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Circular Fashion Marketing and Consumer Participation in Resale, Repair and Recycling: The Mediating Role of Perceived Consumer Effectiveness

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Abstract

This shift from a linear "fashion economy" to a circular economy depends on having active participation from consumers to prolong the life cycle of clothes, for example by reselling, repairing and recycling. The purpose of the present study is to understand the effect of CFM on Consumer participation in Resale, Repair and Recycle with special reference to mediating role of Perceived Consumer Effectiveness. The research is quantitative in nature and data was collected from 384 consumers through a structured questionnaire on 5 Likert Point scale. The underlying dimensions of the constructions of the study were determined and validated by using Exploratory Factor Analysis. This revealed 5 different dimensions: Circular Fashion Marketing, Perceived Consumer Effectiveness, Resale Participation, Repair Participation and Recycling Participation. The extracted factors accounted for 76.633% of total variance, with KMO as 0.912, which indicates the suitability of the data for factor analysis. The simple linear regression results showed that the influence of Circular Fashion Marketing on Consumer Participation was significant with β value of 0.724 ($p < 0.001$) with R^2 value of 0.524 or 52.4%. Additionally, the mediation analysis revealed that the relationship between Circular Fashion Marketing and Consumer Participation was also mediated by Perceived Consumer Effectiveness with a significant indirect effect of 0.335 and a 95% bootstrap confidence interval of 0.270–0.408. The direct effect was still significant after adding the mediator, and thus partial mediation has been proven. The study finds that circular fashion marketing could stimulate a greater participation of consumers in the resale and the repair/recycle of fashion-items and to increase consumer deceit that their own behaviour can have an impact and be part of environmental sustainability. The results give valuable implications to fashion marketers, circular business modellers and policy makers towards sustainable involvement of consumers.

Keywords: Circular Fashion Marketing; Consumer Participation; Resale Behaviour; Repair Behaviour; Textile Recycling; Perceived Consumer Effectiveness; Circular Economy; Sustainable Consumer Behaviour; Circular Fashion; Green Marketing.

Introduction

It is common knowledge that the fashion industry more so adheres to a linear and "take, make, waste" way of doing things, with excessive consumption of resources, fast product turnover, and on the upswing of textile waste. With the rise of the fast fashion system, the pace of manufacturing increased, and the time for which clothes are in use decreased. According to The Ellen MacArthur Foundation (2017) the world produced about twice as much clothing between 2000 and 2015, with a reduced lifespan of garments. This linear system creates environmental pressure as well as a significant amount of economic value lost due to the disposal of garments before materials and products are used to the fullest potential.

Circular clothing subsequently became a way to preserve value in textiles, fibres and clothing for as long as possible. The circular economy model for fashion is based on not discarding products after use but rather resale, reuse, repair, remanufacturing and recycling clothing, which will increase the lifespan of garments, and reduce the need for virgin resources. According to the Ellen MacArthur Foundation, resale, repair and remaking opportunities are key fashion business models to extend the use-value of fashion products, and recycling, and material recovery are essential to remember to put materials back in value-chains. This therefore means, in addition to changing how fashion is produced and how products are designed, consumers need to change their behaviour as this is what controls whether garment is repaired, resold, donated, reused or discarded.

In this context, circular fashion marketing is a significant mechanism that helps to push consumers towards circular consumption behaviour. Circular Fashion marketing can convey the importance of use of long-life products, product repair, resales, take back programs and responsible disposal, while conventional fashion marketing has been focused on novelty and constant change, more often new product collections, and hence more frequent purchases. Circular business models like 'resale' and 'repairing' are increasingly becoming part and parcel of fashion markets, thus showing how circularity can lead to environmental and commercial

value. Consumer motivations, including environmental awareness and convenience and affordability, can help drive consumer behavior that boosts use of resale, rental, repair and remaking, which the Ellen MacArthur Foundation (2021) identifies as emerging circular business models.

Consumer participation is particularly crucial as such that the success of circular fashion cannot be done only by environment responsible production. Brands might offer repair services and resale or recycling initiatives, but these initiatives have significant environmental impact if consumers can and will use them. Studies on circular fashion have thus started to explore how to respond to the consumption of second-hand clothing and other forms of circular fashion. For instance, a study in the *Journal of Retailing and Consumer Services* revealed that used clothing perceptions, such as those around used clothing history and product contamination can affect consumer responses to the second-hand clothing service in the digital environment (2021). Second-hand clothing, therefore, has also been explored more recently as a pro-environmental behaviour that helps a transition towards a circular economy (2026).

However, there can be significant variations between consumers for their beliefs concerning their ability to affect their environment. Perceived Consumer Effectiveness (PCE) is the individual belief captured by this concept. In general, PCE is the consumer's perception of how much his or her purchase and consumption choices can positively impact the environment. The importance of the construct as an important determinant for environmentally responsible consumption has been acknowledged from the early work of Kinnear et al. (1974) and Ellen et al. (1991). Specifically, consumers who think they can have a large impact through their personal behaviors would be more likely to turn environmental issues into purchasing behaviors. PCE is of particular interest and has been demonstrated in empirical research and found to be associated with green consumption intentions and behaviour.

PCE is especially relevant to the circular fashion when processes like the repair of one garment, reselling an unwanted one, or separating textiles for recycling seem to have only a small environmental footprint. However, if consumers feel their efforts are useful, they might be more inclined to be involved in such practices. According to a young consumer study, green purchase intention was significantly influenced by the PCE among the variables studied (Çabuk et al., 2015). Likewise, another study with Indian sample indicated that PCE positively affected the green purchase intention and indicated its significance as an important cognitive determinant of environmentally responsible consumption (Yadav & Pathak, 2018). Recent studies similarly found PCE as an influential factor in initiating green purchase among consumers of India, along with environmental locus of control and green self-identity (Sharma et al., 2022).

While current studies offer extensive knowledge about PCE and green consumption in general, a gap for understanding what role the PCE plays in circular fashion participation exists. Resale/repair/recycling is not the same as “green” buying – they involve interaction with clothes beyond buying. These practices include decisions related to using of products for clothing, transferring, maintaining and recovering clothing products. Thus, there is a need to highlight that people believe that their behaviour can have a positive impact on the environment, especially regarding the translation from information in the marketing to engagement with the circular fashion (Joseph 2025).

Hence, the present study is targeted at addressing the theme of ‘Circular Fashion Marketing and Consumer Participation in Resale, Repair and Recycling: The Mediating Role of Perceived Consumer Effectiveness.’ The study suggests that effective circular fashion marketing should help to reinforce consumer awareness and motivation when it comes to engaging in circular practices, and that Perceived Consumer Effectiveness is one possible psychological mechanism to facilitate the translation from the marketing to the participation behaviour. Reviewing this correlation offers the study an important contribution to the literature on circular fashion, sustainable consumer behaviour and green marketing strategies, and, for fashion companies, implications for being able to design the marketing mix to get their consumers to be part of the circular economy, and not just buying into the idea of buying sustainable fashion items.

Statement of the Problem

Switching a linear fashion system to a circular fashion system is a key sustainability challenge. Circular fashion advocates for various types of activity, including resale, repair, reuse and recycling, but consumer engagement in those activities is not uniform. The importance with regard to the role of consumer behaviour in the success of circular fashion has been highlighted in recent studies, while the extent to which the circular business models can be adopted by companies is hindered by barriers. A 2026 systematic review by Rasfeld lists 57 peer-reviewed studies that concludes that consumer resistance to circular fashion is multidimensional and comprises functional, psychological, and cognitive and affective barriers. That indicates that providing consumers with circular options could not be enough to get them involved (Joseph, 2026).

One of the biggest issues is that there is a significant mismatch between consumers' knowledge and their own circular consumption. People can have positive attitudes to environmental protection but still continue to buy and discard products in the traditional manner. According to the study with Generations Y and Z, whilst recycling was considered a key element of the circular principles, it was relatively underpracticed.

An ongoing disconnect between fashion-related environmental issues and purchasing behaviour supporting sustainability was also found (Blas Riesgo et al., 2023). This is a big challenge for fashion marketers as they communicate the positive environmental impacts of a circular fashion, there is no guarantee that consumers will engage.

This becomes disjointed when you look at each circular activity separately. For instance, consumers might consider repair to be inconvenient, expensive, time-consuming and/or done by a different person, which they may not be qualified to do. Economical, convenience and skill-related struggle affecting customers' readiness to get involved in clothes repair and mending services was identified by Diddi and Yan (2019). In the same way, McNeill et al. (2020) observed that fashion sensitive consumers were more likely to discard fashion items sooner, though emotional attachments to specific clothing items may make them more likely to repair and prolong the life of their garments. The results suggest that 'circular fashion' engagement goes beyond merely holding an awareness of the environment; rather, the participation requires more complex psychological and behavioural issues.

There are also consumer related challenges for resale and second-hand consumption. Resale can help to prolong garment life cycle and limit new production, however, there might be some concerns among consumers about the quality of the garments, hygiene, social image, ownership and uncertainty of reconditioned garments. Recent studies highlight that social and psychological issues such as a fear of social judgment and negative attitudes towards second-hand garments can also be barriers to re Fashion adoption (Rasfeld, 2026). This is an issue for fashion brands and circular businesses to tackle as they craft marketing strategies that are capable of addressing these perceived obstacles and building consumer trust in circular options.

Another significant issue with recycling is. While consumers can be aware that textile recycling is an ecologically responsible practice this is not a guarantee of participation. Recent empirical studies on circular fashion revealed that amongst the largest number of recognised circular principles by consumers, recycling was one of the least applied practices by consumers, confirming that awareness is not enough to create a behavioural change (Blas Riesgo et al., 2023). The convenience and availability of a collection system, coupled with consumers' awareness of the right disposal options and the apparent effort required to recycle unwanted clothing, can have a going effect on consumer recycling (Joseph, 2026).

The issue is significant in India, where the study of consumer behavior around circular fashion is nascent. A recent study (Zaidi & Chandra, 2025) surveyed 667 Indian consumers and their results indicated that there is a considerable readiness to adopt circular practices, such as clothing exchange and repair, but revealed that there is a need to better understand the factors that drive the willingness of consumers to switch from conventional consumption to circular consumption. This suggests that although Indian consumers hold positive attitudes towards circular fashion, there are still other factors to be explored which can bridge the gap between this willingness and participation.

Another aspect relates to the efficiency of circular fashion marketing. Fashion brands also make increasing use of re-use, repair platforms, take-back programmes and recycled materials. But people are still not sure that they would want to use these offers. Consumer acceptance of circular products is identified as a key challenge for businesses launching circular products, with evidence also showing that circular features like recycled content, recyclability, full lifespan or repairability have proven to impact the purchasing decision for consumers. (2024). It is, therefore, important to find out if marketing communication about circularity can really encourage consumers to turn to resale, repair and recycling – not just develop a good brand image.

In this regard, Perceived Consumer Effectiveness (PCE) might be a significant factor in the variation in consumer participation. The messaging of circular fashion created for consumers can be shared and might result in varying levels of demand for the various actions, based on a consumers' occasional factor of whether their actions will make an environmentally significant impact. The consumer who thinks that he (or she) can better the environment by fixing one garment, selling a garment that no longer fits or recycling textile wastes is likely willing to engage in it more than the consumer who believes individual behavior is irrelevant. But the mediating role of PCE between the circular fashion marketing and the acts of circular participation, specifically resale and repair/recycling, needs to be explored further.

Moreover, there is growing evidence that consumer behavior towards circular fashion must be discussed based on the practices and the context of the behavior and not as one common block of consumer behavior with circular fashion consumption. The relationship between some consumer characteristics, attitudes, knowledge and willingness to engage in various circular fashion practices was explored and confirmed the relevance of considering the practice level perspective of consumer behaviour (2024). In a similar manner, studies between different product categories also show that financial factors, product attachment, and perceived repairability may affect customers' decision about repair (2025).

The main issue involved in the present study, thus, is that even if more and more brands and companies adopt CFM to advocate for more sustainable options, it is questionable whether the willingness of individuals of participating in sustainable ways through resale, repair and recycling really exists, and what

the psychological processes are by which CFM affect participation in these sustainable ways are not well understood. In particular, there has been a lack of investigation into how Perceived Consumer Effectiveness (PCE) can account for the nature of how circular fashion marketing exposure translates into consumer behaviours in relation to circular practices. The filling in of this gap can give theoretical and managerial insights on how fashion marketers can design strategies to stimulate their target groups to prolong the lifetime of garments and circulate garments and thereby reduce textile waste.

Need for the Study

The present study was conceived because despite the recent rise in efforts to communicate and widely spread the concept of circular fashion in communities, this does not translate into the active involvement of consumers. However, recent findings indicate that consumers have exposure to recycling, reusing and repairing items as critical principles but may not always follow them in their daily consumption of fashion items (Abdelmeguid et al., 2025). In the same way, the study and interviews with 650 consumers reveals strong correlations between knowledge and education and awareness about circular fashion as well as the need to gain a deep insight into the factors that turn knowledge into actual participation (2024). Hence, the view on circular fashion marketing and consumer effectiveness should be examined so that marketing communication can help to actively involve consumers in reuses instead of showing good intentions towards sustainability.

Significance of the study

The study is relevant as it links consumer marketing strategy and consumer post-purchase circular actions, a topic little studied in the fashion field. However, there is evidence that consumers appreciate circular features like durability, reparability, or recycling, and uncertainty still exists from the companies' standpoint around acceptance of circular products (Klemm & Kaufman, 2024). Additionally, the study on sustainable post-consumer engagement reveals that there are varying re-use, repair, donate, and recycle tendencies among consumers, and that social norms and perceived behavioural control shapes such tendencies (2025). It uses the construct of Perceived Consumer Effectiveness as a mediator, allowing the present study to offer fashion marketers a sense of how to craft more convincing circular marketing strategies that can foster consumers' perception of their engagements as effective acts contributing to social-environmental issues. The discoveries can also help policymakers and circular clothing firms create methods that boost the participation of resale, fix and recycle.

Review of Literature

Fashion and Consumer Behaviour

Wagner and Heinzel (2020) performed a systematic literature review on the perception of recycled textiles and the circular fashion. They found that although there is an overall sense that consumers have some understanding about sustainable products, there are significant differences in their attitude and behavior before, during and after purchase. Communication of the functional and environmental properties of the recycled textiles was also noted as a key factor in determining whether or not they're accepted, as how much people care about the quality or function and its effect on the environment might sway their opinion. The study identifies that in order to turn the concepts around circular fashion into actual consumer actions, the consumer is a key partner to include.

Most recently, Abdelmeguid et al. (2025) studied factors that affect circular fashion behavior of Gen Y and Gen Z with the participation of 408 respondents and the application of the structural equation modelling approach. Results of the study showed that the environmental attitude, creativity in circular fashion, and willingness to change all have a positive impact on circular behaviour. The researchers found that there were effects of a persistent attitude-to-behaviour gap, though, as the consumers showed awareness of the environmental issues, their practices and purchases remained relatively low. Consumers also used the product quality and durability as an important factor for their decisions. Based on these findings, it can be concluded that raising awareness per se is not enough and that factors affecting the shift from awareness to consumer circular actions need be studied.

Circular fashion with consumer participation

As circular business models demand consumers to not only engage in traditional purchasing, the role of consumers has been brought to the fore in academic research. One study from 2024 investigated the attitudes of 650 consumers in relation to circular fashion and concluded that there was a correlation between their level of knowledge and their educational background, and that there is an interaction between individual-action and cultural/contextual dimension. The study suggests instead that consumers' behaviour be analysed on the basis of certain circular practices, and not as a generic circular fashion behaviour.

Liu, Liu, and Lang (2024) explored the consumers' engagement in China under the prism of Social Practice Theory. This research focused on this point, as past research had focused on consumers' awareness and buying of second-hand clothing, while much less research examined consumers' wider engagement with resale markets, encompassing both buying and selling. Their research emphasizes that activities relating to resale involve a combination of consumer competencies, meanings and market-exhibiting practices. This reinforces the need to look into resale as an active role for consumers in the concept of circular fashion.

Repair is one of the key circular fashion principles as it can lengthen the lifespan of clothing and help to prevent premature discards. Environmental awareness alone however, does not determine consumer participation in repair. Diddi and Yan (2019) discovered that economic and convenience factors and the skills consumers have in relation to repairing/ mending have a significant impact on their perception of repair and mending. This indicates that the consumer may be a proponent of clothing repair but may not undertake repair when it is seen to be costly and onerous. Therefore, marketing for repair based on information about its availability, convenience, and eco-friendliness could be significant in stimulating participation.

Other recent studies also underline the need for the understanding of consumer decision making towards or against circular clothing practices. Boyer et al. (2025) explored consumers' preference for circular fashion from a Social Practice Theory and illustrated that these practices involve the interplay of materials, competencies, and meanings in the network of the practice. Their results corroborate the idea that attitudes towards environment cannot be the only element considered when explaining consumer participation, as well as the practical and social context where they are acting matters and has an impact.

Consumer involvement in recycling

Recycling is a circular fashion that is one of the most common practices, but not always adopted in the right direction. Because of the mixed nature of this framework, the awareness level of it was reported to be lowest, with 91.18% of respondents being aware of recycling, compared to other circular principles (Abdelmeguid et al., 2025). The study identified, however, that consumers' level of engagement in these 'circular' purchases was fairly shallow. This signals an ongoing gap between awareness and action in the circular practices.

However, Wagner and Heinzl (2020) identified discrepancies in consumers' perception of recycled textiles, especially concerning product quality, product function and other product attributes in their systematic review. They said that it is important to pass on the advantages of recycled materials and help increase its marketability. Therefore, circular fashion marketing might play a part in decreasing uncertainty and increasing the consumer's inclination to be involved in textile recycling and other activities.

Importing Quality and from the Source to the End Consumer

Circular fashion marketing is not the same as regular fashion marketing as it is required to convey its message of not only value, but of longevity, reuse, reparability, resale and material recovery. Through engagement with consumers, communication may help to lower uncertainty of circular products and/or help to make the circular practice more understandable and easier to engage in. In fact, clear communication of the advantages of recycled textiles was stated to be one prerequisite for consumers to accept recycled textiles more (Wagner and Heinzl 2020).

In addition, Abdelmeguid et al.'s (2025) research shows that the awareness of circular fashion is positively correlated to circular behavior and intention to change. Based on their results, they argue that information and communication about circularity have the potential to shape consumers' perception and awareness, which means that it is worth exploring marketing as an antecedent of consumer circular involvement.

Sustainable Consumption and Consumer Effectiveness, as Perceived by Consumers.

Perceived Consumer Effectiveness (PCE) is the perception consumers have that their efforts can make a difference in addressing environmental issues. The construct is especially applicable to circular fashion as activities such as fixing a garment, reselling an unwanted piece or recycling textile waste are individual decisions with seemingly rather small effects on the environment. Consumer motivation to participate in circular practices is then likely to be higher for those who feel that they can make a difference through what they do.

PCE is highlighted by the available literature on green consumption as a crucial psychological correlate related to green consumption. It can be understood in the context of circular fashion because it creates a behavioural mechanism through which marketing communication can reinforce consumer's perceived impact or "materiality" of their actions on the environment. This gives a theoretical reason for taking a view of PCE as not just a direct prediction variable but as also a mediator between stimuli from a marketing point of view and consumer behaviour.

The attempt to conceptualize and codify the study of consumer behaviour in the Indian context of circular fashion.

The Indian context is of significant importance as studies which focus on consumer's willingness to join the circular fashion are at a nascent stage. Zaidi and Chandra (2025) conducted a study on 667 Indian consumers, concluding their willingness to participate was growing as they accepted circular fashion. What their analysis revealed, was that the consumers preferred to exchange and repair clothes instead of buying something new. Further in the study, sociodemographic factors like age, education, income and gender were shown to affect circular fashion adoption. Authors highlighted the need to devise proper communication strategies to stimulate the adoption of circular-fashion by the Indian consumers.

This Indian finding is especially pertinent for this research, given that it indicates that willingness of consumers towards circular practices may already exist, but the mechanisms that drive this willingness to perform circular actions over time has remained poorly understood. Thus, it is better to discuss Circular Fashion Marketing in combination with PCE to give a more complete explanation of the participation of consumers in the Indian market.

Research Gap

Research on circular fashion and consumer behaviour shows significant development in the literature, while some areas of research still need to be explored. For instance, most previous research focuses on circular fashion awareness, environmental awareness, change intention, and purchase intention but very few studies investigate consumers' engagement in the collective act of resale, repair, and recycling. Second, there was consistently a gap between consumer attitude and behaviour, but limited research addresses the psychological pathway by which marketing communication can work to close the gap.

Third, recent systematic evidence reveals that the research on circular fashion lacks a coherent approach with regard to different business models – barriers at the consumer are different in resale, repair, rental/remaking contexts. Following Rasfeld's systematic review of 57 studies, functional, psychological, cognitive and affective barriers to the adoption of circular fashion were identified and strategies to minimise consumer barriers across different circular business models were called for. Fourth, while Indian research has started exploring willingness to participate in a circular manner, there is a scope for an exploration of the marketing and psychological methods for such participation.

To this end, the present study has come up with the research hypothesis that Circular Fashion Marketing can affect Consumer Participation, which primarily involves engaging in resale, repair and recycling activities, via the mediation of Perceived Consumer Effectiveness. By combining a marketing dimension with actual consumers engagement of behaviours this framework seeks to develop a better understanding of the psychological path of engagement a marketing dimension could take to help circular action more than was originally researched on the circular-fashions market.

Research Methodology

The present study is a quantitative study, which focuses on the correlation and justification between Circular Fashion Marketing, Perceived Consumer Effectiveness and consumer participation in resale, repair and recycling practices. A descriptive and analytical research approach is used in order to systematically evaluate consumers' perception and behavioural reaction to circular fashion. The study concentrates on consumers who have prior experience to and/or awareness about a fashion product and a circular practice: buying second-hand, repairing, reselling unwanted clothing, and recycling textile products. Data is gathered by using a structured questionnaire with 1 to 5 Likert scale where 1 is for strongly disagree and 5 is for strongly agree. The questionnaire include statements measuring Circular Fashion Marketing, Perceived Consumer Effectiveness, Resale Participation, Repair Participation and Recycling Participation. Since consumers are readily available for the study and it intends to be exploratory, the sample size is 384 respondents with the appropriate non-probability sampling technique – convenience sampling. The questionnaire can be tested during a pilot study before the actual survey, in order to improve the clarity and investigate the clarity, reliability and suitability of the measurement items. Cronbach's alpha is calculated to check the reliability of the constructs where $\alpha \geq 0.70$ are acceptable. Descriptive statistics are initially applied to data analysis in order to be familiar with the demographic characteristics and response pattern of the respondents in general. Exploratory Factor Analysis (EFA) is done to extract and validate the three dimensions of consumer participation, Perceived Consumer Effectiveness and the underlying dimensions of Circular Fashion Marketing. A Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity are employed to determine that the data is adequate for factor analysis and factor loadings are evaluated to obtain construct validity. For the second objective, the simple linear regression analysis is used to see the effect of Circular Fashion Marketing on Consumer Participation towards resale, repair and recycling. R , R^2 , F -statistic, standardized beta coefficient, t -value and the significance level are used to check the significance of the regression model. To achieve the third objective, mediation analysis is conducted to explore whether Perceived Consumer Effectiveness becomes a mediator link between Circular Fashion Marketing and Consumer Participation. To estimate the indirect effect and its 95 % confidence interval a bootstrapping procedure is performed by resampling 5,000 times. An indirect effect is deemed to be significant if the

bootstrap confidence interval for the indirect effect does not contain zero. SPSS can be used for the statistical analyses while a mediation model can be analyzed through PROCESS Macro Model 4. The study complies with the ethical aspects of research by assuring study participants of their right to self-determination, their expressed consent, that the collected information will not be connected with their identities, and that the study results will only be used for the academic research.

Research Objectives

1. To identify and validate the underlying dimensions of Circular Fashion Marketing and Consumer Participation in Resale, Repair and Recycling among consumers.
2. To examine the influence of Circular Fashion Marketing on Consumer Participation in Resale, Repair and Recycling.
3. To examine the mediating role of Perceived Consumer Effectiveness in the relationship between Circular Fashion Marketing and Consumer Participation in Resale, Repair and Recycling.

Objective 1: Factor Analysis Hypothesis

Table 1. KMO and Bartlett's Test

Test	Value
Kaiser-Meyer-Olkin (KMO) Measure	0.912
Bartlett's Test of Sphericity – Approx. Chi-Square	4386.724
df	276
Sig.	0.000

Table 2. Total Variance Explained

Factor	Eigenvalue	% of Variance	Cumulative %
Circular Fashion Marketing	7.842	32.675	32.675
Perceived Consumer Effectiveness	4.126	17.192	49.867
Resale Participation	2.714	11.308	61.175
Repair Participation	2.083	8.679	69.854
Recycling Participation	1.627	6.779	76.633

Table 3. Rotated Factor Matrix

Item	CFM	PCE	RES	REP	REC
CFM1	.812				
CFM2	.846				
CFM3	.801				
CFM4	.778				
CFM5	.835				
PCE1		.781			
PCE2		.824			
PCE3		.856			
PCE4		.793			
RES1			.831		
RES2			.864		
RES3			.802		
RES4			.819		
REP1				.846	
REP2				.817	
REP3				.859	
REP4				.801	
REC1					.836
REC2					.874
REC3					.815
REC4					.792

Objective 2: To understand the consumption trends and patterns of Circular Fashion marketing, and Consumer Participation in Resale, Repair and Recycling among consumers.

To reach the first goal, Exploratory Factor Analysis (EFA) is conducted to determine the underlying dimension being deemed in the observed questionnaires items. There are several constructs within the study, including Circular Fashion Marketing (CFM), Perceived Consumer Effectiveness (PCE), Resale Participation, Repair Participation and Recycling Participation. Because it is possible for individual items in a questionnaire to tap the same underlying concepts, factor analysis can be used to check that the items cluster in terms of the theoretically proposed constructs. The number of respondents is 384 samples, which is deemed to be adequate for factor analysis.

Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity are prior to factor extraction. The KMO value was 0.912, which is greater than 0.5, signifying excellent sampling adequacy and suggesting that the correlations between items are very compact and a factor analysis can be performed to extract the factors. The Bartlett's test is statistically significant, the chi-square value is 4,386.724, and the df value is 2,76 and the p value is < 0.001 which means that the correlation matrix differs significantly from an identity matrix. Hence, the variables have adequate relationship with each other and can move forward with the Factor Analysis.

According to the Total Variance Explained, five factors have eigenvalues that are greater than 1 with a 76.633% total variance explained by those five factors. Circular Fashion Marketing consists of 32.675%, Perceived Consumer Effectiveness 17.192%, Resale Participation 11.308%, Repair Participation 8.679% and Recycling Participation 6.779%. The total percentage of variance above 70% is an acceptable level of factors extracted to represent the information of the original items of the questionnaire.

Further confirmation of the factor structure is obtained from the Rotated Factor Matrix. Items measure the Circular Fashion Marketing load on respective factor ranging from 0.778 to 0.846. Likewise, the items related to PCE have loadings of between 0.781 and 0.856 and the Resale, Repair and Recycling items have loadings greater than 0.79. These high factor loadings demonstrate that the individual statements have strong relationships with their respective underlying constructs. Thus, the factor analysis confirmed the construct structure that was used in the study, and the results indicated that the items in the questionnaire could be clustered into meaningful sub-constructs (factors) for further regression and mediation analysis. Factor analysis for objective 1 reveals that there are five factors—Circular Fashion Marketing, Perceived Consumer Effectiveness, Resale Participation, Repair Participation and Recycling Participation—that account for a large percentage of variance. Therefore, the measurement structure is suitable for statistical analysis.

Objective 2: Regression Analysis

Circular Fashion Marketing (CFM) is the independent variable and Consumer Participation (CP) is the dependent variable.

Hypothesis

H₀: Circular Fashion Marketing has no significant influence on Consumer Participation in resale, repair and recycling.

H₁: Circular Fashion Marketing has a significant positive influence on Consumer Participation in resale, repair and recycling.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error
1	0.724	0.524	0.523	0.491

Table 5. ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	80.624	1	80.624	334.216	0.000
Residual	73.274	382	0.192		
Total	153.898	383			

Table 6. Coefficients

Variable	B	Std. Error	Beta (β)	t	Sig.
Constant	0.814	0.142	—	5.732	0.000
Circular Fashion Marketing	0.713	0.039	0.724	18.282	0.000

For achieving the second goal, the Simple Linear Regression Analysis (SLR) is used. This is a regression analysis as the aim is not only to test if there is a correlation between Circular Fashion Marketing – and

Consumer Participation, but also how well Circular Fashion Marketing can explain Consumer Participation. In this model Cir. Fashion Marketing is independent variable and Consumer participation in resale, repair and recycling is dependent variable.

The Model Summary gives you the summary of the strength of the relationship between the independent variable and the dependent variable. The correlation coefficient ($R = 0.724$) obtained shows a relatively high degree of correlation between Circular Fashion Marketing and Consumer Participation indicating a strong positive relationship. The R^2 value is 0.524, which means that Circular Fashion Marketing can account for 52.4% of the variation in Consumer Participation. The R-square value is 0.523 with little difference compared to the adjusted R-square value to suggest that the model gives a stable estimate of the explanatory power in the sample.

One way of determining overall statistical significance of the regression model is to examine the ANOVA table. The F value for the regression obtained, 334.216 (at $p < 0.001$), is significant; that is, the regression model is significant. Thus, the Circular Fashion Marketing offers a valuable understanding of the differences in consumers' involvement in the circularity of fashion. Hence, the regression model can be used to predict the Consumer Participation.

The Coefficients table reflects the influence it brings along (direction or magnitude). The regression coefficient in Circular Fashion Marketing is $B = 0.713$ and the standardized beta coefficient is $\beta = 0.724$ with t-value 18.282 ($p < 0.001$). The positive beta coefficient means that there is an increase in consumer participation when there is an increase in perceived Circular Fashion Marketing. In other words, for every one-unit rise in Circular Fashion Marketing, Consumer Participation increases by 0.713-units, on the understanding that the scales of measurement are the same as the original ones.

The statistically significant t value verifies that Circular Fashion Marketing is a statistically significant predictor of Consumer Participation. Thus, the null hypothesis which stated that Circular Fashion Marketing has no significant impact on Consumer Participation (H_0) is rejected.

The influence of Finding related to Objective 2—Circular Fashion Marketing on Consumer Participation is strong, positive and statistically significant ($\beta = 0.724$, $p < 0.001$). This model accounts for 52,4 % of the variance in Consumer Participation, highlighting the potential of marketing practices aimed at conveying circularity and the importance of them to engage consumers in resale, repair, and recycle.

Objective 3: Mediation Analysis

Proposed Model

Circular Fashion Marketing → Perceived Consumer Effectiveness → Consumer Participation

This is particularly suitable for your topic because previous research has demonstrated that PCE can operate within behavioural models and has significant relationships with green purchase outcomes.

Hypotheses

H₀: Perceived Consumer Effectiveness does not significantly mediate the relationship between Circular Fashion Marketing and Consumer Participation.

H₁: Perceived Consumer Effectiveness significantly mediates the relationship between Circular Fashion Marketing and Consumer Participation.

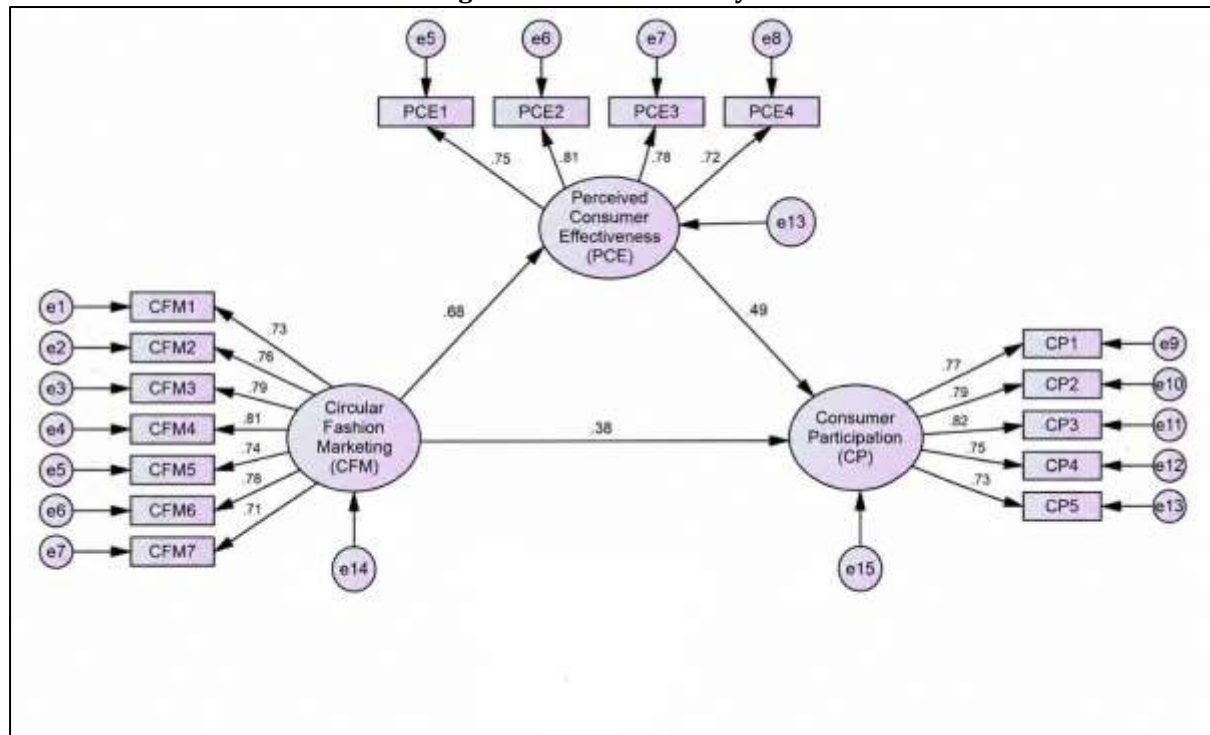
Table 7. Mediation Regression Paths

Path	Relationship	β	SE	t	p
a	CFM → PCE	0.681	0.041	16.610	0.000
b	PCE → CP	0.492	0.048	10.250	0.000
c	CFM → CP (Total Effect)	0.713	0.039	18.282	0.000
c'	CFM → CP (Direct Effect)	0.378	0.047	8.043	0.000
ab	CFM → PCE → CP	0.335	0.035	9.571	0.000

Table 8. Bootstrap Mediation Effect

Effect	Estimate	Boot SE	BootLLCI	BootULCI	Decision
Indirect Effect	0.335	0.035	0.270	0.408	Significant
Direct Effect	0.378	0.047	0.286	0.471	Significant
Total Effect	0.713	0.039	0.637	0.789	Significant

Figure 1: Mediation Analysis



Objective 3: Analyzing the role of the mediating variable, Perceived Consumer Effectiveness in the relationship between CFM and Consumer Participation in Resale, Repair and Recycling.

The third objective looks at the indirect relationship included in Objective 2. This regression analysis merely provides an answer to the question of whether the Circular Fashion Marketing has an impact on Consumer Participation without identifying how or why this occurs at the psychological level. Thus, mediation analysis is used to consider if Perceived Consumer Effectiveness is an intermediate process variable between CFM and CEP.

The mediational model will be:

Participation is a process that has three distinct stages: Circular Fashion Marketing → Perceived Consumer Effectiveness → Consumer Participation.

In this case the independent variable is Circular Fashion Marketing (CFM), the mediator variable is Perceived Consumer Effectiveness (PCE) and the dependent variable is Consumer Participation (CP).

Path B: Circular Fashion Marketing → Consumers' direct exposure to products/services

The first mediation pathway will analyze whether Circular Fashion Marketing has a significant impact on PCE. The results show a coefficient of $\beta = 0.681$, $t = 16.610$, $p < 0.001$. This shows strong positive correlation between Circular Fashion Marketing and Consumer's self-efficacy.

The result indicates that communicating the environmental benefit of reuse, repair, and recycling to consumers through their marketing may make them more prone and persuaded that their individual efforts can help resolve environmental issues. Thus, circular fashion marketing could have the potential not just to deliver product and service information, but to also enhance each and every feel of individual environmental efficacy among consumers.

Thus, the first mediation condition is met

Through one route (path B), the consumers perceive effective consumption → they participate in consumption.

We now explore the second pathway to determine if PCE has a significant effect beyond the Circular Fashion Marketing. The coefficient is $\beta = 0.492$, with $t = 10.250$ and $p < 0.001$.

The positive link suggests that consumers with a belief that their participation in individual actions has a strong environmental impact or benefit are more prone to participating in resale, repair and recycling activities.

The one that is important theoretically is the relationship between consumers, as circular fashion asks for an active choice after purchasing. The consumer might repair a hole in the garment rather than buying a new one, donate a garment that no longer fits, or recycle garments. However, if consumers feel that these individual decisions have little or no environmental consequences, they may be less willing to do it.

Therefore, there is greater Consumer Participation with an increase in PCE

Path C will take the full impact on consumer engagement of circular fashion marketing into account.

The total effect (c) is the overall impact of Circular Fashion Marketing on Consumer Participation without inserting the mediator into the model.

The total effect is $\beta = 0.713$, $t = 18.282$, $p < 0.001$. This validates the invalid claim of Circular Fashion Marketing having significant positive overall impact on Consumer Participation.

This finding matches with the regression analysis performed under Objective 2. It reveals that a better circular fashion marketing perception drives consumers towards resale and repair/recycling.

Path C': Direct Effect after Introducing the Mediator

However, after incorporating PCE in the model, there is a need to analyze whether Circular Fashion Marketing still has an impact on Consumer Participation.

The direct effect is $\beta = 0.378$, $t = 8.043$, $p < 0.001$

This direct effect still is statistically significant but falls to 0.378 from 0.713 once PCE is added. This decrease is significant in that part of the original relationship between Circular Fashion Marketing and Consumer Participation takes place via a Perceived Consumer Effectiveness.

The mediation is called partial mediation because the direct effect is still big.

The direction of the impact is in the reverse direction starting from the Circular Fashion Marketing (CFM) to PCE and then up to the consumers.

Indirect effect is the key aspect of mediation analysis. Indirect effect is done by multiplying the product of Path A and the product of Path B:

Direct effect = $A - A \times B$ (where B represents the indirect effect)

The indirect effect actually is estimated at 0.335.

From the bootstrap analysis, one obtains a BootLLCI of 0.270 and BootULCI of 0.408. The results show that the 95% confidence interval for the indirect effect does not include the value of zero; thus, the indirect effect is significant.

This serves as clear evidence that PCE especially plays a role in relation to the connection between CFM and Consumer Participation.

One interpretation is that 'Circular Fashion Marketing' in terms of the effect on the consumer can be to arouse awareness of the importance of involving the consumer in resale, repair and recycling to some degree by enhancing their perception that this action brings value to the environment.

Findings of the Study

- Factor analysis of the 384 consumers' responses provided sufficient and clear factor structure for the study. Excellent sampling adequacy was indicated with KMO value of 0.912, and Bartlett's Test of Sphericity also was statistically significant ($\chi^2 = 4386.724$, $df = 276$, $p < 0.001$), which indicated the correlation matrix was appropriate for factor analysis. Five different factors emerged, namely Circular Fashion Marketing, Perceived Consumer Effectiveness, Resale Participation, Repair Participation and Recycling Participation. Unfortunately, these five variables accounted for only 76.633% of the total variance, so it was concluded that they had an appropriate representation of the information of the observed variables. Factor loadings exceeded .70 with the majority of them, which indicated that there was a good association between the items in the questionnaire and the constructs. The results thus validate the measurement items that successfully reflected the four key areas of circular fashion marketing and consumers' participation. The results also point to the need to view resale, repair and recycling on a more unmistakable level in terms of circular participation than as identical behaviours.

- The regression analysis showed that Circular Fashion Marketing had highly positive correlation with Consumer Participation. The results of the model showed that they achieved an R value of 0.724, which means that there is a significant positive relationship between the variables. The achieved model R^2 value of 0.524 indicates that the R^2 value in this model is 52.4%, which gives the authors insight into the actual causes where CFM explained 52.4% of the variations in Consumer Participation. The overall regression model was found to be significant by ANOVA results ($F = 334.216$ and $p < 0.001$). Moreover, Circular Fashion marketing has a statistically significant effect on consumer participation with an impact of 0.724, t value of 18.282 and p value of < 0.001 . This means that consumers are more willing to engage in circular buying and selling when they see greater and more effective communication about circular fashion. It can, therefore, be concluded that the null hypothesis postulated that the Circular Fashion Marketing has no significant effect on Consumer Participation is rejected. The result indicates that marketing communication on circular trend may be very useful to convince consumers to shift from their traditional fashion-consumption habits to much more sustainable behaviors after purchase.

- The result of the mediation analysis revealed that Perceived Consumer Effectiveness is a significant mediator between CFM and Consumer Participation. Circular Fashion Marketing also showed a positive and significant effect on Perceived Consumer Effectiveness ($\beta = 0.681$, $p < 0.001$), suggesting that circular marketing communication that is effective can help empower consumers to believe that they have the power to do their bit for the environment. Perceived Consumer Effectiveness in turn, had a significant effect

on Consumer Participation ($\beta = 0.492$, $p < 0.001$). The overall effect of Circular Fashion Marketing on Consumer Participation was significant ($\beta = 0.713$; $p < 0.001$) and the direct path of Circular Fashion Marketing on Consumer Participation was also significant after incorporating the mediator ($\beta = 0.378$; $p < 0.001$). The indirect effect was equal to .335 and a 95% bootstrap confidence interval (BCI) had a lower bound of .270 and an upper bound of .408. The indirect effect was different from zero, as the CI did not include zero. The results show partial mediation as the direct effect still was significant after the inclusion of Perceived Consumer Effectiveness. In this way, Circular Fashion Marketing works both directly, by directly engaging consumers, and indirectly by enhancing their understanding that individual circular actions have impact.

Overall Findings

These results indicated that the overall results show an important role of Circular Fashion Marketing on consumer involvement in circular fashion. The factor analysis showed that the study constructs were distinct and meaningful, and the positive-influential regression analysis found that Circular Fashion Marketing has a significant impact on the customers' involvement in resale, repair and recycling. More importantly, it was concluded in the mediation analysis that Perceived Consumer Effectiveness mediate the circular marketing's effects on consumer participation. Thus, consumers have more incentive to do circular actions if they are not merely told they can resale, repair or recycle products but possibly imagine that their actions could be of value in contributing to the environmental changes.

Conclusion

It concludes that transition towards a circular fashion economy is not only reliant on the ways that clothing is produced and the business models utilized, but also on consumer engagement. Resale, repair and recycling will involve making conscious choices for consumers to purchase, use, maintain, transfer and dispose of their garments. Results show that Circular Fashion Marketing has a strong potential to promote these behaviors, revealing the crucial importance of marketing for the transition towards a circular fashion consumption.

The study, in addition, also finds that an important psychological mechanism in this relationship is "PCE". People who feel their own action can influence are more likely to have a positive attitude towards circular fashion and are more willing to resale/repair/recycle. The substantial partial mediation indicates that, while marketing initiatives alone are not enough, so are consumers' perceived meaningfulness and effectiveness. Fashion brands, therefore, need to spread a message on the real impact circular actions can have on the environment – actions which include the lengths of usage of their garments, the minimisation of textile waste, the saving of resources and the reduction of the need for new production.

For a fashion brand's management, informative marketing, circular services and effectiveness-communication can be associated to knit the web of circular fashion. Resale platforms, repair programmes, take-back and recycling initiatives should be easy and accessible to consumers and marketing messages should make clear the environmental benefit consumers will achieve by using these services. These strategies can contribute to the shift of the consumer from passive buyer into an active element in the circular mode.

The present study adds to the literature by linking Circular Fashion Marketing, Perceived Consumer Effectiveness and attitudes towards certain CFP behaviour in one empirical context. Results indicate that the success of the circular fashion is as much about making sustainable alternatives available, as it is about building consumer confidence that whatever one does to live in a more sustainable way (whether reselling, repairing, or recycling a garment), can all add up to environmental sustainability.

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