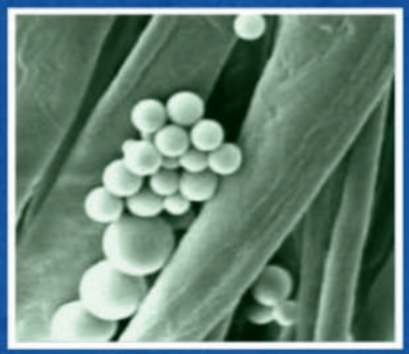
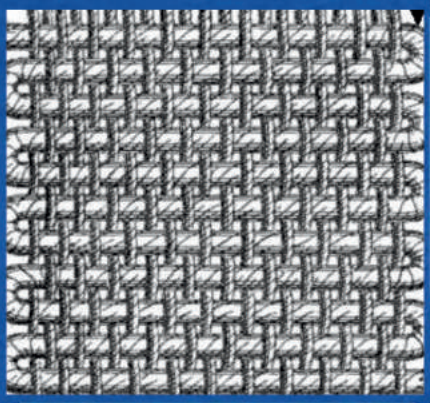
AIFD JOURNAL

LEARN . UNLEARN . RELEARN





2024

TEXTILE SCIENCE
VISUAL MERCHANDISING
PATTERNMAKING
AR IN MARKETING
EMBROIDERY
INTERIOR DESIGN
INDUSTRIAL INSIGHTS

ABOUT AIFD

With an outstanding academic track record spanning two decades, we have consistently achieved a minimum of four university ranks per year, accumulating a total of 64 university ranks since 2008. AIFD takes pride in attaining a 100% placement rate, securing the 6th position nationally for unparalleled placement services. Our global recognition is underscored by our 3rd ranking among Private Fashion Technology colleges and 14th among All India Fashion Technology Colleges, as per The Week. Furthermore, we have earned the 12th position in India Today Magazine's Professional Colleges National Ranking 2022. Our commitment to staying abreast of industry trends is reflected in our consistent subscription to the professional global fashion forecasting website WGSN. We are recognized by NAAC and participating in NIRF since 2017. Noteworthy achievements also encompass consistent victories in fashion shows, coupled with an unwavering commitment to infrastructure enhancement through continuous upgrades in labs, hardware, and software.

LEARN. REFLECT. ITERATE

Chairman's Message

Dear Visionaries and Connoisseurs,

Welcome to the AIFD Technical Journal, a fountain head of views, activities and most importantly thoughts and ideas. As Chairman of the Army Institute of Fashion and Design, I am both proud and happy to present this collection of well articulated research papers, the scholastic quality of which are a testament to the dedication and imagination within the AWES community.

Victor Hugo wisely said, "Nothing is more powerful than an idea whose time has come." Within these pages, discover transformative ideas echoing the pulse of our ever-evolving field of fashion.

This journal mirrors our institute's commitment to advancing knowledge and innovation across diverse disciplines, pushing boundaries, while staying rooted in tradition. It defines our academic ethos, showcasing the seamless integration of tradition and contemporary thought.

In each of these comprehensively crafted papers filled with novel concepts, one can discern the intellectual endeavor of the Army Institute of Fashion and Design to be a crucible of ideas moulding raw talent into expressions of academic and creative achievement.

I commend the contributors for their relentless pursuit of knowledge and innovative spirit aimed at shaping the discourse in the field of fashion. As you navigate these pages, may you discover insights that trigger new thoughts and guide you to expand your intellectual horizons.

My gratitude to readers, supporters, and well-wishers. Your encouragement drives our endeavours and motivate us to continually push boundaries.
Wishing you an immersive reading experience.

Warm Regards,
Maj Gen Ravi Murugan, PVSM, AVSM, GOC HQ K & K SUB AREA
Chairman, Army Institute of Fashion and Design, Bangalore-077

Principal's Desk

Dear Esteemed Members of the AIFD Community,

It is with great pleasure that I extend my warm greetings to each of you. As Principal of the AIFD Institute, I am continually inspired by the dedication and passion for knowledge exhibited by our faculty, researchers, and students.

Today, I am particularly excited to spotlight a cornerstone of our academic endeavours: the AIFD Journal. This esteemed publication serves as a conduit for the dissemination of cutting-edge research, innovative methodologies, and insightful perspectives across a spectrum of disciplines.

At AIFD, we are committed to fostering a culture of intellectual curiosity and scholarly excellence. The AIFD Technical Journal embodies this commitment by providing a platform for rigorous academic inquiry and scholarly exchange.
Through its pages, we celebrate the diversity of thought and the pursuit of knowledge that define our institution.

I am proud to see the AIFD Journal flourish as a hub of intellectual discourse,
attracting contributions from renowned scholars and emerging voices alike. Each article published in the journal represents a significant contribution to its respective field, enriching our collective understanding and inspiring future generations of researchers.

As we embark on the journey ahead, I encourage each of you to engage with the AIFD Journal—whether through submitting your research, serving as a peer reviewer, or simply exploring its pages.

Together, let us continue to push the boundaries of knowledge and elevate the scholarly discourse within our community and beyond.
I extend my heartfelt appreciation to the editorial team, reviewers, authors, and readers who have contributed to the success of the AIFD Journal. Your dedication and expertise are integral to its continued excellence.
Thank you for your commitment to advancing scholarship and enriching our academic community.

Warm Regards,
Prof Dr S Kathirvelu
Principal, AIFD

Registrar's Desk

Navigating the Depths of Scholarship:

Esteemed Readers,
As we embark on our academic journey, I, as Registrar of the AIFD Institute, extend warm greetings to each of you.

Within the realm of scholarly exploration, it is essential to pause and reflect on the profound significance of our collective pursuit of knowledge—a pursuit epitomized by the AIFD Journal.

This publication serves more than a repository of research; it is a beacon illuminating the intricate intersections of philosophy and technology. Through its pages, we navigate the complex currents of inquiry, unraveling the fabric of existence and pushing the boundaries of conventional understanding.

The AIFD Journal represents a convergence of minds, each contribution adding a unique thread to the tapestry of human intellect. Authors, reviewers, and readers alike play pivotal roles in shaping our intellectual discourse, enriching our understanding, and propelling us toward new realms of enlightenment.

In this spirit of collective endeavor, I express gratitude to all those contributed to the journal's success. Your dedication to advancing scholarship not only enriches our academic community but also serves as a testament to the enduring human quest for knowledge.

Col R Balaji (retd)
Registrar & HoA
AIFD

EDITORIAL

Dear Esteemed Contributors and Readers,

We are pleased to bring you our first edition of the AIFD Journal which offers a rich tapestry of insights that transcends traditional boundaries in fashion and interior design. Our commitment to fostering innovation and excellence across disciplines is evident in the diverse array of papers included, covering fashion and apparel design, interior design, decoration, management, literature, and more.

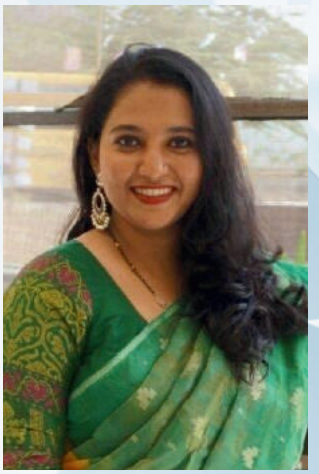
As stewards of knowledge dissemination, our editorial board takes pride in curating a platform that celebrates the convergence of ideas and the spirit of open architecture in academia. We invite you to explore the depth and breadth of research presented in this issue, as we continue our journey of advancing scholarship, embracing network openness, and pushing the boundaries of creative and managerial frontiers.

Thank you for being part of the AIFD Journal community, where collaboration and discovery thrive. We look forward to your continued contributions as we collectively shape the discourse and future trajectories of our interconnected disciplines.

EDITORIAL TEAM

Introducing the AIFD Journal 2024, featuring insightful research across textiles and augmented reality in sales and marketing. With expert contributions, this edition offers a comprehensive view of industry trends. As renowned scholar Albert Einstein once said, "The only source of knowledge is experience." Dive into the latest innovations and explore new horizons with us.

Dr Shashikala H



Heena Khanum

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Roja Ravi

THE CONTENT

Industry 4.0 vs. Industry 5.0

Prof. Dr S. Kathirvelu, Principal, AIFD

Bangalore

Abstract

Industry 4.0 refers to the current trend of automation of production technologies and information exchange. It involves the use of cyber-physical systems, the Internet of Things (IoT), cloud computing and artificial intelligence to create intelligent, interconnected industrial systems. The goal of Industry 4.0 is to increase the efficiency, productivity and flexibility of production processes. On the other hand, Industry 5.0 is a term that has been used to describe the next evolution of industry after Industry 4.0. Industry 4.0 focuses on automation and the integration of technologies, while Industry 5.0 focuses on the collaboration between humans and machines. It envisions a future where advanced technologies such as robotics and artificial intelligence work alongside humans to enhance creativity, problem-solving and innovation. This review paper compares the similarities and differences between Industry 4.0. and Industry 5.0.

1. Introduction

Advances in technology have significantly changed industries over the years. From the introduction of steam power in the 18th century to the digital revolution of the 20th century, each stage brought significant advances. Nowadays, when discussing the future of industries, two terms are often used – Industry 4.0 and Industry 5.0. In this article, we explore the key differences between the two concepts and how they will shape the future of manufacturing and beyond. Fig.1 shows the different stages of industrial revolutions over the time from Industry 1.0 to Industry 5.0. [1]

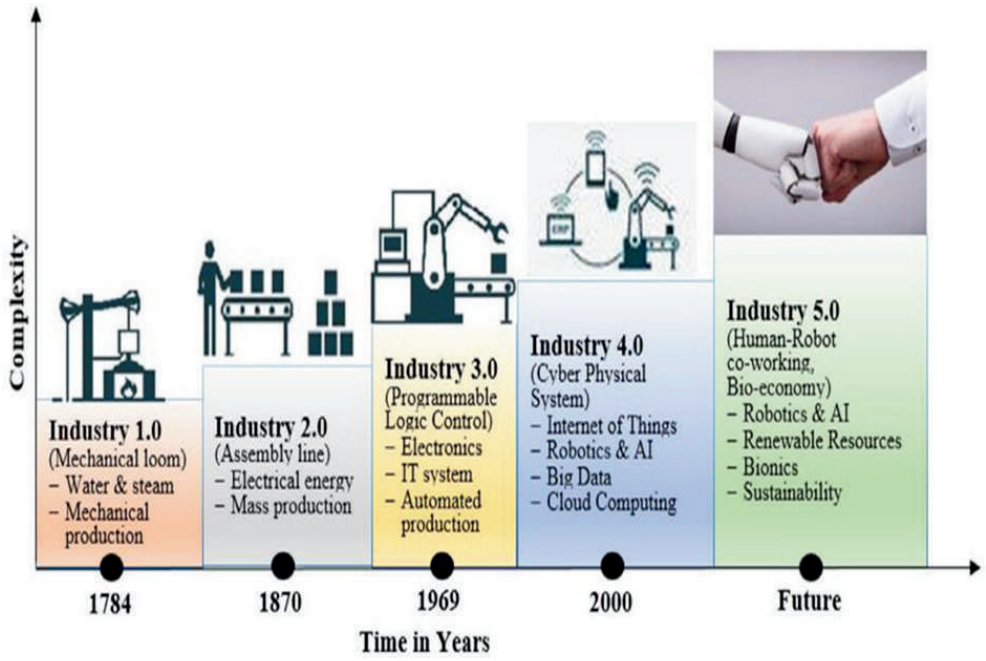

Figure 1 Stages of industrial revolutions over the time from Industry 1.0 to Industry 5.0.

2. Industry 4.0: The Fourth Industrial Revolution

Industry 4.0 refers to the fourth industrial revolution, which is characterized by the integration of advanced technologies and digitization in production processes. It focuses on connecting machines, systems and people together using technologies such as the Internet of Things (IoT), artificial intelligence (AI), big data analytics and automation. The most important features of Industry 4.0:

1. Internet of Things (IoT): Devices and machines are interconnected, allowing them to communicate and share information in real time.
2. Big Data Analytics: Large amounts of data are collected from multiple sources, enabling data-driven decision making and predictive analysis.
3. Artificial Intelligence (AI) and Machine Learning (ML): Machines and systems are equipped with AI and ML capabilities to analyze data, learn from patterns and make autonomous decisions.
4. Cyber-Physical Systems (CPS): The physical and digital worlds are tightly integrated, creating a seamless connection between machines, sensors and people.
5. Automation and Robotics: Intelligent machines and robots take over repetitive and mundane tasks, increasing efficiency and productivity.

As the competition for efficiency, productivity and quality increases in the global market, companies must make important changes in their production plans, technologies and management [2]. Thanks to technological advances, many different industries have been able to improve their efficiency and productivity using automation, digitization and artificial intelligence, as well as the unprecedented availability and affordability of computing power, smart sensors, data acquisition systems and intelligent robotics. , information and communication technology (ICT), Internet of Things (IoT), big data and cloud computing [3].The natural consequence of digitization and new advanced technologies from classic production to intelligent production has led to the fourth industrial revolution, i.e. Industry 4.0. The term was first introduced in Germany in 2011 [4] and covers new production technologies that connect digitization to the industrial world through the Internet of Things. The success of Industry 4.0 largely depends on the intelligent deployment of key technologies (KET) [5], which are the pillars of this revolution. Figure 2 describes the most common pillars of Industry 4.0 identified in the literature.

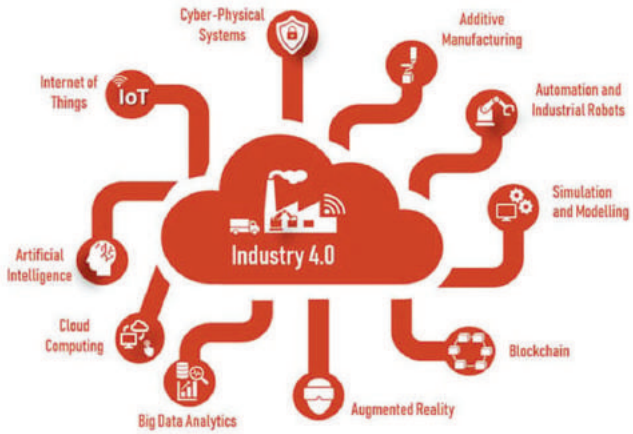

Figure 2. Pillars of Industry 4.0.

3. Industry 5.0: A human-centered revolution

Industry 5.0 represents a paradigm shift from Industry 4.0, emphasizing the integration of human skills together with advanced technologies. It seeks to find a balance between automation and human creativity by promoting collaboration between humans and intelligent machines. Main features of Industry 5.0:

1. **Collaborative Robots (Cobots):** Unlike traditional industrial robots, cobots are designed to work together and help people safely, not to replace them completely.
2. **Enhancing people's creativity:** Industry 5.0 recognizes people's unique abilities, such as creativity, problem-solving and adaptability. It aims to use these features to drive innovation and improve productivity.
3. **Personalization and customization:** Industry 5.0 focuses on meeting customer specific needs, enabling mass customization where products can be tailored to specific requirements.
4. **Augmented Reality (AR) and Virtual Reality (VR):** These technologies are used to improve human-machine interaction, enabling an intuitive and immersive experience in the workplace.
5. **Ethical aspects:** Industry 5.0 places more emphasis on ethical aspects, ensuring the responsible use of technology, data protection and a human-centered approach. Fig 3. Shows the generic block diagram of Industry 5.0. [6].

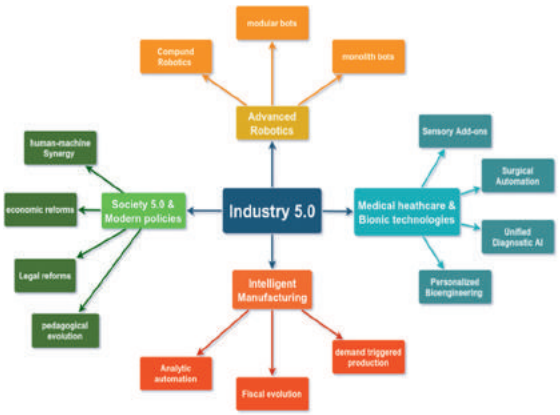

Figure 3 The generic block diagram of Industry 5.0.

4. Similarities between Industry 4.0 and Industry 5.0:

Technology integration: Both Industry 4.0 and Industry 5.0 involve the integration of advanced technologies. Industry 4.0 integrates cyber-physical systems, the Internet of Things and artificial intelligence for automated and data-driven processes. Industry 5.0 emphasizes human-machine collaboration, but would still use these technologies to improve productivity.

Digital transformation: Both concepts involve a significant degree of digital transformation in industrial processes. The adoption of digital technologies, connectivity and data analysis is central to improving efficiency and decision-making.IoT and Connectivity: Both Industry 4.0 and Industry 5.0 are based on the Internet of Things (IoT) and connectivity, enabling seamless communication between devices and systems. This connectivity facilitates real-time information exchange and decision making.

Use of information: The importance of information can be seen in both Industry 4.0 and Industry 5.0. Both concepts use data analysis and insights to optimize processes, predict maintenance needs and make informed decisions.

Advanced manufacturing: Industry 4.0 and Industry 5.0 are about advancing manufacturing processes. Industry 4.0 focuses on smart factories and automated manufacturing, while Industry 5.0 expands on this by emphasizing the role of human workers alongside advanced technologies.

5.Industry 4.0 vs. Industry 5.0: key differences:

1. **Human-centricity:** Industry 4.0 emphasizes automation and machine-driven processes, while Industry 5.0 gives equal importance to human creativity, collaboration and innovation.
2. **Collaboration:** Industry 4.0 focuses on perfectly interoperable machines, while Industry 5.0 emphasizes collaboration between humans and machines, combining their unique capabilities.
3. **Customization**: Industry 4.0 is about mass production, while Industry 5.0 involves mass customization, tailoring products and services to a customer's individual needs.
4. **Ethics and responsibility**: In Industry 5.0, ethical aspects are even more emphasized, ensuring the responsible use of technology and putting people's well-being first.
5. **Augmented Reality and Virtual Reality:** Industry 5.0 integrates AR and VR technologies to improve human-machine interaction and provide an immersive experience beyond Industry 4.0.

6. Conclusion

Industry 4.0 and Industry 5.0 represent two different phases of industrial development. Industry 4.0 focused on automation, connectivity and digitization, while Industry 5.0 takes this a step further, putting people at the centre of technological development. Utilizing human creativity, collaboration and ethical aspects, Industry 5.0 aims to create a harmonious balance between humans and intelligent machines and opens up new opportunities for innovation, customization and personalization across industries. In addition, the transition from Industry 4.0 to Industry 5.0 is not necessarily a separate change, but represents continuity in the continuous development of industrial technologies. When planning for the future, understanding these differences is critical to industrial growth and social progress.

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Microencapsulation: A review

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Abstract

Microencapsulation involves enveloping or surrounding one substance within another. Individually encapsulated small particles (microcapsules) has size ranging from less than a micron to several hundred microns. It is possible to encapsulate substances so that the core material is contained for a specific amount of time inside tablet shells (coating material). Microencapsulation has seen substantial advancement over years and they are tried-and- tested methods pertaining to micro and nanoparticles and their use in a wide range of industrial, agriculture, textile, food, printing, defence engineering, pharmaceutical, biotechnology, and research applications. In case of defence place this approach has introduced the self-healing composites or chemical decontaminating fabrics.

Key Words: Microencapsulation, Microcapsules, Core material, Antimicrobial finish

Introduction

Microencapsulation as a process by which very tiny droplets or particles of liquid or solid material are surrounded or coated with a continuous film of polymeric material (Bansode S S et.al, 2010). Encapsulation is a technique in which core material is completely enveloped by a membrane or wall material. The contemporary definition of encapsulation is 'Enclosure in a sheath not normal to the part of the process or formation of a capsule'. Microencapsulation literally means encapsulation of particles between 1 to 999μm(10-6-10-3 meters), or to encapsulate particles between nanometers (nm) up through millimetres(mm) (Meirowitz R-2015).

Microencapsulation includes Bioencapsulation which is more restricted to the entrapment of a biologically active substance (from DNA to entire cell or group of cells for example) generally to improve its performance &/or enhance its shelf life.

The general benefits of microencapsulation is controlled, predictable and better performance. Improved and faster production capabilities, Protection of the internal phase from degradation, enhanced shelf life etc. Microencapsulation technology finds a wide range of application in the field of textile and apparel technology. These applications include temperature regulation, Phase change materials, delivery systems like – dyeing, aroma treatments to fabrics, insect and animal repellents finishes, antimicrobial finishes R. Meirowitz,(2015).

Microencapsulation:

Microencapsulation is a process in which very tiny droplets or particles of liquid or solid material are surrounded or coated with a continuous film of polymeric material.

Core material

The core material, defined as the specific material to be coated, can be liquid or solid in nature. The composition of the core material can be varied, as the liquid core can include dispersed and/or dissolved materials. The solid core be active constituents, stabilizers, diluents, excipients, and release-rate retardants or accelerators. The ability to vary the core material composition provides definite flexibility and utilization of this characteristics often allows effectual design and development of the desired microcapsule properties.

Coating materials:

The coating material should be capable of forming a film that is cohesive with the core material; be chemically compatible and nonreactive with the core material; and provide the desired coating properties, such as strength, flexibility, impermeability, optical properties, and stability. The coating materials used in microencapsulation methods are amenable, to some extent, to in situ modification.

Microspheres:

Microspheres are stable debris with a matrix-like shape and a diameter within side the variety of 1–1000μm wherein the drug is both dissolved or homogenously dispersed within side the biodegradable polymer.

Microcapsule:

A tiny pill containing material (consisting of an adhesive or a medicine) this is launched whilst the pill is broken, melted, or dissolved.

TECHNIQUES TO MANUFACTURE MICROCAPSULES

Pan Coating:

The pan coating process, broadly used with inside the pharmaceutical industry, is some of the oldest Industrial approaches for forming small, covered Particles or tablets. The approach includes the utility of a coating Composition to a transferring mattress of debris with the concurrent use of heated air to facilitate evaporation of the solvent. The debris are tumbled in a pan or different tool while the coating fabric is carried out slowly . Suitable for incredibly huge debris, extra than six hundred microns in size. The coating is carried out as an answer or as an atomized spray to the favored stable middle material within side the coating pan. Usually, to cast off the coating solvent, heat is surpassed over the covered substances because the coatings are being carried out within side the coating pans. In a few cases, very last solvent elimination is accomplished in drying oven.

Air- Suspension Coating:

Air suspension coating, first described by Professor Dale Erwin Wurster at the University of Wisconsin in 1959, offers advanced manipulate and versatility as compared to pan coating. In this technique the particulate middle material, that is solid, is dispersed into the supporting air and these suspended debris are lined with polymers in a unstable solvent leaving a very thin layer of polymer on them. This technique of air suspension is repeated several hundred times until the required parameters such as coating thickness, etc., is achieved. The air movement which helps the debris additionally facilitates to dry them, and the charge of drying is at once proportional to the temperature of the air movement which may be changed to in addition have an effect on the homes of the coating.

Centrifugal Extrusion:

Centrifugal extrusion is any other encapsulation method that has been investigated and utilized by a few manufacturers. A quantity of food-authorised coating structures were formulated to encapsulate merchandise consisting of flavourings, seasonings, and vitamins. These wall substances encompass gelatin, sodium alginate, carrageenan, starches, cellulose derivatives, gum acacia, fats, fatty acids, waxes, and polyethylene glycol. Centrifugal extrusion is a liquid coextrusion manner using nozzles along with a concentric orifice positioned at the outer circumference of a rotating cylinder i.e., the pinnacle. The encapsulating cylinder or head includes a concentric feed tube thru which coating and center substances are pumped one by one to the numerous nozzles installed at the outer floor of the tool. While the center cloth passes through the middle tube, coating cloth flows through the outer tube. The whole tool is connected to a rotating shaft such that the pinnacle rotates round its vertical axis. As the pinnacle rotates, the center and coating substances are co-extruded thru the concentric orifices of the nozzles as a fluid rod of the center sheathed in coating cloth. Centrifugal pressure impels the rod outward, inflicting it to interrupt into tiny particles. By the movement of floor tension, the coating cloth envelops the center cloth, thus . The microcapsules are accrued on a shifting mattress of fine-grained starch, which cushions their effect and absorbs undesirable coating moisture. Particles produced technique have a diameter starting from a hundred and fifty to 2000 mm.

Spray Drying:

Spray drying is one of the maximum usually used microencapsulation and drying Technologies in meals and pharmaceutical industries on being flexible, economical, efficient, clean to scale-up, effortlessly to be had device and produces correct pleasant powder (Desobry et al. 1997). It has been notably used for many years within side the encapsulation of Bioactive meals elements which includes proteins, fats, vitamins, enzyme, pigments and flavours. But its use in thermo-touchy products, which includes microorganisms and important Oils is restrained due to the fact the specified excessive temperature reasons volatilization and/or destruction of the product .Microencapsulation via way of means of spray drying entails the formation of an emulsion, answer or suspension containing the center and wall material, observed via way of means of nebulization/atomization in a drying chamber with circulating warm air. The water evaporates right away in touch with the new air, and the matrix encapsulates the center material.

Encapsulation by Ionic Gelation Process:

Microcapsules containing extract to be prepared employing sodium alginate. 3% sodium alginate was prepared separately. Then 30 ml of extract and 10 ml of Tween 20 were added to the polymer solution and mixed thoroughly to form smooth viscous dispersion. This was sprayed into calcium chloride solution by means of a sprayer .The droplets were retained in calcium chloride for 15 minutes. The microcapsules were obtained by decantation and repeated washing with isopropyl alcohol followed by drying at 45 °C for 12 hours.

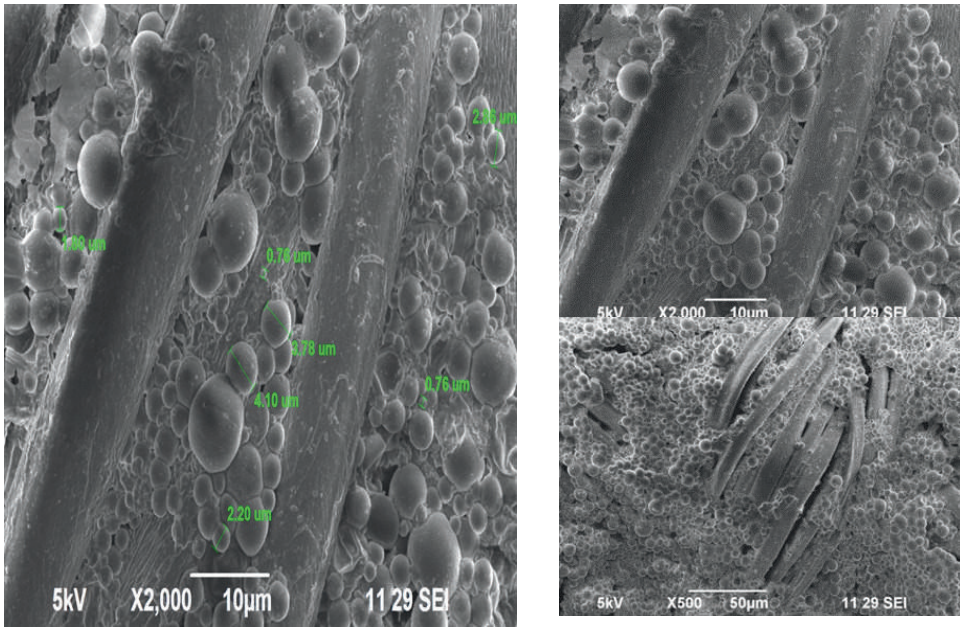
Exhaust Method:

The fabric sample should be finished with the prepared herbal extracts microcapsules according to the following recipe. About one liter solution containing 700 grams of capsules was used to finish

one meter of fabric. The fabric should be immersed in the binder solution (8% citric acid) for 30 mins under 50 °C in an oven. After 30 mins, the fabric was removed and air dried in shade.

SEM (Microcapsules):

The scanning electron microscope was an electron microscope that images the sample surface by scanning it with a high energy beam of electrons. The surface of the fabric was photographed. The encapsulated dye fabric had coated. The scanning electron microscopy was used for confirming the binding of microcapsules and alignment on to the fabric sample. Scanning Electron Microscope is used to identify morphological structure of specimens (fabric) under investigation. SEM evaluation is also used to know the uniformity of coating of finishing over the specimen. The SEM photographs of microencapsulated was examined under different magnifications.



Pictures of Microencapsules

Microencapsulation- Scope and Application:

According to Gordon Nelson(2002), Microencapsulation has wide range of applications in food and textile industry. The microencapsulation technique is used in medical textiles, technical textiles etc to impart added value or finishes which improves the performance of the product. There is an increasing interest among textile manufacturersin the application of durable fragrances to textiles, skin softeners, insect repellent finishes etc. Microencapsulation is a cost effective technique when compare to other technology.

Thilagavathi G et.al, (2007), studied the microbial resistance in health care textiles by implementing microencapsulation of herbal extracts. The neem and Mexican daisy extracts were used to impart antimicrobial finish on cotton fabrics and by microencapsulation technique by pad-dry method. The structure of microcapsules was examined using scanning electron microscope(SEM). The SEM studies revealed the presence and alignment of microcapsules. Durability test comparing the microencapsulated and directly applied herbal extracts revealed that the microencapsulated fabric samples retain their activity even after 15 washes thereby proving that the microencapsulation

technique can be effectively used to impart special finishes.

Antimicrobial finish can be imparted to the cotton fabric using extracts of neem and Mexican daisy by direct application and by microencapsulation using pad-dry-cure method. To enhance the durability of antimicrobial finish to number of washes, the microencapsulation of herbal extracts has been done using phase separation / coacervation. Microencapsulation of herbal extracts such as neem and Mexican daisy has been done successfully by simple coacervation technique using herbal extracts as core material and gum acacia as wall material followed by its application onto fabric using pad-dry- cure method. It is found that they exhibit potential for antimicrobial activity against Staphylococcus aureus and Escherichia coli in clearly measurable terms. The light microscopy with image processing attachment and SEM studies reveal the presence and alignment of microcapsules on the fabric. Durability test comparing microencapsulated and directly applied herbal extracts methods reveals that the microencapsulated samples retain their activity for more than 15 washes.

Conclusion:

Microencapsulation means packaging an active ingredient inside a capsule ranging in size from one micron to several millimetres. The capsule protects the active ingredient from its surrounding environment until an appropriate time. Then, the material escapes through the capsule wall by various means, including rupture, dissolution, melting or diffusion. Microencapsulation is both an art and a science. There's no ONE way to do it, and each new application provides a fresh challenge.

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Sensory Display-Innovations in Visual Merchandising & Window Display

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Abstract

Visual Merchandising is considered the "silent salesman", luring customers off the streets, pushing them towards making a purchase or purchases, whether it is absolutely necessary or merely wishful. Stores have Visual merchandisers conceptualizing looks and displays for entire seasons at a time. Depending on whether the product is high-end or aimed at the masses, the display could be either "precious", "pretentious" or enticing the customer with discount tags or unbelievable offers attached.

However, with far too many retailers on the scene, Visual Merchandising is slowly becoming more individualized. Stores want to establish their brand identity so as to stand apart from the crowd. Certain companies go beyond the traditional display techniques based purely on visuals to providing complete sensory experiences, appealing to all the senses, including smell and sound. Display is individualized; monotony is broken by the choice of arbitrary display cases and proximal placing to arbitrary products.

This paper aims to take the case study of certain stores who specialize in this sort of display. The research is based on reviews of various literature and articles on similar topics.

Key Words: Visual Merchandising, Window Display, Sensory display, sensorial, Consumer buying behaviour, cross merchandising

Fig 1. Anthropologie Store

SENSORY DISPLAY – INNOVATIONS IN VISUAL MERCHANDISING AND WINDOW DISPLAY

"When creating visual displays for retail stores or events, pushing the boundaries of design will enhance interest and result in engaging and intriguing new audiences/customers, leading to more sales."

-Infogram

Introduction:

What is Visual Merchandising?

According to the Economic Times, Visual Merchandising (VM) is the presentation of a store and its merchandise in such a manner that will attract the attention of potential customers. It involves decorating the store keeping the interior presentation the same as what is promised on the outside.

Every retailer hopes to increase his sales by converting the passerby into a browser and a browser into a buyer. A good display could ensure that this happens on a regular basis.

About Visual Merchandising:

Visual Merchandising is the main sales tool of the Retail Industry. Often known as the 'Silent Salesman', it increases sales by the artful and aesthetically pleasing arrangement of goods, right from the facade and window displays to the display in the aisles and interiors of the store. VM includes simple necessities such as clear signage, good lighting, appropriate fixtures and promotional activities.

However, Visual Merchandising is not an exact science; there being no exact rules. The main components are an extension of the Elements of Design, namely, the judicious use of colour, light and merchandise to promote buying. A simple thing like maintaining cleanliness of the store, regular tidying up of displays goes a long way in doing this.

Principles of Visual Merchandising:

The main Principles of VM can be summed up with a few catchwords. They are

- Entice
- Impact
- Inspire and
- Identify

Good VM will *entice* the window shopper into coming into the store. This could be through seasonal or promotional Window Display. This does not mean cramming every type of merchandise available in the store into the window, but rather a promising hint of what is within.

Once the shopper enters, the display should encourage him to look around. The display should have a strong *impact* on him, sparking his interest. There should be clear signage pointing out the various departments, there should be focal points of interesting display.

The customer should be *inspired* by the display. In simple terms, he may have come in looking for a pair of denims, but the product adjacencies could inspire him to buy a couple of shirts and a belt

along with the pants, just because of the artful styling of the display mannequins.

Finally, he should be able to easily *identify* the product he needs (or thinks he needs). Then, after picking up the merchandise he should be able to easily locate the cash counter, pay for it and walk out pleased with his purchase.

Brief History of Visual Merchandising:

While the concept of VM has been prevalent since early man started bartering goods for a living (arranging the best produce on the top and hiding the bruised, not so colourful fruits/vegetables in the bottom of the pile) the concept of aggressively marketing products through pleasing arrangements began only in the late 19th Century. The term, "Visual Merchandising" itself is very recent, perhaps being used regularly only since WWII.

Concepts of VM kept changing drastically over the decades, at time times even from store to store. Traditionally, the store layout had to be clear and uncluttered. Some stores preferred Related Displays, so as to INSPIRE the customer. Display cases traditionally were neatly arranged- sometimes they were colour coded harmoniously- stacks were arranged at comfortable levels, neither too high (at arm's reach), nor too low (below knee level). Display was also organized by grouping similar products, or goods from the same company, or slightly more adventurously – by grouping related products (for example-tops next to bottoms or bags with shoes).

Types of Visual Merchandising:

The products dictated the type of VM to be used. Apparel and accessories could be arranged in open displays, as the customer would be encouraged to feel the fabric, hold it against themselves and even try it on in trial rooms. High value merchandise like fine jewellery is usually displayed under lock and key, to be handled under the close supervision of the sales person. This sort of display is called precious or pristine display. The pristine display is out of the reach of the customer, highlighting the product as belonging to the luxury segment.

While the traditional type of VM is admittedly quite effective, there is a sense of déjà vu with the many malls or departmental stores housing the same brand. Colour blocking was an exciting innovation about ten years back, but today every other sportswear brand displays T-shirts in the exact identical manner. Mid-segment menswear brands also stack shirts by colour and size blocking. One tires of seeing the same display at every mall. This is especially true of premium brands where designs are conceptualized in the head office (sometimes in a foreign country) and have to be implemented perfectly in order to accurately reflect the brand image and positioning. While this may result in outstanding displays, a customer visiting these stores in different malls in different cities will be used to the displays and hence may be put off at the entrance itself, (having seen the products elsewhere) unless he or she has a specific object to purchase.

While SEEING the merchandise is the main purpose of Visual Merchandising, retailers have already been appealing to the other senses like that of smell, and sound by using specific scents and music to identify with the brands displayed.

Technology has been used in the form of digital displays and installations. Moving mannequins are commonplace now; some stores have also used live mannequins at times.

Innovations in the field:

Where does one innovate then? The present generation is jaded by the constant exposure to global news on TV and the social media. They are not going to be enticed by traditional displays. They are used to shopping online. They are the generation where artificial intelligence is pushing boundaries in every field. The Gen Z and the Gen X'ers seek something unique, an exclusive experience in a store rather than either blatant or subtle marketing of products. An individualistic approach is preferred when it comes to innovations in the Visual Merchandising sector.

This paper tries to understand these innovative practices by studying the individualistic experience offered to consumers with the help of two case studies.

Case Study 1:

The first case study is of the American brand, Anthropologie. They have more than 200 stores in USA and Canada, with headquarters in Philadelphia. The brand is well known for its womenswear, accessories and home products. Most of all, the brand is identified by its quirky approach to Visual Merchandising. Rather than looking like a shop/boutique, the store seems to be a friend's or grandmother's overcrowded but eccentric home. Unrelated products are displayed in a seemingly haphazard fashion. Metal jars on a grand piano? (fig 1) A bird cage on a centre table? Paper butterflies swarming out of a dress? A Christmas tree made up of centre tables (fig 1) or yarn wound chaotically around chair legs (fig 2) which are displayed like giant murals on the walls of the store – most of these items are used as props rather than as merchandise

Fig 2 . The Anthropologie Visual Merchandising Display

The Context

According to one of the store managers at Anthropologie, an Anthro store is designed in the lines of an avant-garde art gallery rather than as a commercial retail space. Their VM Mantra is based on the following lines

- There should be a Sense of Whimsy, Wonder and Curiosity
- Instead of blatant selling, Anthro VM sells an experience to the jaded shopper
- "To create a fantasy Universe that shoppers can get lost in"
- Display should be authentic and approachable as against pristine and precious.
- A craft like hand-made approach, using paper mostly, that is appealing to new age customers

Unlike other stores where the display cases and fixtures are either traditional or artistic, depending on the brand positioning, Anthro display designers create new props for every theme. The props at times are created first and the merchandise instead of being the hero of the display is placed around these props. Items are seemingly stacked at random, but there are certain rules about the angles of display. Customers are encouraged to rummage, browse or even sit on the comfortable sofas and seats, but as soon as s/he moves on, the sales assistant will once again arrange the rack in accordance with the 35/40 degree alignment with the other racks. In an interesting technique, the store employees' burn scented candles and incense sticks half an hour before the store opens, every single day.

While all multinationals and premium brands send planograms for exact display to their branches, the Anthro head office sends ideations and mood boards. The merchandise is carefully selected, a fictional client is created for various collections with her tastes and interests analyzed. The 200 stores all over the North American continent then come up with their ideas, which have to be ratified by the head office. But each branch gets the freedom to choose and make their displays. Unlike huge departmental stores like Harrods in London, which is also known for fabulous displays, Anthro stores prepare displays on a limited budget of less than five thousand dollars. Paper is relatively inexpensive; therefore Anthro Visual Merchandisers use a lot of paper in their displays. Props are reused, and recycled. According to the Corporate Creative director of Anthro, the brands aims at a rustic, eclectic and modern feel and therefore the concentration on minute physical details to create a fantasy universe for the shopper.

Case Study 2:

The second case study is Dr Monga Opticians in New Delhi. Opticians bring to mind glass or wooden shelves housing boring rows of spectacles. Dr Monga Opticians in New Delhi however is deliberately non-traditional. Rather than a cold, clean and clinical space, the décor is earthy and woodsy with a vibe more suitable to a Wild West saloon rather than an optician's store. (fig 3, 4) Rustic wood cladding repurposed from railway wooden sleepers add to the element of surprise. The extra height provided by the red brick clad mezzanine floor adds to the element of drama.

With Spectacles becoming a funky accessory rather than merely correcting our vision, Dr Monga Opticians has a VM space that is both dramatic and unique in its funkiness. Spectacles are no longer for the visually challenged; it is a fashion accessory that makes one look cool. At one point of time, only people who needed to correct their vision would visit an optician, now spectacles add to the coolness quotient of the young fashionista. And these new clients demand new and innovative interiors that keep pace with their idea of fashion.

Conclusion:

In conclusion, innovation in Visual Merchandising is not constantly coming up with newer and newer ideas. It just needs fresh vision, perhaps a handmade or sustainable design vibe, like going back to grassroots. In the case of Anthropologie, the focus on is experiential visual merchandising techniques.

Most importantly, VM needs to intrigue the customer, in order to entice and inspire him. Ideas need to be seen within the cultural context of the region that the store is placed in – what is right for the customer in Delhi, may not necessarily appeal to the customer in Chennai. However, with increasing globalization, customers are looking for something different, so providing them with immersive or unexpected experiences while doing mundane activities like shopping, will ultimately lead to increased sales – the bottom line of Visual Merchandising

Fig 3. Dr Monga Opticians, Gurgaon

Fig 4. Dr Monga Opticians, Gurgaon

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Different Pattern Making Methods for Garment Making

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Abstract

Today's garment-making technology has exceeded expectations, has become easier to learn and quickly adapt completely to the specific necessities of garment designing.

The fit is the most significant deciding factor related to the final acceptance or rejection of a garment. Getting to right design is as important as getting a right product with a perfect fit.

The well-tailored fit is dependent on the pattern drafting integrating dimensions of the fit model having various shapes, contour and proportions. With the beginning of the industrial revolution and advances in textiles and clothing manufacturing, standardized patterns were vital to the success of ready-to-wear clothing.

New technology platforms are facilitating greater flexibility in the areas of pattern designing, grading, marker making, waste reduction, increase in efficiency and accuracy of the cutting room and create accurate samples in time to help reduce costs are some advantage of using of computer-aided design (CAD) system in composite garment manufacturing.

Increase in product development costs, the rise in shipping charges, and poor decision making are an entity that many businesses cannot afford. Efforts are required to drive a product to get to the market faster and are saleable.

With that in mind, use of advanced technology in apparel manufacturing is an essential competitive advantage for retailers, brands, and manufacturers alike.

This paper was designed to understand the various methods of pattern making systems.

Key Words: Pattern-making, grading, clothing; toile, fit, CAD

Introduction:

Pattern making is the art of designing patterns by making templates from which clothing and craft items can be sewn.

A pattern making process actually help to come out with the imagination of designer from the sketching till real product.

Pattern makers are also called 'Technical Designers'. When Fashion Designers complete their garment designing, Technical Designers starts their work to prepare the pattern of the garment.

The garment making process consists of disparate yet interdependent stages. The aesthetic appearance, correct fit and the drape attributes of a garment depends significantly on every garment making process.

Pattern making is considered as the first step in garment production. While making a garment as per design, templates are used to trace the various garment parts of similar style onto fabric prior to

cutting and assembling. Generally, patterns are made of paper or cardboard templates that have become a skilled technical process over the centuries.

During the late medieval period, fabric weaving was done manually on primitive looms which were a slow and laborious process and therefore fabric was considered as a coveted commodity. Rectangular shaped fabric pieces were used for garment construction to minimize waste.

The seminal art of pattern making began in the fifteenth century. In place of rectangular uncut fabric, pieces were carefully cut as per size and body's contour. the art of pattern making prior to the industrial revolution was extremely revered.

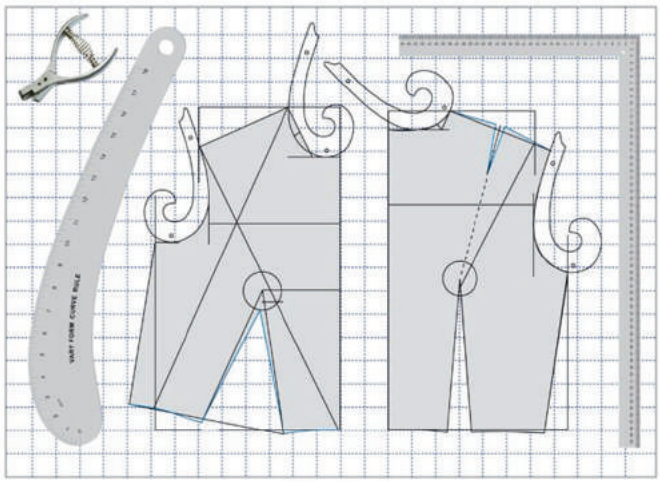
Tailors worked meticulously to customize patterns based on their client's personal measurements and clothing was elaborate and solely relegated for the rich. The onset of the industrial revolution marked the importance of standardized patterns for the success of ready-to-wear clothing. However, initial attempts for standardized clothing patterns resulted in the positive approach towards systematic size chart of different regions like US or UK size chart.

In traditionally cut bespoke clothing by directly marking measurements on fabric by tailor's chalk were developed for each customer.

Which is also known as tailoring method in pattern cutting and home sewing? While in commercial production, industrial patterns were introduced to cater the mass production to fit several standard sizes. Pattern 'blocks' or 'slopers' have been tested to have an impeccable fit and are altered to create a variety of new styles.

The process of developing different sizes of a finished pattern is called 'grading'. It helps in creating a line of differently sized or contoured garments that are yet similarly patterned. Various firms sell pre-graded patterns to consumers who further sew them at home. Commercial clothing manufacturers usually employ specialized pattern maker to make their own in-house patterns as part of their design and production process.

Pattern makers are responsible for ensuring assembling of accessories and garments by sewer and manufacturers. Each design is examined by pattern makers to find out the best way to break a pattern down into a series of pieces as per design that can be reassembled; build paper outlines of each part of the design and confirm that the design can be properly reassembled; prepare a set of instructions that may be utilized by manufacturer to reassemble the design from the pattern; make notes on the pattern to point out where each piece be attached and where each feature (button, pocket, zipper, etc.) should be located.



Methods of pattern making:

A pattern is a guide for cutting the fabric which can be sewn together to form a garment.2 The different types of pattern making within the apparel industry are:

1. Sloper / Block pattern making
    a. Flat Pattern Technique
    b. Modelling/draping
2. Computerised pattern making

Sloper/block pattern making:

It is a basic garment pattern with no seam allowance from which other similar patterns are designed. It is also referred as basic pattern or foundation pattern to develop and design new patterns for garments.

All basic sloper/block is based either by standard measurements or by custom measurements. There are two methods for basic block pattern making which are mostly applicable in women's wear.

Flat pattern technique: Involves a variety of straight edges, curves, measurements, and calculations to draw a draft on paper. It is a two-dimensional method that manipulates an existing foundation pattern 'sloper' or a 'block'. The draft is cut out of muslin fabric having comfort ease to fit a dummy body or an individual.

The desired changes are marked on the paper draft. Making patterns following flat pattern making method is easy since patterns are based on templates. The hard part is in making the templates either manually or by using pattern making softwares.

They look simple but are hard to make as they require many human body measurements and lots of test fitting. They should be perfect since other patterns are developed based on them.

Use of certain geometric rules will derive different patterns from the basic block, and they would fit perfectly like the blocks. Once the blocks are made, the rest is significantly easier given that there is no need to measure the figure anymore, or even test fit new patterns on it.

In flat method, the pattern maker traces the basic blocks and carry out the necessary manipulation along with essential sewing and other allowances to each component. A small mark on the outside edge of the seam allowance on the pattern is marked to ensure alignment and matching during sewing known as 'notches'.

All these exercises produces 'working pattern'. Once test fit is done, the working pattern becomes 'production pattern'

Modelling/Draping Often called 'draping on the stand' is a pattern cutting method which involves muslin fabric for fitting of block garment generally on a designated dummy body of appropriate size. The designers/pattern makers manipulate, mark and adjust the three-dimensional mock-up (creating many variations in style) until they satisfy on the shape and fitness. Mock-up or muslin is also referred as 'toile'. Toile is usually not neatly finished or hemmed like the actual garment would be, and they are made from a translucent cotton or linen fabric so that the design can be tested and perfected. Each component is transferred onto pattern paper and the required allowances added (Fig 1)

Draping is referred to as 'creative pattern making' and is widely used in high-class fashion because this method can provide a clear view of the product to designers in the pattern construction process. In this process, designers may need to use lots of fabric.

The styled patterns that are utilized in cutting the original garment sample may be produced in various ways, including flat method, modelling or both together. Modelling method is more time consuming than other two-dimensional methods.

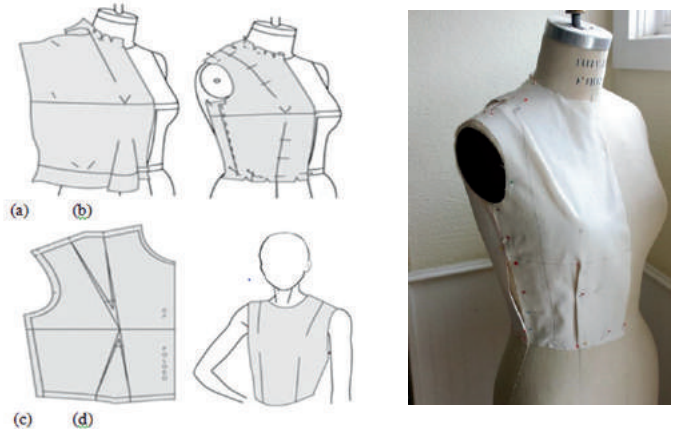


Figure 1 The draping process from 2 D muslin to finished garment.
(a) and (b) Use of muslin to drape front bodice;
(c) Finished pattern with seam allowance; (d) Finished garment.

Computerized pattern Making:

Computer technology has integrated into every aspect of our work-lives. Applications of CAD/CAM made their first appearance in the cutting room in the 1970s. In recent years, however, computers became economical; pattern making and grading software still remain an expensive investment.

Creating a flat pattern using CAD is the easiest and most advanced of all design techniques once one become familiar with the system one is working with.

Many new design entrepreneurs use a computer to relieve some of the work required to develop a new style.

Digitization of manual pattern and using for production is also done in the industry.

The pattern maker work by using a life-sized, sensitized table and a stylus attached to a computer.

Designers use many geometric designs that are based on various shapes and lines to create patterns. Changes can be made easily on the screen if necessary and correct patterns get ready for further operation like grading and marker making.

Computers are useful for making patterns that are repetitive. Some pattern makers draft on hard paper and then use the scanner to convert the pattern into a computerized format.

Then they make the changes on the pattern on-screen. The major technological features are 'pattern design systems' and 'pattern generation systems'. Pattern design systems speed up the process of pattern making and they improve accuracy.

An experienced production pattern maker that is efficient in the use of the pattern design systems drafts the block on the computer efficiently and construct garment patterns by putting in place all the block patterns in current use. Pattern generation system creates the pattern from the pattern components automatically via pattern design system (Fig.2).

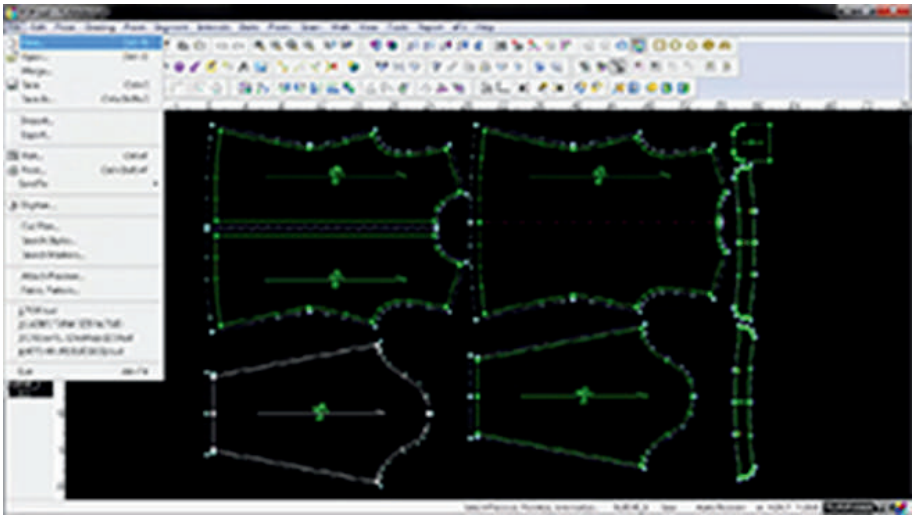


Fig 2. The digital CAD system for pattern making

Many companies use CAD systems to make patterns. CAD can be used for many fashion design processes such as creating design sketches, apparel designing, pattern making and grading, draping, virtual imaging, garment specification sheets, storyboards, prints for fabrics and technical drawings. Overall CAD saves time during the design process, helps to create new design ideas, shows every design components, develops a prototype and helps to amend the new design before producing.
There are different CAD software systems; however, the best come from Lectra Systems, Gerber Technologies, Tukatech, and Optitex.

The Process of Pattern Making:

A pattern maker interprets a design by drafting it through pattern pieces as per the body measurement following a set of instructions in order to create a style.
The process is known as pattern drafting. Individual body measurements are converted into a series of straight lines and curves on template paper. At a later stage, the lines and curves determine the overall sections of the patterns pieces to cut and eventually develop a reusable pattern and tested for fit.

Pattern pieces represent the garment in sections and have information on size, grain line, balance marks, pockets, and placement for buttons, buttonholes, notch mark, seam, and hem allowances.
They are termed as 'pattern information'. Specific methods and stages of pattern drafting vary from pattern maker to pattern maker.
The 'first pattern' is the first set of a pattern that has been obtained from pattern drafting as per continent's size chart either in women's or men's wear area.

Wherein tracing of the main line or necessary lines are done from drafting pattern excluding any seam allowances.
Seam allowances are given in production pattern. It usually prepares to check the pattern shape concerning to the steps of cutting, copying, folding, modifying and experimenting to get the first pattern developed for each design from the basic block. Half a pattern for front, back and sleeve are developed unless the design is asymmetrical (Fig. 3).

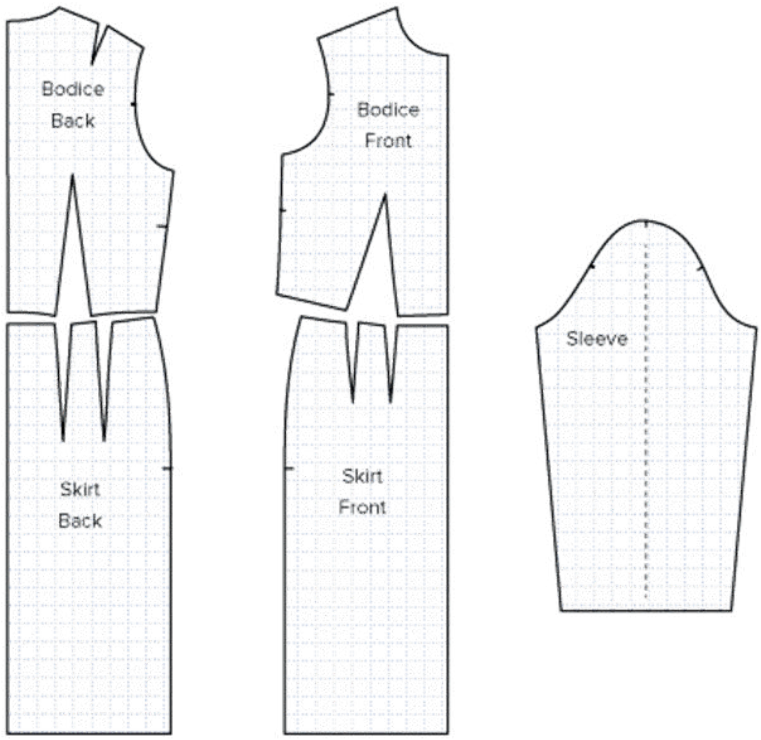


Fig 3. Sloper/Block.
(a) Front / Back, bodice and Skirt
(b) Basic sleeve for bodice sloper

After testing or checking shapes from the first pattern, seam allowance, trimming allowance (optional), buttonhole, button attaching, dart, pleat, notch, ease, etc are included in the copied pattern known as a 'working pattern'.

Working pattern is used as a base for manipulation to generate design patterns and is required for every part of garments.

Working pattern pieces are cut and labeled for parts name and garment size to which it belongs. This pattern is generally made by tracing the basic blocks on paper and requires fitting and adjustments. It is then transferred onto a fabric for a test fit purpose.

The pattern pieces are stitched to get a sample garment (a prototype of the design sketch) and checked for the fit as per the particular body measurement.

After checking of the sample in case of any fitting related problem the working pattern is modified to make it eligible for a second test fit and is called 'revised pattern'. Based on the revised pattern stitching is done and checked for the fit.

On necessary approval of the buyer, the revised pattern is considered to be the 'production pattern'.

3D vision of a pattern can be seen on a simulated dummy in CAD software systems / body scanner.

Thus the approved production pattern goes to the fabric cutting section for marker making and cutting.

The interpretation of the design is done by following pattern making rules which are primarily acquired through experience.

The pattern pieces as per the design sketch are derived from their individual basic block or sloper which are usually without seams as it hinders proportioning and developing design variations.

These basic pattern shapes are used by pattern cutters for every season to draft pattern as a clothing reference with different fitting ease for close-fitting, semi-fitted, fitted, loose-fitting or very loose-fitting.

Ease is the amount of space in a garment beyond the body measurement. The specific amount of ease will vary from style to style.

Different garment types have different fashion features. A fashion feature relates to the various physical components of the garment and its generic shape.

Some of the fashion features are darts, design lines (lines of illusion), pleats, long/short/less sleeve, sleeve in regular/raglan style, flare skirt, collarless bodice, tapered trousers, zipper fly opening, etc. Anything that influences the garment geometry is regarded as fashion feature

Pattern Symbols:

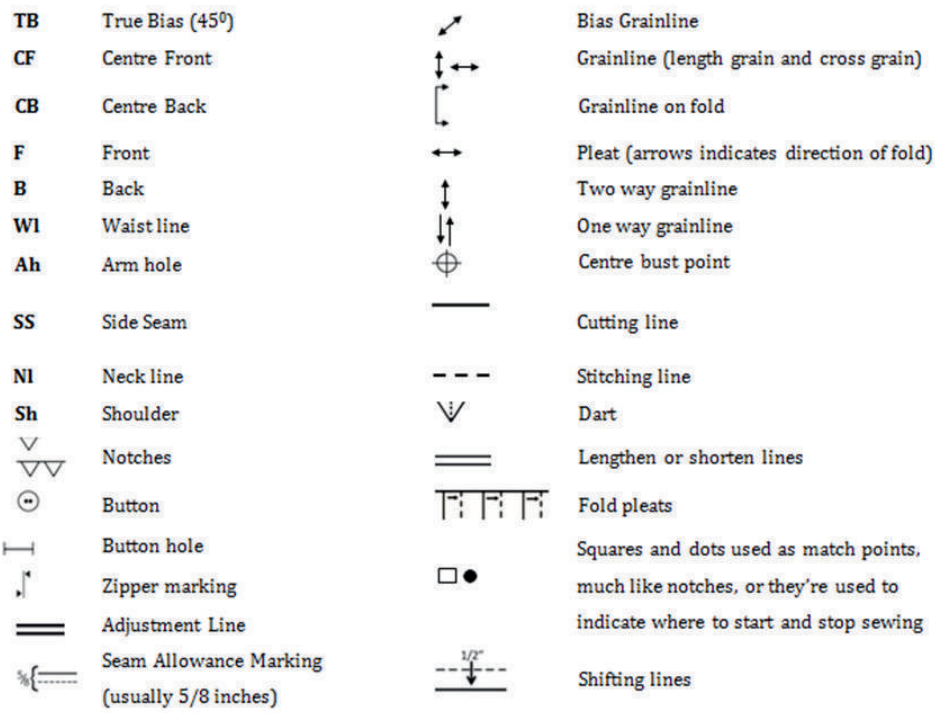


Fig 4. Pattern Symbols

Importance of Pattern Making:

Pattern making converts a sketch into a garment hence it is a link between the design and production. There are three major elements-interpretations, technique, and technology that completes the development of garment pattern making.

Interpretation: This is the ability to read and understand the design/sketch and its objective, technical challenges can be resolved by a technician but none of it completes until design goal is achieved/accomplished.

Technique: The pattern maker should have a large set of tools which can be implied/selected or used while making different specifications/designs and to achieve its results.

Technology: To a huge extent, the efficient and fruitful customised production of a garment is dependent upon the technological facts interpreted into the pattern making. One (pattern maker) should have technological mindset and should understand the production implementations of each

detail in the relevant pattern.

Pre-requisite: For pattern making, knowledge of basic geometry is a must, because pattern making is totally based on logic and mathematical calculation whether it is done manually or by using software.

In the fashion universe, design and pattern cutting go hand-in-hand. A truly great pattern cutter is behind every great designer. The distinctive visual style is based on the cutting techniques that have been followed by their pattern cutters.

The pattern provides the clear idea of right style & accurate measurements of garments. A correct pattern helps to make an appropriate sample and contains clear information on construction, sewing allowance, grain line & fabric cutting direction and eliminates fabric wastage.

More accurate interpretation with proper techniques and technology used reduces the pre-production process, helping the buyer to receive trouble free shipment

Design Practice and Pattern Inspiration:

During research work, and mostly while developing the design briefs for design experiments, different approaches are practiced by the fashion designers and pattern makers to arrive at the final design based sample garment. The different practices that have so far been conducted are:

1. Sketch - Pattern - Toile - (Design alteration) - Pattern alteration -Sample garment
2. Pattern - Toile - (Design alteration) - Pattern Alteration -Sample garment
3. Sketch - Draping - Pattern -Toile - (Design alteration) - Pattern alteration - Sample garment
4. Draping - Pattern -Toile - (Design alteration) - Pattern alteration - Sample garment
5. Existing garment - Sketch - Pattern - Toile - (Design alteration) - Pattern alteration - Sample garment
6. Existing garment - Pattern - Toile - (Design alteration) - Pattern alteration - Sample garment
7. Conceptual idea - Pattern - Toile - (Design alteration) - Pattern alteration - Sample garment
8. Textile print on paper - Draping paper on body - (Sketch) - Pattern - Toile - (Design alteration) - Pattern alteration - Sample garment

Conclusion:

Ready-made garments industry is one of the most dynamic sectors in the global trade. The industry is expected, estimated and generate a considerable amount of revenue and employment in a global perspective. Manufacturing garments are one of the demanded businesses in the global arena.

Pattern making methods and its way of processing are crucial steps for the industry. With the technological development and innovation, pattern making software packages have become more sophisticated and finely tuned to effectively address the requirements of the apparel manufacturer.

These days, pattern making tools are carefully tailored to easily automate repetitive time-consuming tasks that can quickly ramp up manufacturing to deliver to the fast-moving world of fashion. The pattern is most important to make an accurate sample to buyers for collecting order. Except for pattern it difficult to make a sample. It always provides clear idea to require resources for the industry. It helps to reduce fabric wastage. No matter how technology is used, manual pattern making is the mother of pattern making software without which none can produce a pattern that will fit into a particular size without any alteration. The industry's first choice is to digitize accurate manual pattern otherwise even software will fail to produce satisfactory results on repeated iterations.

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A Regime of Thought, to Unveil the Antiquated Gender Struggles- A Glance

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Abstract

"I alone cannot change the world, but I can cast a stone across the waters to create many ripples."

- Mother Teresa

This paper looks at the invisible barriers, like discrimination and biases, that hold back women and minorities from reaching top positions in society. We explore how these barriers affect careers, earnings, and overall well-being. Using the inspiring story of Dr. Kiran Bedi, the first woman in high-ranking Indian police, we show how determined individuals can break through these barriers.

The study also discusses the challenges faced by women in a society that tends to favor men. We touch on the concept of the "glass ceiling" – a term coined by Marilyn Loden – which represents the increasing gaps women face in their careers. We suggest practical tools for individuals to overcome these challenges, emphasizing the importance of perseverance.

In conclusion, the paper encourages women to take charge, break barriers, and pursue success with determination. Inspirational figures like Angela Merkel, Kamala Harris, and others are highlighted to show that women can achieve great things. Overall, the paper calls for empowering women, changing societal norms, and celebrating the successes of those who have shattered the glass ceiling.

Key words: Barricades, disparity, strategy, conflict, work force

Introduction:

Glass ceiling can be defined as an insubstantial barricade in a society that hamstrings women or minority group from achieving a high-flying status. The major uniqueness that designate a glass ceiling will include racial, gender, economic disparity or a minority status. The glass ceiling keeps people from getting certain jobs, despite being well qualified. It affects career trajectory, status a life-time earning potential, mental and physical health. There are various ways to prevail the glass ceiling. Effects of Glass Ceiling on Women and Minorities, different strategies to overcome the glass ceiling effect on women in our society will be discussed. There is an all-inclusive divergence to the efforts of women and the minority class,to clamber the ladder of success when they enter the workforce. The long standing biases,stark realities and prejudices stand as a blockade and a glass ceiling, hindering the augmentation. The competition is so vicious that a woman has to be strong to fight back this classification.

Literature Review:

The body of literature on the glass ceiling encompasses a range of studies that shed light on the persistent challenges faced by women and minorities in various fields. Marilyn Loden's seminal

work, "The Glass Ceiling: Domestic and International Perspectives," stands out as a foundational text that introduced the concept in 1978. This paper laid the groundwork for subsequent research exploring the intricate web of gender and racial disparities in professional settings.

Studies such as "Breaking the Glass Ceiling: Structural, Cultural, and Organizational Barriers Preventing Women from Achieving Senior and Executive Positions" by Smith and Jones delve into the structural and cultural impediments contributing to the glass ceiling. The paper underscores the need for organizational changes to dismantle these barriers and create more inclusive environments.

Research by Garcia and Martinez, titled "Intersectionality and the Glass Ceiling: The Experiences of Women of Color in Leadership," addresses the intersectionality of gender and race in the glass ceiling phenomenon. This study provides valuable insights into the unique challenges faced by women of color, emphasizing the importance of considering multiple identity factors.

In examining the economic implications, "The Glass Ceiling and Earnings: A Cross-National Analysis" by Johnson et al. analyzes cross-national data to highlight the economic repercussions of the glass ceiling on women's earnings. The paper contributes to understanding the broader impact of invisible barriers on financial well-being.

Inspiring narratives of individuals overcoming the glass ceiling, such as Dr. Kiran Bedi's journey, are often explored in papers like "Breaking Barriers: Case Studies of Women Shattering the Glass Ceiling" by Anderson and Smith. These case studies serve as motivational examples and provide qualitative insights into the strategies employed by successful women.

The literature also discusses interventions and strategies to address the glass ceiling. "Mentoring and Advancement Strategies for Women in the Workplace" by Wilson and Brown explores the role of mentorship programs, while "Policy Reforms and the Glass Ceiling: An Analysis of Corporate Initiatives" by Thompson investigates the impact of policy changes on breaking through the glass ceiling.

While progress has been made, challenges persist. Recent contributions, like "Contemporary Perspectives on the Glass Ceiling: Unraveling New Challenges in the Modern Workplace" by Chang and Lee, delve into evolving dynamics, considering factors such as organizational culture and leadership expectations.

In summary, the reviewed literature provides a comprehensive understanding of the glass ceiling, incorporating perspectives from various disciplines and offering insights into both challenges and potential solutions. The cited papers contribute to the ongoing dialogue on gender and minority disparities in professional settings.

Lack of upward progression for women in our society is there because of this inequity. This glass ceiling is not apparent hence there is achimera to a glass – a transparent material. A women's role has changed inestimably over the last few decades and women are making great assistance to the society. It may often appear that man is in charge, but women are encroaching as there is a far-reachingeconomic shift of pre-eminence and influence from men to women. However, despite this exemplary shift in women empowerment and development, there seems to be an interchangeable blockade, which prevents women from getting to the top. This state of affairs has come to symbolize a multiplicity of biases, which thwart qualified minorities and women from advancing in the workplace. Does the glass ceiling really subsist, or is it all a matter of how the facts are slanted either for or against it? Women's roles have distorted at an accelerated rate, and they are now standing tall and playing a most crucial role, in many indispensable areas such as politics and professional field.

The life of Dr.Kiran Bedi is a noticeable example of how a woman breaks the glass ceiling to achieve an unbelievable overhaul in our society.

In the words of Mark Anthony:

"And one day she discovered that she was fierce and strong, and full of fire and that not even she could hold herself back because her passion burned brighter than her fears."

Dr. Kiran Bedi has been India's first and highest woman ranking officer having joined the Indian Police Service in 1972. Her proficiency includes more than four decades of Public Administration, Creative and Reformative Policing and Prison Management. She was the former Lieutenant Governor of Puducherry, a Union Territory of India.She worked with the United Nations in New York as the Police Advisor to the Secretary-General and in the Department of Peace Keeping Operations. She represented India in international forums on crime prevention, drug abuse, police, prison reform, and women's issues.Dr. Bedi is the founder of two NGOs, Navjyoti and India Vision Foundation, which reach out to thousands of underserved children, women, and men in the areas of education, vocational skills, environment, counseling, and health care to the urban and rural poor, including prisoners and policemen's children. Currently, her NGOs are running community colleges, registered with Indira Gandhi National Open University, to provide vocational and soft skills to Indian youth. She has been in the front line of Police and Prison Reforms. Dr. Bedi is a recipient of the prestigious Ramon Magsaysay Award (also called the Asian Peace Nobel Prize) and numerous other national and international decorations.

In the words of Christina Aguilera:

"The roughest roads often lead to the top."

She anchors radio and television shows as well as she is a columnist with leading newspapers and magazines. Broom& Groom is a mirror for self-reflection and a behavioral compass which could progress community living and augment our social acceptance globally. The authors yearn for a social resurgence of civil behavior. It is their dream that this book triggers a movement where the people in power and the public, a mass to bring about the modification in our society.

To quote Dr. Kiran Bedi words:

"The moment I empower a woman, I empower a family"-

Anchor of the famous Indian television show, Aap Ki Kachehri, Dr Kiran also expresses her distaste for politics and strives to serve the poor and unfortunate throughout her life. Dr. Kiran Bedi expresses her thoughts in an interview where she says:

"I am a product of my parents. I was not like an isolated rose. I was part of the garden where my parents were the gardeners. In those days of 50s and 60s, my three sisters and me had carved a niche for ourselves because our parents were continuously nutritioning us. My parents brought me up to take risks. They did not make ship for the harbor; they made ship for the sea".

According to Dr. Kiran Bedi girls have all the right to do everything; there must be reorientation of their own mind, attitude and belief. She also insists that a girl child is never weak she is on par with a male child in a society.

To quote Diane Marie Child:

"A woman is the full Circle .Within her is the power to create, Nurture and transform".

She was also called as 'Crane Bedi' because she ordered to tow away the then Prime Minister, Indira Gandhi's car as it had debased the parking rule. She had also been a part of peace keeping operations where she worked with United Nations as the Police Advisor to the Secretary General.

Addressing a gathering of women students, professionals and homemakers at the first interactive session of the Coimbatore Chapter of Indian Women Network (IWN) of the Confederation of Indian Industry (CII), Ms. Bedi said that while it was true that Indian women were hitting the glass ceiling early, with a change in mindset of men, they would be able to break this ceiling. In her own words:

"We should not expect this mindset to be initiated by one woman or a profession. Expecting a mother or a woman teacher alone to bring about a change in the upbringing of boys and girls is not justified. Anyone or any job can be an agent of change".

Ms. Bedi said that if the sacrifice was done voluntarily, it was a choice made by the woman, but if imposed, it was a sacrifice. ."Whether you make a sacrifice or choice is in our hands." she added.

Kiran Bedi broke the proverbial glass ceiling by becoming the first woman IPS officer, to break such popular stereotypes and self doubt. Kiran Bedi virtually opened many opportunities, broke barriers, for women in the country and became a trailblazer. Kiran Bedi had a great hunger for challenges and took one challenging assignment always making heads turn, with her staunch determination and hard working mentality, lack of fear and almost arrogant disregard for bureaucratic hierarchy of the country too. Kiran Bedi has clearly shown an unswerving attempt at addressing a question that is close to her heart.

To quote Roy T. Bennett, the Light in the Heart:

"Every challenge you face today makes you stronger tomorrow. The challenge of life is intended to make you better, not bitter."

In this patriarchal society with values that are mostly male-dominated, it is indeed complicated for a woman to secure a justifiable proposal for herself. Gender issues thus have received much consequence and magnitude in all fields.

To quote Shirin Ebadi Iranian Lawyer:

"Women are the victims of this patriarchal culture, but they are also its carriers. Let us keep in mind that every oppressive man was raised in the confines of his mother's home".

The major uniqueness which stand as a strong substantiation, that indicate a glass ceiling in our society, can be a gender or racial gap, that grows wider over a career. It was Marilyn Loden who first used the term glass ceiling in 1918. Marilyn Loden is an American writer, management consultant, and diversity advocate. She invented the phrase "Glass ceiling", during a 1978 speech. Loden was a featured enlists on the BBC series 100 Women where she discussed the role of gender favoritism in the workplace. Race and gender wage gaps harm women's economic security and their families' and add up to extensive losses over time. The injustices suffered by fatalities of racial discrimination and interconnected prejudice are well-known - limited employment opportunities; segregation; endemic poverty, lower pay for work of equal value; high illiteracy rates and poor access to health care. While race is one reason for dissimilarity, gender is another; they are not reciprocally restricted forms of discrimination. These factors can create troubles that are inimitable, to particular groups of women or that inexplicably affect, some women relative to others. Sex, gender, race and ethnicity are multifaceted qualities that are particularly well-designed and essential because each includes the social enormity needed for taking into consideration its force on to unpredictable degrees.

An over-involved career and the incapability to gain a higher income can leave us with a package of assorted feelings, such as: self-doubt; a sense of isolation; resentment and anger. These feelings can make us feel substandard and crestfallen. To trounce these barriers and achieve success in life there

are varied tools which can lead to self augmentation and self upgrading. Personality is a beautiful conch, which can be shaped musically to bring out the quintessence of life. Individually we should meditate on the following points - Decide What Success Means; detach expressively; Look at the Barrier as an outsider, Inform Yourself and Keep trying. Perseverance is an unremitting and unrelenting effort to do or achieve something regardless of difficulties, collapse, or resistance.

In the words of our great leader and Father of the Nation Mahatma Gandhi:

"You must be the change you wish to see in the world."

Research Methodology:

Qualitative research in the context of the glass ceiling phenomenon and its impact on women and minorities plays a crucial role in unraveling the nuanced and personal dimensions of individuals' experiences. Through in-depth interviews and focus group discussions, this qualitative approach seeks to capture the lived experiences, challenges faced, and coping strategies employed by those directly affected by the glass ceiling. Personal narratives offer a depth of understanding that quantitative data alone cannot provide, allowing researchers to explore the emotional and psychological toll of invisible barriers in the workplace. These qualitative insights can reveal common themes, patterns, and unique aspects of individuals' journeys, contributing rich contextual information to the broader study. Moreover, qualitative research facilitates the exploration of diverse perspectives across different industries, professions, and cultural contexts, allowing for a more comprehensive and inclusive understanding of the complex factors contributing to the glass ceiling. Ultimately, this qualitative research approach aims to give a voice to those impacted by the glass ceiling and adds a human element to the broader statistical analysis, enhancing the overall depth and richness of the study.

Results:

The results of this comprehensive study on the glass ceiling and its ramifications on women and minorities reveal a multifaceted understanding of the challenges and opportunities within professional landscapes. The qualitative analysis, drawing from in-depth interviews, focus group discussions, and case studies, unveils a spectrum of personal narratives. These narratives illuminate the emotional and psychological toll of navigating invisible barriers, providing a nuanced perspective on the lived experiences of individuals facing the glass ceiling.

Common themes that emerged from the qualitative data include persistent gender and racial biases, discriminatory practices, and the impact of organizational culture on career progression. Inspirational case studies, including that of Dr. Kiran Bedi, underscore the resilience and determination required to break through these barriers. Additionally, the qualitative research sheds light on coping mechanisms and successful strategies employed by individuals who have overcome the glass ceiling, offering practical insights for others facing similar challenges.

The qualitative findings also highlight the intersectionality of challenges, recognizing that the glass ceiling manifests differently for women of color and individuals in various professions and industries. Through diverse perspectives, this study unveils the unique dimensions of the glass ceiling, emphasizing the importance of context-specific interventions to foster diversity and inclusion.

These results contribute a human-centered layer to the broader quantitative analysis, enriching the

overall understanding of the glass ceiling phenomenon. The findings underscore the imperative for targeted initiatives and policy changes to dismantle barriers, promote inclusivity, and empower women and minorities in their professional journeys.

Conclusion:

A woman is always an originator and it is up to her to break down all barriers and disregard all confines for "Behind every successful woman is herself". A woman should learn to exploit her field visibility, tenacity, understand the issues, stay focused, accept feedback, be inventive and appraise herself at periodical intervals to reach accomplishment. She can rephrase the trail of her life with robust energy and channelize them, to break barriers and experience success.

Great women like Angela Markel, Kamala Haris, Oprah Winfrey, Nirmala Seetharam and Kiran Mazumdar Shaw have chalked a conduit for themselves, through uphill struggle, endeavor and aptitude worthy enough to be treasured for ages. To echo these lines:

"A strong woman has faith that she is strong enough for the journey. But a woman of strength has faith that it is in the journey that she will become strong."

Today in this male chauvinistic world, women have achieved success trusting in their ability. Women have broken the glass ceiling in many fields; they are placed in factories, in the Army, Air sector, Railways, IAS Officers, female Fire fighters, female Loco pilots and many more. India is really overconfident to procure her achieved women Commander Shaliza Dhami IAF (Officer), Aditi Mital, Surekha (Loco Pilot), Harshini Kanhekar (Female fire fighter) and many more. Many hurdles and barricades will always exist, in the way of true autonomy and impartiality, unless we change our stance. Strong women will always listen to their own voice, follow their own instincts and come to a pronouncement what they truly want in life. A strapping woman will take her own decisions that will give her satisfaction, with nerve, enthusiasm and perseverance as her strong suit.

To conclude with the words of Mandy Hale:

"A confident woman, a woman who truly knows her worth and her power is a force to be reckoned with."

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Reviving the Lost Art: An Exploration of Forgotten Weaves

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Abstract

Weaving practices, rooted in cultural heritage and artistic expression, have historically played a crucial role in shaping the social and economic structure of various societies. These complex and frequently location-specific methods not only serve as a form of artistic representation but also encapsulate the historical, societal, and environmental stories of their beginnings. This paper examines the realm of overlooked textile patterns, investigating their historical background, importance, and the factors contributing to their decline. This study analyses the socio-economic and technological factors that have led to the decline of traditional arts, specifically due to the influence of globalization and industrialization. The paper provides comprehensive case studies of particular weaves that have declined in prominence or usage. These case studies offer valuable insights into the distinct attributes of each weave, their historical significance, and the factors contributing to their becoming obsolete. In addition, the paper examines current endeavors to revive these forgotten crafts. This text critically examines the difficulties and achievements of these endeavors, evaluating their influence on the conservation of cultural heritage and the promotion of sustainable practices in the textile sector. This study seeks to elucidate the significance of preserving these priceless cultural artefacts and the ongoing endeavors to revive them in the contemporary world by emphasizing the interaction between historical importance, decline, and rejuvenation.

Introduction:

Weaving, a complex craft deeply rooted in the cultural fabric of societies globally, has traditionally served as a fundamental pillar of cultural identity and artistic expression. The term 'Forgotten Weaves' pertains to the traditional weaving techniques and styles that have declined or vanished due to the impact of modern industrialization and evolving socio-economic environments. These intricate fabric patterns, which were once widely used and deeply embedded in daily life and cultural heritage, are now at risk of disappearing and being forgotten over time.

The significance of these weaves in terms of culture and history is immense. Every pattern, technique, and material selection in traditional weaving embodies a narrative that is profoundly connected to the community's historical, environmental, and social foundations. According to Hallett (2019), these weaving practices are more than just threads and colours; they are narratives intricately embedded within the social fabric of societies (p. 42). They embody a wealth of knowledge, artistic creativity, and communal principles that have been transmitted across centuries

and generations. The waning of these fabric patterns represents more than just the disappearance of a creative expression; it signifies a reduction in cultural variety and legacy (Kaplan, 2017).

This paper seeks to illuminate the overlooked textile patterns, examining their intricate historical background and the complex factors that have led to their decline. It aims to comprehend the influence of worldwide industrialization, evolving market requirements, and socio-economic changes on these conventional practices. The research is driven by critical inquiries: What historical and cultural significance have these overlooked weaves held within their respective societies? Which factors have contributed to their decrease? Furthermore, what are the current endeavors focused on revitalizing and safeguarding these weaving customs?

The paper will examine specific case studies of overlooked weaves, emphasizing their distinct attributes and importance. Additionally, it will examine the current endeavors to revive these priceless cultural artefacts, evaluating their efficacy and influence on preservation. The aim is to make a valuable contribution to the wider discussion on the preservation of culture and the adoption of sustainable methods, with a particular focus on highlighting the crucial significance of traditional arts in contemporary society. The paper supports the perspective of scholars such as Thompson (2020), who advocate for the essential importance of safeguarding traditional crafts to uphold cultural diversity in an ever more interconnected world (p. 58).

Literature Review:

The domain of conventional weaving practices encompasses a substantial collection of written works, delving into their historical importance, socio-cultural influence, and the obstacles contributing to their decline. An extensive examination of this body of literature uncovers various viewpoints and highlights specific deficiencies in the current research.

The historical importance and socio-cultural influence of traditional weaves have been extensively recorded. In her influential work "Prehistoric Textiles", Barber (1991) offers a comprehensive examination of the progression of weaving methods throughout various civilizations, emphasising their significance in the advancement of societies. Jansen's (2002) study titled "The Cultural Fabric of India" explores the symbolic significance of Indian weaving patterns, highlighting their ability to communicate social and religious stories. These works emphasise the notion that textiles transcend being mere commodities; they serve as conveyors of cultural identity and history.

The decline of traditional weaving practices is attributed to various factors. Kaplan (2017) ascribes this decrease primarily to the process of industrialization and the emergence of mass-produced textiles, which outshone artisanal weaving in terms of cost-effectiveness and efficiency. In contrast, Thompson (2020) contends that the decrease can be attributed to a change in interests among different generations and a failure to actively involve the younger population in these conventional crafts. These contrasting perspectives indicate that economic factors are important, but social dynamics and educational approaches are also crucial in comprehending the decline.

An evident deficiency in the existing body of literature is the absence of comprehensive research on the worldwide consequences of these declines. Although there are many studies that focus on

specific regions, such as Edwards' (1953) investigation of Persian carpet weaving, there is a lack of research that combines these individual accounts to provide a global viewpoint. Moreover, there is a scarcity of literature regarding the current resurgence endeavours, particularly research that assesses the efficacy of these initiatives in maintaining these customary practices.

To summarise, although the current body of literature offers valuable perspectives on the historical and cultural significance of traditional weaving practices and the factors that have led to their decline, there is a requirement for more comprehensive worldwide studies and research on contemporary revival initiatives. This research has the potential to provide a comprehensive understanding of the difficulties and advantages involved in safeguarding these priceless cultural heritages.

Historical Context

Weaving, one of the oldest surviving crafts in the world, is an art form that has been integral to the development of civilizations across the globe. The origins of weaving can be traced back to the Neolithic era, as early as 12,000 years ago, where it began as a fundamental practice for producing clothing and other essential items (Barber, 1991). This craft evolved from simple mats and baskets to more complex fabrics and patterns as societies progressed. The development of looms during the Bronze Age marked a significant advancement in weaving techniques, allowing for more intricate designs and efficient production (Crowfoot, 1983).

Globally, weaving traditions have varied immensely, reflecting the diverse cultural, geographical, and historical contexts of different regions. In ancient Egypt, linen weaving was highly regarded, with fine linen being a symbol of purity and wealth (Vogelsang-Eastwood, 2000). Meanwhile, in Asia, particularly in China and India, silk and cotton weaving developed into sophisticated art forms with immense cultural significance (Postrel, 2020). The intricate patterns and motifs often had symbolic meanings, representing religious beliefs, societal status, or local myths.

Weaving was not merely a practical activity; it was deeply embedded in the cultural fabric of societies. In many indigenous cultures, weaving techniques and patterns were passed down through generations, becoming a part of the community's identity and heritage. For instance, Native American weaving, especially among the Navajo, is not only a craft but a sacred tradition, rich in symbolism and spiritual meaning (Schaaf, 1997).

The evolution of weaving has also been influenced by trade and cultural exchanges. The famed Silk Road facilitated the spread of silk weaving techniques from China to the West, introducing new materials and styles across different cultures (Liu, 2010). Similarly, the intricate designs of Persian carpets, renowned for their beauty and craftsmanship, reflect a confluence of artistic influences from various trade routes (Edwards, 1953).

The significance of weaving in shaping cultural identities cannot be overstated. These traditional practices encapsulate centuries of knowledge, history, and artistry, making them invaluable cultural artifacts. As Postrel (2020) eloquently puts it, textiles "tell stories of economic and political power, cultural innovation, artistic expression, and technological ingenuity" (p. 15).

Factors Leading to Decline

The waning of conventional weaving practices can be ascribed to a convergence of factors such as industrialization, globalisation, and changes in consumer preferences. The combined effects of these influences have significantly affected the long-term viability and ongoing existence of traditional weaving industries on a global scale.

The process of developing industries and transforming an economy to rely more on manufacturing and production.

Industrialization revolutionised textile production. The implementation of mechanised looms and mass production methods during the Industrial Revolution had a profound impact on the textile manufacturing industry. According to Kaplan (2017), these modifications not only enhanced production efficiency but also resulted in a substantial reduction in the cost of textiles, thereby diminishing the competitiveness of handwoven products in the market. The economic pressure that ensued caused the decline of artisanal weaving communities, which were unable to rival the magnitude and swiftness of mechanised production (Smith, 2018).

Globalisation refers to the process of increasing interconnectedness and interdependence among countries, economies, and societies worldwide.

The challenges encountered by traditional weavers were further intensified by globalisation. The liberalisation of international markets resulted in a surge of inexpensive, factory-made fabrics from developed nations into markets that were previously monopolised by indigenous weavers. According to Thompson (2020), this not only weakened local weaving traditions but also resulted in a standardisation of textile designs, reducing the desire for distinctive, culturally specific weaves.

Consumer preferences have changed over time, which has had an impact on traditional weaving practices. The contemporary preference of consumers for fast fashion has worsened the decline of slow, labour-intensive traditional weaving techniques. The traditional weaving practices have been further marginalised due to the increasing demand for affordable, easily accessible, and ever-evolving fashion trends. According to Johnson (2019), this change in consumer behaviour is indicative of a larger pattern where convenience and affordability are prioritised over skilful craftsmanship and cultural importance.

Additional factors that have contributed to the decline include the erosion of traditional expertise and wisdom as a result of waning interest among younger cohorts in acquiring these artisanal skills. According to Rastogi (2020), the increasing number of older skilled artisans and the lack of successful transfer of these skills to younger generations present a substantial risk to the preservation of traditional weaving techniques.

To summarise, the decrease in traditional weaving practices is a multifaceted problem that is influenced by various factors. Although industrialization and globalisation have had significant impacts, the decline of these ancient crafts can also be attributed to shifts in consumer preferences and the inadequate transmission of skills to younger generations.

Case Studies of Specific Forgotten Weaves

This section explores the historical background, distinctive characteristics, and factors contributing to the decline of two particular traditional weaves: Muslin from Bengal and Kente from Ghana. These case studies provide insight into the diverse array of weaving traditions and the intricate issues surrounding their decline and potential resurgence.

Bengal Muslin

Bengal muslin has a long-standing reputation for its exceptional thinness and intricate handloom weaving methods, which have gained global recognition. This fabric, commonly referred to as 'woven air' because of its lightweight nature, was created through the exceptional artistry that was prevalent in the Dhaka region, which is now the capital of Bangladesh (Islam, 2017). The production of muslin fabric in Bengal can be traced back to at least the 15th century, if not earlier. Its popularity peaked during the Mughal Empire when it became a highly sought-after item for the royal courts (Sarkar, 2018).

Several factors have contributed to the decline of Bengal muslin. The onset of the British colonial era signaled the commencement of the decline of this exquisite fabric. The British economic policies exhibited a preference for imported machine-made textiles over locally produced handlooms, resulting in a significant negative impact on the muslin industry. In addition, the industrial revolution in Britain brought about more affordable, mass-produced options that further diminished the demand for handwoven muslin (Chaudhuri, 2015).

Kente originating from Ghana

Kente, which has its origins in Ghana, is a prestigious and vivid fabric crafted from silk and cotton. It is renowned for its vibrant designs and symbolic importance. Every color and pattern found in Kente cloth holds a distinct significance, frequently associated with historical occurrences, moral principles, or societal norms of the Akan community (Arthur, 2001). Kente fabric was historically donned by the Ghanaian monarchy and has since evolved into an emblem of nationalistic fervour and cultural heritage throughout the African diaspora.

The decline of traditional Kente weaving can be attributed to the emergence of more affordable, mass-produced replicas and a waning enthusiasm for the laborious traditional weaving technique among the younger demographic. The preservation of authentic Kente weaving techniques has been significantly challenged by these factors (Boateng, 2019).

Nevertheless, both Muslin and Kente have undergone revitalization endeavours in recent years. In Bangladesh, there are ongoing efforts by both the government and private sectors to restore the traditional muslin weaving techniques, which involve cultivating the specific cotton species used for muslin (Karim, 2020). In Ghana, efforts are being made to revive Kente through educational initiatives that focus on instructing young artisans in traditional weaving techniques and showcasing Kente on global platforms (Adjei, 2021).

Contemporary Revival Efforts

Recently, there has been a growing interest in revitalising neglected weaving techniques, led by governments, non-governmental organisations (NGOs), and individual craftsmen. These initiatives seek to revitalise traditional weaving practices, acknowledging their cultural, artistic, and economic

significance.

The involvement of the government is essential in these efforts to revive. The "Handloom Mark" initiative by the Indian government promotes traditional weaves and offers consumers a guarantee of authenticity, thereby supporting local artisans (Ministry of Textiles, India, 2021). In Japan, the government has officially recognised specific weaving techniques as "Important Intangible Cultural Properties" to safeguard and advance these traditional crafts (Cultural Affairs Agency, Japan, 2020).

Non-governmental organisations (NGOs) are leading the way in these revival endeavours. The World Crafts Council engages in efforts to protect and advance traditional crafts, such as weaving, by offering opportunities for artisans to exhibit their work and by facilitating their entry into global markets (World Crafts Council, 2019). These endeavours frequently encompass the instruction of emerging cohorts of weavers, guaranteeing the transmission of expertise and wisdom.

Nevertheless, these efforts to revive face substantial obstacles. A significant obstacle arises from the competition posed by mass-produced textiles, which are frequently more affordable and easily accessible compared to handcrafted weaves (Smith, 2018). Moreover, younger generations are increasingly losing interest in acquiring these labour-intensive and frequently less lucrative weaving skills (Johnson, 2019).

Notwithstanding these obstacles, there have been remarkable achievements. The renewed fascination with traditional textiles, driven in part by a worldwide trend towards sustainability and ethical fashion, has generated fresh opportunities for these fabric patterns. An instance of this can be seen in the resurgence of the Banarasi Sari industry in India, which has been revitalised due to a combination of government backing and growing international attention. This has injected fresh vitality into the age-old craft (Rastogi, 2020).

Moreover, digital platforms have emerged as a potent tool in these revival endeavours. Artisans have been able to expand their reach and display the distinctiveness and cultural importance of their crafts to a global audience, thanks to online marketplaces and social media platforms (Nguyen, 2021).

To summarise, although there are substantial obstacles in the process of revitalising neglected weaving techniques, the combined endeavours of governments, non-governmental organisations, craftsmen, and consumers are fostering a revival of these customary crafts. These endeavors are not only safeguarding significant cultural legacies but also making valuable contributions to sustainable and ethical fashion practices on a global scale.

Discussion

The research findings emphasize the complex nature of the decline in traditional weaving practices and the diverse efforts made to revive them. These findings are closely connected to the research questions that were initially asked and offer a detailed comprehension of the difficulties and possibilities in safeguarding these cultural heritages.

The case studies of Muslin from Bengal and Kente from Ghana highlight the historical and cultural importance of traditional weaves. These textiles are not just fabrics, but also hold significant value as preservers of cultural identity, history, and skilled craftsmanship. The waning of these customs, primarily influenced by industrialization, globalization, and changes in consumer tastes, signifies not only an economic detriment but also a substantial cultural depletion.

The revival endeavours, despite encountering significant obstacles, have demonstrated different levels of achievement. Government initiatives, support from non-governmental organisations, and the utilisation of digital platforms have become crucial instruments in these endeavours. These initiatives emphasise the significance of a comprehensive strategy that encompasses not only the preservation of the craft but also the adjustment to current market demands and consumer behaviours.

The ramifications of this research for the conservation of cultural heritage are significant. It emphasises the necessity for a coordinated and cooperative strategy involving multiple stakeholders, such as governments, cultural institutions, craftsmen, and consumers. The resurgence of traditional weaves should not be perceived solely as an endeavour to safeguard an artistic tradition, but rather as a strategy to uphold and commemorate cultural diversity in an increasingly standardised global society.

Conclusion

Ultimately, this study demonstrates that the conservation and revitalization of traditional weaving techniques necessitate a thorough comprehension of the factors contributing to their decline, as well as a strategic approach to effectively tackle these obstacles. The effectiveness of revival initiatives relies on their capacity to conform to modern economic and social environments while safeguarding the fundamental aspects of traditional craftsmanship. With the growing global awareness of the importance of sustainable and ethically manufactured products, traditional weaves can regain their significance and attract a new audience.

Preserving these crafts entails more than simply safeguarding a skill or technique; it involves upholding a concrete link to our history and culture. This research contributes to the ongoing discourse on the significance of safeguarding intangible cultural heritage in a swiftly evolving world and the individual responsibilities of stakeholders in this pursuit.

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Impact of Social Media on Fashion

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Abstract
Social media has emerged as a powerful tool shaping the fashion industry, influencing trends, consumer behaviors, and industry dynamics. This review provides an in-depth analysis of the multifaceted impact of social media on fashion, encompassing aspects such as trend dissemination, brand promotion, consumer engagement, and the evolving role of influencers. Understanding these influences is crucial for fashion professionals and educators to adapt and thrive in the digital age.

Keywords: Social media, fashion industry, influencers, consumer behavior, trend dissemination, brand promotion.

Introduction:
The integration of social media into the fabric of modern society has drastically changed the landscape of the fashion industry. Social media platforms have become central to how fashion is perceived, consumed, and marketed. This section provides an overview of the pervasive influence of social media in the realm of fashion.

Trend Dissemination Social media platforms act as powerful vehicles for the rapid dissemination of fashion trends, often creating viral sensations that can significantly impact the industry. The speed at which trends spread through platforms like Instagram, TikTok, and Twitter has altered the traditional fashion cycle and impacted consumer demand.

Brand Promotion and Digital Marketing Fashion brands leverage social media for promoting their products, reaching a global audience, and engaging with consumers directly. Advertising and marketing strategies are evolving to optimize reach and engagement, utilizing features like sponsored posts, influencer collaborations, and interactive content.

Influencers and their Role in Shaping Fashion Influencers, with their vast online reach and engaged followers, play a critical role in shaping fashion trends and consumer preferences. Their endorsement of brands and products significantly influences purchasing decisions, making influencer marketing a key strategy for fashion businesses.

Consumer Behavior and Social Commerce Social media has transformed consumer behavior, providing a platform for product discovery, reviews, and direct purchasing. The rise of social commerce allows consumers to seamlessly purchase products within the same platform where they

discover them, blurring the lines between discovery and transaction.

Ethical and Sustainability Considerations Social media has enabled heightened awareness of ethical and sustainability issues within the fashion industry. Consumers and influencers use social platforms to advocate for ethical practices and sustainability, influencing brands to adopt responsible approaches.

Conclusion:

Social media's impact on the fashion industry is pervasive and multifaceted, affecting trends, brand strategies, consumer behavior, and societal values. Fashion professionals and educators must stay informed and adapt to these changes to navigate the evolving landscape successfully. With the continued integration of social media, understanding its dynamics and leveraging its potential will be crucial for a sustainable and innovative fashion industry.

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Qinghai Embroidery

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Abstract

Qinghai embroidery, also known as "Xiang embroidery" or "Thangka embroidery," is a highly intricate and culturally significant form of needlework originating from the Qinghai-Tibetan Plateau in China. It holds a profound connection to Tibetan Buddhism and is primarily associated with the creation of religious artworks, particularly Thangkas (scroll paintings) that have spiritual significance in Tibetan Buddhist practices.

The embroidery technique involves the meticulous use of silk threads, cotton fabric, and sometimes even precious metals like gold or silver. The stitches employed are diverse, including satin stitch, chain stitch, and couching, allowing for the creation of stunningly detailed and vibrant designs.
The motifs in Qinghai embroidery are deeply symbolic, often featuring religious iconography such as Buddhas, bodhisattvas, mandalas, and scenes from Buddhist scriptures. Natural elements like flowers, birds, and landscapes are also prevalent, reflecting the close connection between Tibetan culture and the natural environment.

The color palette of Qinghai embroidery is characterized by its bold and vivid hues, contributing to the overall visual impact of the artwork. These vibrant colors not only add aesthetic appeal but also carry cultural and spiritual significance within the Tibetan Buddhist context.
Qinghai embroidery stands as a testament to the rich cultural heritage and artistic prowess of the Qinghai-Tibetan Plateau. Its meticulous craftsmanship and profound cultural significance make it a highly valued form of needlework within China and internationally. While deeply rooted in tradition, Qinghai embroidery has also seen contemporary adaptations, blending the old with the new, and ensuring its relevance and vitality in the modern world.

Introduction:

Qinghai embroidery, also known as "Xiang embroidery" or "Thangka embroidery," has a rich history intertwined with the cultural heritage of the Qinghai-Tibetan Plateau. Here's a brief overview of its historical development:

Origins in Tibetan Culture (Ancient Times): Qinghai embroidery traces its origins to ancient Tibetan traditions of textile arts. It was primarily practiced by Tibetan artisans in the Qinghai province of China, particularly in areas with a strong Tibetan cultural influence.

Origins in Tibetan Culture (Ancient Times): Qinghai embroidery traces its origins to ancient Tibetan traditions of textile arts. It was primarily practiced by Tibetan artisans in the Qinghai province of China, particularly in areas with a strong Tibetan cultural influence.

Influence of Buddhism (7th Century Onward): The spread of Buddhism in the region greatly influenced the development of Qinghai embroidery. It became closely linked with Tibetan Buddhism and was used to create religious artworks, including Thangkas (scroll paintings) and other ceremonial items.

Integration of Tibetan Culture (Tang Dynasty, 7th - 10th Century): During the Tang Dynasty, there was significant cultural exchange between central China and the Tibetan Plateau. This likely contributed to the refinement and diversification of embroidery techniques.

Ming and Qing Dynasties (14th - 19th Century): Qinghai embroidery continued to flourish during the Ming and Qing dynasties. It gained recognition for its intricate craftsmanship and became a significant art form in the region.
Isolation and Preservation (20th Century): Due to the remote and mountainous terrain of Qinghai, the region was somewhat isolated from broader cultural and economic changes in China during the 20th century. This isolation played a role in preserving the traditional techniques of Qinghai embroidery

Cultural Revival and Modernization (Late 20th Century - Present): In recent decades, there has been a renewed interest in traditional Chinese crafts and arts. Qinghai embroidery has gained recognition both within China and internationally as a valued form of needlework.
Recognition and Promotion (21st Century): In the 21st century, Qinghai embroidery has been acknowledged as an important cultural heritage of China. Efforts have been made to promote and support artisans involved in this craft.
Contemporary Adaptations and Innovations: While Qinghai embroidery continues to honor its traditional roots, contemporary artisans have also incorporated new designs and techniques. This fusion of old and new has allowed the art form to evolve and remain relevant.

1. "**Chinese Embroidery: Traditional Techniques" by Josiane Bertin**-Guest and Wan Hua Xuan - This book covers various forms of Chinese embroidery, including techniques and styles that may encompass Qinghai embroidery.
2. "**Chinese Silk Embroidery" by Liu Hai Su** - While not focused exclusively on Qinghai embroidery, this book provides a comprehensive overview of Chinese silk embroidery, which may include references to regional styles.
3. **"Art of the Needle**: Chinese Embroidery from the Forbidden City" by Anita Jones and Stephen Wootton Bushell - This book explores the history and techniques of Chinese embroidery, which may touch on Qinghai embroidery as a part of the broader tradition.

Online Resources and Academic Journals - Academic journals and online databases related to textile arts, Chinese art, or embroidery studies may have articles or papers that touch on Qinghai embroidery. JSTOR, Google Scholar, and similar platforms can be good starting points

for academic research.

1. **Museums and Exhibitions** - Museums with extensive textile collections, especially those with a focus on Chinese art, may have exhibits or catalogues that feature Qinghai embroidery. The Victoria and Albert Museum in London and the China National Silk Museum in Hangzhou, for example, have significant textile collections.
2. **Consulting Experts and Artisans** - Sometimes, experts in the field or artisans who specialize in Qinghai embroidery may have written articles or guides that provide insights into this specific form of embroidery.

The stitches used in Qinghai embroidery:

- **Satin Stitch (Zang Hua Xiu):** This is a smooth, flat stitch used to fill in large areas with a glossy finish. It involves closely spaced parallel stitches that create a polished surface.
- **Chain Stitch (Lian Xiu):** Chain stitch is formed by creating a series of looped stitches that resemble a chain. It's often used for outlining and adding texture to designs.
- **Couching Stitch (Dì Xiu):** In this technique, a decorative thread is laid flat on the fabric and then secured in place by a series of small stitches. It's often used to attach thicker or more ornate threads.
- **Back Stitch (Hou Tui Xiu):** This is a strong and secure stitch often used for outlining and creating defined edges. It involves bringing the needle back through the previous stitch.
- **Running Stitch (Qu Xiu):** This is a simple, straight stitch often used for basic outlining and adding subtle details.
- **Whipped Back Stitch (Fu Hou Tui Xiu):** This is a variation of the back stitch where the completed stitches are whipped with a contrasting thread. This creates a raised and decorative effect.
- **Long and Short Stitch (Duan Chang Duan Duan Xiu):** This technique involves varying the lengths of stitches to create a gradient or shading effect. It's often used for realistic depictions of objects or figures.
- **French Knots (Fa Guo Xiu):** These are small, raised knots made by wrapping the thread around the needle before pulling it through the fabric. They are used to add texture and dimension.
- **Stem Stitch (Jing Xiu):** This is a rope-like stitch that is often used for creating outlines and stems in floral designs. It has a distinctive twisted appearance.
- **Seed Stitch (Zi Rong Xiu):** This stitch involves creating small, scattered stitches to add texture and fill in small areas.
- **Bullion Knot Stitch (Niu Tou Jie Xiu):** This is a raised, knotted stitch that resembles a bullion knot. It's often used for creating dimensional effects.

These stitches are combined and layered to produce the intricate and detailed designs characteristic of Qinghai embroidery. The choice of stitches depends on the specific design, the desired texture, and the level of detail required for the artwork.

Qinghai Embroidery is known for its intricate and meaningful motifs, which reflect the rich cultural heritage of the Tibetan people and the natural landscapes of the Qinghai-Tibet Plateau. Here are some of the most common motifs used in Qinghai Embroidery:

1. Lotus Flower:
    - The lotus is a sacred symbol in Tibetan Buddhism, representing purity and enlightenment. It is often depicted in various stages of bloom, with detailed petals and a central seed pod.

2. Snow Lions:
    - Snow lions are mythical creatures in Tibetan folklore, symbolizing power, strength, and fearlessness. They are often depicted in pairs and are associated with protection.

3. Dragons:
    - Dragons hold significant symbolism in Tibetan culture, representing power, wisdom, and protection. They are often depicted in a sinuous, flowing style with intricate scales and features.

4. Mandalas:

- Mandalas are geometric patterns that hold spiritual significance in Tibetan Buddhism. They represent the universe and the interconnectedness of all beings. Mandalas are often symmetrical and meticulously detailed.

5. Buddhist Deities and Symbols:

- Depictions of Bodhisattvas, Buddhas, and other revered figures in Tibetan Buddhism are common motifs. Additionally, symbols such as the Eight Auspicious Symbols (such as the conch shell and endless knot) are frequently embroidered.

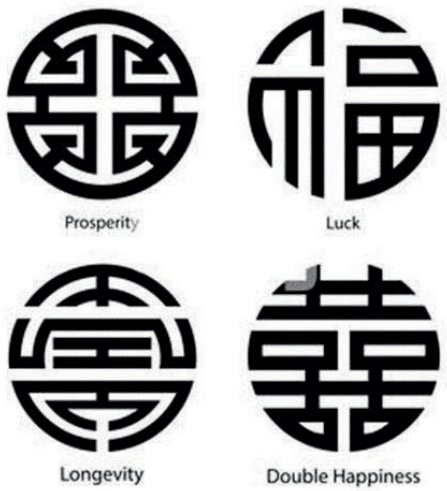
6. Mountains and Landscapes:

- Qinghai-Tibet's stunning natural scenery, including mountains, rivers, and lakes, is often depicted in Qinghai Embroidery. These motifs celebrate the region's awe-inspiring environment.

7. Floral Patterns:
    - Intricate floral designs, including peonies, chrysanthemums, and other native flowers, are used to add beauty and elegance to the embroidery.

8. Animals and Wildlife:
    - Various animals native to the Qinghai-Tibet Plateau, such as yaks, horses, and Tibetan antelopes, are depicted in Qinghai Embroidery. These motifs celebrate the region's wildlife and nomadic culture.

9. Symbols of Good Luck and Prosperity:
    - Auspicious symbols like the endless knot, double fish, and the Swastika (a symbol of well-being) are often included in Qinghai Embroidery to convey positive wishes.



10. Tribal and Geometric Patterns:

- Tribal patterns, including geometric shapes and repeating motifs, are used to create visually striking and dynamic designs in Qinghai Embroidery.

These motifs are carefully selected and arranged to convey specific meanings, tell stories, and evoke emotions. The choice of motif, along with the color palette and stitching techniques, contributes to the unique beauty and cultural significance of Qinghai Embroidery.

Applications:

The intricate craftsmanship and cultural significance, finds various applications that extend beyond traditional clothing and textiles. Here are some of the notable applications of Qinghai Embroidery:

1.Clothing and Accessories:

- Traditional Costumes: Qinghai Embroidery is often used to embellish traditional Tibetan clothing, such as chubas (long robes) and aprons. These garments are worn on special occasions and ceremonies.
- Accessories: Embroidered pieces are also used to create belts, hats, bags, and shoes, adding a touch of cultural elegance to everyday wear.

2. Home Décor:

- Wall Hangings: Elaborate embroidered tapestries and wall hangings serve as decorative pieces in homes and monasteries, depicting auspicious symbols, deities, and natural motifs.
- Cushion Covers and Linens: Embroidered designs are incorporated into cushion covers, tablecloths, and curtains, transforming living spaces with vibrant patterns.

3. Religious Artifacts:
    - Thangkas: Qinghai Embroidery is employed in creating thangkas, which are intricate painted or embroidered scrolls depicting Buddhist deities, scenes, or mandalas. These are revered objects in Tibetan Buddhism.
4. Ceremonial and Festive Items:
    - Ceremonial Banners: Elaborately embroidered banners are used in religious ceremonies, processions, and festivals, often bearing sacred symbols and mantras.
    - Ritual Objects: Embroidered symbols and motifs are applied to ceremonial objects used in religious rites and rituals.
5. Corporate Gifts and Souvenirs:
    - Qinghai Embroidery is increasingly being used to create unique corporate gifts, souvenirs, and cultural artifacts, showcasing the artistry of the region and serving as a bridge between cultures.

6. Art and Craft Installations:
    - Contemporary artists and designers are exploring the incorporation of Qinghai Embroidery techniques in modern art installations, creating visually stunning and culturally significant works.
7. Fashion and Haute Couture:
    - High-end fashion designers are recognizing the intricate beauty of Qinghai Embroidery, incorporating it into haute couture collections, showcasing the art form on a global stage.

7. Educational and Cultural Workshops:
    - Qinghai Embroidery is being taught in workshops and educational programs, preserving the knowledge and skills associated with this traditional craft and passing it on to future generations.
8. Cultural Exhibitions and Museums:
    - Embroidered pieces are featured in cultural exhibitions and museums, providing a window into the rich heritage and craftsmanship of the Qinghai-Tibet Plateau.

In Fashion Industry: A significant impact on the fashion industry, offering a unique and culturally rich alternative to mainstream designs. Here are several ways in which Qinghai Embroidery has found its place in the fashion world:

- Couture Collections:
    - Prominent fashion designers have incorporated Qinghai Embroidery into their haute couture collections. These exquisite pieces not only showcase the craftsmanship of the artisans but also introduce a distinct cultural element to high fashion.
- Runway Shows:
    - Qinghai Embroidery has been featured on international runways, captivating audiences with its intricate patterns, vibrant colors, and the story it tells about the Tibetan culture. It adds an element of diversity and inclusivity to the global fashion scene.
- Collaborations with Designers:
    - Fashion designers often collaborate with Qinghai Embroidery artisans to create unique, limited-edition collections. These collaborations fuse traditional craftsmanship with modern design sensibilities, resulting in one-of-a-kind pieces.

- Accessories and Embellishments:
  - Qinghai Embroidery is used to embellish accessories like handbags, shoes, belts, and scarves. These embroidered accents add a touch of sophistication and cultural flair to otherwise simple or minimalist designs.
- Bridal and Evening Wear:
  - The intricate and luxurious nature of Qinghai Embroidery makes it a popular choice for bridal gowns and evening wear. The detailed patterns and vibrant colors create a striking and memorable look for special occasions.
- Ready-to-Wear Collections:
  - Beyond haute couture, Qinghai Embroidery has been incorporated into ready-to-wear lines. This makes the art form more accessible to a wider audience, allowing people to integrate this unique craftsmanship into their everyday style.
- Global Influence and Cultural Exchange:
  - The inclusion of Qinghai Embroidery in fashion helps promote cultural exchange. It introduces a broader audience to the rich heritage of the Qinghai-Tibet Plateau and fosters an appreciation for the craftsmanship and traditions of this region.
- Sustainable and Artisanal Fashion:
  - With growing interest in sustainable and artisanal fashion, Qinghai Embroidery aligns well with this movement. The handcrafted nature of the embroidery emphasizes the importance of preserving traditional skills and supporting local artisans.
- Fashion Education and Workshops:
  - Qinghai Embroidery is often featured in fashion education programs and workshops, allowing aspiring designers to learn about and experiment with this unique technique.

Conclusion:

In conclusion, Qinghai Embroidery stands as a testament to the rich cultural heritage and artistic finesse of the Qinghai-Tibet Plateau. Its intricate patterns, vibrant colors, and meticulous craftsmanship reflect the deep connection between the artisans and the awe-inspiring natural landscapes that surround them. With a history spanning centuries, this unique form of embroidery encapsulates the stories, traditions, and aspirations of the Tibetan people.

In a rapidly changing world, Qinghai Embroidery serves as a poignant reminder of the beauty that emerges from tradition and the profound wisdom that lies within the hands of those who create it. It is a treasure not only for the people of Qinghai but for humanity as a whole, inviting us to appreciate the enduring beauty that emerges from the intersection of culture, nature, and human ingenuity.

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Beyond Cotton: A Technical Study of Emerging Sustainable Fiber Landscapes

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Abstract

Sustainable substitutes for traditional fibers are becoming more and more necessary as the global textile industry comes under more scrutiny for its effects on the environment. Two organic fibers– nettle and lotus–are explored in this abstract as potential eco-friendly, futuristic substitutes that could completely transform the textile sector.

In recent years, there has been a growing focus on sustainability and finding alternative solutions to traditional materials. This is particularly true in the field of natural fibres, where researchers and industries are exploring futuristic sustainable options that can replace synthetic fibres. These natural fibres offer numerous advantages such as being lightweight, biodegradable, and having lower carbon emissions during production. Moreover, natural fibres are abundant, cost-effective, and can be recycled, making them a viable choice for various industries like automotive, aerospace, and consumer goods.

By delving into the unique properties and sustainability aspects of the mentioned organic fibers, this abstract aims to shed light on their potential to transform the textile industry. As consumer demand for sustainable products continues to rise, these futuristic alternatives may pave the way for a more environmentally conscious and socially responsible approach to textile manufacturing. Further research and development are essential to unlock the full potential of these fibers and integrate them into mainstream textile production, ultimately contributing to a more sustainable and resilient future.

Keywords: Alternative Fibers, Conscious Consumption, Future Textiles, Natural Fibres, Organic, Sustainability

Introduction:

Natural fibres offer several advantages over synthetic fibres. Firstly, they are abundant and readily available, making them a sustainable choice. Secondly, natural fibres have a lower carbon footprint during production and manufacturing processes, contributing to environmental sustainability. Additionally, natural fibres are lightweight, which can reduce the overall weight of products and vehicles, leading to better fuel efficiency and reduced emissions.

Review of Existing Natural Fibres:

Existing natural fibres have been extensively studied for their potential as synthetic fibre substitutes (Zakaria*, 2019). Researchers have found that natural fibres, such as jute, hemp, flax, sisal, and kenaf, possess favorable properties for various applications. These natural fibres have shown comparable strength and stiffness to synthetic fibres, making them suitable for use as reinforcing materials in composites (George et al., 2015). Furthermore, natural fibres offer additional advantages such as being lightweight, renewable, and biodegradable.

India is home to a rich diversity of natural fibers that have been used for centuries. Many of these fibers are sustainable and eco-friendly, making them excellent choices for various applications. Below are some lesser-known sustainable and natural fibers found in India:

1. Banana Fiber:
   - Source: Extracted from the pseudostems of banana plants.
   - Sustainability: Sustainable as it is a byproduct of banana cultivation.
   - Uses: Textiles, handicrafts, and paper production.

2. Nettle Fiber:
   - Source: Extracted from the stalks of certain nettle plants.
   - Sustainability: Nettle plants are hardy and can grow in diverse conditions.
   - Uses: Textiles, ropes, and twine.

3. Jute:
   - Source: Jute plants, mainly grown in the Ganges Delta.
   - Sustainability: Jute is biodegradable and requires minimal pesticide use.
   - Uses: Burlap bags, ropes, textiles, and home furnishings.

4. Hemp:
   - Source: Hemp plants (Cannabis sativa).
   - Sustainability: Hemp requires minimal water and pesticides and is fast-growing.
   - Uses: Textiles, ropes, paper, and eco-friendly building materials.

5. Ramie:
   - Source: Chinese nettle plant (Boehmeria nivea).
   - Sustainability: Ramie is a fast-growing plant that doesn't require many pesticides.
   - Uses: Textiles, especially in blends with other fibers.

6. Sisal:
   - Source: Agave sisalana plant.
   - Sustainability: Sisal is hardy and can grow in arid conditions.
   - Uses: Ropes, twines, carpets, and handicrafts.

7. Kapok:
- Source: Kapok tree (Ceiba pentandra).
- Sustainability: Kapok is a natural seed fiber, and the trees require little maintenance.
- Uses: Stuffing for pillows, mattresses, and life jackets.

8. Lotus Stem Fiber:
- Source: Extracted from the stem of the lotus plant.
- Sustainability: Lotus plants grow abundantly in wetlands.
- Uses: Luxury textiles and traditional crafts.

9. Aloe Vera Fiber:
- Source: Extracted from the leaves of the aloe vera plant.
- Sustainability: Aloe vera is known for its hardiness and doesn't require excessive water.
- Uses: Textiles and cosmetics.

10. Kala Cotton:
- Source: Indigenous cotton variety native to Kutch, Gujarat.
- Sustainability: Adapted to arid conditions, requires minimal water and pesticides.
- Uses: Textiles, known for its natural colors.

These fibers not only contribute to sustainable and eco-friendly practices but also support local communities and traditional craftsmanship. Integrating these lesser-known fibers into various industries can promote biodiversity, reduce environmental impact, and support sustainable livelihoods.

Futuristic Prospects of Nettle and Lotus fibers

In the quest for sustainable and eco-friendly alternatives to conventional textiles, nettle fibers have emerged as a promising contender. Derived from the stalks of the nettle plant, these fibers boast a range of desirable properties, making them a viable choice for environmentally conscious consumers. This paper explores the detailed usage of nettle fibers, analyzes their impact on the environment, and envisions their role alongside lotus fibers, bamboo, and banana fibers in revolutionizing the landscape of sustainable textiles.

If you are a fiber artist who is familiar with northern European fairy tales, hearing about making clothing out of nettles likely makes your thoughts immediately fly to the tale of The Six Swans. First set to paper by the Brothers Grimm in 1812, this ancient tale has been told and retold by storytellers and authors throughout the ages. Widely used as food and medicine, nettles featured frequently in other European myths and fairy tales, too. Indeed, before the popularity of nettle fiber began to decline around the 17th-18th centuries, it was not uncommon to see nettle fiber used in fabric and sails.

Himalayan Nettle is known by the name Nangai by the Thangmi, although the Nepalese word allo is used more commonly throughout the region to refer to Himalayan Nettle (Girardinia diversifolia). It is a member of the nettle family (Urticaceae) and is closely related to the Common Nettle or Great Nettle (Urtica dioica) found in western North America, Europe, and other continents. Although the fiber of stinging nettles from a few varied species have been used throughout history, Himalayan Nettle is the only one still grown specifically for its fiber. It has been used in clothing, as well as for more utilitarian items such as grain sacks and rope.

Similar is the history of Lotus fiber, also known as lotus silk, is a rare and luxurious textile material derived from the fibers within the stem of the lotus plant (Nelumbo nucifera). Unfortunately, finding a comprehensive historical account of lotus fiber can be challenging due to its limited historical documentation. However, the use of lotus fibers can be traced back to ancient times, particularly in Southeast Asia. Historically, lotus fibers were known for their association with religious and ceremonial practices in regions such as Cambodia, Myanmar, and Thailand. Monks and royalty prized garments made from lotus fibers due to their exquisite texture and symbolic significance.

While specific historical records are sparse, contemporary efforts to revive and promote lotus fiber production have been spearheaded by organizations and artisans who recognize its potential as a sustainable and high-quality textile. In recent years, various research studies and articles have explored the extraction and utilization of lotus fibers, contributing to a renewed interest in this ancient and eco-friendly textile.

Detailed Usage of Nettle Fiber:

Nettle fibers, extracted from the outer stem of the nettle plant, possess remarkable tensile strength and durability. Traditionally used for centuries, particularly in regions like Nepal, the fibers have gained recognition for their versatility. Nettle fibers find applications in various textile products, including clothing, bags, and home furnishings. Their adaptability to blending with other fibers enhances their functionality and widens their scope in the textile industry.

The cultivation of nettles for fiber production is relatively low-impact, requiring minimal water and pesticides compared to traditional crops like cotton. Additionally, nettle plants can thrive in diverse climates, making them a resilient and sustainable resource for textile production.

Impact on the Environment:

Nettle fibers contribute significantly to the reduction of environmental impact in comparison to conventional textiles. Their cultivation demands fewer resources, and the fibers themselves are biodegradable, ensuring minimal harm at the end of their life cycle. Moreover, nettles can be cultivated organically, reducing the need for synthetic fertilizers and pesticides, thereby minimizing water pollution.

The production process for nettle fibers is generally less energy-intensive compared to certain synthetic fibers, aligning with the principles of sustainable and energy-efficient manufacturing. By choosing nettle fibers, consumers actively participate in promoting a more environmentally friendly and responsible textile industry.

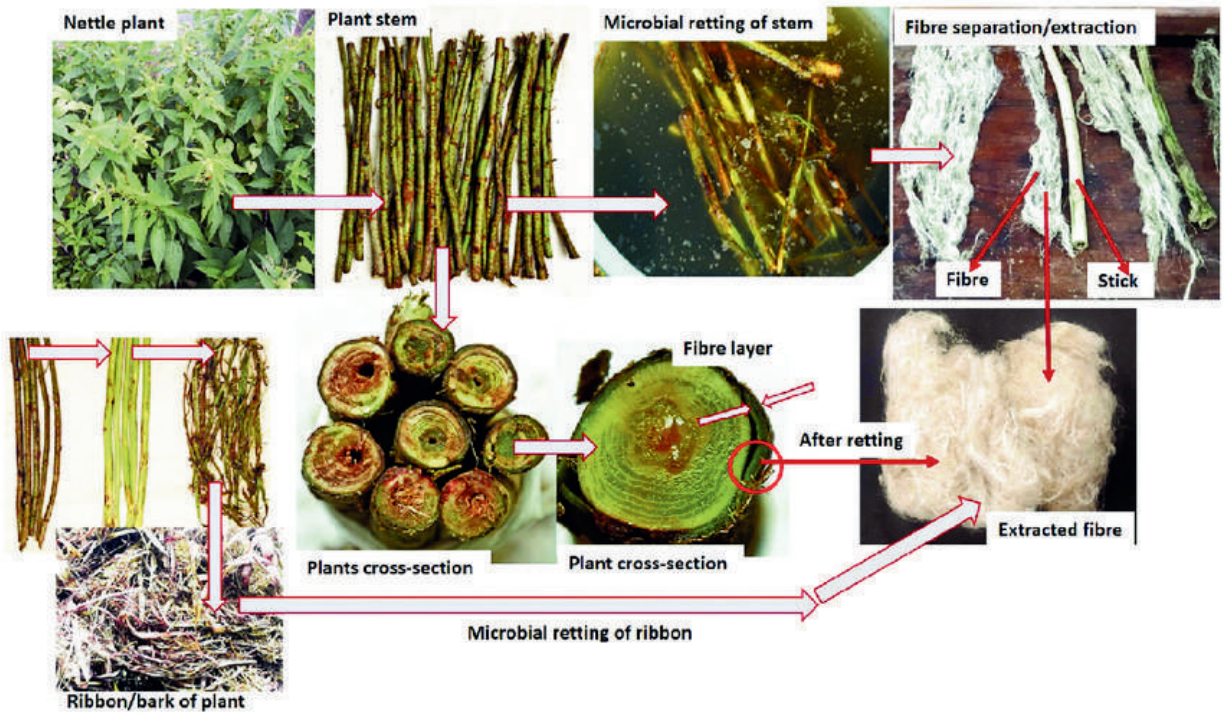

Fig 1. Pictorial Representation of Nettle Fiber

Fig 2. Pictorial Representation of Lotus Fiber

Detailed Usage of Lotus Silk

Several unique properties make lotus silk desirable for garment makers and fashion designers.

1. Strength
2. Lightweight
3. Natural Sheen
4. Easy to Dye
5. Highly Breathable

The Sustainability of Lotus Silk

The sustainability of lotus silk is one of its significant advantages. The plant is a renewable resource, and its cultivation does not require chemical pesticides or fertilizers. The production process is much less energy-intensive than other fabrics, such as cotton or polyester. This makes lotus silk a more sustainable option than other fabrics.

The popularity of lotus silk has grown in recent years due to its luxurious look, sustainable production, and unique properties. Many designers, who appreciate its lightness, strength, and sheen, have embraced its use in fashion. The fabric is also becoming increasingly popular among consumers looking for ethically and sustainably produced clothing. As the demand for lotus silk continues to grow, so does its potential to become a significant player in the sustainable fashion industry.

Environmental Benefits of Lotus Silk

Lotus silk is biodegradable and can be composted, making it a much more sustainable option than conventional silk. Here are seven environmental benefits of lotus silk production:

1. Reduced Water Use
2. Reduced Carbon Footprint
3. Sustainable Resource
4. Reduced Pollution

Role of Nettle and Lotus Fibers in Sustainable Consumption:

Nettle fibers, when considered alongside lotus fibers, bamboo, and banana fibers, contribute to a diverse range of sustainable alternatives. Lotus fibers, obtained from the stem of the lotus plant, share similar ecological benefits, featuring low environmental impact and excellent durability. Together, these natural fibers provide a comprehensive palette for sustainable textile consumption.

Bamboo fibers are renowned for their rapid growth and minimal environmental footprint, while banana fibers offer a unique blend of strength and flexibility. Combining these with nettle and lotus fibers creates a spectrum of organic choices for consumers, fostering a shift towards sustainable fashion and conscious consumption.

Why these fibres?

1. Nettle Fiber:

Nettle fibers, derived from the stinging nettle plant, offer a promising alternative due to their rapid growth, low environmental impact, and minimal need for pesticides or fertilizers. The fibers possess

exceptional strength and durability, making them suitable for various textile applications.

2. Lotus Fiber:

Lotus fibers, extracted from the stem of the lotus plant, present a unique and sustainable option. Known for their natural resistance to water, the fibers require minimal processing, reducing the environmental footprint of the textile manufacturing process. Lotus fibers also exhibit a luxurious texture, making them desirable for high-end fashion.

Future Prospects of Sustainable Natural Fibres

The use of sustainable natural fibres in the development of new generation composites is expected to play a crucial role in the near future. With the increasing demands for environmental and energy sustainability, natural fibres reinforced composites have garnered significant attention in industries such as automotive (Hu et al., 2018). In the coming years, there is expected to be a continued focus on finding alternative solutions to traditional materials and incorporating sustainable practices in various industries.

Futuristic sustainable and alternative natural fibres have a promising scope in the coming years (Manalo et al., 2015). Research and development efforts are likely to focus on optimizing the properties and performance of natural fibres, such as improving their strength, durability, and compatibility with various matrices. This will involve exploring new processing techniques and treatments to enhance the mechanical properties of natural fibres.

In addition, there is a possibility of using advanced technologies, such as nanotechnology, to further enhance the properties of natural fibres and expand their range of applications. Moreover, collaborations between researchers, industries, and governments are expected to increase in order to promote the use of natural fibres and develop standards and regulations for their production, use, and disposal.

Conclusion:

The integration of nettle and lotus fibers into the sustainable textile landscape holds immense potential for mitigating the environmental impact of the fashion industry. As conscious consumers increasingly seek alternatives to conventional fibers, the combination of nettle, lotus, bamboo, and banana fibers offers a holistic approach to sustainable consumption. By embracing these organic alternatives, we can contribute to a more ecologically balanced and responsible future for the textile industry, one thread at a time.

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Augmented Reality in Marketing: A Holistic Exploration of Consumer Engagement,Brand Advocacy, and Shopping Experience

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Abstract
This research paper aims to provide a comprehensive understanding of the role of augmented reality (AR) in various aspects of marketing. Drawing insights from multiple studies, including "Exploring the Role of Augmented Reality as a New Brand Advocate" (Kumar et al., 2023) and "The Effects of Augmented Reality on Consumer Responses in Mobile Shopping: The Moderating Role of Task Complexity" (Yoo, 2023), the study will delve into how AR impacts consumer engagement, brand advocacy, and the overall shopping experience.

Introduction:

In recent years, the advent of augmented reality (AR) technology has significantly transformed the landscape of digital commerce and consumer behaviour. As consumers increasingly turn to digital platforms for their shopping needs, AR has emerged as a powerful tool that enhances the overall shopping experience. This paper delves into the diverse facets of AR application in the realm of consumer behaviour, specifically focusing on its impact on user engagement, brand advocacy, and the intricate dynamics involved in mobile shopping.

Background of Augmented Reality in Commerce
The rapid evolution of digital commerce, fuelled by technological advancements, mobile devices, and global connectivity, has become a cornerstone of contemporary retail. The global shift towards digital shopping, further accelerated by the challenges posed by the COVID-19 pandemic, underscores the growing importance of seamless omnichannel experiences for consumers [Raheel Batool & Jian Mou, 2023; Jungmin Yoo, 2023]. In this digital landscape, the integration of augmented reality stands out as a transformative force, allowing consumers to engage with products in ways previously unimaginable.

Significance of Augmented Reality in Digital Shopping

As consumers seek immersive and realistic online shopping experiences, AR has proven to be a game-changer. This paper explores the effects of AR on consumer responses in the mobile shopping domain, unravelling the intricate interplay of factors such as perceived media richness, interactivity, telepresence, utilitarian and hedonic values, and behavioural intentions. Understanding these relationships becomes paramount as retailers strive to provide not only utilitarian but also enjoyable shopping experiences [Zainah Qasem Year, 2023].

Research Objectives

The primary objective of this study is to unravel the nuanced dynamics of consumer responses to AR in mobile shopping. Specifically, we aim to investigate the relationships between key variables, namely perceived media richness, interactivity, telepresence, utilitarian and hedonic values, and their collective influence on consumer behavioural intentions. Furthermore, we explore the moderating role of task complexity, aiming to provide valuable insights for mobile retailers navigating the terrain of advanced AR technology [Jungmin Yoo, 2023].

Structure of the Paper

The subsequent sections of this paper delve into a comprehensive review of existing literature, establishing the theoretical foundations that underpin our research. Following this, the methodology outlines the research design and data collection process. Results and discussions shed light on the empirical findings, providing insights into the complex relationships explored. The paper concludes with practical implications for digital retailers and avenues for future research in this burgeoning field of study.

Literature Review

Augmented Reality (AR) has emerged as a disruptive force in the field of marketing, with an increasing body of research shedding light on its multifaceted impacts. In the paper "Exploring the Role of Augmented Reality as a New Brand Advocate" (Kumar et al., 2023), the authors emphasize AR's potential to transform users into brand advocates. Building on attachment theory, the study posits that consumers develop emotional connections and brand attachment through AR experiences, leading to increased brand engagement and advocacy.

In tandem, "The Effects of Augmented Reality on Consumer Responses in Mobile Shopping: The Moderating Role of Task Complexity" by Yoo (2023) investigates consumer responses to AR in mobile shopping. This study underscores the importance of perceived media richness, interactivity, and telepresence in influencing behavioural intentions, shedding light on how these factors interact with users' perceived task complexity.

AR marketing, as defined by Rau Schnabel et al. (2022), involves strategically integrating AR experiences to achieve overarching marketing goals. Leading brands such as IKEA, Zara, Dulux, and Amazon have leveraged AR to engage users with immersive experiences. Kumar and Srivastava

(2022) argue that AR is not merely a gimmick but a potential disruptor with attributes such as interactivity, augmentation, vividness, and novelty. These attributes generate different aspects of the customer experience, including flow, spatial presence, and immersion, thereby providing hedonic and utilitarian values.

Brand Attachment and Psychological Empowerment

Brand attachment theory by Bowlb (1969) forms a theoretical basis for understanding how AR influences consumer behaviour. The emotional connection consumers develop with a brand through AR's immersive presence enhances brand attachment (Kumar et al., 2023). Psychological empowerment theory provides further insights, explaining how AR's media attributes activate intrinsic motivation, fostering customer engagement and autonomy in decision-making (Kumar & Srivastava, 2022).

Brand Advocacy and Engagement

Brand advocacy, a key indicator of a brand's strength, is fuelled by strong customer-brand relationships. In AR marketing, brand advocacy extends beyond information exchange, involving powerful, influential, and non-incentivized online representation by brand- experienced customers (Wilk et al., 2020). The psychological empowerment derived from AR's interactivity and vividness enhances intrinsic motivation, intensifying customer relationships and, consequently, brand advocacy (Bhati & Verma, 2020; Kumar et al., 2023).

Consumer Values and Behavioural Intentions

The effects of AR extend to shaping consumervalues and behavioural intentions. In mobile shopping, Yoo's study (2023) reveals that perceived media richness and interactivity positively influence telepresence, subsequently impacting utilitarian and hedonic values, and ultimately influencing behavioural intentions. The immersive natureof AR experiences contributes to consumers feeling present in the mediated environment, thus influencing their values and intentions (Yoo, 2023).

Conclusion of Literature Review

In conclusion, the literature indicates that AR is not only a technological innovation but a transformative force in marketing, influencing brand attachment, consumer engagement, and brand advocacy. The immersive and interactive nature of AR experiences contributes to enhancing consumer values and shaping their behavioural intentions in the digital commerce landscape. The following sections of this research paper will further explore and synthesize these findings to contribute to the evolving understanding of AR's role in modern marketing.

Methodology

The methodology employed in this research paper involves a comprehensive and systematic approach to exploring the multifaceted impacts of augmented reality (AR) in the realm of marketing. The research design encompasses a qualitative case study methodology, aiming to provide in-depth insights into how AR strategies have been implemented by various retail companies and their subsequent effects on consumer engagement, brand advocacy, and the

shopping experience.

Research Design

The qualitative case study design is chosen for its suitability in investigating real-world phenomena within their natural context. This design enables an exploration of the complexities and nuances associated with the adoption of AR in retail settings, offering a rich and detailed understanding of each case. By delving into specific instances of AR implementation in companies such as Warby Parker, Magnolia Market, Houzz, Ulta Beauty, Williams-Sonoma, AMC, and Nike, the study aims to uncover patterns, themes, and unique insights that contribute to the broader understanding of AR in marketing.

Case Selection

The selection of cases is based on the criterion of relevance to the research objectives. Companies representing various sectors within the retail industry are chosen to provide a diverse and holistic perspective on the applications of AR. The chosen cases have demonstrated the innovative and impactful use of AR in enhancing consumer engagement, fostering brand advocacy, and shaping the shopping experience. The selected cases align with the theoretical framework established in the literature review and contribute to the overall goals of the research.

Data Collection

Primary data for each case study is collected through a combination of sources, including:

1. Document Analysis: Thorough analysis of publicly available documents, press releases, marketing materials, and company reports. This assists in understanding the chronological development of AR initiatives, strategic goals, and perceived impacts on consumer engagement and brand advocacy.
2. Direct Observation: Where applicable, direct observation of AR experiences is employed to gain firsthand insights into how consumers interact with AR applications in retail settings. This method provides valuable context and helps validate findings from document analysis.

Data Analysis:

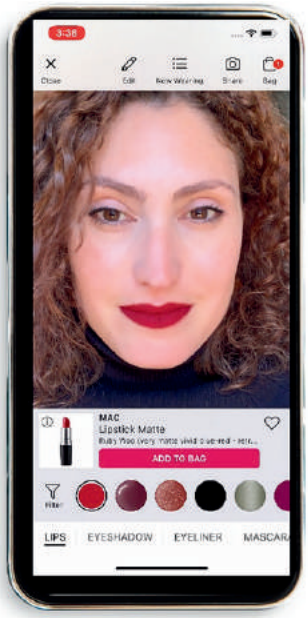
The collected data is subjected to rigorous qualitative analysis methods. Thematic analysis is employed to identify recurring patterns, key themes, and unique insights across the case studies. The analysis is both deductive, guided by the research objectives and theoretical framework, and inductive, allowing for the emergence of new themes from the data.

Ethical Considerations:

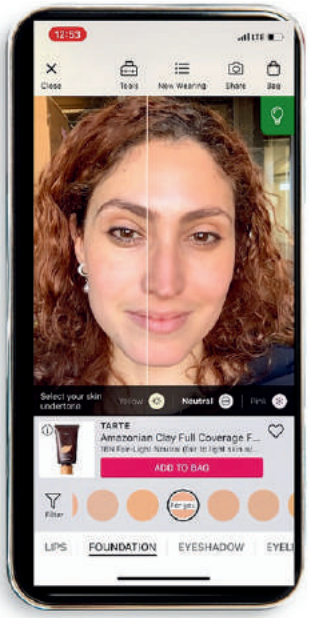
Ethical considerations are paramount throughout the research process. The research adheres to ethical guidelines and principles, ensuring transparency, integrity, and respect for the rights of companies involved in the case studies.

Results:

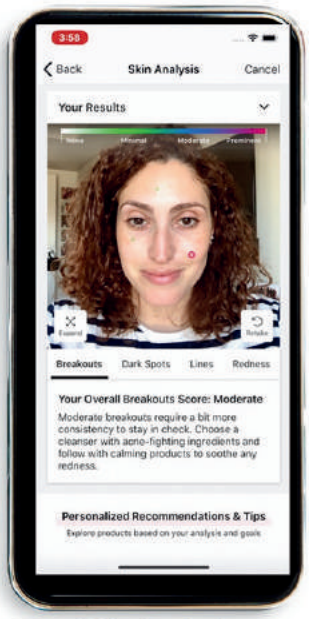
1.Case Study of Ulta Beauty:Augmented Reality Transforms Beauty Retail



Try-on



Shade Finder



Skin Analysis

Introduction:

Ulta Beauty, a leading beauty retailer, has successfully integrated augmented reality (AR) into its customer experience, redefining beauty retail standards. The AR Try-On feature, available on the Ulta Beauty app, enhances consumer engagement by allowing virtual product testing.

Key Achievements:

1. ***AR Try-On Experience:***

Ulta Beauty's AR Try-On enables customers to virtually try on makeup products using their smartphones. Real-time virtual testing enhances the online shopping experience, addressing common concerns related to product suitability.

2. ***Product Personalization:***

Consumers can personalize their virtual try-on experience by selecting from a wide range of beauty products and shades. This customization fosters a sense of empowerment, as users can experiment with different looks tailored to their preferences.

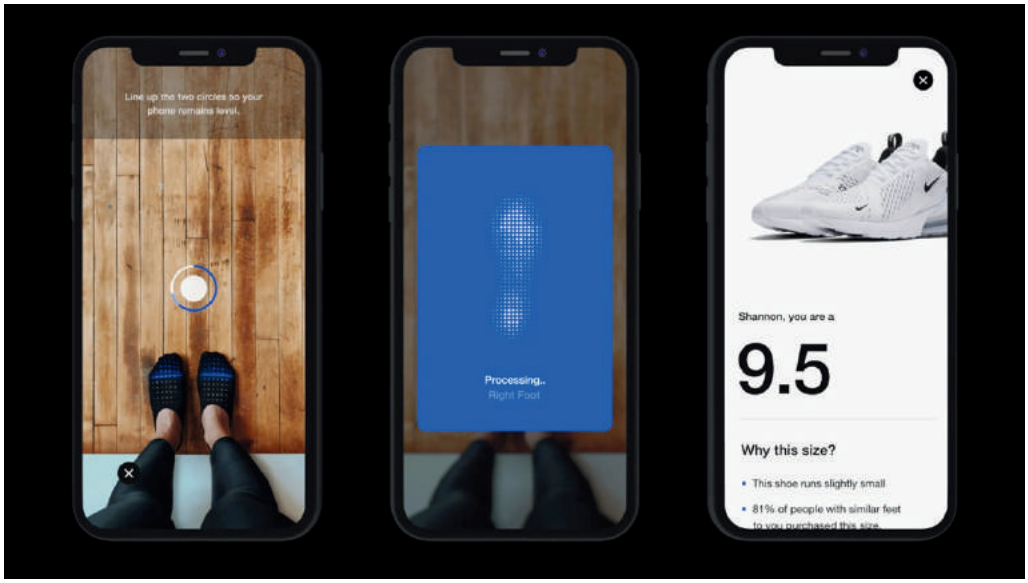
3. Increased Consumer Confidence:

By virtually trying on products, customers gain confidence in their purchase decisions, reducing the likelihood of returns. The feature mitigates the uncertainty associated with online beauty shopping, contributing to increased customer satisfaction.

4. Market Leadership:

Ulta Beauty's adoption of AR aligns with evolving consumer preferences for immersive and interactive shopping experiences. The AR Try-On feature positions Ulta Beauty as an industry leader, setting new standards in beauty retail.

2.Case Study of Nike: Revolutionizing Shoe Shopping with Nike Fit AR



Introduction:

Nike, a global sportswear giant, has embraced augmented reality (AR) with its Nike Fit initiative, revolutionizing the way consumers find the perfect shoe fit. The feature, integrated into the Nike app, uses AR to recommend ideal shoe sizes based on detailed foot scans.

Key Achievements:

1. ***Accurate Sizing recommendations:***

Nike Fit utilizes AR technology to provide hyper-accurate sizing recommendations for each shoe in Nike's catalog. The detailed foot scan, powered by a 13-point measuring system and artificial intelligence, enhances sizing precision.

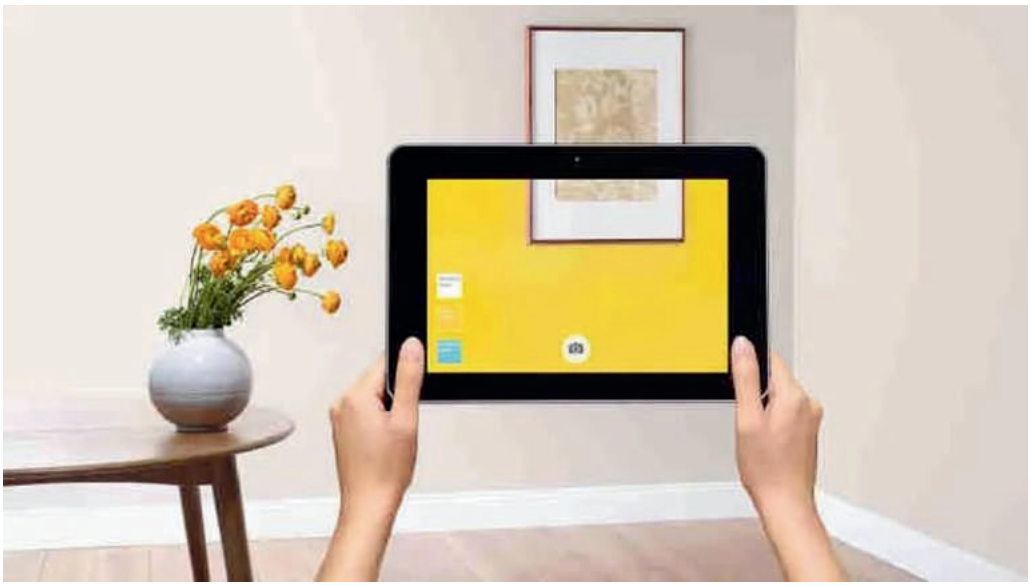
2. ***Addressing Online Shopping Challenges:***

Nike Fit tackles common pain points in online shoe shopping, such as inaccurate sizing and the hassle of returns. By minimizing returns and improving sizing accuracy, Nike aims to increase customer satisfaction and drive sales through its app and website.

3. ***Youthful Audience Engagement:***

Nike's adoption of AR resonates well with its target audience, predominantly the younger demographic. Millennials, known for their interest in AR/VR experiences, find the Nike Fit initiative appealing, contributing to brand loyalty.

3.Case Study of Dulux: Transforming Wall Repainting with AR Visualizer



Introduction:

Dulux, under AkzoNobel, pioneers the use of augmented reality (AR) in its Visualizer mobile app, providing consumers with a dynamic way to re-colour walls. The app offers a comprehensive set of features, from virtual wall painting to educational content and ecommerce integration.

Key Achievements:

1. ***Dynamic Wall Recolouring:***

Dulux Visualizer employs AR to allow consumers to re-colour their walls dynamically as they move around a room with a mobile device.

The feature enhances the visualization of paint colours in real-world settings, aiding informed purchase decisions.

2. Global Availability and Integration:

The app is globally available, supporting 25 of Akzo Nobel's paint brands in 40 markets and 28 languages. Integrated ecommerce capabilities enable users to order and deliver paint testers and stock online, streamlining the entire purchasing process.

3. Educational Content and Technological Innovation

Dulux Visualizer features 'Dulux Masterclass' educational content, enriching users' knowledge about paint selection and application techniques. Technological innovations, including bespoke algorithms for analysing live video and measuring ambient lighting conditions, contribute to the app's effectiveness.

4. Real-world Benefits to Consumers:

The app provides consumers with a real-world benefit, allowing them to visualize paint colours realistically before making a purchase. Dulux aims to shorten the sales cycle and strengthen the global brand profile of Akzo Nobel's paint products through the innovative use of augmented reality.

4.Case Study of Gucci: Snapchat Collaboration and Virtual Sneakers

Introduction:

Gucci, a renowned luxury brand, leverages augmented reality (AR) to engage consumers and drive sales. The collaboration with Snapchat and the introduction of virtual sneakers showcase Gucci's commitment to innovative digital experiences.

Key Achievements:

1. ***Snapchat AR Try-On Campaign:***

Gucci partnered with Snapchat for a global AR try-on campaign, allowing users to virtually try on sneakers through AR lenses. The campaign successfully increased brand engagement and translated into impressive sales directly from the Snapchat platform.

2. Virtual Sneakers in the Digital Realm:

Gucci's release of the virtual sneaker collection, Gucci Virtual 25, showcases the brand's venture into the virtual wearables space. The neon-colored, digital-only sneakers can be tried on using AR and purchased through Gucci's app, blending fashion with virtual experiences.

5.Case Study of ASOS: See My Fit – Redefining Online Apparel Shopping

Introduction:

ASOS, a prominent online fashion and cosmetic retailer, introduces the See My Fit tool in collaboration with Zeekit, an Israeli augmented reality (AR) company. This tool aims to enhance the online shopping experience by allowing users to view items on models of different sizes and heights.

Key Achievements:

1. ***See My Fit AR Tool:***

ASOS's See My Fit tool utilizes AR to provide consumers with a simulated image of how clothing items look on models of various sizes.

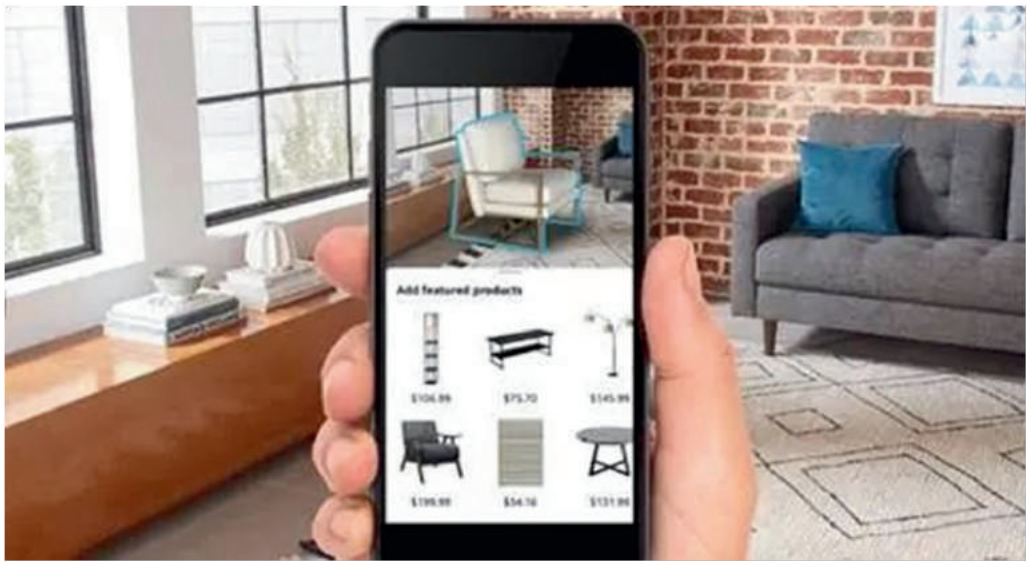
The tool addresses the common issue of discrepancies between online product images and real-world appearances.

2. Trailing Size Diversity:

The tool, currently in a trial phase, offers users the ability to choose from 16 different models, ranging from a UK size 4 to 18 and in height from 5' 1" to 5' 9".

ASOS aims to assess the results of the trial and potentially expand the range of models to cater to a broader audience.

6.Case Study of Amazon's Room Decorator:Virtual Room Design Made Easy



Introduction:

Amazon introduces the Room Decorator tool, an augmented reality (AR) initiative simplifying furniture and home decor shopping. This tool, part of the AR View feature, allows users to visualize multiple items in a room, facilitating virtual room design.

Key Achievements:

1. ***Visualizing Furniture in Real Space:***

Room Decorator goes beyond traditional AR tools by allowing users to visualize multiple furniture items together in their physical space. The tool takes the guesswork out of online furniture shopping, providing a holistic view of how different pieces fit together.

2. Ease of Shopping:

The tool, currently in a trial phase, offers users the ability to choose from 16 different models, ranging from a UK size 4 to 18 and in height from 5' 1" to 5' 9".

ASOS aims to assess the results of the trial and potentially expand the range of models to cater to a broader audience.

7.Case Study of The Walking Dead Game: Augmented Reality Meets Zombie Apocalypse

Introduction:

The Walking Dead: Our World" game brings augmented reality (AR) into the realm of zombie apocalypse, offering players an immersive experience in the real world. Developed by Next Games, the AR game follows the location-based model, similar to Pokémon Go.

Key Achievements:

1. ***Real-world Zombie Interaction:***

The game enables players to interact with virtual zombies overlaid on the real world, combining digital elements with the players' environment. Players can fight off undead creatures using various in-game weapons, enhancing the overall gaming experience.

2. Strategic Partnerships:

Mountain Dew's integration with the game, using the Walking Dead Encounter AR app, extends the experience to physical spaces. On-pack and in-store promotions, coupled with Mountain Dew ads featuring AR codes during the TV show, leverage AR for brand collaboration and fan engagement.

Discussions

Augmented Reality's Role in Brand Engagement

- ***Immersive Brand Experiences: Redefining Consumer Interaction***

The integration of augmented reality (AR) into brand strategies is a transformative force, evident in the immersive experiences crafted by leading brands. Ulta Beauty's Glam Lab sets the stage, offering customers a virtual haven to experiment with makeup products. This transcendent approach replaces the traditional in-store makeup trials, providing a dynamic engagement platform. Users can visualize and test various makeup options, creating a personalized experience that goes beyond conventional retail interactions. The result is not just a simulated trial but a journey of self-expression and discovery within the brand's digital realm.

Amazon's Room Decorator and ASOS's See My Fit further amplify the impact of immersive brand experiences. These platforms empower users to virtually place furniture and fashion items within their living spaces. Amazon's tool facilitates the visualization of entire rooms, allowing users to curate personalized aesthetics. ASOS, on the other hand, tackles the persistent issue of online apparel shopping by introducing See My Fit, which enables consumers to preview clothing on models of different sizes. In both instances, AR serves as a bridge, seamlessly connecting the virtual and physical worlds, and transforming the way users interact with products.

- ***Beyond Transactions to Interactions: A Paradigm Shift***

The case studies of Nike's Nike Fit and Gucci's collaboration with Snapchat unveil a significant paradigm shift–from transaction-focused engagements to interactive brand interactions. Nike, acknowledging the challenges of online shoe shopping, introduces Nike Fit, leveraging AR technology to enhance accuracy in size selection. This move extends beyond a mere transaction; it becomes a consumer-centric initiative to alleviate concerns, fostering trust and satisfaction.

Gucci, on the other hand, strategically aligns with Snapchat, a platform synonymous with the youth demographic. This collaboration transcends traditional marketing; it forges shareable, viral moments, turning brand-consumer interactions into an ongoing dialogue. Gucci not only showcases its products but integrates seamlessly into the social media behaviours of its audience. The result is a dynamic relationship that extends beyond a purchase, capturing the essence of modern brand engagement.

In essence, these case studies showcase augmented reality not merely as a technological tool but as a catalyst for redefining consumer-brand relationships. The immersive experiences and interactive engagements fostered by AR propel brands into the realm of lifestyle and self-expression, creating lasting connections with today's discerning consumers.

Demographics Understanding: Tailoring AR Experiences

- ***Inclusivity and Personalization: A Paradigm of Representation***

The brands featured in the case studies illuminate a profound comprehension of their consumer demographics, prominently showcased in their augmented reality (AR) implementations.

ASOS's See My Fit emerges as a pioneering example, championing inclusivity in the realm of online fashion. This AR tool is strategically designed to empower users by allowing them to visualize products on models of varying sizes. By fostering a sense of representation, ASOS transcends conventional beauty standards, creating a shopping experience that resonates with a diverse audience. The commitment to inclusivity becomes a cornerstone of the brand's identity, aligning seamlessly with the evolving expectations of today's consumers.

Nike's Targeted Approach with Nike Fit exemplifies a strategic understanding of demographic nuances. By catering to a younger and digitally native audience, Nike addresses the unique needs and preferences of this demographic. The implementation of AR technology, particularly in enhancing shoe sizing accuracy, signifies a commitment to providing a personalized and customer-centric experience. Nike's approach reflects an astute awareness of the tech-savvy nature of its consumers, translating into a seamless integration of technology into their lifestyles.

In essence, both ASOS and Nike showcase that AR, when wielded with precision, can break traditional moulds and cater to the diverse preferences of consumers. The commitment to inclusivity and personalization is not merely a feature; it becomes a fundamental aspect of brand building, fostering stronger connections with a wide spectrum of consumers.

Conslusion:

In summary, this research delved into the transformative landscape of augmented reality (AR) in the retail sector, examining its multifaceted impact on brand engagement, consumer demographics, and the retail experience. The case studies, ranging from Ulta Beauty and Nike to Gucci and Mountain Dew, elucidate the dynamic ways in which AR is shaping the future of retail.

Key Findings Recap

The exploration of Ulta Beauty's GlamLab, Nike's Nike Fit, Amazon's Room Decorator, ASOS's See My Fit, Gucci's Snapchat collaboration, and Mountain Dew's Walking Dead integration revealed pivotal insights into the diverse applications of AR. From immersive brand experiences to tailored interactions and strategic collaborations, AR emerged as a catalyst for fostering meaningful connections with consumers.

Significance and Implications

The findings underscore the significance of AR in revolutionizing not just how consumers interact with products but also how brands understand and engage with their diverse audiences. The strategic collaborations exemplify a nuanced comprehension of demographics, from ASOS's inclusive representation to Gucci's alignment with Snapchat's youth-centric platform.

Future Directions

While celebrating the current successes, it is crucial to recognize the limitations, particularly the global focus that might not capture the intricacies of specific markets like India. Future research avenues should explore the cultural, economic, and technological nuances in diverse markets, ensuring a more comprehensive understanding of AR's role in shaping consumer behaviours.

Research's Broader Relevance

As augmented reality continues to evolve, this research provides valuable insights for businesses and

researchers alike. The statistics derived from the "Impact of Augmented Reality on Retail" report reinforce the pivotal role of AR in influencing consumer behaviour. From increased product exploration to elevated purchasing decisions, AR emerges as a transformative force in shaping positive consumer sentiments.

Final Call to Action

In conclusion, the fusion of technology and retail is not merely transactional; it's an ongoing dialogue between brands and consumers. As AR becomes an integral part of this dialogue, its strategic integration holds the key to unlocking new dimensions in brand- consumer relationships. This research invites further exploration into the evolving realm of AR, urging stakeholders to actively participate in and contribute to the ongoing narrative of retail innovation.

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Vertical farming: Navigating potentially untapped assets

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Abstract

The abstract for the research review delves deeply into the interconnected themes of consumer acceptance, technological advancements, and sustainability challenges in vertical farming, as synthesized from three comprehensive documents. It critically examines how consumers' perceptions and technological innovations interact within the vertical farming ecosystem, affecting its sustainability and practicality. This review illuminates the complexities and nuances of vertical farming's role in urban agriculture, offering insights into its potential benefits and limitations. By integrating diverse perspectives, the abstract sets the stage for a nuanced discussion on the feasibility and future of vertical farming in meeting urban food demands sustainably.

Keywords: - Literature review, technology acceptance model, vertical farming, sustainable urban food

Introduction:

Vertical farming, an innovative approach to agriculture, represents a paradigm shift in food production, particularly pertinent to urban areas. This method, characterized by vertically stacked layers and controlledenvironments, emerged as a responseto increasing urbanization and the pressingneed for sustainable food production systems. The evolution of vertical farming reflects advancements in agritech, including hydroponics, aeroponics, and sophisticated climate control technologies, enabling year-round crop cultivation with minimal land use.

Its relevance in urban agriculture is underscored by growing environmental concerns and urban space constraints. Vertical farmingoffers a solutionto these challenges by promoting efficientland use, reducing transportation emissions (as farms can be locatedcloser to consumers), and potentially lessening the use of pesticides and herbicides due to controlled conditions.

Understanding consumer perception is crucial in this context. As the field is relatively new, consumer acceptance varies, influenced by factors like perceived naturalness, product quality, and sustainability awareness. These perceptions directlyimpact market growthand the adoption of verticalfarming techniques.

Its equally important to assess the environmental impact of vertical farming. While it promises reduced water usage and a smaller carbon footprint, concerns about high energy consumption, particularly from artificial lighting, and the environmental cost of constructing and maintaining vertical farms, remains. Balancing these factors is key to realizing the full potential of vertical farming as a sustainable solution for urban food production.

In sum, the introduction sets the stage for a detailed exploration of vertical farming, acknowledging its innovative approach, and underscoring the need to balance technological advancements with consumer expectations and environmental considerations.

Methodology:

The methodology employed in this research review involved a systematic and comprehensive analysis of three key documents related to vertical farming. The process began with a meticulous reading of each document to understand their individual perspectives on consumer acceptance, technological advancements, and sustainability challenges in vertical farming.

Key themes and findings were extracted from each document. This was followed by a thematic analysis, where similar themes across the documents were identified and grouped together. Divergent views or unique insights were also noted, ensuring a balanced representation of perspectives.

The next step involved synthesizing these findings into a cohesive narrative. This synthesis was not merely a summary of each document but an integrative effort to weave together the various strands of thought and research into a comprehensive overview. The aim was to provide a holistic understanding of vertical farming, reflecting the complexity and multi-dimensional nature of the subject.

Throughout the process, care was taken to ensure that the review reflected a deep understanding of the material. The methodology was thus designed to offer a nuanced and in-depth exploration of vertical farming, grounded in rigorous analysis and synthesis of the selected documents.

Results:

The Results present an in-depth analysis of findings from three documents, focusing on consumer attitudes, technological challenges, and sustainability aspects in vertical farming. This section also features a comparative synthesis, highlighting key similarities and differences. Critical findings, along with key statistics and descriptions, are bullet-pointed:

- **Consumer Acceptance and Perception:** All studies highlight technophobia's impact on consumer acceptance, underscoring the need for educational initiatives to enhance understanding and adoption of vertical farming technologies.
- **Technological Advancements and Challenges:** Studies discuss innovations in climate control and hydroponics, addressing energy-efficient solutions.
- **Sustainability Aspects:** The document provides environmental benefit solutions, such as reduced water consumption and wastage, and a decline in pesticide use.

The main challenge documented is ongoing energy expenses; initial setup is costly. Overall, the potential of vertical farming proves positive for urban agriculture.

Discussion:

The discussion section delves into the broader implications of the findings from the documents, focusing on the complex interplay between consumer behaviour, technology adoption, and sustainability in vertical farming. It analyses how consumer perceptions and attitudes toward vertical farming are shaped by various factors, including environmental awareness, perceived naturalness, and familiarity with technology. The section also examines the challenges and opportunities presented by technological advancements in vertical farming, such as the need for energy-efficient solutions and the potential for improved crop yields and sustainability.

The role of sustainability in vertical farming is a critical focus, exploring how this innovative approach can contribute to more sustainable urban food production systems. The discussion highlights the potential environmental benefits, such as reduced water and land use, and the challenges, including high initial costs and ongoing energy requirements. It also considers how vertical farming can be integrated into existing urban infrastructures and food systems to maximize its benefits.

Furthermore, the section addresses the policy implications and the need for supportive frameworks to encourage the adoption and growth of vertical farming. It emphasizes the importance of interdisciplinary research and collaboration among technologists, agriculturists, and social scientists to address the multifaceted challenges and realize the full potential of vertical farming in urban settings.

Technological Innovations in Vertical Farming

Vertical farming, a beacon of modern agriculture, has been revolutionized by technological advancements, each playing a pivotal role in shaping its sustainability and consumer appeal. The adoption of hydroponics and aeroponics has been a game-changer, significantly reducing water usage – a critical factor in sustainability. LED lighting, tailored to provide optimal wavelengths, has enhanced growth while minimizing energy consumption. These technologies have not only improved efficiency but have also made vertical farming an attractive, eco- friendly option for urban settings.

However, these advancements come with complexities. For instance, the energy demands of LED lighting, while more efficient than traditional methods, still pose a sustainability challenge. Balancing these technological benefits with energy consumption is a key focus in the ongoing development of vertical farming.

Consumer perception, a vital aspect of vertical farming's success, is also significantly influenced by these technologies. The promise of pesticide-free, locally grown produce is appealing, yet there's a juxtaposition against concerns over the 'naturalness' of such high-tech growing methods. Addressing these consumer concerns is crucial for market acceptance.

Innovative case studies, like the integration of solar power to offset energy demands, provide practical insights into overcoming these challenges. These real-world applications demonstrate how technological innovation can align with sustainability goals, offering a roadmap for future development.

Consumer Attitudes and Market Dynamics: This section provides an in-depth analysis of consumer behaviour trendsand the factors influencing acceptance or resistance to vertical farming,as well as how these trends shape market dynamics. This comprehensive analysis begins with understanding the consumer's perspective on vertical farming, which is influenced by a range of factors, including environmental awareness, health consciousness, and perceptions of the naturalness and quality of produce.

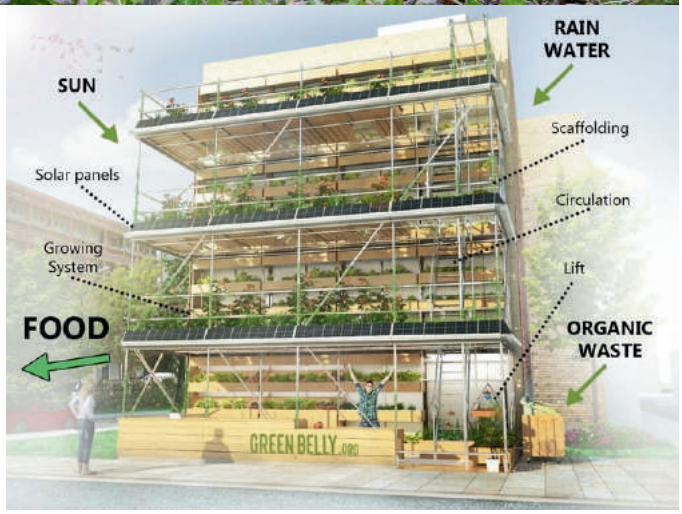
Environmental Concerns: Increasing sustainability will attract consumers to vertical farming for lower water usage and a reduced carbon footprint. Health and safety perceptions, with fresher, pesticide-free produce, positively influence attitudes. However, technological novelty may elicit scepticism or fascination. Price sensitivity, especially in cost-conscious markets always has affects acceptance which arises resistance Resistance arises from concerns about unnaturalness and limited awareness. Consumer attitudes directlyimpact market dynamics, affecting demand, investment, and innovation. Competitive positioning against traditional agriculture involves emphasizing vertical farming's unique selling points. Policy and regulations play a pivotal role, with supportive measures fostering growth and restrictive ones hindering vertical farming's development.

Environmental Impact and Sustainability Assessment: The study evaluates vertical farming's environmental benefits, including reduced water usage, lower land requirements, and decreased transportation emissions. Despite these advantages, sustainability challenges like high energy consumption and resource-intensive infrastructure persist. Strategies for improvement involve integrating renewable energy, enhancing resource- efficient technologies, and implementing recycling systems. Vertical farming presents unique advantages in water and land use efficiency compared to traditional farming, but its sustainability relies on energy sources and technology efficiency. Continued innovation and responsible management are crucial for maximizing environmental benefits.

Future Directions and Research Needs: The key areas for exploration include reducing energy consumption through advanced technologies, diversifying crops, ensuring economic competitiveness, integrating with urban systems, ongoing environmental impact assessment, understanding consumer perceptions, shaping policy frameworks, and exploring global applications. These areas are pivotal for the sustainable growth of vertical farming.

Conclusion

The conclusion of this research review emphasizes the substantial potential of vertical farming, particularly in urban settings. It encapsulates the multifaceted aspects of vertical farming, highlighting the positive impacts and challenges in consumer acceptance, technological innovation, and environmental sustainability. The review underscores the importance of continued research and interdisciplinary collaboration to optimize vertical farming practices, ensuring they are economically viable, environmentally sustainable, and socially acceptable. As urban populations grow, vertical farming stands as a promising solution to future food security challenges, necessitating ongoing innovation and policy support.



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