). Microsociology (comprising regular human social interactions), microeconomics (comprising consumer behavior and decision-making), micromarketing (comprising individual and consumer marketing), social psychology (comprising people's thoughts, emotions, and behaviors), and social anthropology are some of these microlevel aspects. (individual). Within-group interactions (buenstorf and cordes, 2008; evans and jackson, 2008; kol and aimatchett, 2009; haron, paim, and yahaya, 2005; mont, 2004; gilg, barr, and ford, 2005). Different consumer views of sustainable consumption affect how they intend to behave, which in turn influences how they actually behave when it comes to consumption. Based on consumer decision-making theory and an established conceptual framework of attitudes and behavioral intentions, Vermeir and Verberke (2006) performed a study on sustainable food consumption. This is a good example of a study that examined consumer behavior at a micro level and provided some key indicators that are critical and significant in predicting sustainable consumer behavior.

III. HYPOTHESES

1) Consumers in the Indian fringe are increasingly concerned about the environmental impact of the textile industry and are willing to pay more for sustainable fabrics.
2) Textile companies that adopt sustainable practices and materials will have a competitive advantage in the Indian fringe market.
3) The use of sustainable fabrics in the Indian fringe will result in a reduction in environmental pollution and will contribute to the overall sustainability of the industry.
4) Government policies and regulations promoting sustainable practices in the textile industry will lead to increased adoption of sustainable fabrics in the Indian fringe.

IV. RESEARCH METHODOLOGY

This study is embodied with primary and secondary data. The primary data has been collected from the respondents categorized in two categories of stakeholders' i.e. local household respondents and visitor respondents. The study included a sample of 175 however 124 respondents with alid details were finalised for the study.. The respondent data includes diversified demographics collected over a course of 6 months. The questionnaire statements consist of varied statements related to Utility of Sustainable fabric, buying behaviour on sustainable textile, awareness on the importance of Production of Sustainable Apparel and adaptation practices. The respondents were expected to rate the factors on the basis of their knowledge and experience.

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In this respect, the factor statements were rated on the basis of a five – point Likert scale. The scale ranged from Strongly Agree (5) to Strongly Disagree (1).

The responses of respondents have been collected in different patterns. Thus, the communities residing in the Southern region of India are dominantly attached with production of sustainable apparel. The response rate of other respondents is 88 percent. In order to determine the significant set of variables and their correlated ness has been tested in the questionnaire analysis. The primary objective in the factor analysis methodology was to determine the pattern of their influences on the surface attributes. For the purpose, exploratory analysis is conducted.

Exploratory research is a type of research methodology that aims to explore and gain insights into a research topic or problem. In the context of sustainable textiles and environmental concern, an exploratory research study may involve the following steps:

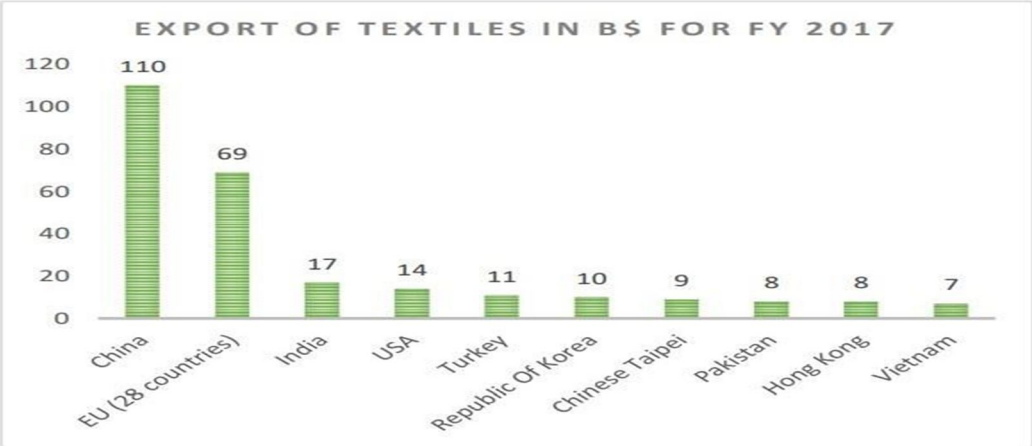
1) *Literature Review:* Conduct a thorough review of existing literature on sustainable textiles and environmental concern. This will provide a background understanding of the topic and help identify gaps in knowledge.
2) *Identify Research Questions:* Based on the literature review, develop research questions that explore the scale and validity of sustainable textiles and environmental concern.
3) *Data Collection:* Collect data through methods such as interviews, surveys, and focus groups with stakeholders involved in sustainable textiles and environmental concerns, such as textile manufacturers, policymakers, and consumers.
4) *Data Analysis:* Analyze the collected data using qualitative analysis techniques such as content analysis or thematic analysis to identify key themes and patterns.
5) *Results:* Draw conclusions based on the findings of the exploratory research study. These conclusions may lead to the development of hypotheses for further research.
6) *Limitations and Future Research:* Identify any limitations of the exploratory research study and suggest areas for future research.

An exploratory research study can provide insights into the scale and validity of sustainable textiles and environmental concerns. It can help identify key stakeholders, issues, and concerns that can inform the development of future research studies or interventions.

V. DATA ANALYSIS & INTERPRETATION

All sources combined yielded 149 replies, of which 21 questionnaires were filled out incorrectly or incompletely. As a result, 138 replies were actually received. After the data was gathered, it was examined for inconsistencies and missing values. The data analyses include a summary of the demographic information about the respondents, descriptive statistics, and, lastly, confirmatory factor analyses of SSCM procedures and performance metrics.

The second thing Is to develop a conversation theme and build an SCCP scale that reflects the distinctiveness of clothes consumption. Prior studies with a focus on purchases confined the behavioural perspective of sustainable clothing consumption, particularly with regard to purchases, or they looked at attitudes or norms towards broad environmentalism as antecedent determinants of behaviour. The uniqueness of clothes consumption was examined in this study while also taking into account its particularity. In particular, it created a variety of behaviours, such as impact-oriented and activist behaviours, as a measurement item. In actuality, exploratory study on sustainable clothing consumption concentrated on a number of behavioural factors, such as managing a wardrobe/life of a garment, styling, and consumption reduction, primarily through interviews.



VI. FINDINGS & DISCUSSION

The researcher made an effort to assess the general degree of SSCM practises among manufacturing and processing businesses in China and India when constructing the scale. Chinese manufacturing enterprises place a high premium on economic performance, which has had a serious negative impact on the environment. Due to the development of market pressure, regulatory pressure, and competitive pressure as a result, Chinese enterprises have begun implementing GSCM techniques.

In light of this, the current work makes an effort to create and empirically validate a scale that combines SSCM techniques and performance metrics. This study adds to the body of SCM literature by creating a parsimonious scale that incorporates the pertinent SSCM components. This would allow the decision-maker to assess SSCM performance on the aforementioned three dimensions while also enabling him to measure the practises of SSCM comprising economic, environmental, and social dimensions.

VII. CONCLUSION & RECOMMENDATION

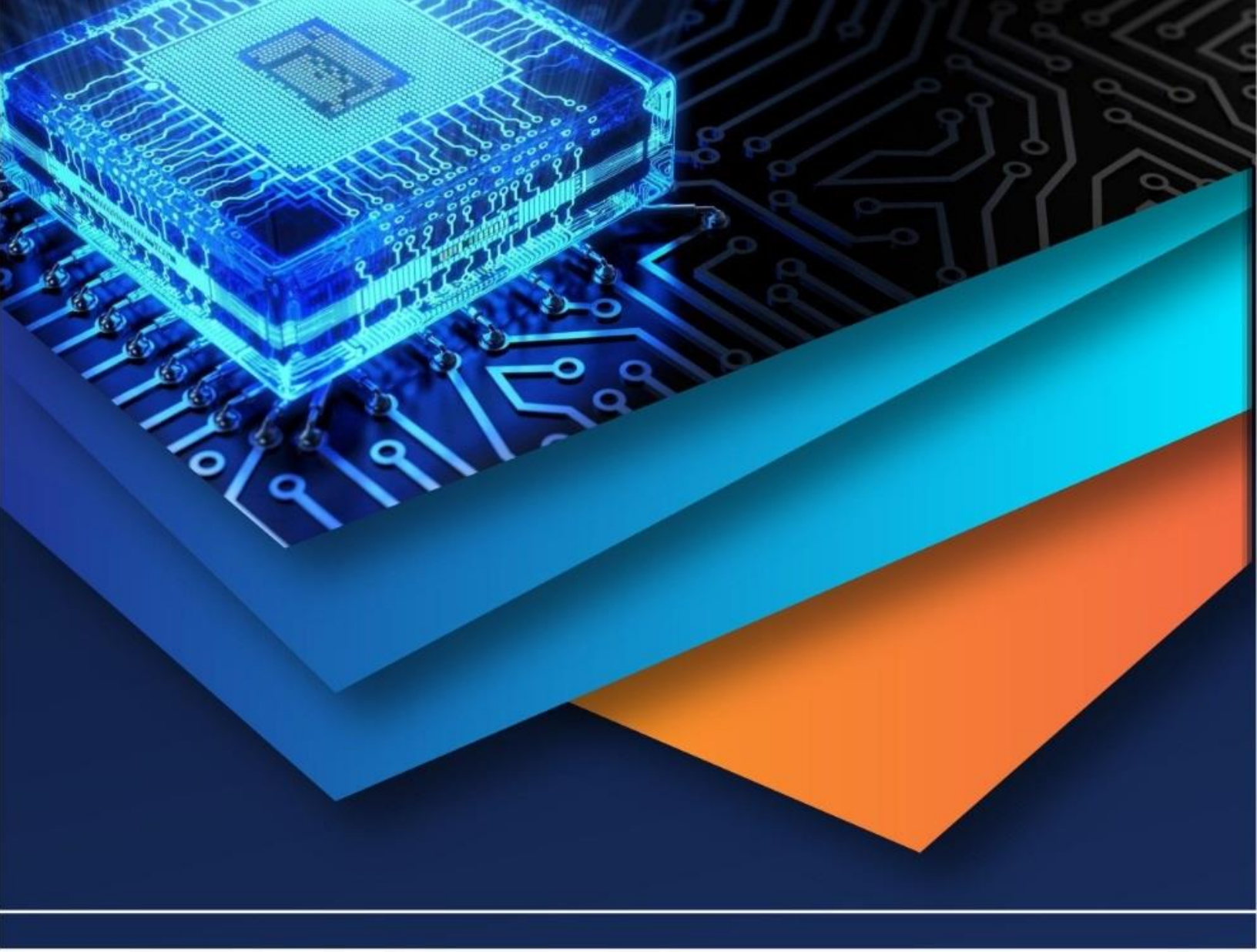
As a result, the current research emphasizes how important it is for the government to create an environment that will support the development of sustainable supply chain management. The current findings alert managers in the textile industry to the significance of creating and managing a sustainable supply chain because of its favourable impact on customer loyalty, ability to give the company a competitive edge, and ultimately improvement of the company's overall performance. The time required to build a long-term alliance with the supplier as well as the challenges and significant investment involved in creating a sustainable supply chain must be understood by the managers. The current study's findings also highlight the significance of preserving long-term customer relationships in order to improve business success. The study's findings also help to close a research academic gap on the significance of developing a sustainable supply chain for boosting both individual company performance and the overall economic performance of nations, particularly developing nation. *(Attia, A. 2023)*

VIII. LIMITATIONS & FUTURE SCOPE OF RESEARCH

Although this study has several limitations, they also provide multiple opportunities for future research. The data is limited to a specific geographical consumer who may have different views; thus, beliefs and perceptions of moral intensity toward sustainable apparel, as well as the impacts of these on responses regarding these products, need to be investigated in future study. Although a wide range of age groups were surveyed, the sample size for answers from respondents in their 50s was relatively small because information was gathered online, where people of this age are less active than people of other ages. Thus, Future research may need to investigate whether the relationships found in this study apply to various types of sustainable textile products used by various professions and in various geographical locations in order to improve the generalizability of the study's findings and to understand the differences among various groups in terms of sustainable product purchases.(Hong, H., & Kang, J. H. 2019)

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