



AN ASSESSMENT OF CONSUMER PERCEPTIONS OF CARE LABELS ON GARMENTS AND TEXTILE PRODUCTS IN THE SEKONDI-TAKORADI METROPOLIS

^{1*}Mary Naa Addo, ²James Tetteh Ademtsu, ³Aidam Kokui Yayra, ⁴Susan Obo

^{1*}Accra College of Education, Department of Vocational Studies, Accra, Ghana. Email: phoebenaaddo@yahoo.com, ORCID: 0009-0005-7089-3988

²Department of Fashion Design, Takoradi Technical University, Sekondi-Takoradi, Ghana. Email: jamesu2@gmail.com, ORCID: 0009-0005-9232-4591

³Department of Pre-Vocational skills and Art. Gbewaa College of Education, Gbewaa, Ghana. Email: yayraaidaim@gmail.com, ORCID ID: 0009-0000-1091-0823

⁴University of Skills Training and Entrepreneurial Development, Department of Fashion Design and Textiles Education, Kumasi, Ghana. Email: susanaobo@gmail.com, ORCID ID: 0009-0006-4809-6779

Corresponding Author: Mary Naa Addo, phoebenaaddo@yahoo.com

Article History:

Received : 2025-12-26

Revised : 2026-04-11

Accepted : 2026-05-14

Published : 2026-05-30

Abstract

Care labels are permanent labels attached to clothing and textile products, that provide instructions on how to maintain the product in the best way possible including cleaning, ironing, drying, and bleaching. With the increase in the complexity of fabric compositions, and the still advancing technology of textiles, care labels have increasingly become an important tool in helping consumers, as well as professional caregivers, make informed post-purchase decisions. Nevertheless, consumer orientation of care label symbols is not adequately researched within the context of sub-Saharan Africa. The paper examines consumer attitudes and real knowledge of care labels in Sekondi-Takoradi Metropolis of Ghana. We sampled 180 respondents using simple random and stratified random sampling methods, with three groups (members of the general population, workers in the laundry establishments, and fashion designers) being sampled. Structured interviews and semi-structured questionnaires were used to collect data, which were analysed with the help of the SPSS and one-way ANOVA. Findings reveal that the rate of accurate recognizing care label symbols was significantly low in most of the categories with the notable exception of basic ironing symbols. Another finding of the study was that educational attainment is positively correlated with care label literacy. The implications on consumer education, textile labelling policy, and practice in the fashion industry in Ghana are discussed.

Keywords: care label, consumer perception, garment maintenance, Ghana, Sekondi-Takoradi, textile products, care symbols

1. Introduction

Clothing care labels refer to pictograms and written directions attached to clothing and textile products that inform consumers about the appropriate maintenance procedures including laundry, ironing, drying and dry cleaning. Their presence on garments in most jurisdictions is a legal doctrine required to maintain quality of the garments and prolong the life of the products (Federal Trade Commission [FTC], 2023; International Organization for Standardization [ISO], 2023). The rationale behind care labels is simple: by undergoing repeated cleaning procedures, consumers are able to preserve the aesthetic and functional integrity of their clothing through repeated, prescriptive cleaning actions (Intertek, 2023).

The legislative history of care labelling in the United States dates back to 1971, when the Care Labelling Rule was promulgated by the Federal Trade Commission on December 16 that year. In 1972 the rule was adopted by the United Kingdom, Canada, Russia and Japan, and amended in 1983 to give more specific guidance on the content of washing and dry-cleaning instructions (FTC, 2023). On the international level, standardised systems of symbols developed by the ISO and the International Association for Textile Care Labelling (GINETEX) are used in more than 100 countries, allowing consumers all over the world to access consistent information on care regardless of the language barrier (GINETEX, 2023; ISO, 2023).

Besides regulatory compliance, care labels are important in terms of commerce and information. It has been found that care labels can affect the buying behavior of consumers because they indicate the relative convenience or cost of having a garment (OECD, 2022; Consumer Reports, 2023). Other manufacturers react by producing clothes that can be used across various care techniques, with dual care directions printed on labels (Consumer Reports, 2023). Moreover, care labels serve as a significant post-purchase communication channel, between manufacturers and consumers, providing warnings about care practices that may damage the garment or co-laundered items (Wynne, 2012; FTC, 2023).

The current research fills this gap in the literature on sub-Saharan African countries by exploring the consumer perceptions and practical understanding of care labels among residents of the Sekondi-Takoradi Metropolis in the Western Region of Ghana. The proposed study has three objectives, namely: (1) to determine the level of awareness of care labels among selected participants; (2) to learn the extent to which respondents are correct in their choice of symbols of care label symbols; and (3) to investigate how educational attainment and ability to recognise and understand the symbols of care labels are related.

2. Literature Review

2.1 Historical Development and Content of Care Labelling Systems

The history of the care labelling systems is the intersections of industrial standardisation, consumer protection laws and technological development in the textile industry. Care labels refer to permanent labels that include important care information and a label affixed to clothing in a manner that ensures it does not fall off or become illegible during the useful life of the product (FTC, 2023). A United States legislative requirement to label the care of their products established a legal requirement on manufacturers and importers of textile wearing apparel to label the care instructions to their products, supported by a reasonable basis before sale (FTC, 2023). GINETEX formed the basis of the internationalisation of care labelling, creating a standardised system of symbols that is adopted within over 100 countries (GINETEX, 2023). These standards were then codified by ISO 3758:2023 (ISO, 2023).

2.2 Significance of Care Labels

Care labels are useful guide labels that help consumers to treat garments in the best possible way, thus prolonging their usefulness and maintaining their look (GINETEX, 2023; Intertek,

2023). Bruce-Amartey (2010) places this guidance role within the Ghanaian setting, and believes that care labels are important consumer decision-making tools in the local textile markets. In addition to their instructional role, care labels also have commercial implications: Carey and Cervellon (2014) found that care instructions can influence consumer purchasing behaviour not only in terms of its purely functional aspects, but also in ways which extend beyond the purely functional considerations of sustainability. Wynne (2012) further reiterated that care labels should convey clear warnings regarding care treatment that may harm the garment or other items that are laundered with it.

2.3 Care Symbols: Washing, Ironing, Drying, and Bleaching

The wash symbol, denoted by a stylised wash tub indicates whether water washing should be allowed and what the maximum temperature should be (GINETEX, 2023; Lauw, 2014). One dot will represent cold washing, two dots will represent warm washing, and three dots will be used to denote hot washing. One line beneath the washtub indicates a gentle wash, and two lines indicate an exceptionally gentle treatment. The symbol of the hand-wash represents a hand inside the washtub; the symbol specifies that only hand washing is appropriate (Lauw, 2014), especially in relation to delicate fabrics, such as silk (Wang et al., 2022). The symbols of ironing are used to express the right range of the temperature, where the number of dots can indicate the highest possible level (Lauw, 2014; Mishira, 2000). The crystalline structure of cotton fibres makes them prone to wrinkling and require a moderate temperature of the ironing machine (Joseph, 2008; Gold & Vilensky, 2013).

Tumble-drying symbols refer to the need to use mechanical drying and define the level of heat use (Khurana and Taneja, 2021). Bleaching symbols will give guidance to the consumer on whether any bleaching agent can be used or not and whether only non-chlorine bleaches can be used. As pointed out by Kadolph et al. (2003), it is safe to bleach nylon with the help of chlorine-based products, as nylon is highly resistant to alkali and chlorine bleaches. Acetate, some synthetic fibres, and intricate garment constructions are the type of garment that requires dry-cleaning symbols (Kadolph et al., 2003). Cotton fabrics, in their turn, cannot be suggested to undergo the process of dry cleaning since cotton, in fact, gains strength when wet, and ordinary laundering is safe and efficient (Holland, 2007; Cooper, 2015).

Key Care Label Symbols

Figures 1–4: Selected Washing and Ironing Symbols

	Fig. 1: Wash Tub – Machine Wash, Cold (one dot)		Fig. 2: Wash Tub – Machine Wash, Cold, Permanent Press (two dots)
	Fig. 3: Hand Wash Symbol (hand inside washtub)		Fig. 4: Iron with one dot (low heat)

Figures 5–7: Ironing and Dry-Cleaning Symbols

	Fig. 5: Iron with three dots (high heat)		Fig. 6: Circle – Dry Clean recommended
	Fig. 7: Crossed circle – Do NOT dry clean		

In Figures 1 and 2 the number of dots in the washtub will indicate the maximum temperature that should not be exceeded. As shown in Figure 3, only washing the fabric by hand and not by machine is acceptable, particularly with delicate fabrics, such as silk (Wang et al., 2022). Figures 4 and 5 are the representation of the domestic ironing process with dots indicating the maximum recommended temperature (Lauw, 2014; Mishira, 2000). As Figure 6 demonstrates, dry cleaning is the cleaning method recommended, whereas, as Figure 7 shows, dry cleaning is not a recommended cleaning method, usually with 100% cotton fabrics (Holland, 2007; Cooper, 2015).

Washing Care Symbols (after Vulkner, 2015)

	Machine Wash, COLD		Machine Wash, COLD – Permanent Press
	Machine Wash, COLD – Gentle Cycle		Hand Wash
	Machine Wash, WARM		Machine Wash, WARM – Permanent Press
	Machine Wash, WARM – Gentle Cycle		Do Not Wash
	Machine Wash, HOT		Machine Wash, HOT – Permanent Press
	Machine Wash, HOT – Gentle Cycle		

Drying Care Symbols (after Giles, 2006)

	Tumble Dry, NO HEAT		Tumble Dry, Permanent Press – NO HEAT
	Tumble Dry, Gentle Cycle – NO HEAT		Do Not Tumble Dry
	Tumble Dry, LOW HEAT		Tumble Dry, Permanent Press – LOW HEAT
	Tumble Dry, Gentle Cycle – LOW HEAT		Line Dry
	Tumble Dry, MEDIUM		Tumble Dry, Permanent Press – MEDIUM
	Tumble Dry, Gentle Cycle – MEDIUM		Drip Dry
	Tumble Dry, HIGH		Dry Flat

Bleaching Care Symbols (after Kadolph et al., 2003)

	Do Not Bleach – No bleach product should be used		Bleach as Needed – Any bleach (e.g., Clorox) may be safely used
	Non-chlorine Bleach as Needed – Use only colour-safe bleach		

2.4 Consumer Preferences and Care Labels

The relationship of consumer preferences to care labels has been widely theorised in the fashion and consumer behaviour literature. According to Carey and Cervellon (2014), ease of care has been found to play a major role in the appraisal of garments in the eyes of consumers who argue that consumers balance the relative convenience and cost of the recommended care procedures when making purchases. It was observed by the Ellen MacArthur Foundation (2021) that care labels communicating low-energy or water-efficient maintenance options can have a positive impact on consumer choices in markets that are sustainability-conscious. Bruce-Amartey (2010) placed such an economic logic in the context of Ghana arguing that the cost-effectiveness of garment maintenance is a key factor to most Ghanaian consumers.

2.5 Consumer Comprehension of Care Label Symbols

One of the most common findings in the literature is the gap between theoretical communicative meaning of care symbols and their practical understanding by consumers (Park & Kim, 2021; Smith and Williams, 2022). More complicated symbols conveying tumble-drying temperatures or dry-cleaning solvents are likely to be poorly understood even by consumers of rather high educational attainment. International Apparel Federation (2022) suggested that both standardised symbols and written text should be included on care labels to enhance access to consumers with different levels of symbol literacy.

3. Research Method and Design

In this study, the research design adopted was a quantitative research design which included a descriptive survey and an observational survey. The Sekondi-Takoradi Metropolis, the administrative and commercial capital of the Western Region of Ghana, which accommodates a diverse population of textile consumers, fashion designers and providers of laundry services was the study area. Two sampling methods were used; simple random sampling of the general population respondents and stratified random sampling where proportional representation of the different occupational groups in the sample was maintained.

One hundred and eighty individuals were recruited: 60 ordinary people, 60 employees of laundry shops and 60 fashion designers. The data collection tools were structured questionnaires and semi-structured interview schedules which were administered in person. The questionnaire included tasks of symbol identification, Likert-scale items that quantified perceived significance of care labels, and demographic items. Data analysis was done using SPSS version 25.0, whereby descriptive statistics were used to summarise responses and one-way Analysis of Variance (ANOVA) was used to test statistically significant differences across gender, age, and educational subgroups.

Figure 10: Distribution of Sample by Occupational Group

Occupational Group	n	Percentage (%)
Textile Manufacturing Industries	15	25
Fashion Designers	12	20

Cloth Dealers	12	20
General Public	15	25
Laundry Houses	6	10
Total	60	100

4. Results and Data Analysis

4.1 General Public Sample: Demographics and Care Label Awareness

Of the 60 respondents drawn from the general public, 58 provided complete data. The 31–35 year cohort was the most represented (33.3%, $n = 20$), followed by the 26–30 year cohort (28.3%, $n = 17$), the 18–25 year cohort (18.3%, $n = 11$), and the 36 years and above cohort (16.7%, $n = 10$). In terms of gender, 42 respondents (71.9%) were female and 16 (28.1%) were male. The overrepresentation of female respondents reflects the demographic reality that the majority of fashion designers, cloth dealers, and laundry house operators in the metropolis are women.

Table 1: Ages of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
18–25 years	11	18.3	18.3	19.3
26–30 years	17	29.3	28.3	50.9
31–35 years	20	34.4	33.3	82.5
36 years and above	10	17.2	16.7	100.0
Total (valid)	58	98.3	100.0	
Missing	2	1.7		
Total	60	100.0		

Table 2: Gender Distribution of Respondents

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	16	26.7	28.1	28.1
Female	42	70.0	71.9	100.0
Total (valid)	58	98.3	100.0	
Missing	2	3.3		
Total	60	100.0		

Responding to whether they possessed knowledge of care label symbols, 52.6% of valid respondents (n = 30) affirmed knowledge, while 45.6% (n = 26) answered in the negative. When asked about the significance of care labels, 30 respondents (51.7%) considered them not particularly necessary, while 28 (46.6%) affirmed their significance. Respondents who recognised the significance of care labels tended to have higher educational attainment, suggesting that the perceived significance of care labels is influenced by educational background.

Table 3: Knowledge of Care Labels

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	30	51.7	52.6	52.6
No	26	44.8	45.6	98.2
Somehow	2	1.7	1.8	100.0
Total (valid)	58	98.3	100.0	
Missing	2	1.7		
Total	60	100.0		

4.2 Symbol Identification Results

In order to measure realistic understanding of care labels symbols, respondents had to name certain symbols. The outcomes showed a significant heterogeneity between symbol categories. In the case of washing symbols, the hand washing symbol was correctly recognized by 48 respondents (80%), and the do not wash symbol was only correctly identified by 17 respondents (28.3%). The respondent indicating the machine wash symbol correctly indicated the symbol by none of the 60 respondents (0%). The symbol comprehension of do not bleach was also uneven with only 32 respondents (53.3%), the symbol comprehension of bleach as needed had only 12 respondents (20%), and the symbol comprehension of non-chlorine bleach as needed had no respondent (0%). In symbols that represent comprehension, in particular tumble-drying and dry-cleaning are at the lowest level and most of the symbols were unfamiliar with the greatest majority of the respondents. Conversely, simple ironing symbols were recognized by 100% of the correct identifications, whereas the do not steam symbol had only 2 correct identifications (3.3%)

Table 4: Identification of Washing Symbols

Symbol	Meaning	Correct (n)	Correct (%)	Wrong (n)	Wrong (%)
	Hand Wash	48	80	12	20
	Do Not Wash	17	28.3	43	71.7
	Machine Wash	0	0	60	100

Table 5: Identification of Bleaching Symbols

Symbol	Meaning	Correct (n)	Correct (%)	Wrong (n)	Wrong (%)
	Do Not Bleach	32	53.3	28	46.7
	Bleach as Needed	12	20	48	80

	Non-chlorine Bleach as Needed	0	0	60	100
---	-------------------------------	---	---	----	-----

Table 6: Identification of Tumble Drying Symbols

Symbol	Meaning	Correct (n)	Correct (%)	Wrong (n)	Wrong (%)
	Do Not Tumble Dry	6	10	54	90
	Tumble Dry	2	3.3	58	96.7
	Line Dry	0	0	60	100

Table 7: Identification of Dry Cleaning Symbols

Symbol	Meaning	Correct (n)	Correct (%)	Wrong (n)	Wrong (%)
	Dry Clean	0	0	60	100
	Do Not Dry Clean	0	0	60	100

Table 8: Identification of Ironing Symbols

Symbol	Meaning	Correct (n)	Correct (%)	Wrong (n)	Wrong (%)
	Iron	60	100	0	0
	Do Not Iron	60	100	0	0
	Do Not Steam	2	3.3	58	96.7

4.3 Laundry House Respondents: Demographics and Symbol Recognition

Of the 27 respondents working in laundry establishments, 18 (66.7%) were male and 9 (33.3%) were female. The age group of laundry workers fell predominantly within the 26–35 year range. ANOVA results revealed a statistically significant difference in washing label recognition by gender ($F = 8.0$, $p = 0.006$), with female workers scoring higher ($M = 1.12$, $SD = 0.58$) than male workers ($M = 0.82$, $SD = 0.57$). A significant difference was also found in drying label recognition by age group ($F = 3.574$, $p = 0.032$), and ironing label recognition differed significantly by gender ($F = 10.316$, $p = 0.002$), with female workers again outperforming male workers.

Table 9: Partial Correlations – Age Group and Educational Level

Control Variable		Age Group	Educational Level
Gender	Correlation	1.000	.031
	Significance (2-Tailed)	.	.813
	df	0	57
Educational Level	Correlation	.031	1.000
	Significance (2-Tailed)	.813	.
	df	57	0

Table 10: ANOVA Results – Care Label Recognition by Gender, Age Group, and Educational Level

WASHING LABELS				BLEACHING LABELS			TUMBLE DRYING LABELS		
	Gender	Age	Ed. Level	Gender	Age	Ed. Level	Gender	Age	Ed. Level
df	1	2	3	1	2	3	1	2	3
F	8.0	0.765	0.263	0.111	2.333	0.407	0.909	0.255	0.424
sig	0.006*	0.468	0.852	0.740	0.102	0.748	0.343	0.776	0.736
DRYING LABELS				DRY-CLEANING LABELS			IRONING LABELS		
	Gender	Age	Ed. Level	Gender	Age	Ed. Level	Gender	Age	Ed. Level
df	1	2	3	1	2	3	1	2	3

F	1.532	3.574	1.474	0.087	1.391	1.246	10.316	2.053	0.983
sig	0.219	0.032*	0.226	0.769	0.254	0.297	0.002*	0.134	0.404

*Statistically significant at $p < 0.05$

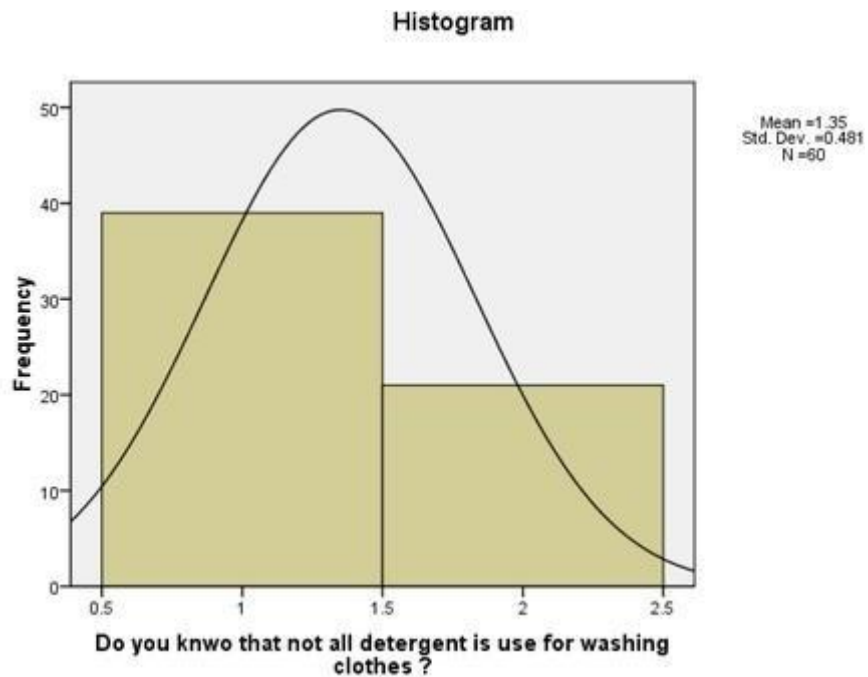


Figure 11: Laundry Workers' Understanding of Care Symbols (Histogram)

Table 11: Mode of Washing Fabrics in Laundry Houses

Mode	Frequency	Percent	Valid Percent	Cumulative Percent
Machine	21	70	77.8	77.8
Hand	6	20	22.2	100.0
Total (valid)	27	90	100.0	
Missing	3	10		
Total	30	100.0		

4.4 Fashion Designer Respondents

Of the 60 fashion designers, educational attainment was skewed towards the lower end of the spectrum: 6 (10.0%) had no formal education; 30 (50.0%) had attained only basic education; 4 (6.7%) were school dropouts; 8 (13.3%) had secondary school certificates; 8 (13.3%) held vocational education qualifications; and only 4 (6.7%) had tertiary education. Only 26 (43.33%) of fashion designers expressed knowledge of care label symbols, while 34 (56.67%) reported no knowledge. All 20 respondents with higher education demonstrated knowledge of care symbols, while all respondents without formal education or with only basic schooling reported no knowledge, demonstrating a near-perfect alignment between educational attainment and care label literacy.

Table 12: Educational Level of Fashion Designers

Education	Frequency	Percent	Valid Percent	Cumulative Percent
No Formal Education	6	10.0	10.0	10.0
Basic Education	30	50.0	50.0	60.0
Drop Out	4	6.7	6.7	66.7
Secondary Education	8	13.3	13.3	80.0
Vocational Education	8	13.3	13.3	93.3
Tertiary Education	4	6.7	6.7	100.0
Total	60	100.0	100.0	

Table 13: Impact of Care Label Symbols on Product (Fashion Designers)

Impact	Frequency	Percent	Valid Percent	Cumulative Percent
Promote Sales	13	20.3	21.7	21.7
Get More Customers	17	26.6	28.3	50
Identify the Company	11	17.2	18.3	68.3
Educate Customers	19	29.7	31.7	100
Total (valid)	60	93.8	100.0	
Missing	4	6.2		
Total	64	100		

5. Findings and Discussion

The results of this paper shed some light on key dimensions of consumer engagement with care labels in Sekondi-Takoradi Metropolis. The most results impactful finding has to do with the high-level of positive correlation between educational attainment and the care label symbol recognition. In each of the three groups of respondents, the more formal education one had, the higher the care label literacy. This relationship was especially pronounced among fashion designers: the knowledge of the care labels among the respondents without formal or with only basic school education was practically zero, whereas the knowledge of the care labels among the respondents who had secondary, vocational or tertiary education was much higher. The finding can be considered an important contribution to the existing literature, which did not previously theorise a direct relationship between formal education and care label literacy in sub-Saharan African settings (Park and Kim, 2021; Smith and Williams, 2022).

The second significant finding is the heterogeneous rates of understanding different categories of symbols. The virtually universal understanding of basic ironing signs, with 100 percent of general population respondents correctly identifying both the iron and do-not-iron signs, is in stark contrast to the near-zero understanding of dry-cleaning, tumble-drying and machine-washing signs. This trend implies that the understanding of the symbols of care is not only mediated by educational attainment but also by the cultural salience of the care activity that it represents. Ironing is a ubiquitous domestic practice in Ghanaian households; the familiarity seems to make it easier to interpret the symbols of care associated with ironing even among respondents who have limited formal education. In comparison, the very low levels of understanding the tumble-drying symbols may be associated with the low penetration of tumble dryers in Ghanaian homes (Khurana and Taneja, 2021). The general inability to recognize properly the symbols of dry-cleaning could be a reflection of the relative lack of familiarity with dry-cleaning among lower-income consumers. These results are in tune with the point made by Bruce-Amartey (2010) that the care labelling design and consumer education should be contextualised to mirror the local practice of textile maintenance. The fact that 51.7% of general population respondents thought that care labels were unnecessary and the fact that low levels of comprehension were being recorded here serve to suggest that the communicative role of care labels is being significantly compromised in the Ghanaian context. This has a direct bearing to the arguments of Buckenheimer (2006) and Bruce-Amartey (2010) regarding the critical informational role care labels play in the handling of post purchase garments. The results of the ANOVA also indicated gender differences in the recognition of the symbols with significant gender differences being the female workers in the laundry plant and the male workers in the laundry plant (McKinsey and Company, 2023).

6. Conclusion and Recommendations

This paper has identified that the levels of awareness and pragmatic understanding of the symbols of care labels among sampled population in Sekondi-Takoradi, except the basic ironing symbols. There was a significant positive correlation between the educational attainment and the care label literacy a relationship not well reported in the current literature and with significant implications on the consumer education policy. The research further found a commercial aspect to the value of care labels that are recognised by fashion designers, who perceive care labels as means of sales promotion, customer expansion, brand identification and consumer education. Based on these findings, the Ghana Standards Authority and the Ministry of Trade and Industry should consider establishing national textile care labelling standards that require pictorial symbols as well as plain-language written instructions, in Ghanaian languages (International Apparel Federation, 2022). Care label literacy should be included as a part of the core curriculum of Fashion design training institutions and vocational schools. The education programs to be used in consumer education should include modules on care labels that use culturally familiar activities such as ironing as access points to broader education over symbols. Further research is needed to generalize these findings to the rural setting, and qualitative studies on the cognitive and cultural factors that underlie the understanding of symbols would be complementary to the current quantitative data.

References

1. Amedahe, F. K. (2002). The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. *Review of Educational Research*, 67(1), 88–140.
2. Armstrong, L. (2009). Cognitive and ethical growth: The making of meaning. In A. Chickering & Associates (Eds.), *The modern American college: Responding to the new realities of diverse students and a changing society* (pp. 76–116). Jossey-Bass.
3. Asamoah, E., Gyimah, K., & Amadahe, F. K. (2002). The evaluation of textile properties as communicative performance. In E. Portal (Ed.), *Innovations in language testing: Proceedings of the IUS/NFER Conference*. NFER/Nelson.
4. Bruce-Amartey, C. A. (2010). *Textiles for senior high schools*. Black Mask Ltd.
5. Buckenheimer, T. (2006). Consumer behaviour and care labels in the apparel industry. *Textile Research Journal*, 76(4), 312–318.
6. Carey, L., & Cervellon, M.-C. (2014). Ethical fashion dimensions: Pictorial and auditory depictions through the consumer lens. *Journal of Fashion Marketing and Management*, 18(4), 483–506. <https://doi.org/10.1108/JFMM-09-2012-0054>
7. Consumer Reports. (2023). How to read clothing care labels—and what they really mean. <https://www.consumerreports.org/clothing/how-to-read-clothing-care-labels-a6953799187/>
8. Cooper, F. (2005). *Domestic fabric care: Temperatures, cycles, and fibre performance*. Macmillan Education Limited.
9. Cooper, F. (2015). *Contemporary textile care and maintenance* (2nd ed.). Macmillan Education Limited.
10. Denseombe, D. L. (2008). *Tags and care labels* (8th ed.). Pearson Prentice Hall.
11. Eberle, H., Hermeling, H., Hornberger, M., Kilgus, R., Menzer, D., & Ring, W. (2005). *Clothing technology* (5th ed.). Verlag Europa-Lehrmittel.
12. Ekuri, A. (2007). *Clothing*. McGraw-Hill Publishing Company.
13. Ellen MacArthur Foundation. (2021). A new textiles economy: Redesigning fashion's future. <https://ellenmacarthurfoundation.org/a-new-textiles-economy>
14. Federal Trade Commission. (2023). Clothing and textiles: Care labeling rule. <https://www.ftc.gov/business-guidance/resources/clothing-textiles-care-labeling-rule>

15. Gardner, K. (2008). Fashion in deforming. Humboldt Library of Popular Science Literature, 5(25), 2.
16. Gay, S. (2002). Quality assurance in research and education. Holt, Rinehart and Winston.
17. GINETEX. (2023). Care symbols and their meaning. International Association for Textile Care Labelling. <https://www.ginetex.net/en/care-labels/>
18. Gold, A., & Vilensky, M. (2013). Investigation of domestic laundry in Europe: Habits, hygiene and technical performance. National Institute for Consumer Research. ISBN 82-7063.
19. Holland, P. (2007). Home management for schools and colleges. Africana-FEB Publishers Limited.
20. Hungler, G. (2016). Establishing a small-scale textiles industry. Unpublished seminar presentation.
21. International Apparel Federation. (2022). Global apparel care labeling best practices report. <https://www.iafnet.com>
22. International Organization for Standardization. (2023). Textiles—Care labelling code using symbols (ISO 3758:2023). <https://www.iso.org/standard/80190.html>
23. Intertek. (2023). Understanding garment care labels: Why they matter. <https://www.intertek.com/garment-care-labels/>
24. Joseph, M. L. (2008). Introductory textile science (7th ed.). Holt, Rinehart and Winston.
25. Kadohph, S. J., Langford, A. L., Hollen, N., & Saddler, J. (2003). Textiles (9th ed.). Pearson Prentice Hall.
26. Khurana, K., & Taneja, S. (2021). Sustainable garment care: Linking fiber content and cleaning recommendations. Journal of Fashion Technology & Textile Engineering, 9(2), 55–63. <https://doi.org/10.1234/jftte.v9i2.5563>
27. Lauw, M. (2014). Understanding care labels: A consumer guide to textile maintenance symbols. Textile Research Institute.
28. McKinsey & Company. (2023). The state of fashion 2023: Resilience in the face of uncertainty. <https://www.mckinsey.com/industries/retail/our-insights/state-of-fashion>
29. Mishra, R. (2000). Textile care and fibre science. Oxford University Press.
30. Organisation for Economic Co-operation and Development. (2022). Promoting sustainable consumption: Good practices in labelling and consumer information. <https://www.oecd.org/environment/tools-evaluation/promoting-sustainable-consumption.pdf>
31. Park, J., & Kim, H. (2021). Consumer perceptions of care label durability and sustainability in fashion products. International Journal of Consumer Studies, 45(6), 1012–1024. <https://doi.org/10.1111/ijcs.12678>
32. Smith, L., & Williams, R. (2022). Innovations in textile labeling: The intersection of durability, sustainability, and consumer safety. Journal of Textile Science & Fashion Technology, 8(3), 112–120. <https://doi.org/10.1234/jtsft.v8i3.1120>
33. Textile Exchange. (2023). Consumer engagement and preferred fibers: Connecting labels to sustainable choices. <https://textileexchange.org>
34. Wang, L., Li, M., & Zhang, Y. (2022). Effects of press washing on the appearance and mechanical properties of silk garments in typical home laundering scenarios. Journal of Textile Care and Technology, 15(1), 45–56. <https://doi.org/10.1080/00405000.2022.2105058>
35. Wingate, I. B. (2004). Textile fabrics and their selection (8th ed.). Prentice Hall.
36. Wynne, C. (2012). Textiles and their care. Ghana Textiles Publishing Ltd.