Upcycle Textile Towards Value-Added Product as Creative Community Practices in Malaysia

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ABSTRACT

Scenarios of post-consumer waste textiles. Malaysia is one of the countries that make downcycle a source of income because it does not require a lot of capital and does not have high creativity skills. However, the item will have no value course people keep spending and throw away in the end. On the other side, upcycle is one process added value to a product. Convert textile materials to other creative products at all levels with simple skills. Looking at various ways upcycle textile activities based on case studies upcycle textiles in the current practice towards value-added products. Through secondary data from Google search and observation from various case studies in Malaysia with different areas that involve upcycle textiles towards value-added products from 2018 to 2022. The data will help develop research upcycle textile practice flow and understand upcycle practitioner activities about upcycle textiles in current industries.

Keywords: post-consumer, upcycle textile, practice, value-added product, waste textile

INTRODUCTION

These scenarios illustrate various factors, such as fast fashion practices, household disposal habits, and inadequate waste management systems, contribute to the accumulation of post-consumer textile waste. Scenario 1, excess Textiles in Landfills. Uncontrolled disposal of raw materials to dumping textiles excess and clothing waste in landfills. Malaysia's NSWMD estimates 84. million tonnes of waste annually, with fabric waste contributing about 4% or 1000 metric tonnes per day [1][2]. Scenario 2, fast fashion impact. The fast fashion business model significantly contributes to the high volume of textile waste. Fast fashion involves quickly translating runway trends into mass-produced garments to meet consumer demand, resulting in a large quantity of clothing being disposed of regularly. Scenario 3, household wastage. [3][2]. Household waste also adds to textile waste concerns. Malaysia faces challenges in sustainable waste management and recycling practices.[4][2] Consumers, including fashion influencers, often discard clothes, shoes, and fabric products due to prevalence the of away fashion attitudes and the short fashion life cycle.[5][2].

A several approaches to maintaining sustainability and helping reduce textile waste. There are processes of recycling, upcycling, and downcycling. Water supply, heating energy, and chemical components are all required for the recycling process. In recycling, molecular materials decompose using chemical materials, heating energy, and water supplies.

This process is unsuitable for small groups and communities that embrace compliance with procedures and industry skills. Downcycle turns surplus textiles into used products such as bundles and thrift. Malaysia is one of the countries that make downcycle a source of income because it does not require a lot of capital and does not have high creativity skills. However, the item will have no value course people keep spending and throw

away in the end. On the other side, upcycling is one process added value to a product. Convert textile materials to other creative products at all levels with simple skills.

Upcycle activities have been carried out at all levels, individually, in communities, organizations, institutions, or large business companies. Moreover, upcycle activities to reduce textile disposal are one of the community services.

Besides generating income it also awareness of the environment. Therefore, this study focuses on identifying upcycle textiles towards value-added products and activities. Looking at various ways of practice to carry out textile upcycle activities based on case studies and the understanding of textile upcycle towards value-added products.

LITERATURE REVIEW

Upcycle for Product Material

Upcycle is defined in the study as giving old or used objects new life. This section explains how upcycled fabrics are used worldwide to create goods with extra value. The worth of denim, its social influence, and production difficulties are discussed [6].[7]Emphasised the process of upcycle, which involves restoring and creating a new product out of wasted and underused textile resources.[7]Respondents discovered that the costs were reduced, and the things were repurposed. [8] assess the training's execution. The training's execution, results, and trainees' reactions to both instructors' and trainees' activities upcycle were all determined to be excellent in the study. [9]Identifies the potential of solely selling upcycled textile goods. Overall, concluded previous studies discussed on the garment as material focusing on textile.[2]

Upcycle Business and Design Strategies

Through the previous study identify references related to business and design strategies that implement in other countries.[10] The researchers found that material life experience is important while researching the upcycling design process. "Iterative Upcycling Design Process Model," a viable conceptual model of a continuing life cycle of a product, was developed in the process of creating the framework for upcycling product design.

According to Han et al. (2015) [11], repurposed materials are being used by upcycling designers in the UK for their aesthetic appeal, practicality, and other advantages. Apart from offering more job possibilities and training within the industry, developing an innovative plan for sustainable development and manufacturing in the UK addresses the issue of textile waste. Small and medium-sized businesses (SMEs) that operate locally are highlighted by Santulli & Langella (2013) [12].

By giving discarded goods more value, upcycling produces results across a range of industries, sizes, and business domains. Investigate how recycling and redesigning assist small and medium-sized businesses maintain their competitiveness [13]. New products would be made from garbage. The Technological Transformations framework is used by designers to comprehend how long-term strategies might be developed with the aid of grassroots advances [14]. In addition, Hamzah & Shaari (2023)[2] highlighted the system, activity, design, and act of upcycling as a commercial practice.

Reused Excessive, and Consumption of Textiles

Textile material products such as clothing, fashion accessories, and house interior products that be used but still in good condition. Part of the material can be used and transformed into other creative products. Excessive textiles usually come from fashion manufacturing or garment-making industries. The process of patternmaking created a lot of waste because part of the material will discard. Consumption can define as products that have expired dates or old trends that need to be discarded. Certain companies have their assets or stock with a limited duration of usage and after a certain time, the material cannot be used. In that way to avoid waste, the company needs to be creative to solve the problem.

ENVIRONMENTAL RECYCLE PRACTICES

Malaysia is an importer of discarded recycled goods. According to a report from (Sahabat Alam Malaysia, 2021) [15] in 2018 Malaysia became the huge recipient of plastic waste, and the issue of illegal plastic waste recyclers, dump sites, and open burning was highlighted by affected communities and civil society organizations, attracted the attention of local and international media. Likewise, textile, according to the Observatory of Economic Complexity OEC (2021)[16] Malaysia imported 105 million in used clothing and expanded to be the world's eighth-largest importer of used textiles.in used clothing and expanded to be the world's eighth-largest importer of used textiles. The OEC report highlighted Malaysia imports of used clothing primarily from South Korea, Japan, Australia, the United States, and Singapore. The fastest-growing import markets in used clothing for Malaysia between 2019 and 2020 were from South Korea followed by Pakistan and China. Based on this, the demand for bundle business shows the trend of Malaysians who like international brands but are not able to buy first-hand products. However, this situation created the largest textile dumping area in addition to the excess textile in the country. Therefore, recycling activity is very important to help reduce waste and consumption.

Recycling was the recovery and reprocessing of waste material developed into new products. The basic process of recycling by collecting waste material, processing, or manufacturing into new products, and purchasing products that can be recycled. The type of recycled materials is iron or steel waste, aluminium cans, glass bottles, paper, wood, plastics, and waste clothing or textile.

Through recycling develop creative and innovative culture. Gupt (2021)[17] highlights a few of the researcher's recycling initiatives and a brand's involvement in the development of intriguing, recycled lifestyle goods. Recycling also gives a vent to the creativity of the person involved in recycling as it gives immense satisfaction to the creator for developing or contributing to society by saving the environment as well as his/her own monitory resources[17].Shirvanimoghaddam et al., (2020)[18] highlighted various approaches for the reuse, recycle and repurposing of the textiles waste as well as disruptive scientific breakthroughs, innovations, and strategies towards a circular textile economy have been discussed.

Circular economy (CE) reuses and recycling programs to reduce material flows and enhance overall sustainability from a systems-thinking standpoint in the textile. Findings show that recycling and reuse as CE interventions are suited only to a limited extent to achieve the goal of reduced material flows if operating within traditional market dynamics and growth paradigms[19]. Therefore, there is a need for environmental recycling textile practice help to reduce environmental wastage.

Upcycle

The concept of adding value to old or used things was brought to the term "upcycling" by Reiner Pilz of Pilz GmbH [20]. The concept contradicts the popular perception that recycling lowers the value of the product [20]. Upcycling creates a unique, sustainable handmade product that is the fruit of a confluence of environmental conscience, creativity, inventiveness, and laborious effort. Making products that are truly sustainable, affordable, clever, and creative is the aim of upcycling. Recycling allows for the creation of rags from refurbished second-hand T-shirts, while upcycling turns worn tops into expensive products that resemble unique hand-braided rugs.

METHODOLOGY

Upcycle Practice in Malaysia

Through secondary data from Google search, 12 various case studies in Malaysia with different areas that involve in upcycle textiles towards value-added product from 2018 to 2022 (Table I). Attributes divided into 7 parts include categories, group, type of business, type of product, location, product, material, production maker, collaboration, objective, product/art production process, and activity flow.

Table 1: Secondary Data From Case Studies In Malaysia

No	Categories	Source
1	Airline	(Chin, 2018)[21]
2	E-Hailing	(Fashion Label Turn Used Grabfood Delivery Bags into School Bags, 2021)[22]
3	Fabric Recycling Movement	Fauziah Ayub (Head of Program Fashion Community College)
4	Malaysia environmental organisation	(About Us – BijiBiji, 2019)[23]
5	Artist/researcher	Amin et al., (2021)[24]
6	Fashion Designer	("PressReader.Com -Digital Newspaper &Magazine Subscriptions," 2020)[25]
7	Hospitality	Shangri-La Partners with Diversey to Upcycle 12,500KG of Hotel Linen into Half-a-million Reusable Face Masks for the Vulnerable. (2020, July 2)[26]
8	Food & beverage	("Starbucks Collaborates with YWCA for Upcycling Campaign," 2019)[27]
9	Academician/researcher	Doren & Malin, (2018)[28]
10	Institution community	(Fazurawati Che Lah, 2018)[29]
11	Community Movement	(Home _ Upcycle4Better, 2021)[30]
12	Fashion retail	(Up-Cycle and Recycle Your Fabrics through Project Denim Angel 2.0 by Voir Gallery _ Snowman · Sharing, 2019)

RESULT

Through upcycle practice (Table II),7themes are involved, engagement and education, type of business, activity, product, process, location, material, production maker, and networking. Elaboration focusing case studies on upcycle textiles toward value-added products. The study aims to identify consumer textiles by practicing upcycle textiles toward value-added products. The authors have elaborated on nine components in attribute, which are engagement and education, type of business, activity, product, flow, location, material, production maker, and networking focusing case studies on upcycle textiles toward value-added products. The result of the study points to several key findings.

Table 2: themes upcycle textile practice

Upcycle Practice	
Engagement and education	**Type of business**
University/institution	Enterprise
Hospitality	Group Berhad
Fashion	Holding Inc
Transportation	Berhad
Art	Public institution
Food & Beverage	Social Entrepreneurship
E-hailing	Social Enterprise
Community movement	Individual

Women organization Fabric Recycling Movement	
Activity	**Process**
Project commercialization Exhibition Research Observation Survey Experimentation Sale Aesthetic value Teaching Collect	Design Cutting Assemble Sewing Dismantle Cleaning Segregation Produce Donate Online Distribute Innovation
Location	**Material**
Selangor Kuala Lumpur Sarawak Pulau Pinang Sabah Kelantan Johor Perlis	Denim Excessive textile Seat Belt Linen Life Jacket Old batik sarong Carrier food bags Old Cloth Recycle textile Banner Coffee Bags
Production Maker	
B40 Household income Fashion designer Craftsman Artist Student Youth Community	

Engagement and Education

Upcycle textile with University and Institution

Universities or institutions contribute expertise from the perspective of creativity and innovation. Sabak Bernam Community College teaches the local community consisting of B40 housewives to produce upcycle products from used jeans materials. The environmental awareness program is run by the faculty, staff, and students by collecting scraps of cloth and making them into foot pads. This information was shared by the Head of Sabak Bernam Community College's Fashion and Clothing Program.

Upcycle textile with hotel

Shangri-La Groups upcycles clean linen transform into face masks for COVID-19. 21 Shangri-La hotels donated over 12,500 kilogrammes of old linen, which will be recycled by local Non-Governmental Organisations (NGOs) in Colombo, Hambantota, Penang, Johor Bahru, Kota Kinabalu, Surabaya, Jakarta, Cebu, Manila, Singapore, Bangkok, and Yangon into reusable fabric face masks. The upcycling of masks will

also create job possibilities for members of low socioeconomic community groups in various places, including Bangkok, Jakarta, Surabaya, Manila, Johor Bahru, and Yangon. Source from Shangri-La Partners with Diversey to Upcycle 12,500KG of Hotel Linen into Half-a-million Reusable Face Masks for the Vulnerable. (2020, July 2)[26]

Upcycle textile in fashion and art

Malaysian designer Hatta Dolmat used excessive textiles from his material collection and created other functional products such as bucket hats and pouch. Besides that, based on Doren & Malin, (2018)[28]there are designers from Sarawak who used excessive textiles as fashion accessories such as jewelry. Moreover involvement Mohamed Amin et al., (2021) a local artist towards upcycles by using waste textiles as material to develop 2D assemblage artwork.[24]

Upcycle textile with transportation.

According Chin (2018)[21]Malaysia low-cost airline started recycling procedures based on waste and consumption materials. Addition, AirAsia discards up to 5,000 uniforms, 200 seat belts, and 100 safety vests. Totally of roughly 3,800 kg of fabric that will end up in landfills. The Air Asia Foundation (AFF) has started an upcycling project as part of the programme to revitalise outdated uniforms and life jackets. The outcome of this engagement with social enterprise is the product called 'Soggy No-More'

Upcycle textile with e-hailing

Delivery of food became common throughout the pandemic. Food carrier bags were conveniently provided by each rider for food pickup and delivery. Riders must change their used food carrying bags every few months due to increased wear and tear. Approximately 100 delivery bags are returned once a month thanks to the company's bag swap programme, according to Grabs ESG Annual Report 2020. According to the report, bags are costly to recycle and difficult to dispose. Based on that, delivery carriers are converted into school backpacks and given to kids in orphanages through partnerships with social entrepreneurs and regional designers.[22]

Upcycle textile with food and beverage.

Starbucks Corporation is a global network of coffee shops and roasting facilities. Starbucks offers a variety of beverages, including hot and cold options, espresso made from whole beans, café lattes, full and loose-leaf teas, juice, Frappuccino drinks, pastries, and snacks. However, a lot of used coffee bags are produced and recycling them is a challenge. Upcycle coffee bags into pouches, Starbucks Malaysia has teamed up with the non-profit Yong Women's Christian Association (YWCA) Kuala Lumpur. This program's goals are to lessen its negative effects on the environment and assist the B40 community in raising their standard of living. Source from ("Starbucks Collaborates with YWCA for Upcycling Campaign," 2019)[27]

Upcycle textile with community movement.

Pioneer social enterprise in Malaysia calls the biji-bijiinitiative[23]. As a community movement, biji-biji also come out with an ethical fashion label that respects the environment. Choose different in the fashion industry by converting recycle textile material into norm-to-handmade fashion accessories and apparel. Upcycle textiles from different sources and materials turn out in functional products such as handbags, pouch bags, purses, and wallets. Another community movement Upcycle4Better(U4B)[30]create upcycle product from consumption clothing. Beside, empowering the community for good living and facilitated leadership opportunities, U4B partnership with the social enterprise, as leading textile collectors and processors in Malaysia, Kloth Care, Lifeline Clothing Malaysia (LLCM), and Australian Textile Manufacturing Malaysia (ATMM).

Business involve with textile upcycle goods in Malaysia

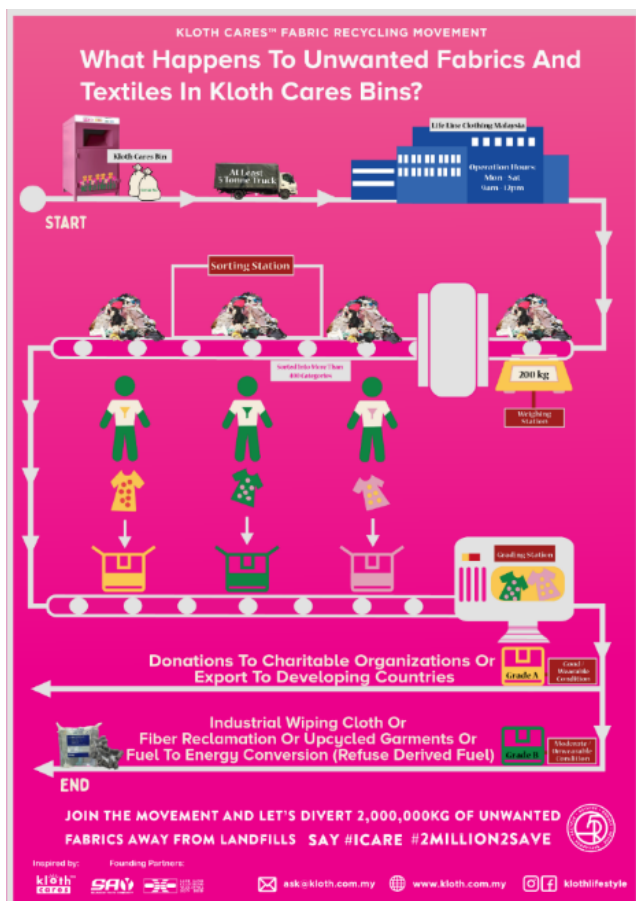Based on the case studies, several companies are involved in upcycle projects based on CSR programs.

The company consists of private limited and groups. They are contributors to material sources to solve the problem of excess material. Besides that, the company is a financial contributor to aid and community service activities. Another type of business is social enterprise known as a community movement that is active in upcycling products.

There are also individual parties such as fashion designers who solve the problem of excess fabric in their collections and create upcycle products. In addition, the institution conducts an innovation study of waste textile material transformed as material for the artwork.

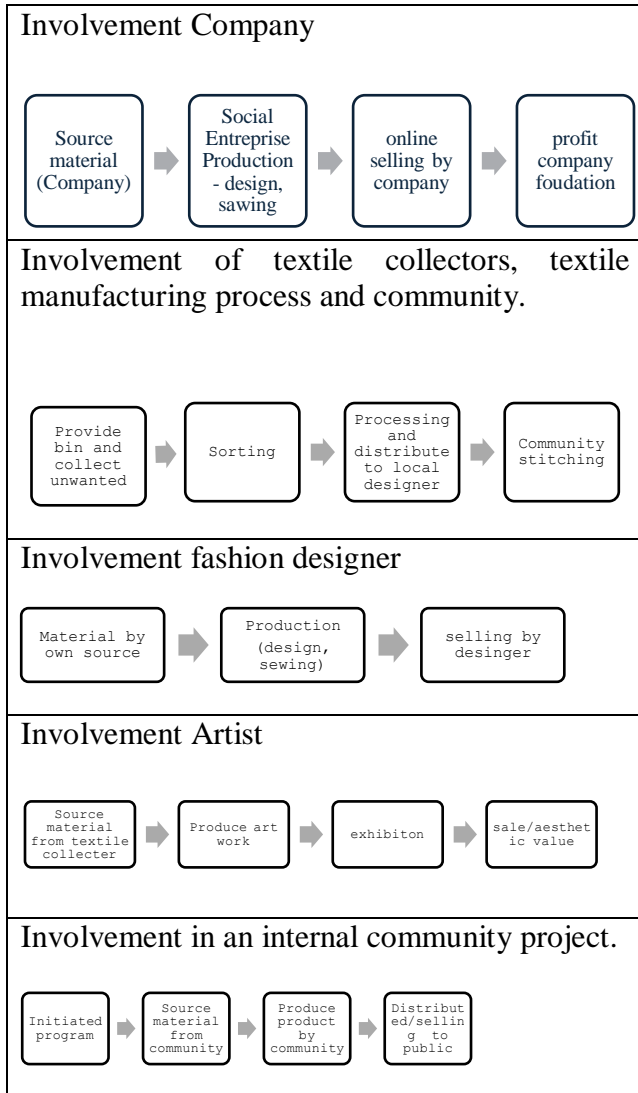**Networking in upcycle textile.**

The involvement from social enterprise, textile collectors, and textile manufacturing upcycle textiles for added value activities. Upcycle textile is a recycling activity that is still not carried out by local entrepreneurs. However, some companies initiated to help institutions, organizations, and large companies develop upcycle textile products. Kloth Care is a social enterprise that is a pioneer in recycling activities. Becoming a collector by providing recycle bins to companies and the local community can donate various forms of textile material to bins. Through the textile material that has been donated, it will be sent to the factory to be processed. Lifeline Clothing Malaysia SdnBhd(SendirianBerhad) and Australian Textile Manufacturing Malaysia SdnBhd are places to process textile waste.

Lifeline Clothing collects textile waste across Malaysia by working closely with the communities, corporations, and local governments. They offer hundreds of 'drop off' locations and frequently hold collection drives by working hand in hand with several institutions including schools and universities as well as both small and large corporations. Another is Australia Textile Manufacturing Malaysia SdnBhd process and sell used second-hand textile across the globe and currently process upwards of 25 tones per day into over 500 different item categories. Through the segregation, the process will see the type of material suitable for recycle, downcycle and upcycle. Figure 2 Example activity flow conducted by Kloth Care.

Figure 1: Activity flow by Kloth Cares

Activities Upcycle textile as product-added value

Involvement Company

Source material (Company) → Social Entreprise Production - design, sawing → online selling by company → profit company foudation

Involvement of textile collectors, textile manufacturing process and community.

Provide bin and collect unwanted → Sorting → Processing and distribute to local designer → Community stitching

Involvement fashion designer

Material by own source → Production (design, sewing) → selling by desinger

Involvement Artist

Source material from textile collecter → Produce art work → exhibiton → sale/aesthetic value

Involvement in an internal community project.

Initiated program → Source material from community → Produce product by community → Distributed/selling to public

Upcycle textile type of product

In this part, this study will explain the sample type of upcycle type of product. Upcycle textiles are divided into three categories functional products, fashion products, and artwork mediums. There are types of products with different materials, forms, and sources. (Table 3)

Table3: Description product with different materials involve in upcycle textile activities

No	Type	Description
1.	**Life Jacket (Nylon/polyester)**	Life jackets of personal floatation devices (PFDs) important role in safety and survival in the aircraft. PFDs are required by law to meet stringent performance criteria. However, PDFs had a certain lifetime duration and cannot be used until they reach the expiration date and need to be discarded. In addition, PDFs constructed using nylon or polyester fabric, this material were difficult to discard and expensive to be recycled. By injected of creativity safety vests transform into various types of bags.
2.	**Food Delivery Bag (Nylon/polyester)**	An insulated food delivery bag is very important in food delivery to keep foods temperature while controlling moisture. Material made of nylon or vinyl and not easily to disposed of. However, with a little imagination and innovation old food delivery bag transform into new school bags.

3.	**Seat belt (Nylon/polyester)**	Define as a vehicle safety device designed to secure the driver or a passenger of a vehicle against harmful movement that may result during collision or a sudden. Seat bels are usually woven from polyester or nylon. There is consumption seat belt manufacturing, and it is suitable for transforming into different value-added products
4.	**Others material**	Other material such as banner(vinyl), consumption linen, coffee bags, old cloth(denim), and excessive textile.

Upcycle textile product maker

Upcycle is one of the processes that involve creativity to develop value-added products. Production makers in upcycle textiles in Malaysia involve B40 Household income that can sew. Besides that, fashion designers, local craftsmen, artists, and the student or youth community.

B40 Household income

B40 defines as the bottom 40 percent of household income earning less than RM 4800 per month. Additionally, this group came from non-working housewives and single mothers. Minimum of sewing skills with help from experts from public institutions and social enterprises this group will generate side income from upcycled textile projects.

Fashion designer and artist

Fashion Designer (FD) is an expert that can create cloth and accessories. Highly creative and innovative in terms of creating products according to trends and demand. Surely, FD had an awareness of environmental material, design, and process making towards sustainability. Therefore, some of them contribute to upcycle textiles either as individual projects or big-scale projects. Another creative group is the involvement of artists. Produce artwork in 2D(painting/assemblage) or 3D (sculpture) by using waste textiles as artwork medium.

Craftsman

The worker has specific abilities. In this case, the craftsman ability to handle fabric in terms of sewing and cutting. Discoverer, a few local craftsmen are involved in upcycle textiles and some of them are war refugees with abilities in specific areas that work with social enterprise.

Student or youth community

This group can be categorized as a large scale that involves upcycle textiles. This is because they involve in university projects, programs, and start-up businesses as social entrepreneurs. Awareness of environmentally friendly and the importance to recycle started at an early age.

Upcycle textile value- added products making

There is a step or process for upcycle textiles to turn up into a product. A few product-making flows that be implemented to upcycle textiles for value added. Hence, the product-making flow is suitable for the source of material and type of product.

dismantle →cleaning cut into poladesign→assemble

design →cutting according to pola→assemble by sewing technique

Collect exessive→segregation recycle textile→weaving→finishing process

Collet recycle textile→ segregation recycle textile→cutting and select parts of the material that a still in good condition to be reused→sorting recycle textile by type and cleaning process→sorting recycle textile by color

DISCUSSION

Through this study, a conceptual framework centered around the theme of "Post-Consumer Textile Waste (PCTW) is shown in Figure 2.
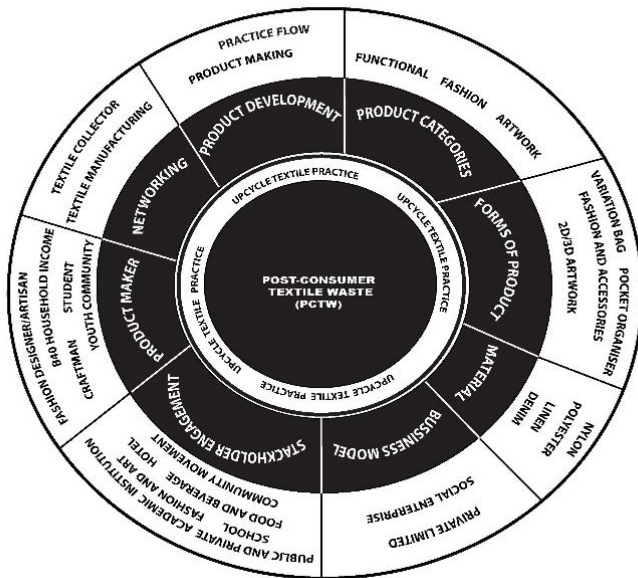
Figure 2: Upcycle Textile Practice towards Value Added Product Framework Source by author 2024

The framework provides a structured approach to managing post-consumer textile waste by turning it into various upcycled products through a series of practices. It emphasizes the importance of upcycle textiles to create new items, thus reducing waste and promoting sustainability in textile industries.

CONCLUSION

This study contributes to upcycle textile practice flow and understanding upcycle practitioner activities in current industries. Existing studies on upcycling have mainly focused on environmental recycling practices that enhanced upcycle textiles towards values-added product. This study discovered different case studies in Malaysia that involve in upcycle textiles towards values added from 2018 to 2022. Based on the result, one of the prominent social enterprises discovered as communities 'Kloth Care' collaborated with different companies and organizations as partners, product makers, and involve as upcycle textile project financial contributors. Moreover, 7 components can conclude in three main points upcycle product in terms of product, activities, and value. Based on the findings, in-depth interviews need to be conducted with related social enterprises. Besides that, conducting a study on behavioral practitioner attitudes towards upcycle products and developing an "Upcycle pratictioner" framework.

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