Production of fashion waste from Cyprus households

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Introduction

➤ Most fashion industries follow linear model patterns ignoring the exhortations of the times to shift to a circular economy (Bottani et al. 2019).

➤ Waste reduction practices, reuse and recycling of generated waste must enrich the life cycle of clothing items in view of the gradual transition from a linear model to a circular economy model (Shou and Domenech 2022; Papamichael et al. 2024).

➤ The transition from the linear to the circular model is now imperative since the rate of consumption of raw materials exceeds by 1.5 times the rate at which the earth can respond (Mishra et al. 2020).

➤ The European Commission has set 1st of January 2025 as the final date by which Member States will have to introduce separate collection of textile products from households.

➤ In Cyprus, clothing waste management relies exclusively on private initiatives. Citizens dispose of their clothing waste in special bins (Fig.1) and then the waste is collected and exported to third countries

➤ It is considered necessary to ensure quantitative and qualitative data regarding the collected clothing waste for a more efficient design of the procedures that may be implemented with the ultimate goal of promoting the reuse of these items.

➤ Quantitative and qualitative analysis of the collected waste may help to identify the items of clothing that are discarded the most and therefore need more attention in terms of information and public awareness.

Figure 1 Collection bins for fashion waste from streets and shopping centers.

Methodology

➤ Seven main sorting categories were defined and then for each category an additional division into subcategories was made (Table 1).

➤ Five sorting procedures/measurements were carried out and the sample size analysed each time was approximately 150Kg to 170Kg.

➤ The sample size of each sampling campaign was approximately the amount of waste found in the collection bins.

➤ The total amount of waste analysed amounted to 856Kg.

➤ 2 sites were chosen for the sample campaigns (the warehouse of a private collection company (Fig.3) and a Green Collection Point in Nicosia municipality (Fig.2))

➤ The sites chosen were easily accessible to the study team and the collected waste was from a large proportion of the population so that the sample was as representative as possible.

Figure 2. Sorting procedures and findings from Green Point in Nicosia

Figure 3. Sorting procedures and findings from private company warehouse

Results

➤ More than half of the sample (52%) is adult clothing. Children wear (23%) and shoes (15%) make most of the rest (Chart 1).

➤ Not very big consistency between samples. Evidence of increased category participation due to big comparatively big singular clothes drop off (Chart 3).

➤ Women's shoes prevail in the shoes category (Chart 2).

➤ Subcategory trousers, denim trousers and t-shirts are the subcategories of greater percentage both in adult's wear and children wear (Chart 4).

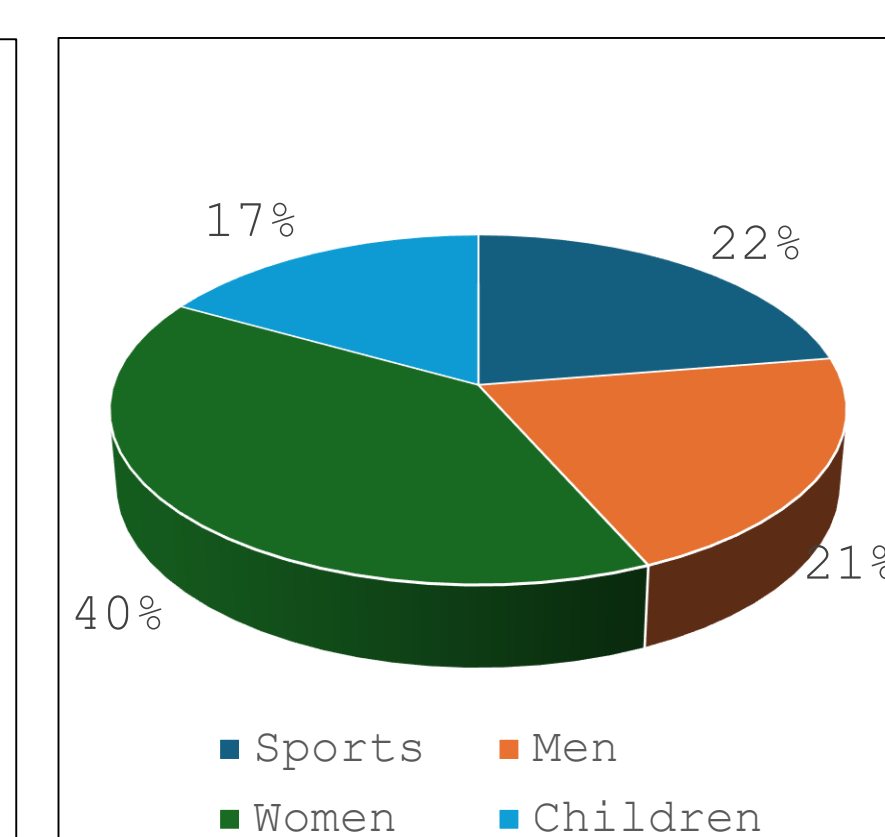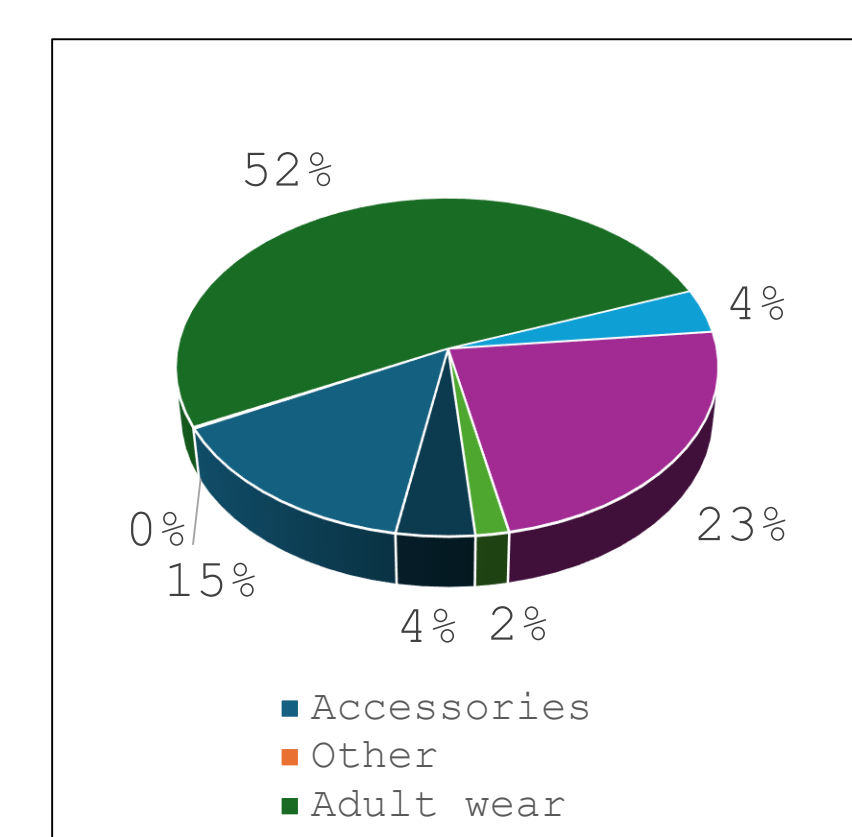➤ More research should be carried out to draw safer results.

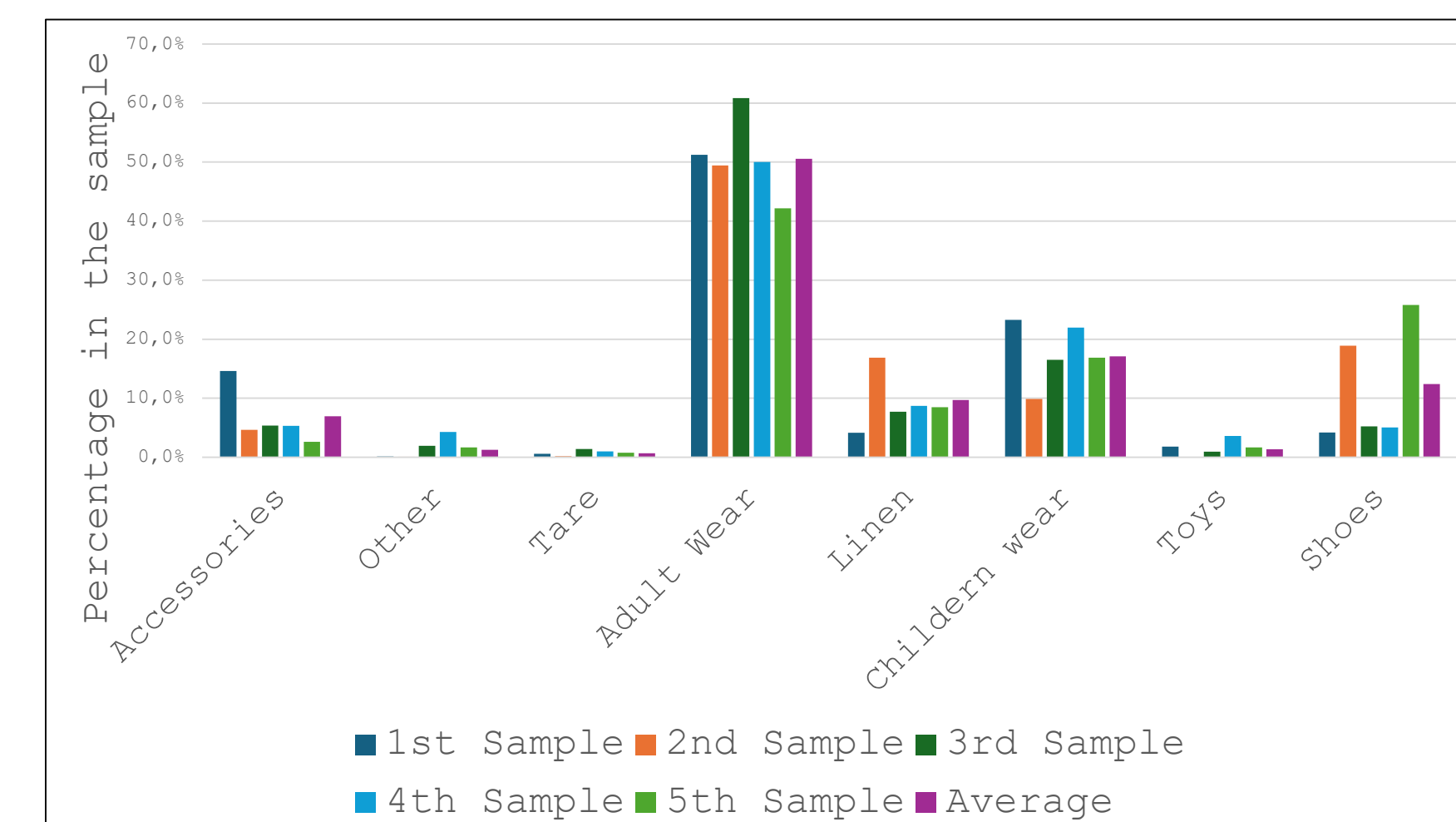**Chart 1.** Total Sample %   **Chart 2.** % Shoe Sub Category

Chart 3. % category per sample
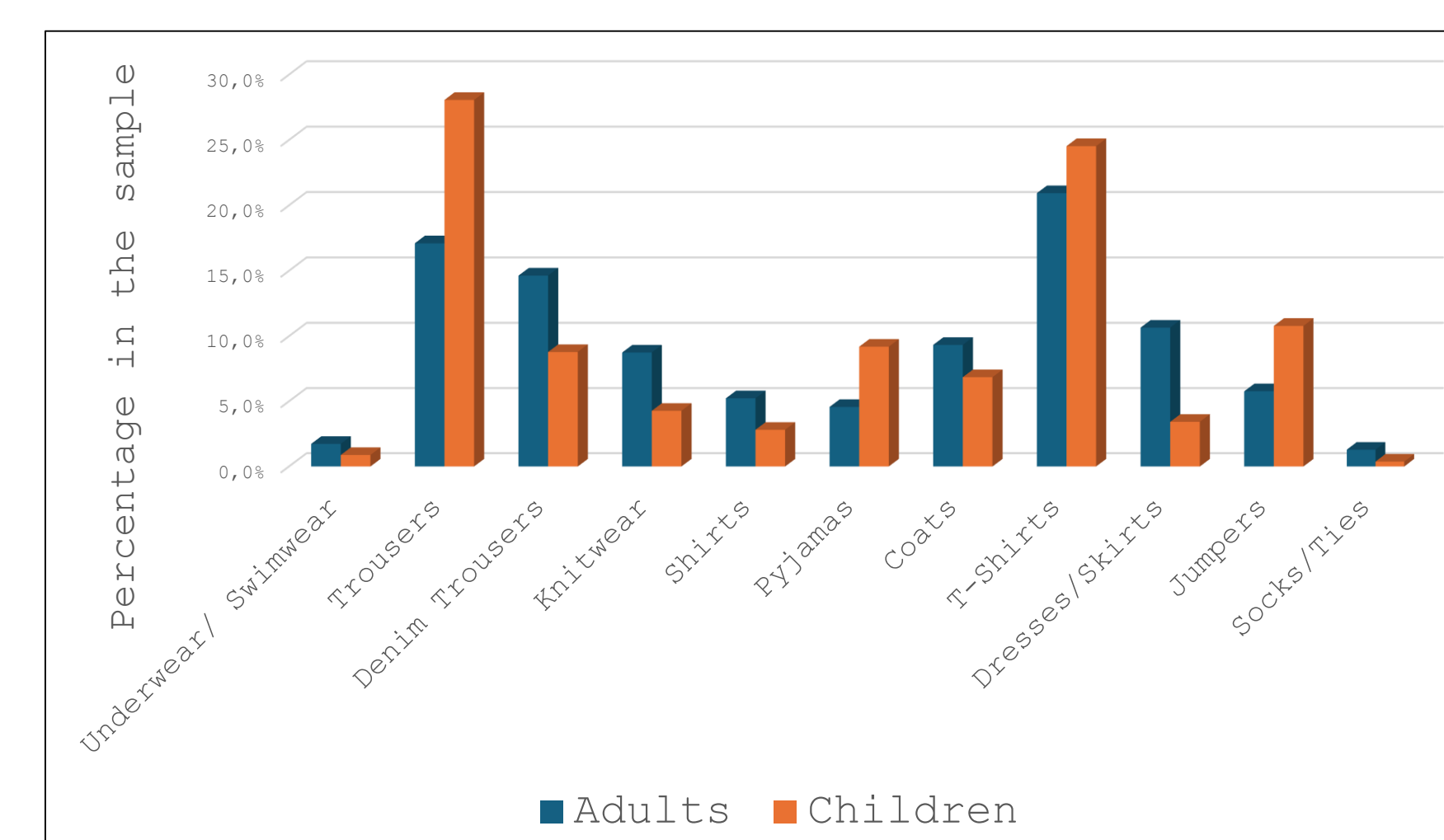
Chart 4. Adult vs Children wear % of Subcategory

Interesting finds:

➤ Unused garments (still carrying their shop labels) were found in every sample.

➤ A large bulk of clothes belonging to singular people were found (professional uniforms of a certain company, male suits of the same size, children wear of specific age etc).

➤ Unexpected items were found (pet clothing, partywear).

Table 1. Sorting Categories

Accessories	Adult	Linen	Child wear	Toys	Shoes	Others
Ties	Underwear/ Swimwear	Blankets	Underwear/ Swimwear	Soft Toys	Sports	Bracelets
Belts	Socks/ties	Drapes	Socks/ties	Electronic	Male	Stationary
Scarfs	Trousers	Pillows	Trousers	Plastic	Female	Sun Glasses
Aprons	Denim Trousers	Kitchen towels	Denim Trousers	Other	Children	Beach gear
Bips	Knitwear	Bath Towels	Knitwear			Medical Aprons
Hats	Shirts	Throws	Shirts			Cosmetics
Bags	Pyjamas	Bed sheets	Pyjamas			Carnival Costumes
	Coats	Table clothes	Coats			Hangers
	T-Shirts	Carpets	T-Shirts			Children diapers
	Dresses/Skirts		Dresses/Skirts			Kitchen Gloves
	Jumpers		Jumpers			Wallets
						Other accessories

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