





## **IDEALOGY JOURNAL**

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Section: Review Article

# Unravelling Discarded Second-Hand Winter Knitwear into Reusable Recycled Material.

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## **ABSTRACT**

Textile waste has become a worldwide problem. Malaysians dumped approximately 195,300 tonnes of fabric waste, causing Malaysian landfills with discarded textile to account for about 6.3% of the total 3.1 million tonnes of solid waste filling up landfills. The excessive amount of clothing in thrift shops is due to the fast fashion industry mass-producing clothing at rapid speed in a short time frame making the value of one garment plummet to dirt cheap with lower stitching quality. The objective of this study is to identify available discarded preloved winter knitwear as a suitable sustainable material and to propose an effective method for unrevealing knitwear into a reusable recycle material. The researcher applies qualitative research by preparing a semi-structured interview question and experimentation to gather the required data. The research resulted in a potentially reusable material able to use in producing new items. This study will help the consumers to reduce the number of textile waste in landfills by understanding the method of unveiling woven garments into a reusable recycle material for a potential new product.

Keywords: recycle sustainable material, preloved garment, winter wear.



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## 1. INTRODUCTION

In Malaysia, the rise in fast fashion has created a wasteful shopping habit causing approximately 195,300 tonnes of fabric waste causing Malaysian landfills with discarded textile to account for about 6.3% of the total 3.1 million tonnes of solid waste filling up landfills (Chu, 2019). According to Mathilde Charpail (2017), fast fashion produces cheap, disposable clothing at a rapid pace with countless new collections per year making public consumers constantly out of date and encouraging them to keep purchasing new pairs of ready-made clothing. As stated by YouGov staff (2017) Malaysians have thrown away 27% of clothing after wearing it just ones caused by 37% of millennials that purchased at least half of the clothes that they own in the past 12 months and keep their clothes for under a year before throwing them away.

Textile waste is creating an environmental crisis. According to the conscious club (2019), Clothing that is mostly made of natural plant-based materials such as silk, linen, and cotton can act as a food waste once it is buried in a landfill. However, unlike plant-based material, most old unwanted clothing could not be composted and act as a food source for the land because 65% of all fibers used in the fashion industry are made from synthetic material (Charpail, 2017). Most garment nowadays has gone through a lot of unnatural processes such as bleaching process, chemical dye, printed on, and permanent bath, causing water pollution that is harmful to the aquatic life and the health of millions of people living by riverbanks (Charpail, 2017).

With the rising number of textile waste in Malaysia, the existence of donation boxes and the local second-hand store give a second chance for unwanted garments to be purchased by consumers preventing them from becoming accumulating as waste products and unnecessarily contributing to the landfill. However, donating old clothing to local donation boxes and the local second-hand store can cause issues. According to Tan Cheng Li (2015), the majority of clothing received by the local sorting center arrived from first world countries such as Japan, Australia, and America came in huge mixed bundles of various items such as dresses, children's t-shirts, shirts, blouses, coats, sweaters, jeans, baseball caps, bed sheets, curtains, shoes, handbags, belts, and soft toys.

Unlike jeans and t-shirts that could be easily sold locally, most winter clothing such as knitwear, acrylic sweaters, woolens, and coats, generally has poor demand in Malaysia. Hence, winter wear such as these are sent to India where they are shredded to extract fibers for use in making things like blankets and carpet underlay (Li, 2015). The objective of this research is to identify discarded knitwear and to process it into a reusable component through an effective method of unraveling. The intent of which is to repurpose the materials into products such as bags, masks, indoor shoes, rugs, decorations and could be sold locally or internationally. The process can also be taught to other developing countries to resolve the same issues of unused excessive knitwear waste.

## 2. DEFINITION OF THRIFT STORES

A thrift shop is a place that sells a wide range of second-hand used items donated by the local community, charity bins, obtained through massive import from developing countries, or received by outdated inventory from the fast fashion industry in various conditions (Bunquita, 2011). Most items in local thrift shops are being sold significantly cheaper than the original price of the original garment and in some instances, rare branded items were available at a fraction of their actual price (McDonald, 2017). Buying second-hand clothing that are still wearable and buying back second-hand garments can help to reduce the amount of landfill waste and help consumers to understand the value of clothing through hand-me-down garment (McDonald, 2017). On November 4<sup>th</sup> 2017, the researcher visited a local thrift shop named *Jalan Jalan Japan* which sourced their items from Japan to obtain material to recycle, shown in Figure 1.0. It is located 11.2km from UITM Shah Alam in Subang Jaya, Selangor.



**Figure 1:** The local thrift shop in Subang Jaya, Selangor (Source: Picture taken by researcher, 2017, Copyright Consent: Permissible to Publish)



# 2.1 Type of Second-Hand Winter Garment Available in Local Thrift Shop

A wide variety of winter wear were available in the local thrift shop. Most of the winter wear garments are reusable, cheap and in good condition to be recycled in representing reusable recycled material. Cardigan is a knitted vest or sweater with a buttoned front fasten (Watson, 2015). The button front opening allows the cardigan to be worn close or open as a replacement form jacket, allowing for a transition from indoor to outdoor wear. Cardigan is a versatile garment that can be worn in a different range of seasons depending on the type of material (Watson, 2015). A down jacket is a jacket that has insulated with the soft and warm under feather from duck or geese to create a tiny air pocket which traps air and retains heat and keeps the wearer in warm condition (Watson, 2015). An overcoat is a heavy coat that is worn over a suit or middle layer jacket.it usually slightly between above the knee to all the way down to the ankle-length with double or mostly a single-breasted with a collar (Watson, 2015). A sweater is a garment made to cover the torso and mostly the upper body part. Jumpers are used to describe a sweater in British but in America, a pullover may also call a sweater. The garment is worn by adult and children with a shirt, blouse, or t-shirt that fit closely to the skin. Sweaters were made traditionally knitted with wool but can be mixed between synthetic fiber and cotton (Watson, 2015).

## 2.2 Definition Of Winter Wear

Winter wear is clothing used to protect people against the cold weather (ymcaPony, 2016). During winter seasons, it is common to wear multiple layers of clothing such as coats, jackets, hats, scarves, gloves, and socks. Most winter wear garments have sufficient water resistance with multiple layers of insulation against harsh winter temperatures (ymcaPony, 2016).

## 2.3 The Clothing Layers in Winter Wear

In winter, the most effective way to protect people from the cold element is to wear multiple layers of clothing that can be added or removed depending on the weather condition (ymcaPony, 2016). the 3 layering system is an essential way of layering garments together to ensure people's comfort during outdoor activity (ymcaPony, 2016).

The base layer is the first layer that fits directly to the skin with two main functions that is regulating body temperature and transporting any moisture away from the skin to regulate body temperature (ymcaPony, 2016). the base layers material can't be cotton due to the characteristic of the material to absorb moisture, a synthetic fiber such as polyester and nylon, or a natural fiber such as merino wool and silk work best as base layers material (ymcaPony, 2016).

The middle layer is insulation layers that help retain the body heat that radiated throughout the body and this layer is efficient to trap heat based on suitable materials such as fleece, wool, and fur (ymcaPony, 2016). The thickness of the middle layer can generate warmth to help increase the insulation of body heat (ymcaPony, 2016).

The outer layer is a protective layer as a shell from wind, rain, and snow and most outer layer such as jacket and topcoat allow at least a small amount of perspiration to escape with a durable water repellent finish to make water roll off the fabric (ymcaPony, 2016). the outer shell is an important piece to prevent stormy cold weather, harsh wind, and watery snow to penetrate inner layers (ymcaPony, 2016).

## 2.4 Type Of Material in Winter Wear

Material blends will take a natural product like wool or cotton and team it up with man-made fabrics like polyester to keep costs down and produce different clothing items (Icewear, 2021). In general, blends won't keep you as warm as 100% wool, but they can provide better heating insulation than cotton (Icewear, 2021). Wool is a breathable material which the ability to absorb and release moisture from the surrounding air generating enough heat to prevent condensation in construction cavities by maintaining the damp condition (Attireclub, 2014). Wool fibers create a natural heat stabilizing and insulation to retain natural body heat.

### 3. METHODOLOGY

This research uses semi-structured interview questions and experimentation to gather the required data and to address the research objective. The data consist of an analysis of corresponded with several interviews with the local thrift store manager and owner regarding available material in the thrift store.

## 3.1 A Semi-Structured Interview

The researcher conducted several interviews with the owners or managers of five local thrift stores located in the Klang Valley area. A semi-structured interview question was prepared and memorised by the researcher to ask the interviewees as it helps to clarify the issue and gave the interviewees the sense of assurance to discuss the topic. This is to ensure that they would be comfortable enough to talk on a topic that may be considered confidential business matters. Some questions that were asked can only be discussed within the staff to protect their business operations. Data collection from this interview would only use to complete the study and any unnecessary excess information from the respondent's feedback will remain confidential.

## 3.2 Research Experiment

There are several effective methods for unrevealing knitwear into a reusable recycled material. A few winter-wear will be tested to determent multiple ways on unrevealing winter knitwear. The researcher started the experiment by understanding clothing patterns, materials, and types of clothing fastening in order to salvage every strand of yarn. Embroidery scissors were used to remove clothing fastening, tags, and seams at the garment to divide the knitwear into several pieces of knit fabric. The sweater in figure 2.0 has been deconstructed by searching the main knitted source and pulling the yarn row by row and forming a ball as a means of length measurement and to be easily used in the future.



**Figure 2:** Deconstructing sweater at UiTM fashion department studio, Shah Alam, Selangor (Source: Picture taken by researcher, 2018, Copyright Consent: Permissible to Publish)



## 4. PROJECT OUTCOMES

The researcher found out that most winter knitwear regarding the type of material can be salvaged thought out the experiment. Figure 3 below shows five balls of wool yarn that have been dismantled and the quality of the yarn is in good condition to be reused.



**Figure 3:** Finished deconstructed sweater at UiTM fashion department studio, Shah Alam, Selangor (Source: Picture taken by researcher, 2018, Copyright Consent: Permissible to Publish)

## 5. CONCLUSION

The study aims to identify available discarded preloved winter knitwear as a suitable sustainable material and to propose an effective method for unrevealing knitwear. This study will help the consumer to reduce the number of textile waste in landfills by introducing a more effective method of dismantling woven garments, which then turn into a form of reusable material. These materials can then be repurposed into usable products such as bags, masks, indoor slippers or to produce newly designed knitwears to be sold back to countries with winter seasons.

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