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The effectiveness and comprehension of consumer knowledge on clothing care labels: A case study of Takoradi Technical University

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Abstract

Purpose: Clothing care labels are critical for guiding consumers in proper garment maintenance, promoting durability, and supporting sustainable textile consumption. Despite their importance, limited empirical research exists in developing countries, particularly concerning how tertiary students interpret and adhere to care instructions. This study aimed to examine the knowledge, adherence, challenges, and influencing factors associated with clothing care labels among students, teaching, and non-teaching staff at Takoradi Technical University.

Methodology/Design: A convergent mixed-methods design was adopted, utilising a structured questionnaire administered to 134 respondents for the quantitative strand and structured interviews with 20 professionals in the qualitative strand. Quantitative data were analysed using descriptive statistics, while qualitative responses were subjected to narrative thematic analysis, with findings integrated for triangulation.

Findings: Results revealed that while most participants demonstrated moderate to high knowledge of care labels, adherence to recommended practices was inconsistent, influenced by factors such as fabric type, personal experience, garment cost, and clarity of label instructions. Participants frequently encountered difficulties interpreting symbols, highlighting usability gaps. The study recommends simplifying and standardising care labels, enhancing consumer education, and implementing policy measures to ensure clear labelling standards. These actions are vital for promoting sustainable garment care practices and reducing textile waste in Ghana and similar contexts.

Practical and Social Implications: The study highlights the need for simplified and standardised care symbols, multilingual labelling, and consumer education on garment care. Policymakers and industry stakeholders can leverage these insights to improve label design, reduce textile waste, and foster sustainable consumption habits. The findings also emphasise the role of universities in raising young consumers' awareness of sustainable clothing practices.

Originality: This study is among the few empirical investigations in Ghana that examine consumer comprehension and behavioural responses to clothing care labels. By integrating both student and industry perspectives, it provides a nuanced understanding of how care labels influence garment maintenance and sustainability within the local context.

Keywords
Care label, laundry, clothing, apparel maintenance

1 | INTRODUCTION

Clothing care labels play a crucial role in guiding consumers on how to properly maintain their garments to ensure longevity, quality retention, and environmental sustainability (Appau et al., 2026). These labels provide essential information regarding washing, drying, ironing, and dry-cleaning procedures that help consumers preserve the quality and appearance of their clothing (Guru et al., 2021). Over the years, the use of care labels has evolved significantly, reflecting shifts in consumer preferences, technological advancements, and regulatory frameworks (Sudheshna & Srivastava, 2019).The introduction of the Care Labelling Rule by the United States Federal Trade Commission (FTC) in 1971

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marked a turning point, making it mandatory for manufacturers to provide standardised care information on garments (Khude, 2017).

Beyond serving as maintenance guides, care labels are increasingly being recognised as tools for promoting sustainable consumption and waste reduction within the fashion industry. Proper garment care minimises premature clothing disposal, reduces the need for frequent replacement, and conserves natural resources (Rotimi et al., 2021). As consumer awareness of environmental issues grows, manufacturers have also adopted innovative approaches, such as QR codes and Near Field Communication (NFC) tags, that provide access to extended digital care information (Brown, 2022). These developments position care labels not only as functional tags but as critical instruments for advancing sustainability goals within the circular economy. Despite their importance, consumer understanding and adherence to care label instructions remain limited. Several studies suggest that many individuals either overlook or misinterpret the symbols and information displayed on care labels (Coats Sewing Solutions, 2014; Sudheshna & Srivastava, 2019). This lack of comprehension often results in garment damage, reduced clothing lifespan, and increased textile waste issues that undermine both consumer satisfaction and sustainability efforts. Furthermore, much of the existing research on clothing care labels has been conducted in developed contexts, with limited empirical evidence from developing countries such as Ghana, where awareness of sustainable garment care practices may differ significantly due to cultural, educational, or socioeconomic factors. This knowledge gap raises critical questions about how consumers, particularly young adults and students, interpret and apply care label information in their daily garment maintenance. Understanding this is essential because tertiary students often represent the next generation of fashion consumers whose behaviours will shape future sustainability outcomes. However, to date, little is known about their level of knowledge, interpretation ability, and adherence to care label guidelines in Ghanaian institutions. Therefore, this study seeks to examine the knowledge, understanding, and adherence to clothing care label instructions among students of Takoradi Technical University. Specifically, the study aims to:

1. Determine the level of knowledge and understanding of clothing care labels among students.
2. Assess the extent to which students adhere to clothing care label instructions in their garment maintenance practices.
3. Examine the difficulties students encounter in interpreting and applying care label information.
4. Identify the factors influencing students' adherence to clothing care label instructions.

By addressing these objectives, this study makes a novel contribution to the limited body of literature on clothing care behaviour in the Ghanaian context. The findings are expected to inform consumer education programs, sustainable fashion campaigns, and policy interventions to improve garment care practices and promote environmental responsibility in the textile and apparel industry.

2 | REVIEW OF RELATED LITERATURE

2.1| Historical Development and Purpose of Care Labels

The origin of clothing care labels can be traced to the early 20th century, when textile manufacturers began including basic care instructions on garments (Appau et al., 2026). However, it was not until the mid-20th century that care labels became standardised. The United States Federal Trade Commission introduced the Care Labelling Rule in 1971, mandating care instructions on clothing (Khude, 2017). Since then, care labels have become an integral component of global textile production, reflecting evolving consumer needs, technological advances, and regulatory requirements (El-Dessouki, 2015). The fundamental purpose of care labels is to guide consumers in maintaining garment quality and durability. These labels typically provide information on washing, drying, ironing, and dry-cleaning procedures (Gerbis & Simón, 2024).In addition, modern care labels now communicate sustainable practices, such as energy-efficient washing and garment recycling options (Holtström et al., 2019). Care labels are essential components of clothing items that provide important information on how to properly care for and maintain the garment. These care labels come in various types and serve different purposes to ensure the longevity and quality of the clothing item. A strict adherence to the instructions on the care labels is an assurance that the appearance and fit of the garment will be maintained after repeated cleaning treatments. The following pictograms (Figure 1(a)-1(e)) with their accompanying instructions are explained by Gerbis and Simón (2024).

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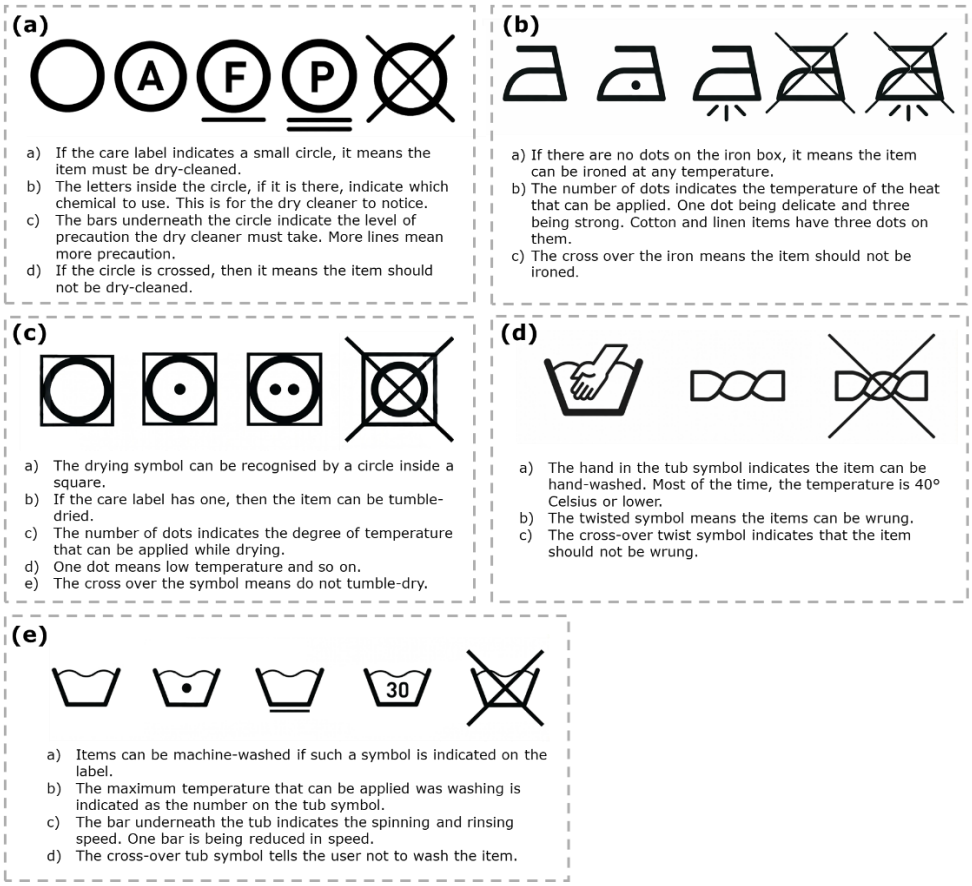


Figure 1. Care labels (a) Dry Cleaning Symbol, (b) Ironing Symbol, (c) Drying Symbol, (d) Hand Wash Symbol, and (e) Synthetic Washing Symbol. (Gerbis & Simón, 2024)

From a manufacturer's point of view, damage to garments from incorrect cleaning methods can lead to complaints, costly customer returns, and a bad image (Coats Sewing Solutions., 2014). Whereas accurate and clearly written care labels can prevent customer dissatisfaction. From a consumer's point of view, accurate and clearly written care instructions serve as a cleaning guide and influence purchase. Garments with ease of care are often preferred over garments with complicated or difficult-to-understand care procedures. Many different care labelling systems have evolved around the world. Some have been established as a governmental regulation, while others are international standards. Not all of them, however, are mandatory (Coats Sewing Solutions., 2014).

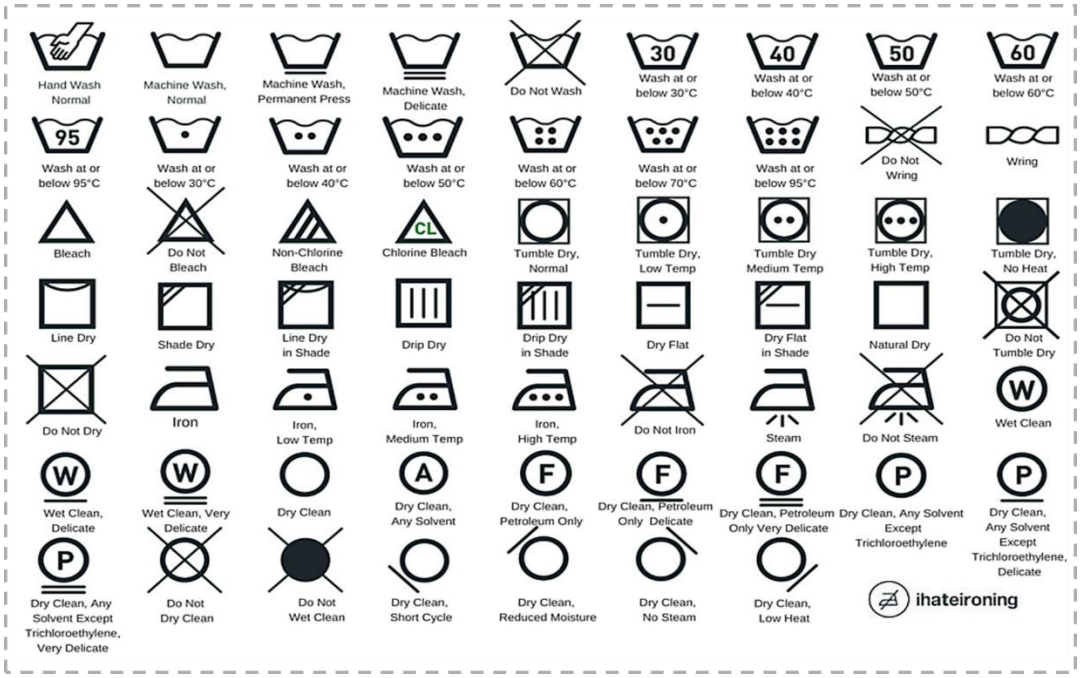


Figure 2. The Care labels chart shows the five basic laundry care symbols, including a tub, triangle, iron, square and circle. Each one has variations with different meanings

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Care labels come in various types and serve different purposes to provide consumers with important information on how to properly care for and maintain their clothing items. By following the instructions on these labels, consumers can prevent damage and prolong the life of their garments. Building on the multiple layers of discussion presented earlier, the disregard for clothing care labels can significantly compromise the longevity and visual appeal of textile products, ultimately rendering them unattractive and less usable (Sudheshna & Srivastava, 2019). During regular use, apparel and textiles inevitably accumulate dirt, stains, and general wear. From an economic and environmental standpoint, it becomes crucial to clean and maintain these items in a manner that preserves their functional integrity and aesthetic value. Effective garment maintenance not only extends the useful life of clothing but also supports sustainability efforts by minimising textile waste and reducing the demand for new raw materials and frequent replacements.

Despite the importance of proper care, there exists a notable gap in academic and industry research concerning consumers' understanding of and interaction with care labels. While these labels are intended to guide users in maintaining their garments correctly, it remains uncertain how well consumers comprehend the information presented and whether they apply this knowledge effectively in their garment care routines. By using Takoradi Technical University as a case study, the research specifically sought; to examine the level of knowledge and understanding of clothing care labels among students of Takoradi Technical University, to assess the extent to which students adhere to clothing care label instructions in their garment maintenance practices, to examined the extent to which students encountered difficulties in interpreting and applying clothing care label instructions and to identify the factors that influence students' adherence to clothing care labels. Through this research, we hope to gain insights that could inform better labelling practices and educational strategies to enhance consumer understanding and behaviour in garment care. Through this focused inquiry, the research aspires to generate meaningful insights that could contribute to the improvement of care label design, enhance communication strategies, and support educational initiatives. Ultimately, the goal is to empower consumers with the knowledge needed to care for their garments more effectively, thereby fostering more sustainable consumption habits and reducing the environmental impact of the fashion and textile industries.

2.2| Empirical Review

Empirical studies on clothing care knowledge, adherence, and consumer behaviour have revealed important patterns that help situate the present study within the broader research landscape. Prior research has asserted that women generally demonstrate greater understanding and use of garment care labels than men, suggesting gendered differences in textile maintenance practices (Laitala, Klepp, & Boks, 2012). Similarly, studies focusing on younger consumers have shown that university students, despite being fashion-conscious, often lack practical garment care experience, which affects their ability to interpret and apply care instructions effectively (Bianchi & Birtwistle, 2012). According to Ananga (2011), the dominance of the 18–24 age group in tertiary institutions implies that a large portion of clothing care decisions are made by young adults who may not prioritise long-term garment preservation. In view of sustainable consumption, earlier works have stipulated that adequate knowledge of care labels promotes garment longevity by preventing shrinkage, fading, and premature disposal (Laitala, Klepp, & Henry, 2018). Nevertheless, several researchers have postulated that consumers often disregard care labels despite acknowledging their importance. Feltham and Martin (2006) revealed that convenience, time pressure, and personal laundering routines frequently override adherence to recommended care practices. Similarly, McQueen et al. (2022) asserted that younger consumers are less consistent in following care instructions, opting for faster washing methods rather than those that preserve fabric quality.

The literature has also exposed persistent challenges in interpreting care labels. Scholars such as Laitala, Klepp and Boks (2012) and Rahman and Koszewska (2020) emphasised that complex symbols, unclear instructions, and language barriers limit consumers' ability to apply care information correctly. These difficulties often result in garment damage and contribute to unsustainable laundering practices. According to Harris, Roby and Dibb (2016), clearer symbols, larger print, and multilingual labelling could mitigate these challenges and improve consumer compliance. Factors influencing adherence have been similarly documented across empirical studies. Previous research has asserted that fabric type strongly determines whether consumers follow care instructions, as delicate materials demand more cautious handling (Laitala, Klepp, Kettlewell, & Wiedemann, 2020). Rahman and Koszewska (2020) further revealed that personal experience with garment damage and knowledge of textile care significantly shape

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garment maintenance behaviour. Cost considerations also play a role, with Goworek et al. (2012) stating that consumers are more likely to adhere to care labels when dealing with expensive garments. Additionally, lifestyle pressures, such as limited time and the pursuit of convenience, have been exposed as major barriers to consistent compliance (McQueen et al., 2022). Generally, the empirical literature demonstrates that while consumers acknowledge the value of care labels, their actual behaviour is shaped by a complex interaction of knowledge, experience, clarity of label instructions, garment value, and lifestyle demands. This reinforces the need for improved label design and stronger consumer education to promote sustainable garment care practices.

2.3| Gaps and Contributions to Current Students

Although previous studies have examined consumers' understanding and use of clothing care labels, several important gaps remain in the literature. Much of the existing research focuses on consumers in Western or developed contexts, offering limited insight into how young adults in developing countries, particularly tertiary students in Ghana, interpret and apply care label information. Additionally, while earlier studies acknowledge challenges with symbolic interpretation, they seldom explore the specific misconceptions or barriers encountered by technical university students who frequently handle diverse garment types. Research has also not adequately linked consumers' knowledge of care labels with their actual garment care practices, leaving unclear how symbolic comprehension influences real-world adherence. Furthermore, the behavioural factors shaping adherence, such as prior garment damage, convenience, clarity of symbols, and personal experience, have not been sufficiently examined within student populations. Methodologically, many studies use broad consumer samples and overlook institution-specific investigations that could yield deeper insights. The present study seeks to bridge these gaps by focusing on students at Takoradi Technical University, assessing their knowledge and understanding of care labels, examining their adherence to instructions, identifying the challenges they encounter in interpreting symbols, and exploring the factors that influence their adherence behaviours. Through this targeted, context-specific inquiry, the study provides locally relevant evidence that strengthens understanding of garment care practices and supports improved care-label communication and sustainable consumption habits.

3 | MATERIALS AND METHODS

3.1| Research Design

This study adopted a convergent mixed-methods design, in which both quantitative and qualitative data were collected concurrently, analysed independently, and then integrated at the interpretation stage to provide a comprehensive understanding of consumer knowledge, attitudes, and behaviours regarding clothing care labels. This design allows the strengths of one approach to complement the limitations of the other and facilitates methodological triangulation, thereby enhancing the depth and validity of findings (Creswell & Clark, 2017). The integration process occurred at two key levels. During data collection, both quantitative (survey) and qualitative (structured interviews) strands focused on the same core themes: knowledge, adherence, challenges, and influencing factors. During data analysis, findings from both strands were compared and merged through a joint display matrix to identify areas of convergence, divergence, and expansion (Fetters, Curry, & Creswell, 2013). This integrative strategy ensured that insights from statistical trends were enriched with contextual explanations from narratives, producing a more holistic interpretation

3.2| Study Setting and Participants

The study was conducted at Takoradi Technical University, located in the Western Region of Ghana, over a two-week data collection period. The target population for the quantitative strand comprised students, teaching staff, and non-teaching staff across the university. Using a stratified convenience sampling strategy, members of all three groups were approached during lecture breaks, office hours, and through online circulation via institutional mailing lists. In total, 134 fully completed structured questionnaires were collected and analysed. This sample size exceeds the minimum of 100 cases recommended by (Fraenkel & Wallen, 2013) for meaningful generalisation in a quantitative survey, thereby enhancing the reliability and representativeness of the quantitative findings. The use of a structured questionnaire ensured uniformity in the data gathered, reduced interviewer influence, and supported accuracy and comparability across responses.

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For the qualitative strand, a structured interview guide was used to collect data from twenty (20) purposively selected professionals drawn from textile production, garment retail, and laundry/dry-cleaning services. Participants were included based on their practical experience and relevance to garment care and labelling practices. All respondents, aside from the students, had a minimum of two years of industry experience. Recruitment was conducted through direct invitations via phone calls and email. The use of a structured interview guide ensured consistency across interviews while still allowing for detailed and comparable insights from all respondents. The qualitative sample size was guided by the principle of data saturation rather than being predetermined before fieldwork. Saturation was reached when successive interviews no longer yielded new information, a phenomenon commonly achieved within small qualitative samples (Fusch & Ness, 2015; Mason, 2010). In this study, saturation was attained within the 20 interviews, ensuring sufficient depth and breadth of perspectives. All recruitment procedures, guides, and consent forms are documented in the project's audit trail.

3.3| Data Collection Procedure for Quantitative Strand

The quantitative phase targeted students, teaching staff, and non-teaching staff of Takoradi Technical University. A total of 300 individuals across these groups were initially approached, out of which 134 provided complete and valid responses, resulting in a 44.7% response rate. Although slightly below the 50% benchmark, this response rate is acceptable within social science research, where typical survey response rates range between 30% and 50% (Nulty, 2008; Baruch & Holtom, 2008). Incomplete or improperly filled questionnaires were excluded to maintain the validity and integrity of the dataset. The final sample exceeded the minimum threshold recommended by (Creswell & Clark, 2017) for populations of comparable size and reflected adequate diversity in gender, age, category (students, teaching staff, non-teaching staff), and academic programmes, thereby enhancing representativeness and generalizability. The structured questionnaire used for data collection comprised three thematic constructs aligned with the study objectives:

1. Knowledge and understanding of clothing care labels
2. Adherence to care instruction guidelines
3. Consumer behaviour regarding garment maintenance

Each construct consisted of multiple Likert-scale items designed to capture respondents' perceptions and behaviours. Sample items included: "I can easily interpret the symbols on clothing care labels" (knowledge), "I usually follow care label instructions when washing clothes" (adherence), and "Care labels influence how I maintain my garments" (behaviour). The internal consistency of the instrument was confirmed using Cronbach's alpha, which produced reliability coefficients of 0.81 for knowledge, 0.79 for adherence, and 0.83 for behaviour values that demonstrate strong internal reliability across all constructs. Data analysis was conducted using SPSS Version 22. Descriptive statistics (frequencies, percentages, means, and standard deviations) were employed to summarise the general patterns within the data, while cross-tabulations facilitated comparisons across demographic categories such as gender, age group, and institutional role. The results from the quantitative phase provided the foundational patterns required for subsequent integration with qualitative insights, supporting a richer and more comprehensive interpretation of the research problem.

3.4| Data Collection Procedure for Qualitative Strand

The qualitative phase was designed to complement and deepen the quantitative findings by providing rich, interpretive insights into the perspectives of students, teaching, and non-teaching staff regarding clothing care labels. Twenty respondents from the university community were purposively selected for structured interviews based on their experience with garment maintenance and engagement with clothing care practices. The structured interview guide aligned with the study's core themes: knowledge, adherence, challenges, and influencing factors. Open-ended questions such as "What challenges do you face when interpreting care labels?" and "How do care labels influence your garment maintenance practices?" were included to elicit detailed responses. All interviews were audio-recorded with participants' consent, transcribed verbatim, and supplemented with detailed field notes to ensure accuracy and completeness.

Data analysis employed a narrative thematic approach (Braun & Clarke, 2012). The analysis began with open coding, identifying meaningful text segments, which were then grouped into broader themes corresponding to the study objectives:

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- Knowledge interpretation: awareness and comprehension of care symbols,
- Adherence behaviour: extent of compliance with care instructions,
- Interpretive challenges: difficulties in understanding and applying care symbols, and
- Influencing factors: personal habits, prior experience, and accessibility of care information.

Coding was conducted manually by two researchers, with intercoder reliability ensured through discussion and consensus. Thick description was achieved by incorporating detailed participant quotations and contextual narratives, thereby enhancing the credibility, transferability, and replicability of the findings within similar educational or consumer contexts.

3.5| Data Integration Strategy

This study employed a convergent mixed-methods design, wherein quantitative and qualitative data were collected concurrently and analysed separately before integration. The integration strategy aimed to combine the breadth of survey findings with the depth of qualitative insights to generate a comprehensive understanding of knowledge, adherence, and influencing factors related to clothing care labels among students and staff at Takoradi Technical University. Integration was achieved through a side-by-side comparison approach (Creswell & Clark, 2017), where key quantitative results were juxtaposed with thematic qualitative findings. For example, patterns of knowledge levels, adherence rates, and encountered challenges identified in the survey were interpreted alongside narratives from structured interviews to explain the underlying reasons for observed behaviours. This approach allowed the study to validate, complement, and elaborate on the findings from each strand, providing a more nuanced and robust interpretation.

Additionally, the integration process involved triangulation across data sources to strengthen credibility and reduce bias. Convergences between quantitative trends (low adherence to certain care label instructions) and qualitative insights (difficulty interpreting symbols or language barriers) highlighted areas of consistency and confirmed the reliability of results. Divergences were also examined to identify unique contextual or experiential factors that might influence garment care practices. Systematically combining numerical patterns with participant narratives, the integration strategy ensured that the study's conclusions are both empirically grounded and contextually meaningful. This approach enhances the explanatory power of the findings and supports actionable recommendations for improving care label design, consumer education, and sustainable garment maintenance practices.

3.6| Ethical Considerations

Ethical approval for the study was obtained from the Takoradi Technical University Ethical Review Board before data collection. Participants were provided with clear information about the study's purpose, procedures, and benefits, and informed consent was obtained from all respondents. Anonymity and confidentiality were maintained by assigning codes to responses instead of using names, and all data were securely stored. Participation was entirely voluntary, and participants were informed of their right to withdraw from the study at any stage without penalty.

4 | RESULTS AND DISCUSSION

4.1| Demography of Respondents for Quantitative Study

The demographic profile of respondents provides useful context for interpreting the study's findings. From Table 1, the majority were male (57.5%), which reflects enrolment trends in Ghanaian tertiary institutions where men typically outnumber women, although the significant female representation (42.5%) allows for gender-based comparisons, particularly as prior studies show women often demonstrate greater garment care knowledge and adherence than men (Laitala, Klepp, & Boks, 2012). Nearly half of the respondents (49.3%) fell within the 18–24 age bracket, corresponding with the dominant undergraduate population in Ghanaian universities (Ananga, 2011), a group that is highly fashion-conscious but may lack garment care experience (Bianchi & Birtwistle, 2012). Older respondents, including teaching and non-teaching staff, brought more practical experience to clothing maintenance, providing intergenerational perspectives. Occupationally, undergraduate students made up the largest category (56%), reinforcing the youth-driven nature of fashion consumption in Ghana (Daitey, Panin, Takyi, & Daitey, 2025), while staff and postgraduate students provided complementary views shaped by

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socioeconomic status and lived experience. Together, this demographic composition ensures a balanced sample that reflects diverse consumer groups within the university context, thereby strengthening the validity of the study's subsequent findings on knowledge, adherence, and effectiveness of clothing care label usage.

Table 1. Demography of respondents for the quantitative study

	Frequency	Percentage
Gender		
Male	77	57.5%
Female	57	42.5%
Age		
18-24	66	49.3%
25-34	33	24.6%
35-44	20	14.9%
45-54	14	10.4%
55 and above	1	0.7%
Category		
Teaching staff	20	14.9%
Non-teaching staff	25	18.7%
Undergraduate students	75	56%
Postgraduate students	14	10.4%

(Source: Field research, 2025)

4.2| Knowledge and Understanding of Care Labels

The first objective of the study was to examine participants' knowledge and understanding of clothing care labels. Care labels provide essential information that supports proper garment maintenance and contributes to garment longevity. Findings from Figure 3(a) indicate that respondents' interaction with care labels varies considerably. A larger proportion of participants reported encountering or referring to care labels occasionally (41.8%), followed closely by those who indicated rare engagement (39.6%). Only a smaller proportion reported frequent (13.4%) or consistent (5.2%) interaction with care labels. This distribution suggests that while care labels are present on garments, they are not consistently consulted by a significant proportion of respondents. Limited engagement with care labels may affect users' ability to fully understand and apply the information provided, thereby influencing effective garment maintenance practices.

Further analysis (Figure 3(b)) reveals that despite this inconsistent interaction, a substantial proportion of respondents perceived care labels as informative, with 44.8% agreeing and 26.1% strongly agreeing that care labels provide sufficient guidance. This indicates a disconnect between perceived usefulness and actual usage behaviour. For instance, several participants emphasised the essential role of care labels in garment preservation:

> *"Care labels are essential, and adhering to them helps in maintaining the long life span of a fabric"* - R22.

Others highlighted their practical benefits

> *"Clothing care labels are very important because they give many details concerning how to iron and how to wash it"* - R63.
>
> *"Clothing care labels are very important since they help in cloth maintenance"* - R74 and R76.

Similarly, another respondent observed that

> *"Clothing care labels provide essential information on how to properly maintain your garments to ensure they last longer and stay in good condition"* - R109

These findings align with earlier research suggesting that knowledge of care labels not only improves garment maintenance but also contributes to sustainable consumption by reducing clothing waste (Laitala, Klepp, & Henry, 2018). However, while respondents largely indicated confidence in their understanding, the fact that a proportion rated themselves at the lower end of the scale suggests that gaps in

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comprehension still exist, particularly regarding the interpretation of complex symbols. This highlights the need for improved consumer education and clearer labelling to support better adherence.

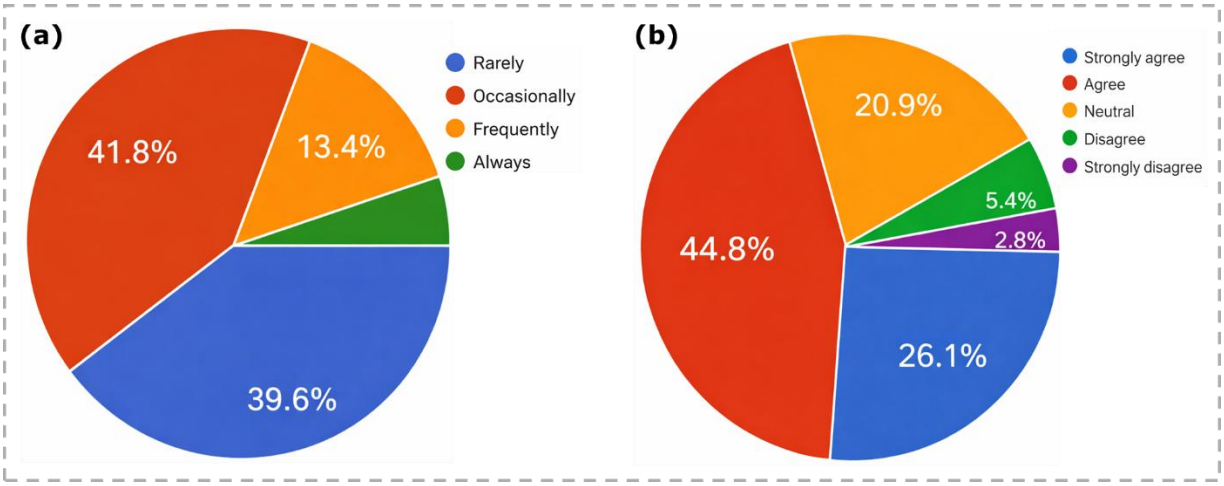


Figure 3. (a) Respondents' encounter with care labels, (b) Response to the adequacy of care label information

4.3| Student adherence to clothing labels' instructions in their garment maintenance practices

Objective two sought to assess the extent to which students adhere to clothing care label instructions in their garment maintenance practices. The results, as illustrated in Figure 4, show varied levels of compliance with care labels among respondents. A substantial proportion of students reported adhering to care labels sometimes (38.8%), while smaller groups reported doing so most of the time (21.6%) or rarely (22.4%). Only a minority claimed to always (11.2%) follow care label instructions, with a further 6% admitting to never adhering to them. This distribution suggests that while a majority of students recognise the importance of garment care guidelines, actual practice is inconsistent, and adherence remains relatively low.

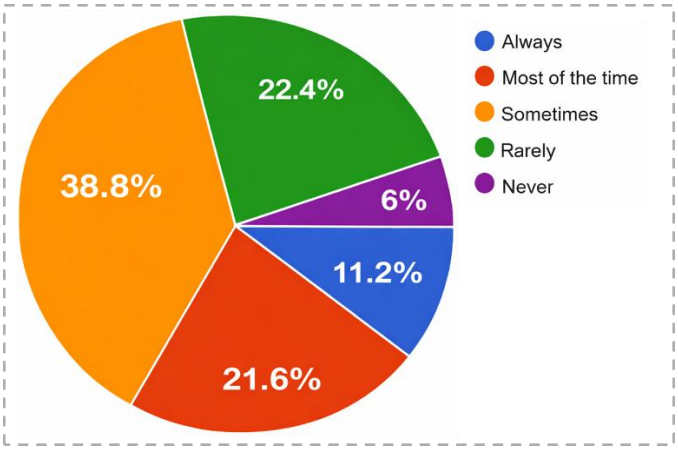


Figure 4. Adherence to the Care label instructions when washing

These findings corroborate earlier studies, which have highlighted the challenges consumers face in consistently adhering to garment care labels. For example, Feltham and Martin (2006) observed that despite awareness of care labels, consumers often neglect them due to convenience, time constraints, or the perception that their own experience supersedes written instructions. Similarly, McQueen et al. (2022) found that younger consumers, particularly university students, are less likely to adhere strictly to garment care instructions, often prioritising ease and speed of laundering over long-term garment preservation. This resonates with the present study, where only a small fraction of students reported always adhering to the recommended care practices. The implications of inconsistent adherence are significant. Research shows that failure to comply with care labels contributes to fabric deterioration, colour fading, and garment shrinkage (Shin, 2000). Beyond the longevity of individual garments, poor laundering practices also have environmental consequences. According to Klepp, Haugrønning, and Laitala (2022), disregarding care instructions often leads to increased washing frequency, higher energy

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and water consumption, and premature disposal of clothing, thereby intensifying textile waste and sustainability challenges. Students' tendency to neglect care labels, therefore, reflects not only personal challenges in garment care but also broader issues of environmental sustainability. Notably, students' moderate level of adherence may be linked to the clarity and accessibility of care labels. Studies by Rahman and Koszewska (2020) emphasise that many consumers find care labels difficult to interpret due to small font sizes, unfamiliar symbols, or foreign languages, which often discourages compliance. This was also evident in the present study, as several students expressed frustration about the readability and comprehensibility of care labels. For instance, one respondent noted that it was:

"very difficult to understand if the fabric type is written in a different language" - R8

While another insisted

"Let labelling be clear and understandable" - R13

Similarly, students highlighted that

"They must be made clearer and easier to understand" - R24 and

"The labels are often too small to read" - R30.

Others emphasised the importance of practical usability, stating that:

"Care labels must be made easy for understanding and application" - R32

One added that

"It should be written in a language that is understandable to everyone" - R38

These responses highlight the pressing need for simplified, standardised, and consumer-friendly care labelling systems that not only promote garment longevity but also encourage sustainable laundry practices.

4.4| Encounter with Difficult Care Labels

Objective three examined how often students encountered difficulties in interpreting and applying the instructions on clothing care labels. The results in Figure 5 show that 41.8% of respondents occasionally encountered such difficulties, while 39.6% reported rarely encountering them. A smaller proportion, 13.4%, indicated that they frequently struggled with care labels, and only 5.2% stated that they always experienced such challenges. These findings suggest that while difficulties are not constant for most students, a substantial number still face them often enough to influence garment care practices. These results are consistent with prior studies, which show that consumers frequently encounter confusion when interpreting care labels due to complex symbols, unclear instructions, or language barriers. Laitala, Klepp, and Boks (2012) noted that ambiguous care labels are a leading cause of misinterpretation and poor garment maintenance. Similarly, Rahman and Koszewska (2020) observed that consumers often disregard care instructions because they find them too complicated or irrelevant. This difficulty is even more pronounced among young consumers, such as students, who may lack prior experience with textile care (McQueen et al., 2022). The findings highlight that while some students rarely face problems, a considerable proportion still struggle, suggesting a need for simplified and more consumer-friendly care labels. This aligns with recommendations by Harris, Roby and Dibb (2016), who advocate for clearer symbols, larger fonts, and multilingual accessibility to improve understanding and promote sustainable clothing care practices.

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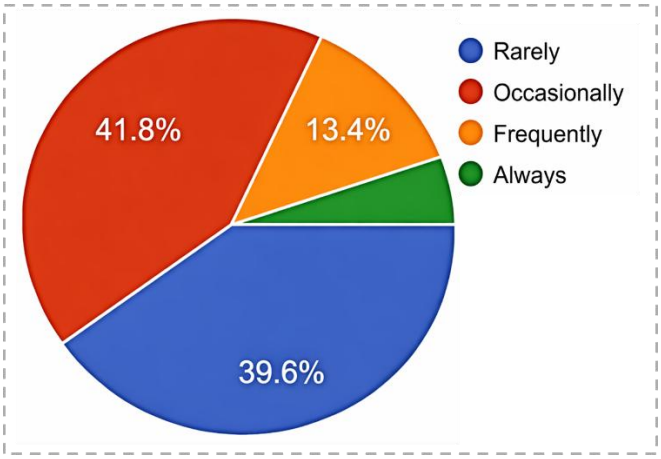


Figure 5. Encounter with difficult care labels

4.5| Factors that influence students' adherence to clothing care labels

Objective four sought to identify the major factors influencing students' adherence to clothing care labels. As presented in Figure 6, the most dominant factor reported was fabric type (68.7%), indicating that students are more likely to follow care labels when the garment material is considered delicate or requires special handling. This finding aligns with the observation of Laitala et al. (2020), who emphasised that consumers' garment care decisions are largely fabric-dependent, as different textiles demand varying levels of attention. Other notable factors included personal experience with garment damage (32.8%) and knowledge of garment care techniques (31.3%). These suggest that students who have previously damaged clothes or who possess some knowledge of care procedures are more conscious about adhering to instructions. Rahman and Koszewska (2020) similarly noted that experiential learning and technical awareness significantly shape compliance with care practices.

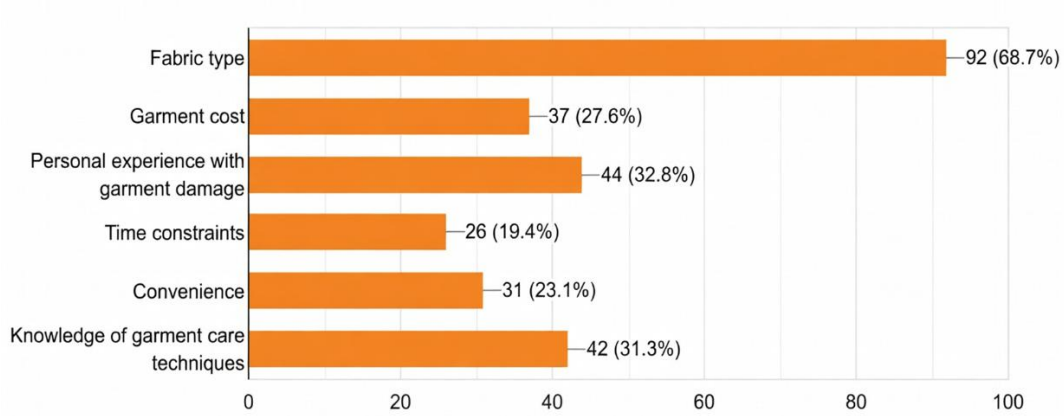


Figure 6. Factors that influence students' adherence to clothing care labels

Additionally, garment cost influenced 27.6% of respondents, implying that expensive clothing items are more likely to receive careful treatment. This reflects the findings of Goworek et al. (2012), who argued that consumers' perceived value of a garment strongly determines their willingness to invest time and effort in its maintenance. Convenience (23.1%) and time constraints (19.4%) were also reported as influencing factors, highlighting the role of lifestyle pressures in shaping clothing care habits. These barriers echo McQueen et al. (2022), who found that many young consumers prioritise ease and speed over strict adherence to label instructions. Against these, the results demonstrate that while fabric type remains the primary determinant of care label adherence, personal experience, cost considerations, knowledge levels, and lifestyle constraints also play significant roles. This suggests that promoting proper garment care among students will require not only clearer label designs but also greater consumer education on fabric handling and sustainable clothing practices.

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5 | CONCLUSION AND FUTURE STUDIES

This study examined the knowledge, understanding, and adherence to clothing care labels among students, teaching, and non-teaching staff at Takoradi Technical University. Findings revealed that while respondents generally demonstrated moderate awareness and comprehension of care labels, gaps persisted in interpreting complex symbols and consistently applying instructions. Adherence to care labels was varied, with many students following instructions only occasionally, often influenced by factors such as fabric type, prior experience with garment damage, garment cost, convenience, and time constraints. Difficulties understanding care labels, including small fonts, unfamiliar symbols, and language barriers, were commonly reported, highlighting the need for clearer, more consumer-friendly labelling systems. The study confirms that knowledge alone is insufficient to guarantee consistent adherence; practical experience, label clarity, and lifestyle considerations also play crucial roles. Importantly, these findings underscore the broader implications for garment longevity, sustainable consumption, and environmental conservation, as improper care contributes to premature clothing disposal, increased resource use, and textile waste. Enhancing consumer education on garment care, simplifying and standardising label designs, and fostering awareness of sustainable laundering practices are essential steps toward promoting better garment maintenance and environmentally responsible behaviour. This research contributes to the understanding of clothing care practices in the Ghanaian context and provides actionable insights for policymakers, educators, and industry stakeholders seeking to support informed, sustainable consumer behaviour.

Based on the study findings, it is recommended that clothing care labels be simplified, standardised, and made more consumer-friendly, with larger fonts, clear symbols, and multilingual instructions to improve comprehension and adherence among students and the wider population. Practical initiatives, such as awareness campaigns and workshops on proper garment maintenance, could further enhance consumers' knowledge and promote sustainable clothing practices. From a research perspective, there is a need for additional empirical studies in developing countries to explore innovative approaches, such as digital labelling or visual aids, and behavioural interventions that encourage consistent compliance with care instructions. Policy-wise, regulatory bodies should consider establishing mandatory guidelines for care labelling to ensure minimum readability and clarity standards while promoting sustainable textile consumption and waste reduction. For future research, studies could expand beyond university settings to capture diverse consumer experiences, employ longitudinal designs to evaluate the impact of educational interventions or label redesigns over time, and conduct cross-cultural comparisons to identify effective strategies for improving consumer understanding and adherence to garment care labels.

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DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this study due to the qualitative nature of the research and ethical restrictions on participant data.

CONFLICT OF INTEREST STATEMENT

There is no conflict of interest with respect to this paper as declared.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this work, the author(s) used Poe AI to help authenticate and restructure the document to conform to the journal standard. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

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REFERENCES

Appau, E. A., Asante, R., Frimpong, C., & Boadi, M. A. (2026). Sustainable garment care through knowledge and ethics: a case study of laundry operators in Ghana. *Research Journal of Textile and Apparel*, 1–17. https://doi.org/10.1108/RJTA-11-2025-0269

Ananga, E. (2011). Dropping Out of School in Southern Ghana: The Push-Out and Pull-Out Factors. CREATE Pathways to Access. Research Monograph No. 55. https://eric.ed.gov/?id=ED519559

Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, 61(8), 1139-1160. https://doi.org/10.1177/0018726708094863

Bianchi, C., & Birtwistle, G. (2012). Consumer clothing disposal behaviour: A comparative study. *International Journal of Consumer Studies*, 36(3), 335-341. https://doi.org/10.1111/j.1470-6431.2011.01011.x

Braun, V. & Clarke, V. (2012). Thematic analysis. In P. M. Editors: H. Cooper, *APA handbook of research methods in psychology, Vol. 2: Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 57-71). Washington DC: American Psychological Association. https://doi.org/10.1037/13620-004

Brown, J. (2022, July 12). All you need to know about Digital Care Labels. *EON Group Holding Inc*. Available at: https://www.eon.xyz/blog/digital-care-labels-guide (accessed on November 22, 2025)

Coats Sewing Solutions. (2014, June). Care Labels. Bulletin Post, pp. 2-8. Available at: https://cdn.coats.com/wp-content/uploads/Care-Labels_tcm.pdf (accessed on November 22, 2025)

Creswell, J. W., & Clark, V. L. P. (2017). Designing and conducting mixed methods research (3rd ed.). Sage Publications.

Daitey, W., Panin, K. B. O., Takyi, E. M., & Daitey, T. S. (2025). The Influence of Youth Culture on Fashion Trends in Ghana: A Sociocultural Analysis. *Adom Social Science and Humanities Journal*, 1(1).

El-Dessouki, H. (2015). A survey on knowledge about care label on garments by Residents in Egypt. *Life Science Journal*, 49-53.

Feltham, T., & Martin, L. (2006). Apparel care labels: understanding consumers' use of information. *Marketing*, 27(3), 231-244. Available at SSRN: https://ssrn.com/abstract=1809865

Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs principles and practices. *Health Services Research*, 48, 2134-2156. https://doi.org/10.1111/1475-6773.12117

Fraenkel, J. R. & Wallen, N. E., (2013). Educational research: A guide to the process. Routledge. https://doi.org/10.4324/9781410601001

Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, 20(9). 1408-1416. Available at: https://scholarworks.waldenu.edu/facpubs/455/

Gerbis, N. & Simón, Y. (2024, January 22). Washing Symbols Explained: A Guide to Garment Care Labels. *Howstuffworks*. Available at: https://home.howstuffworks.com/home-improvement/household-hints-tips/cleaning-organizing/laundry-symbols.htm (accessed on November 22, 2025)

Goworek, H., Fisher, T., Cooper, T., Woodward, S., & Hiller, A. (2012). The sustainable clothing market: an evaluation of potential strategies for UK retailers. *International journal of retail & distribution management*, 40(12), 935-955. https://doi.org/10.1108/09590551211274937

Guru, R., Kumar, A., & Kumar, M. (2021). Study on garment care symbols and laundry performance. *Asian Textile Journal*, 54-57.

Harris, F., Roby, H., & Dibb, S. (2016). Sustainable clothing: challenges, barriers and interventions for encouraging more sustainable consumer behaviour. *International Journal of Consumer Studies*, 40(3), 309-318. https://doi.org/10.1111/ijcs.12257

Holtström, J., Bjellerup, C. & Eriksson, J. (2019). Business model development for sustainable apparel consumption: The case of Houdini Sportswear. *Journal of Strategy and Management*, 12, 481–504. https://doi.org/10.1108/JSMA-01-2019-0015

Khude, P. (2017). The Importance of Care Labeling in Apparel and Textiles. *International Journal of Innovative Research in Science, Engineering and Technology*, 6(7), 15161-15165.

Klepp, I. G., Haugrønning, V., & Laitala, K. (2022). Local clothing: What is that? How an environmental policy concept is understood. *International Journal of Fashion Studies*, 9(1), 29-46. https://doi.org/10.1386/infs_00060_1

Laitala, K., Klepp, I. G., & Boks, C. (2012). Changing laundry habits in Norway. *International Journal of Consumer Studies*, 36(2), 228-237. https://doi.org/10.1111/j.1470-6431.2011.01081.x

Laitala, K., Klepp, I. G., & Henry, B. (2018). Does use matter? Comparison of environmental impacts of clothing based on fiber type. *Sustainability*, 10(7), 2524. https://doi.org/10.3390/su10072524

Laitala, K., Klepp, I. G., Kettlewell, R., & Wiedemann, S. (2020). Laundry care regimes: Do the practices of keeping clothes clean have different environmental impacts based on the fibre content?. *Sustainability*, 12(18), 7537. https://doi.org/10.3390/su12187537

Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. In *Forum: Qualitative Social Research* (Vol. 11, No. 3). Freie Universität Berlin.

McQueen, R. H., McNeill, L. S., Kozlowski, A., & Jain, A. (2022). Frugality, style longevity and garment repair–environmental attitudes and consumption behaviour amongst young Canadian fashion consumers. *International Journal of Fashion Design, Technology and Education*, 15(3), 371-384. https://doi.org/10.1080/17543266.2022.2072958

Nulty, D. D. (2008). The adequacy of response rates to online and paper surveys: what can be done?. *Assessment & Evaluation in Higher Education*, 33(3), 301-314. https://doi.org/10.1080/02602930701293231

Rahman, O., & Koszewska, M. (2020). A study of consumer choice between sustainable and non-sustainable apparel cues in Poland. *Journal of Fashion Marketing and Management: An International Journal*, 24(2), 213-234. https://doi.org/10.1108/JFMM-11-2019-0258

Rotimi, E. O. O., Topple, C., & Hopkins, J. (2021). Towards a conceptual framework of sustainable practices of post-consumer textile waste at garment end of lifecycle: A systematic literature review approach. *Sustainability*, 13(5), 2965. https://doi.org/10.3390/su13052965

Shin, S. (2000). Consumers' Use of Care-label Information in the Laundering of Apparel products. *The Journal of the Textile Institute*, 91(1), 20-28. https://doi.org/10.1080/00405000008659524

Sudheshna, A.A. & Srivastava, M. (2019). Assessment of Consumers' Knowledge about Care Label on Textiles and Apparel. *International Advanced Research Journal in Science, Engineering and Technology*, Vol. 6, (8), 40-42.

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