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Critical Individual and Organizational Drivers of Circular Economy Implementation in SMEs in Bangladesh

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Abstract: This study aims to examine the influence of individual and organizational factors on the implementation of circular economy (CE) practices in SMEs in Bangladesh. A non-probability sampling technique is utilized to select a sample of 280 respondents from the textile and leather industries. Data are collected through a survey assessing individual factors such as environmental consciousness and innovation propensity, as well as organizational factors including leadership commitment and training and development programs. A frequency table is used to give the respondents' details, and skewness and kurtosis are conducted to find the data normality. Reliability and validity analyses are conducted to ensure the robustness of the measurement instruments. A correlation matrix is generated to examine the relationships between variables, followed by a multiple regression analysis to test the hypothesized relationships. The preliminary findings indicate a significant correlation between individual and organizational factors and the implementation of CE practices. The multiple regression analysis reveals that both sets of factors contribute significantly to explaining the variance in CE implementation. The results indicate that environmental consciousness, innovation propensity, leadership commitment, and training and development programs emerge as significant predictors of CE implementation within these industries. This study offers valuable insights and sheds light on the role of individual and organizational factors in shaping sustainable practices. The findings contribute to the explanatory literature on CE implementation, providing empirical evidence to inform policymaking and business strategies aimed at promoting sustainability in the SME sector and beyond.

Keywords: circular economy implementation; individual factors; organizational factors; SMEs; sustainability

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1. Introduction

In Bangladesh, small and medium-sized enterprises (SMEs) are essential for economic growth and are significantly contributing to job creation and the nation's GDP [1]. They comprise 90% of industrial units, 80% of industrial employment, and 45% of manufacturing value added, but only contribute 25% to the GDP, which is lower compared to countries like Indonesia (59%), Sri Lanka (52%), and Vietnam (45%) [2]. Despite their critical role, however,

many sectors of SMEs, like textiles, leather, medicine, loom, food, chemical, and rubber, face substantial challenges including capital shortages, limited access to financing, and technological constraints, leading to high failure rates [3,4]. The government of Bangladesh recognizes the importance of SMEs for industrialization and has set a target to increase their GDP contribution to 32% by 2024 [5].

As a developing country, Bangladesh is also steadily advancing in its journey toward digitization, and the potential for implementing circular economy (CE) principles within SMEs is substantial. Many SMEs are beginning to integrate CE practices into their operations. In the textile and apparel sector, for example, SMEs are increasingly adopting waste reduction and recycling measures. The leather industry is also showing progress, with some SMEs embracing green supply chain management and improving waste treatment processes [6]. Additionally, SMEs in the wood sector are working on green production. The growing awareness and initial efforts by SMEs reflect a promising trajectory towards a more sustainable and circular business model in Bangladesh [7].

As the country strives for sustainability [8], there is increasing recognition of the importance of transitioning towards a circular economy (CE) model, which seeks to reduce waste and optimize the efficient use of resources [9]. The transition towards a circular economy (CE) has emerged as a vital strategy for achieving sustainable development in the 21st century. As opposed to the "take, make, dispose" paradigm of the conventional linear economy, the circular economy (CE) seeks to establish closed-loop systems in which resources are used for as long as feasible, extracting maximum value before recovery and regeneration [10]. This model, developed by the Ellen MacArthur Foundation, is particularly relevant in the context of increasing environmental degradation, resource depletion, and economic instability [11,12].

The implementation of CE practices in SMEs can offer numerous benefits, including cost savings, a reduced environmental footprint, and enhanced competitiveness [13]. For instance, by adopting practices such as recycling, remanufacturing, and sustainable product design, SMEs can limit waste and reduce their reliance on supplies of raw materials [14]. Despite these potential benefits, slow progress is being made by SMEs in adopting a circular economy, which are often characterized as lacking an awareness and understanding of environmental issues [15], lacking an innovation mindset [16], showing weak leadership commitment [17], and lacking the necessary skills and knowledge [18,19]. So, understanding the drivers of circular economy implementation at both the individual and organizational levels is essential for overcoming these challenges and promoting sustainable practices among SMEs.

However, individual drivers for the implementation of CE practices include the awareness, attitudes, and personal values of workers, managers, and business owners. These drivers are crucial as they influence decision-making processes and the prioritization of sustainability initiatives within organizations. On the other hand, organizational drivers refer to the internal factors within a company that can either enable or hinder the implementation of CE practices. These include leadership commitment, the availability of training and development programs, and the extent to which sustainability is integrated into the company's strategy and operations.

The objective of this study is to investigate the impact of individual factors (environmental consciousness and innovation propensity) and organizational factors (leadership commitment and training and development programs) on the implementation of circular economy practices in SMEs in Bangladesh. The main research question was: What are the individual and organizational drivers that impact the successful implementation of circular economy practices in SMEs in Bangladesh?

By attaining the study objective, this study seeks to fill a gap in the existing literature and provide valuable insights for policymakers, business leaders, and other stakeholders. This study also promotes a paradigm shift in the way SMEs operate. Furthermore, the study's outcomes align with global sustainability agendas like the United Nations Sustainable Development Goals (SDGs), to which Bangladesh is a signatory. By embracing

circularity, SMEs can contribute to achieving multiple SDGs, including SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 8 (Decent Work and Economic Growth). This study, therefore, holds the potential to advance national and international efforts towards circular business development, positioning Bangladesh as a leader in circular economy innovation and practice.

This work comprises six sections, including the introduction. Section 2 reviews the literature and develops the study model. Section 3 outlines the study methods used for study design, approach, sampling technique, survey instruments, data collection and analysis. Section 4 presents the findings, while Section 5 discusses their implications. Section 6 concludes with a findings' summary, limitations, and proposing future research.

2. Literature Review

2.1. Environmental Consciousness and Circular Economy Implementation

The CE is a strategy designed to tackle pressing issues including environmental degradation and resource scarcity [20]. While it is often suggested that the CE can contribute positively to environmental growth by enhancing natural capital and ecosystems, this potential is frequently implied rather than explicitly demonstrated [21]. The critical role of environmental consciousness in this context is evident, as it forms the foundation for advancing sustainable development amidst escalating environmental challenges. As explored in a book edited by Gardner and Stern [22] in 1996, environmental consciousness highlights the importance of individual and collective awareness, attitudes, and behaviors in driving environmental sustainability. This consciousness of environmental issues and consumers' willingness to purchase green products can drive the application of CE approaches [23]. Environmental knowledge evolves in two forms: (1) consumers must be educated to comprehend the influence of a product on the environment, and (2) consumer awareness that the product itself is created in an environmentally responsible way [24]. As individuals and organizations become more environmentally conscious, they are more likely to adopt sustainable practices aligned with CE principles [25]. Indeed, incorporating environmental consciousness into the circular economy practices model enhances the model's explanatory capacity [26]. So, consumption patterns that reflect increased environmental consciousness among modern consumers will result in the circular economy becoming more prevalent in the business segment [27]. Thus, the following hypothesis is proposed:

H1: *Environmental consciousness positively influences the execution of CE practices.*

2.2. Innovation Propensity and Circular Economy Implementation

Innovation propensity, defined as the tendency or inclination of firms to pursue and adopt new ideas, processes, and products, plays a crucial role in the implementation of circular economy (CE) practices. The integration of innovative strategies within business models is essential for shifting from a traditional linear economy to a circular one, where resource efficiency, waste minimization, and sustainability are paramount. Geissdoerfer et al. substantiate this by arguing that innovation is a driving force behind the successful use of CE principles [28]. They argue that without significant innovation in product design, process engineering, and business models, the transition to a CE would be severely hampered. Innovations are crucial for developing products that are easier to recycle and have a longer lifespan. Lüdeke-Freund et al. explored how companies can innovate their business models to support circular economy principles [29]. They suggest that organizations must rethink their value creation mechanisms, shifting from selling products to offering services or adopting product as a service models, which can lead to significant resource efficiencies and waste reduction. This shift is supported by numerous case studies that illustrate the successful integration of innovation in circular economy practices. For instance, Stahel provided examples of companies that have adopted innovative approaches to extend product lifecycles and enhance resource efficiency [30]. The study also captures the practical applications of innovation in achieving circular economy objectives and demonstrates

the tangible benefits of such strategies. Innovation propensity drives the development of new solutions, fosters collaboration, and enables the adoption of a circular model, contributing to more sustainable and efficient economic systems [31]. As a result, companies that successfully implement circular-oriented innovations can differentiate themselves in the market by offering sustainable and eco-friendly products, which can drive a broader adoption of circular economy practices [32–34]. This differentiation is further reinforced by a higher propensity for innovation in adopting new materials and technologies, and circular design principles will significantly reduce the demand for virgin resources and energy consumption, thereby enhancing the implementation of the circular economy [35]. Therefore, the following hypothesis is put forward:

H2: *Innovation propensity is causally linked to CE practices.*

2.3. Leadership Commitment and Circular Economy Implementation

Leadership plays a crucial role in the effective execution of the CE, with a need for different leadership approaches compared to the linear economy [36]. Leadership is essential for the successful implementation of the CE [37]. It involves fostering partnerships across different sectors, industries, and even competitors to create a unified approach to resource management and sustainability. By promoting open communication, shared goals, and mutual trust, leaders can facilitate the exchange of ideas, technologies, and best practices necessary for a CE. Cannon et al. also underline that the leader must adopt a scientific mindset and act accordingly in the CE model, rather than continuing to prioritize achieving results at all costs [38]. To put the CE into action, strategic leaders with strong decision-making skills are needed [39–41]. According to the growing body of research, top management and leadership commitment are generally important success criteria for SMEs looking to implement the CE [42]. Additionally, leaders positively influence the adoption of circular economy practices in small and medium-sized enterprises (SMEs) by fostering an environment of power-sharing, delegation, and collaborative decision-making [43]. Such leadership practices are vital, as leadership commitment to green initiatives significantly influences the implementation of circular economy practices [44]. The above reviews showcase the leadership commitment associated with circular economy implementation. However, very little research has looked closely at how leadership affects this implementation [45,46]. Hence, a hypothesis is developed and given below:

H3: *Leadership commitment leads to the implementation of CE.*

2.4. Training and Development Programs and Circular Economy Implementation

An organization's capacity for knowledge management is a crucial function that fosters the eco-efficiency and collective green intelligence needed to generate green goods and services in marketplaces that are both competitive and sustainable [47]. This capacity is enhanced by employee skills and competencies, which are essential tangible resources for achieving corporate efficiency and sustaining a competitive edge [48]. According to Quinn, Anderson, and Finkelstein, professional knowledge is categorized into four levels: knowing what to do, knowing how to do it, understanding why it is done, and caring about why it is done [49]. These characteristics enable organizations to implement sustainability-focused innovation like circular economy practices [50]. Training initiatives are designed to improve the skills and competencies required for circular economy implementation [51]. By enhancing workforce capabilities, organizations can effectively identify the opportunities and overcome the challenges associated with CE practices. Training and development programs provide access to knowledge on the circular economy and build the capacity of stakeholders to turn circular economy principles into a practical reality. However, the effectiveness of circular economy implementation in industrial companies is hindered by a lack of knowledge in key green strategies, indicating that tailored training programs are essential to equip companies with the necessary understanding and skills to successfully

adopt sustainable practices [52]. This gap underscores the need for training and development programs to enhance workforce knowledge and skills that promote circular economy practices. Given that limited empirical evidence exists on circular business model implementation within SMEs, it becomes clear that a novel and practical training and support program is essential to guide the future design of circular economy initiatives specifically for SMEs [53]. Accordingly, a hypothesis is formulated below in light of this review:

H4: *Training and development programs enhance CE practices*.

After these reviews, this study develops a conceptual framework depicted in Figure 1, where four independent variables—environmental consciousness (EC), innovation propensity (IP), leadership commitment (LC), and training and development programs (TDP)—are the predictors of the dependent variable, circular economy implementation (CEI). The theoretical lens of the Resource-Based View (RBV) supports the framework by positing that EC, IP, LC, and TDP are crucial organizational resources and capabilities. According to the RBV, these elements are vital for achieving a competitive advantage in sustainability by enhancing a firm's ability to effectively implement CE strategies and practices [54]. Although the literature on CE is indeed expanding, research using the RBV to particularly address individual and organizational factors affecting CE implementation remains underdeveloped. Despite the growing interest in CE and its benefits, the application of RBV to explore how individual and organizational resources and capabilities influence CEI is still limited. This gap presents an opportunity to examine how various factors influence the successful implementation of CE practices from an RBV perspective.

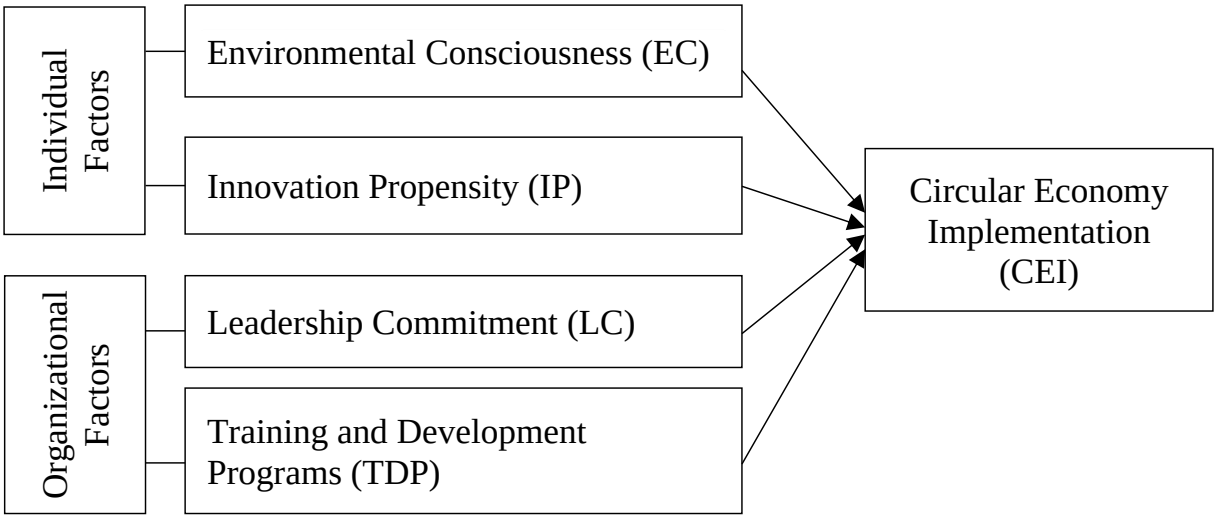

Figure 1. Conceptual model.

3. Materials and Methods

The research design utilized a quantitative and cross-sectional survey strategy with a deductive reasoning methodology to investigate the findings within SMEs. This design allows for a snapshot view of variables at a specific time, facilitating the analysis of relationships between predictors and outcomes. The deductive approach is used to test existing theories and hypotheses, enhancing the reliability and validity of the results [55,56]. The study involved participants from small and medium-sized enterprises (SMEs) in Bangladesh, specifically focusing on the textile and leather industry sector. The "10-times rule" for sample size adequacy applies under conditions of strong effect sizes and high measurement reliability [57]. A convenience sampling technique was used to select 280 participants, of whom 212 (75.7%) were deemed valid.

The research instruments included five-point Likert scales to measure EC, IP, LC, TDP, and CEI. The survey questionnaire consisted of two parts: demographic information (Part

One) and measurements of the study variables (Part Two). The number of items used in the questionnaire for Part Two is provided in Table 1. The data analysis involved a sequential process using IBM SPSS v. 22 software. Initially, frequency tables were utilized for a demographic analysis, providing an overview of the sample's characteristics. Subsequently, descriptive statistics—mean, standard deviation, skewness, and kurtosis—were computed to analyze the distribution and central tendency of the data.

Table 1. Description of research instruments (see Appendix A).

EC	5 items	Mishal et al. (2017) [58]
IP	6 items	Chen et al. (2006) and Chen et al. (2014) [59,60]
LC	5 items	Chowdhury et al. (2022) [61]
TDP	6 items	Janssens et al. (2021) [62]
CEI	6 items pertaining to recycle, reduce, and reuse	de Souza Junior et al. (2020), Djoutsa Wamba et al. (2020), Pini et al. (2019) [63–65]

Following this, the Cronbach's Alpha and factor loadings were computed to assess the internal consistency and the construct validity of the scales measuring EC, IP, LC, TDP, and CEI. The Pearson correlation coefficients were then analyzed to examine the relationships among variables. A multiple regression analysis was conducted to discover the predictive power of the predictor variables (EC, IP, LC, TDP) on the criterion variable (CEI), where ANOVA was employed to determine the statistical significance of the regression model. Coefficients of regression were examined to understand the magnitude and direction of the relationships within the regression model. Lastly, the model summary, including R, R Square, Adjusted R Square, and Standard Error of the Estimate, was examined to evaluate the overall fit of the regression model.

R indicates the strength of the relationship between the independent and dependent variables, while R Square measures the proportion of variance in the dependent variable explained by the model. Adjusted R Square adjusts this measure for the number of predictors, providing a more accurate reflection of model fit, particularly when comparing models with different numbers of predictors. The Standard Error of the Estimate provides insight into the average distance between the observed values and the model's predicted values, helping to estimate the precision of the predictions. The findings were reported through the results presented in tables.

The multiple regression model used in this study is designed to examine the relationship between the four key independent factors, EC, IP, LC, and TDP, and the dependent factor, CEI. The model is expressed as

$$\mathrm{CEI}_{it} = \alpha_0 + \beta_1 \mathrm{EC}_{it} + \beta_2 \mathrm{IP}_{it} + \beta_3 \mathrm{LC}_{it} + \beta_4 \mathrm{TDP}_{it} + \epsilon_{it} \quad (1)$$

Here, the coefficients β_1 to β_4 represent the impact of each independent variable on CEI, with α_0 being the constant term, and ϵ_{it} representing the error term.

4. Results

4.1. Demographic Analysis

The demographic characteristics of the respondents are summarized in Table 2. This analysis includes data on gender, marital status, education level, age, and income level. The majority of the respondents are male, comprising nearly two-thirds of the sample. This indicates a potential gender imbalance in the sample, with males being the predominant group. A significant majority of the respondents are married, accounting for over 80% of the sample. This suggests that marital status might play an important role in this study, given the high proportion of married individuals. The educational attainment of the respondents is fairly evenly split between those who have completed SSC and HSC, with each group representing roughly 43% of the sample. A smaller portion of the respondents (13.2%) have

education levels below SSC. This distribution indicates a moderately educated sample, with most respondents having at least secondary education. The largest age group among the respondents is 31–35 years, making up nearly half of the sample. This is followed by those aged 36–40 years (25.5%). Younger age groups (25 years and below, and 26–30 years) and the older age group (41 years and above) are less represented. This suggests that the sample is predominantly middle-aged adults. More than half of the respondents have an income level of 8000 Taka and below, indicating a lower-income demographic. A quarter of the respondents fall into the 8000–15,000 Taka range. The remaining respondents, with incomes between 16,000–25,000 Taka and above 25,000 Taka, represent smaller portions of the sample. This distribution highlights that the majority of the respondents are in the lower-income bracket.

Table 2. Demographic profile.

Category	Subcategory	Frequency	Percent
Gender	Male	135	63.7
	Female	77	36.3
Marital Status	Married	173	81.6
	Unmarried	22	10.4
	Divorce	8	3.8
	Widowed	9	4.2
Education Level	Below SSC	28	13.2
	SSC	91	42.9
	HSC	93	43.9
Age	25 Years and Below	19	9.0
	26–30 Years	21	9.9
	31–35 Years	102	48.1
	36–40 Years	54	25.5
	41 Years and Above	16	7.5
Income Level	8000 Taka and Below	113	53.3
	8000–15,000 Taka	53	25
	16,000–25,000 Taka	35	16.5
	Above 25,000 Taka	11	5.2

4.2. Descriptive Analysis

Table 3 presents the descriptive statistics for five variables: EC, IP, LC, TDP, and CEI. Each variable has been measured on a scale, with the following statistics reported: N (sample size), mean, standard deviation (Std. Deviation), skewness, and kurtosis.

The descriptive statistics indicate that respondents generally provided positive ratings for all variables, with means ranging from 3.4858 (EC) to 3.8098 (TDP). The standard deviations suggest moderate to low variability, with TDP showing the most consistency in responses. The skewness and kurtosis values are close to zero for most variables, falling within the range of ± 1 [66]. So, the data distributions are normal.

Table 3. Descriptive Statistics.

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
EC	212	3.4858	0.79809	−0.161	0.167	−0.093	0.333
IP	212	3.5752	0.68273	−0.043	0.167	0.103	0.333
LC	212	3.6066	0.73488	−0.312	0.167	−0.009	0.333
TDP	212	3.8098	0.59234	0.050	0.167	−0.497	0.333
CEI	212	3.6483	0.68244	−0.074	0.167	−0.227	0.333
Valid N (listwise)	212						

4.3. Reliability and Validity Measures

The Cronbach's Alpha values for the scales reveal strong internal reliability, with all values exceeding the commonly accepted threshold of 0.7 [67]. The EC scale demonstrates an Alpha of 0.844, while the IP scale exhibits a value of 0.781. Similarly, the LC scale shows an Alpha of 0.830, and the TDP scale has an Alpha value of 0.800. Lastly, the CEI scale achieves a reliability coefficient of 0.805. These values indicate good reliability, suggesting that the items within each scale consistently measure their respective constructs. The overall Cronbach's Alpha of 0.938 for all 28 items further underscores the excellent reliability of the combined scales, ensuring that the measurements are dependable for interpreting the study's findings. According to Hair et al. [68], factor loadings of 0.5 or higher are considered practically significant. All items have factor loadings above the threshold value of 0.5, demonstrating strong correlations with their respective constructs. This indicates that the items are valid measures of the underlying factors (see Table 4).

Table 4. Reliability and validity statistics.

	Factor Loadings		Cronbach's Alpha
EC	EC1	0.811	0.844
	EC2	0.812	
	EC3	0.813	
	EC4	0.784	
	EC5	0.702	
IP	IP1	0.770	0.781
	IP2	0.729	
	IP3	0.656	
	IP4	0.679	
	IP5	0.621	
	IP6	0.665	
LC	LC1	0.693	0.830
	LC2	0.835	
	LC3	0.790	
	LC4	0.819	
	LC5	0.719	

Table 4. *Cont.*

		Factor Loadings	Cronbach's Alpha
TDP	TDP1	0.576	0.800
	TDP2	0.716	
	TDP3	0.658	
	TDP4	0.682	
	TDP5	0.810	
	TDP6	0.773	
CEI	CEI1	0.702	0.805
	CEI2	0.673	
	CEI3	0.711	
	CEI4	0.699	
	CEI5	0.753	
	CEI6	0.752	
Overall			0.938

4.4. Correlation Analysis

Table 5 presents the coefficients of correlation between EC, IP, LC, TDP, and CEI. From the table, significant positive correlations are observed between EC and IP (r = 0.733), EC and LC (r = 0.595), EC and TDP (r = 0.548), and EC and CEI (r = 0.687). Similarly, IP exhibits significant positive correlations with LC (r = 0.610), TDP (r = 0.569), and CEI (r = 0.672). LC also shows significant positive correlations with TDP (r = 0.602) and CEI (r = 0.661). Furthermore, TDP displays a significant positive correlation with CEI (r = 0.584).

Table 5. Coefficients of correlation.

		EC	IP	LC	TDP	CEI
EC	Pearson Correlation	1	0.733 **	0.595 **	0.548 **	0.687 **
	Sig. (2-tailed)		0.000	0.000	0.000	0.000
	N	212	212	212	212	212
IP	Pearson Correlation	0.733 **	1	0.610 **	0.569 **	0.672 **
	Sig. (2-tailed)	0.000		0.000	0.000	0.000
	N	212	212	212	212	212
LC	Pearson Correlation	0.595 **	0.610 **	1	0.602 **	0.661 **
	Sig. (2-tailed)	0.000	0.000		0.000	0.000
	N	212	212	212	212	212
TDP	Pearson Correlation	0.548 **	0.569 **	0.602 **	1	0.584 **
	Sig. (2-tailed)	0.000	0.000	0.000		0.000
	N	212	212	212	212	212
CEI	Pearson Correlation	0.687 **	0.672 **	0.661 **	0.584 **	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	212	212	212	212	212

**. Correlation is significant at the 0.01 level (2-tailed).

4.5. Regression Analysis

The ANOVA test examines the statistical significance of the regression model in predicting the variation in the dependent variable, CEI, based on the independent variables

EC, IP, LC, and TDP. The regression model's goodness-of-fit is evaluated by comparing the sum of squares for the regression (59.550) to the sum of squares for the residual (38.717). The ratio of these values results in an F-statistic of 79.595. Since the *p*-value associated with the F-statistic is less than the significance level ($\alpha = 0.05$), it is concluded that the regression model fits the data significantly (see Table 6).

Table 6. ANOVA Test.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.550	4	14.887	79.595	0.000
	Residual	38.717	207	0.187		
	Total	98.267	211			

The regression coefficients in Table 7 provide the results of a multiple regression analysis examining the relationship between four predictor variables, EC, IP, LC, and TDP, and the dependent variable, CEI. The intercept term indicates that even with zero values for all predictors, there is still a significant positive effect on CEI (B = 0.493, $p = 0.016$). Regarding the predictor variables, significant positive relationships are found between EC and CEI (B = 0.251, $p < 0.001$), IP and CEI (B = 0.210, $p = 0.003$), LC and CEI (B = 0.256, $p < 0.001$), and TDP and CEI (B = 0.159, $p = 0.018$). These results support the acceptance of all four hypotheses, indicating that all four predictors significantly contribute to the prediction of CEI. Precisely, higher levels of EC, IP, LC, and TDP are associated with a greater CEI.

Table 7. Regression coefficients.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	0.493	0.203		20.427	0.016	0.092	0.893
	EC	0.251	0.058	0.293	40.353	0.000	0.137	0.365
	IP	0.210	0.069	0.210	30.054	0.003	0.075	0.346
	LC	0.256	0.057	0.275	40.503	0.000	0.144	0.367
	TDP	0.159	0.067	0.138	20.376	0.018	0.027	0.292

Finally, the model summary is displayed in Table 8, where the coefficient of multiple correlation (R) states a moderately strong positive correlation (R = 0.778) between the predictors and the criterion variable. Approximately 60.6% of the variance in the CEI is accounted for by the predictor variables, as indicated by the coefficient of determination (R Square = 0.606). The Adjusted R Square, which accounts for the number of predictors, slightly diminishes to 0.598. These findings collectively suggest that the predictor variables effectively explain a notable portion of the variability in the criterion variable CEI.

Table 8. Model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.778	0.606	0.598	0.43248

5. Discussion

The results indicate a significant positive relationship between environmental consciousness (EC) and circular economy implementation (CEI). This finding aligns with

previous research indicating that environmental awareness is a critical driver of sustainable practices within organizations [58]. Innovation propensity (IP) was found to have a significant positive impact on circular economy implementation (CEI). Workers who are more inclined towards innovation are more likely to adopt CE practices. This supports the notion that a propensity for innovation encourages the creation and implementation of new solutions that advance sustainability [59,69–72]. A significant positive relationship was also observed between leadership commitment (LC) and circular economy implementation (CEI). Strong leadership commitment to sustainability goals appears to be crucial for the successful practice of CE practices. Leaders who are committed to environmental goals can inspire and motivate workers to follow suit, thereby embedding sustainability into the organizational culture [73,74]. Training and development programs (TDPs) were shown to have a significant positive influence on circular economy implementation (CEI). Effective training programs that educate workers about the benefits and practices of a circular economy can increase their ability and willingness to participate in sustainable practices. This finding is consistent with studies that highlight the importance of continuous learning and development in nurturing sustainable organizational practices [75]. Inversely, training has not been uncovered to have any positive benefits on the implementation of the circular economy [76].

The implications of these findings are particularly relevant for SMEs in the textile and leather sector. To enhance CE practices, the textile and leather industries should concentrate on environmental consciousness, innovation propensity, leadership commitment, and training and development programs. These factors should also be integrated into organizational policies. Managers should embed environmental awareness into strategic planning to align operations with CE principles, which can enhance brand reputation and drive operational improvement. They should promote innovation by investing in new technologies and processes, encouraging experimentation and valuing new ideas. This approach will help differentiate the company in the market and support its long-term sustainability. Also, supervisors must articulate a clear vision for CE practices, motivate employees, and form strategic partnerships to propel implementation. Additionally, the firm should organize training and development programs to offer employees with the technical skills needed for new processes and technologies, boost their job satisfaction and retention, and inspire the successful execution of circular economy efforts. These initiatives have the potential to strengthen these industries in Bangladesh by empowering SME workers and developing a more sustainable business model.

From a theoretical standpoint, this study extends the Resource-Based View (RBV) by applying it to the implementation of CE practices, specifically in the textile and leather sectors of SMEs. This research illustrates how the four key factors—environmental consciousness, innovation propensity, leadership commitment, and training and development—collectively contribute to the broader competitive positioning and sustainability of SMEs. This study thus fills a gap in the literature by providing empirical evidence as to how individual and organizational factors, guided by the RBV, influence the use of a circular business model in emerging economies.

6. Conclusions

To address the research question, the study identified four key drivers for circular economy (CE) implementation: EC, IP, LC, and TDP. The findings highlight the importance of both individual and organizational factors in adopting sustainable business practices. Among these, leadership commitment and environmental consciousness were found to be the most impactful. This study can facilitate positive social change by creating a more sustainable and responsible business environment. Ultimately, this change will benefit society by reducing environmental impact and upholding sustainable development.

Although this study provides valuable insights, it is important to acknowledge several limitations. The reliance on self-reported data may affect the generalizability of the findings, and the use of convenience sampling could introduce bias. Additionally, the cross-sectional

design limits the ability to examine long-term impacts. Future research could address these limitations by collecting data from multiple sources, using random sampling technique, and adopting a longitudinal study design to explore dynamics over time. Scholars should also investigate complex circular practices and their impact on business performance.

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Appendix A. Survey Instrument

Environmental Consciousness (EC)

1. We are approaching the limit of the number of people the earth can support.
2. The earth has plenty of natural resources if we just learn to develop them.
3. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
4. Human ingenuity will ensure that we do not make the earth unliveable.
5. Humans will eventually learn enough about how nature works to be able to control it.

Innovation Propensity (IP)

1. I am willing to choose materials that produce the least amount of pollution when developing or designing products.
2. I am willing to select materials that consume the least amount of energy and resources when developing or designing products.
3. I prefer to use the minimum amount of materials necessary when developing or designing products.
4. I carefully consider whether the product is easy to recycle, reuse, and decompose during product development or design.
5. I intend to improve existing green innovations through simple modifications to current green products, services, or processes.
6. I aim to adjust existing green innovations through slight changes to current green products, services, or processes.

Leadership Commitment (LC)

1. My manager takes risks to implement circular economy practices, even without senior management's full support.
2. My manager holds us accountable for integrating circular economy principles into our work.
3. My supervisor promotes circular economy practices through formal and informal communication.
4. My supervisor encourages creative thinking for quick decision-making in circular economy strategies.

5. Management supports the introduction of innovative practices aligned with circular economy principles.

Training and Development Programs (TDP)

1. I have knowledge related to sustainable materials.
2. Training provides knowledge on material choices and efficient use of materials.
3. Training covers the principles of a circular economy.
4. I have skills related to product design.
5. I have knowledge and skills in energy efficiency and renewable energy.
6. I am able to implement a product or an idea.

Circular Economy Implementation (CEI)

1. Our firm recycles waste products from consumers.
2. Our firm reprocesses the waste products recovered.
3. Our firm is committed to reducing energy consumption.
4. Our firm is committed to reducing the consumption of raw materials.
5. Our firm reuses raw materials to produce similar products.
6. Our firm reuses production scraps.

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