Direct and Indirect Effects of Perceived Environmental Sustainability with Customer Loyalty: A Case Study of Kochi Metro Rail Transport System

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Abstract: *Now a days, consumers are more aware of the environmental sustainability initiatives of business organizations and they expect the firms to be more socially and environmentally sustainable. There is a theoretical gap between current studies that examine how mass rapid transit systems' environmental sustainability initiatives affect the loyalty of their passengers. Thus, using the antecedents of customer loyalty in the Kochi Metro Rail Transport System, this study examined the impact of customers' perceptions of environmental sustainability initiatives. Data were collected from 380 commuters who are using Kochi Metro as their transportation mode. Structural Equation Modelling was used to test the relationship. The result shows that the environmental sustainability initiatives of Kochi Metro Significantly relates to customer loyalty. The relationship between perceived environmental sustainability initiatives and customer loyalty could be both direct and indirect through customer identification. The result shows that while environmental sustainability has a direct positive impact on customer loyalty, customer identification also contributes, though to a lesser extent, to strengthening this relationship. The study helps to understand how environmental sustainability can serve as a powerful marketing tool for transportation corporations.*

Keywords**:** *Customer Company Identification, Customer Loyalty, Environment Sustainability, Mass Rapid Transit, Social Sustainability.*

Introduction

Globally, people are becoming more and more conscious of environmental degradation and its detrimental impacts. The entire world has united to work toward environmental protection. Now a day's business world is giving more significance to sustainability. Many companies realize the impact of sustainability on their competitive position. Over the last decade, the term sustainability has received considerable attention from both academics and practitioners (Mertcan Tascioglu 2014). Environmental sustainability is a crucial concept in today's world, as it pertains to the preservation of natural resources and the protection of the environment for future

generations. It encompasses a wide range of practices, policies, and initiatives aimed at reducing human impact on the planet and ensuring that our activities do not compromise the ability of future generations to meet their own needs. The significance of maintaining a healthy environment has received a lot of attention in the business sector in recent decades, and customers choose businesses that practice environmental sustainability and look for eco-friendly goods and services. Businesses can gain a competitive advantage by utilising consumers' growing awareness of the environmental impact of their consumption habits by providing them with eco-friendly goods, services, or brands. The managers are examining the environmental activities of their rivals since knowing how to maintain a sustainable environment is just as important as following up with their rivals' marketing, development, and financial status. Stronger brand and price power, more operational efficiency, more effective use of resources, increased customer loyalty, improved market entry, and more possible revenue streams are some possible effects of following sustainability initiatives (STREIMIKIENE et al.2016). Previous studies have shown that Companies that adopt, implement, and communicate appropriate sustainability policies are better able to attract and retain long-term relationships with their customers and other key stakeholder categories. (Ovidiu-Ioan Moisescu 2018).

The environment is significantly impacted by the transport industry, making its role in environmental sustainability crucial. Greenhouse gas emissions, especially carbon dioxide (CO2), are largely contributed by transportation. Additionally, vehicles release pollutants such as nitrogen oxides (NOX) and particulate matter (PM), which harm air quality and human health. Various initiatives in environmental sustainability are implemented by the transport sector to protect the environment from different types of pollution. These initiatives not only benefit the environment but also have the potential to enhance customer loyalty by aligning with consumer values, improving brand reputation, setting businesses apart in the market, promoting engagement and transparency, facilitating long-term relationship building, and influencing purchasing decisions. The term 'sustainable transport' lacks a universally agreed-upon definition. Environmentally sustainable transport (EST) refers to applying environmental sustainability principles to the transport sector or its components (Robert Foulard campnrik Gudm Edmundson,2010). Companies that integrate sustainability into their operations and effectively communicate their efforts can establish loyal customer relationships built on mutual environmental values and trust. Starting from this assumption, this paper investigates the direct and indirect effect of customer-based perceptual environment sustainability on customer loyalty towards Kochi Metro Rail Transport System. Likewise, this study contributes to the body of literature by examining how passenger loyalty is impacted by customer-company identification (CID). Examining how CID mediates the relationship between customer loyalty and perceived environmental sustainability in the transportation sector is another goal of this study.

Review of Literature

Environment Sustainability

Sustainability issues arise when there is a significant or irreversible loss of valued aspects or characteristics of the environment. Initiatives focused on environmental sustainability involve efforts to reduce the consumption of natural resources, promote a 'recycle everything/buy recycled' approach, utilize renewable resources instead of depletable ones, restructure production processes and products to eliminate the formation of harmful substances, and safeguard and rehabilitate natural habitats and environments cherished for their habitability or aesthetic appeal (Philip Sutton, 2004). Environmental sustainability refers to "the capacity to preserve valued aspects or characteristics of the physical environment".

Environmental sustainability can be described as a state of equilibrium, adaptability, and interdependence that permits human society to meet its needs without going beyond the ability of the ecosystems that support it to continue generating the services to meet those needs nor by our actions diminishing biological diversity (John Morelli, 2011). In this paper, we conceptualise customer-based perceptual corporate environment sustainability as the extent to which commuters of Kochi Metro perceive its efforts and commitments towards environmental responsibility in its business operations and interactions with stakeholders.

Customer Loyalty (CL)

One of the definitions which have got worldwide acceptance being provided by Jacoby and Chesnut (1978). According to them, customer loyalty as a "deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behaviour.". Customer loyalty can be defined as a persistent and positive attitude about a product. Marketing definition of loyalty covers two aspects, behavioural aspect and attitudinal aspect. Behavioural loyalty refers to the purchasing behaviour of consumers by preferring a specific brand over others on the basis of their previous experiences (Chaudhuri & Holbrook, 2001). Attitudinal loyalty is the emotional attachment to a specific brand which has significant influence on their purchase behaviour (Dick & Basu, 1994). Faridah Ishak & Noor Hasmini Abd. Ghani (2013) defined loyalty as consistent repurchase of a brand resulting from positive affinity of consumers towards the brand or the product. Key predictors of customer loyalty include image, perceived quality, value, satisfaction, emotion, trust, commitment, switching cost etc. (R. Agrawal et al 2012), Nyadzayo, M. W., & Khajehzadeh, S. (2016), Pan, Y.et al.(2012).

Customer Identification with the company (CID)

A customer will develop an emotional bond with a product or service when it fulfils their expectations. Company-customer identification refers to the psychological bond or emotional attachment that a consumer has to a business or brand. Customers will sense a strong C-C I dentification if they identify with or align with the company's identity, values, and image. Customer identification is more than just being happy with products or services; it's a deeper sense of belonging and brand loyalty. Consumer identification is affected by a variety of factors, including the company's values, CSR initiatives, brand image, and customer experiences. Businesses usually strive to establish strong customer identification through effective branding, marketing strategies, and customer engagement activities in order to foster a sense of connection and loyalty within their customers. Liu et al. (2010) defined C-C identification as the degree to which consumers feel a sense of connection to a company and the degree to which aspects of the perceived organizational identity are self-referential and self-defining for them. The strongest customer-business relationships, according to Bhattacharya, C. B., & Sen, S. (2003), are predicated on customers' identification with the organization that helps them satisfy one or more self-definitional needs.

Environmental sustainability and customer loyalty

A greater level of economic and environmental sustainability has been associated to higher levels of customer loyalty, as noted by Frempong et al. (2022). Panda et al. (2020) found that customers' altruism is positively influenced by sustainability awareness; customers' altruism also positively affects purchase intention, loyalty, and evangelism for green brands; purchase intention positively influences loyalty and evangelism for green brands; and loyalty positively impacts evangelism for green brands. The outcomes of the study conducted by Ovidiu-Ioan Moisescu and Oana-Adriana Gică (2020) show that customer loyalty is positively influenced by perceived company social and

environmental responsibility. The study discovered that although perceived social and environmental responsibility has a negligible direct impact on customer loyalty, customer satisfaction and customer-company identity mediate the majority of the indirect effect. Patricia Martínez (2014) did a study that looks at the origins of green loyalty in the hospitality sector from a green marketing perspective. As a way to investigate the relationships between green trust, green satisfaction, green loyalty, and green overall image, the research proposes a hierarchy of effects model. The findings of the research demonstrate that a greener public perception directly has a positive direct impact on green trust, green satisfaction, and green loyalty. Green trust and green satisfaction have positive effects on green loyalty. Green trust also influences green satisfaction positively. According to Ruiqi Chang et al. (2024), there is a strong correlation between perceived value, green practices, service quality, and environmental sensitivity and consumers' satisfaction with eco-friendly hotel services. The study's findings indicate that tourists are more satisfied when eco-friendly hotels implement green practices. As a result, by offering eco-friendly hotel services, hotels that consistently use sustainable practices can raise customer satisfaction. According to Taryn Renatta De Mendonca and Yan Zhou (2019), a company's environmental performance indicates how well its environmental management initiatives are working. By enhancing their environmental performance, businesses can increase customer confidence in their environmental management initiatives. As expectations are fulfilled and perceptions of value are raised, this confidence will lead to increased identification with and desire for the products and services of businesses. Researchers Rashed A. Karim and Dr. Karim Rabiu (2024) looked into the connections between customer loyalty, customer happiness, and sustainability. The study results show that, Economic, social, and environmental sustainability favourably effect firm image, customer happiness, and customer loyalty. According to Roman Asatryan and Emmanuel Selase Asamoah (2014), companies in the airline sector stand to gain a great deal from their involvement in CSR initiatives. According to them, airlines firms that successfully position themselves by engaging and projecting their economic social and environmental sustainability initiatives would gain competitive advantage. Customer loyalty and CSR participation are positively correlated, according to this study.

Environment sustainability and Customer identification (CID)

Although customer identification is a well-known and sensitive trait, it has not been used extensively in research on perceived environmental sustainability. A positive relationship between perceived environmental sustainability and CCI has been established by prior research (Ali Raza et al., 2000; Niki Glaveli, 2021; P Martínez & IR Del Bosque, 2013; May et al., 2021). A company that has an excellent reputation for being ecologically and socially conscious may be able to assist in meeting the demands of its customers in terms of self-definition, which will enhance their sense of identification with the company. Sustainability efforts by businesses can enhance customers' perceptions of the values of the company.

Customer identification and customer loyalty

A study conducted by Yang et al. (2017) found a positive and significant relationship between Customer Identification and customer loyalty in tourism sector. Wolter et al (2017) find that customer identification is best at creating deep attitudinal loyalty. So many studies have confirmed the relationship between C-C Identification and customer loyalty (Shirazi, A.et al 2013, Ashraf, S et al. (2017), Rather, R. A. (2018), Shin, M (2020), García de Leaniz, P. M., & Rodríguez Del Bosque Rodríguez, I. (2015)).

Now a days, consumers are more aware of the environmental sustainability initiatives of business organizations and they expect the firms to be more socially and environmentally

sustainable. From the theoretical perspective, there is a gap among recent studies that concentrate on how passenger loyalty is affected by environmental sustainability initiatives used by mass rapid transit systems. The term environmental sustainability and its relationship with the predictors of customer loyalty has not been studied in the transport industry especially in mass rapid transit system. Thus, this study uses the antecedents of customer loyalty in the Kochi Metro Rail Transport System to analyse the impact of customers' perceptions of environmental sustainability operations. Consequently, the study helps to understand how environmental sustainability can serve as a powerful marketing tool for transportation corporations.

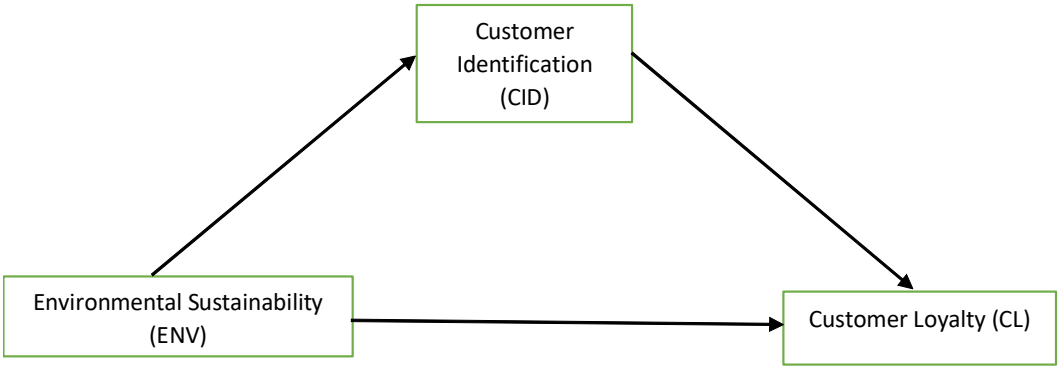

Figure 1: Conceptual Model showing relationship between Environmental sustainability, Customer identification with the company (CID) and Customer Loyalty (CL)

Objectives of the study

1. To study the direct effect of perceived environment sustainability on customer loyalty towards Kochi Metro Rail Transport System.
2. To study the mediational role of Customer identification with the company (CID) in the relationship between perceived environmental sustainability and customer loyalty.

Hypotheses of the Research Work

On the basis of the literature evidence and research gap we formulated the following hypothesis;

H1: Customer identification with Kochi metro is positively impacted by the Environmental sustainability of Kochi Metro Rail Transport System.

H2: Environmental sustainability has a positive effect on the customer loyalty of Kochi metro rail passengers.

H3: Customer identification positively influences the customer loyalty of Kochi metro rail passengers.

H4: The effect of Environmental Sustainability on Customer Loyalty of the Kochi metro passengers is mediated by Customer Identification.

Research Method

This study is quantitative in nature, and the purposive sampling technique was used to collect the data from the passengers of the Metro Rail Transport System in Kochi. The researcher travelled along with the passenger's and

collected responses from each of them. Before starting the final data collection, a pilot study was conducted among 50 respondents. On the basis of responses, adequate changes were made to the interview schedule. Final data were collected from 380 participants with no missing observations.

The researcher measured environmental sustainability with six items scale adapted from Sekasi, J.; Martens, M.L. 2021, Jing Yu Pan, 2024. The study measured customer loyalty with four item scale adapted from Zeithaml et al. 1996. Customer identification with the company was measured with four item scale developed by Mael and Ashforth (1992).

The researcher analysed the data collected from respondents with SPSS 20 version. Descriptive statistics and Exploratory Factor Analysis were used. Structural Equation Modelling was used to test the relationship between environment sustainability, customer loyalty and customer identification with the company. SEM is highly suitable for analysing the direct and indirect effects of variables (Kline, R. B.,2016). Cronbach's alpha test was conducted to estimate the internal consistency of scale for environment sustainability, customer loyalty and customer identification with the company.

Analysis and Results

Table 1: Demographic profile of Respondents

Categories		Frequency	Percent
Gender	Male	192	50.5
	Female	188	49.5
Age	Below 20 yrs	30	7.9
	20- 40 yrs	153	40.3
	40-60 yrs	141	37.1
	Above 60 yrs	56	14.7
Education	Professionals	66	17.4
	Post graduation	137	36.1
	Graduation	124	32.6
	12th below	53	13.9
Occupation	Government employee	77	20.3
	Private employee	123	32.4
	Business/ profession	53	13.9
	Self employed	49	12.9
	Others	78	20.5
Income	Up to 100000	54	14.2
	100001-200000	69	18.2
	200001-300000	86	22.6
	300001-400000	86	22.6
	Above 400000	85	22.4
Total		380	100.0

Note: *Percentages are derived from the total respondents*

Source: *Data collected through a structured questionnaire*

Table 1 provides an overview of the study sample's demographics, which included 380 Kochi Metro rail users. With 50.5% of the respondents identifying as male and 49.5% as female, the gender distribution is almost equal. The majority of respondents (40.3%) are between the ages of 20 and 40, followed by those between the ages of 40 and 60 (37.1%), and a lesser percentage of respondents (7.5%) are under the age of 20 or older (14.7%). Education-wise, the respondents comprise 17.4% professionals, 32.6% graduate degree holders, 13.9% higher secondary school graduates, and 36.1% postgraduate students. The sample's job composition consists of 32.4% private workers, 20.5% other workers, 20.3% government workers, and smaller percentages from businesses, self-employment, or students. According to the income distribution, 22.6% of respondents make between ₹ 200,001 and ₹ 300,000 and ₹ 300,001 and ₹ 400,000 annually, with a sizable percentage (22.4%) making more than ₹ 400,000. All things considered; the information offers a thorough demographic breakdown of Kochi Metro users.

Table 2: Normality and Common Method Bias

Variable	Mean	Std. Deviation	Skewness
Environmental Sustainability	4.3311	0.72648	-2.184
Customer Loyalty	3.8316	0.80724	-0.874
Customer Identification	2.9000	1.19180	-0.004

Source: *Author Compilation*

Interpretation**:** Table 2. Shows normality and common method bias. Based on the normality assessment of the constructs, parametric tests are appropriate for further analysis because all variables show skewness and kurtosis values within acceptable ranges. In particular, the skewness values for customer loyalty (-0.874), customer identification (-0.004), and environmental sustainability (-2.184) are all within the permissible range of -3 to +3 for a normal distribution. (Hamaker, 1995).

Common Method Bias:

Only 39.88% of the variance can be explained by a single component, according to the results of the Harman's Single component test, which is less than the prescribed 50% limit (Cooper et al., 2020). This indicates that the data do not exhibit significant common method bias.

Table 3: Exploratory Factor Analysis

Rotated Component Matrix

	Component		
Item	1	2	3
ENV1	0.593		
ENV2	0.852		
ENV3	0.726		
ENV4	0.803		
ENV5	0.850		
ENV6	0.761		
CL1		0.817	
CL2		0.851	
CL3		0.824	
CL4		0.851	
CID1			0.842
CID2			0.823
CID3			0.864
CID4			0.834

Note: The rotation converged in 3 iterations after suppressing coefficients below 0.5, by principal component analysis with Varimax rotation & Kaiser normalization

Interpretation: Table 3. Shows Exploratory Factor Analysis. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were used to assess the data's suitability for factor analysis. Strong sampling adequacy is indicated by the KMO value of 0.848, indicating that the sample is appropriate for reliable factor analysis (Nkansah, 2018). The use of factor analysis is further supported by the substantial results of Bartlett's Test of Sphericity ($\chi^2 = 3524.958$, df = 91, $p < 0.001$), which indicate that the correlation matrix differs significantly from an identity matrix. Three constructs—Environmental Sustainability (ENV), Customer Loyalty (CL), and Customer Identification with the Company (CID)—were subjected to exploratory factor analysis, and three unique components were emerged.

According to the rotated component matrix, Customer Loyalty (CL) items load onto the second factor with values between 0.817 and 0.851, Environmental Sustainability (ENV) items load onto the third factor with values between 0.823 and 0.864, and Customer Identification (CID) items load onto the second factor with values between 0.593 and 0.852. The construct validity of the measured variables is further supported by these high loadings, which show that the variables considerably contribute to their respective factors.

Table 4: Cronbach's Co-efficient Alpha, Reliability

Sl. No.	Variable	No. of items	Cronbach's Alpha
1	Environmental sustainability	6	0.869
2	Customer Loyalty	4	0.887
3	Customer Identification	4	0.879

Source: *Author compilation*

Interpretation: Cronbach's Alpha was used to evaluate the research constructs' internal consistency; the results are shown in Table 4. Cronbach's Alpha scores for all three constructs are higher than the recommended threshold of 0.70 (Nunnally & Bernstein, 1994). Particularly, there is excellent internal consistency in Environmental Sustainability ($\alpha = 0.869$), Customer Loyalty ($\alpha = 0.887$), and Customer Identification ($\alpha = 0.879$). The reliability of the scale in this study is confirmed by these values, which imply that the items within each construct assess their intended variables in a reliable manner.

Table 5. shows Confirmatory Factor Analysis (CFA). CFA was employed to assess how well the measured variables represent the constructs. Multiple fit indices were used to evaluate the model's goodness of fit, as shown in Table 5. The chi-square statistic (CMIN) was 147.221 with 73 degrees of freedom, yielding a CMIN/DF ratio of 2.017, which is within the acceptable range of 1 to 3, indicating an excellent fit (Kenny et al., 2015). Other indices also demonstrate strong model fit: The Goodness of Fit Index (GFI = 0.950) surpasses the threshold of 0.90 (Hair et al., 2010), whereas the 0.80 criterion is exceeded by the Adjusted GFI (AGFI = 0.929) (Gefen et al., 2003). An excellent fit is confirmed by the Comparative match Index (CFI = 0.979) and Normed Fit Index (NFI = 0.959), which both satisfy the condition of being more than 0.95 and 0.80, respectively (Hooper et al., 2008; Hu & Bentler, 1999). Furthermore, the Root Mean Square Error of

Approximation (RMSEA = 0.052) falls within the acceptable range of less than 0.06, and the Standardized Root Mean Square Residual (SRMR = 0.052) is much below the 0.08 requirement (Hu & Bentler, 1999). The PClose value (0.387) is greater than 0.05, further indicating excellent model fit (Byrne, 2001). These results suggest a strong alignment between the proposed model and the observed data.

Table 5: Confirmatory Factor Analysis, Model Fit

Measure	Estimate	Threshold	Reference	Interpretatio
CMIN	147.221	--		--
DF	73	--		--
CMIN/DF	2.017	Between 1 and 3	(Kenny et al., 2015)	Excellent
GFI	0.95	>.90	(Hair et al., 2010)	Excellent
AGFI	0.929	>.80	(Gefen et al., 2003)	Excellent
CFI	0.979	>0.95	(Hu & Bentler, 1999)	Excellent
NFI	0.959	>.80	(Hooper et al., 2008)	Excellent
SRMR	0.052	<0.08	(Hu & Bentler, 1999)	Excellent
RMSEA	0.052	<0.06	(Hu & Bentler, 1999)	Excellent
PClose	0.387	>0.05	(Byrne, 2001)	Excellent

Figure 2: Confirmatory Factor Analysis in AMOS

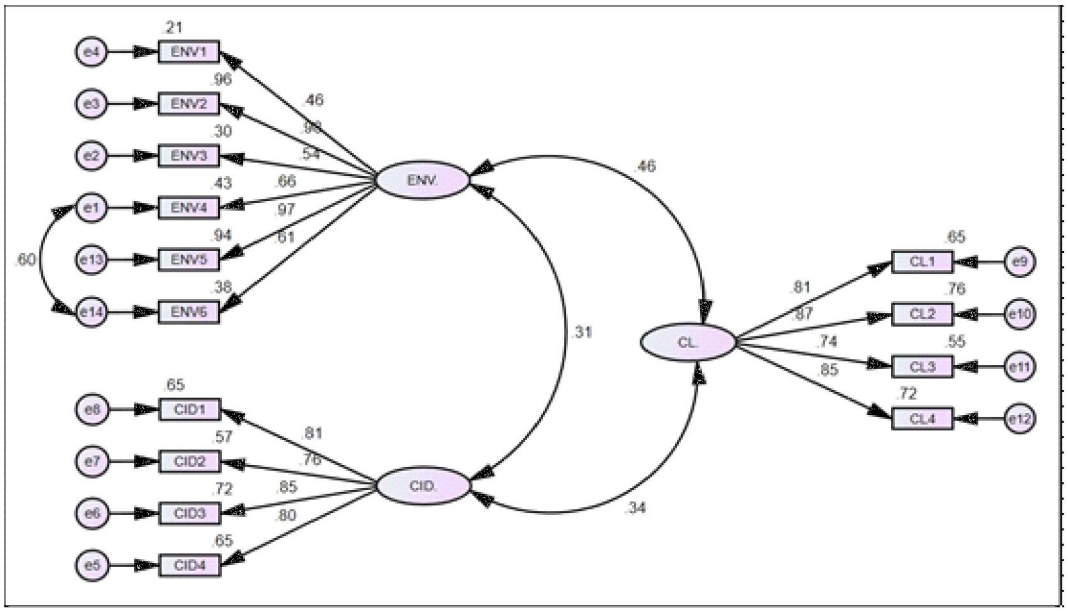

Table 6: Model Table estimates and Psychometric properties of the constructs

Construct	Item	Factor Loading	Sum of factor loading	Item reliability	Eigen Value	AVE	Delta	Sum of delta	CR
Environmental Sustainability (ENV)	ENV1	0.459	4.226	0.210	3.219	0.536	0.789	2.780	0.865
	ENV2	0.981		0.962			0.037		
	ENV3	0.545		0.297			0.702		
	ENV4	0.657		0.431			0.568		
	ENV5	0.97		0.940			0.059		
	ENV6	0.614		0.376			0.623		
Customer Loyalty (CL)	CL1	0.809	3.272	0.654	2.685	0.671	0.345	1.314	0.890
	CL2	0.871		0.758			0.241		
	CL3	0.743		0.552			0.447		
	CL4	0.849		0.720			0.279		
Customer Identification (CID)	CID1	0.805	3.214	0.648	2.586	0.646	0.351	1.413	0.879
	CID2	0.756		0.571			0.428		
	CID3	0.849		0.720			0.279		
	CID4	0.804		0.646			0.353		

Table 6. presents an analysis of the three constructs: customer identification, customer loyalty, and environmental sustainability focusing on model estimates and psychometric properties. Most indicators have standardized factor loadings that are higher than the suggested threshold of 0.50, indicating a good relationship between the measurements and the corresponding constructs (Hair et al., 1998). According to Holland (1999), an acceptable factor loading is 0.40, hence the Environmental Sustainability (ENV1) factor loading is 0.459, which is somewhat below 0.50. Furthermore, all constructs' Average Variance Extracted (AVE) values are higher than the 0.50 standard, indicating sufficient convergent validity (Hair et al., 2010). All of the constructs have Composite Reliability (CR) values more than 0.70, indicating the constructs' reliability (Hair et al., 2010). Furthermore, all constructs have Composite Reliability Coefficients (CRCs) greater than the acceptable cut off point of 0.60 (Bagozzi & Yi, 1988). The aforementioned results suggest that the measurement model has good psychometric qualities together with validity and reliability.

Table 7: Discriminant validity and Convergent Validity of the variables

Variable	CR	AVE	MSV	MaxR(H)	ENV	CID	CL
ENV	0.865	0.536	0.207	0.977	**0.732**		
CID	0.88	0.647	0.118	0.884	0.310***	**0.804**	
CL	0.891	0.672	0.207	0.899	0.455***	0.344***	**0.819**

Table 7 demonstrates that all constructs' Average Variance Extracted (AVE) values are greater than their squared inter-construct correlations (MSV), confirming the discriminant validity of each construct (Fornell, C., & Larcker, 2016). The AVE values for each construct exceed the threshold of 0.50, affirming the convergent validity of the factors (Hair et al., 2010). Moreover, the Composite Reliability (CR) values for all constructs are above the acceptable threshold of 0.70, indicating the reliability of the measurement model (Cheung et al., 2024). These results confirm that the constructs possess both adequate convergent and discriminant validity, as well as reliability.

Hypothesis Testing

Figure 3: CB SEM Model

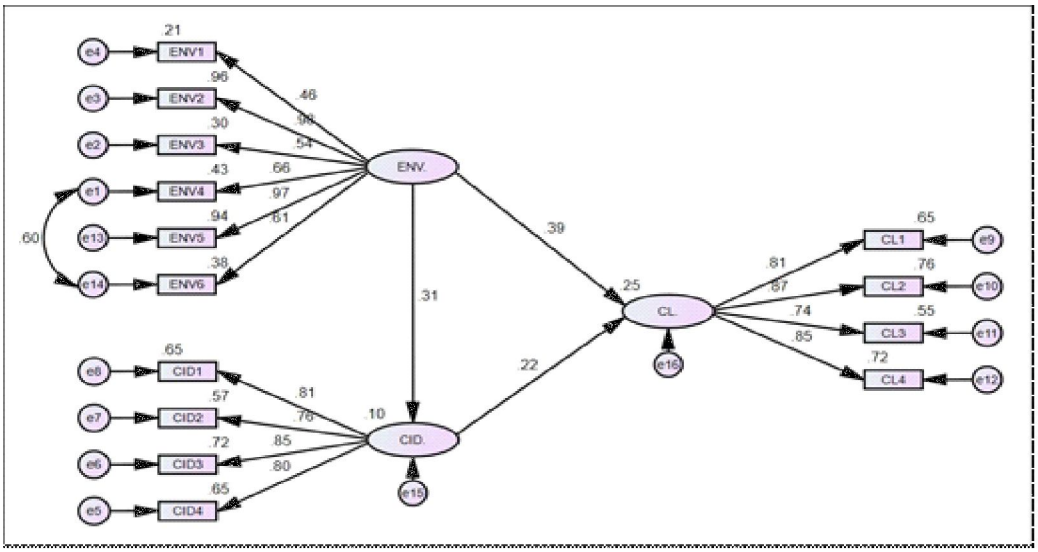

Table 8: Causality test results

From	To	β	p value	Description
Environmental Sustainability	Customer Identification	0.310	<.001	Significant
Environmental Sustainability	Customer Loyalty	0.386	<.01	Significant
Customer Identification	Customer Loyalty	0.224	<.01	Significant

Note: *Significant at 5% level*

Source: *Author compilation*

H1: Customer Identification is positively impacted by the Environmental Sustainability of Kochi Metro Rail.

H2: Environmental Sustainability has a positive effect on the Customer Loyalty of Kochi Metro Rail passengers.

H3: Customer Identification positively influences the Customer Loyalty of Kochi Metro Rail passengers.

The results of the causality test using CB-SEM through SPSS AMOS, presented in Table 8, provide strong support for the proposed hypotheses. The first hypothesis (H1) is verified, as there is a positive correlation ($\beta = 0.310$, $p < .001$) between Environmental Sustainability and Customer Identification. Additionally, Environmental Sustainability significantly improves Customer Loyalty ($\beta = 0.386$, $p < .01$), supporting Hypothesis 2 (H2). Finally, the validation of Hypothesis 3 (H3) shows that Customer Identification has a positive impact on Customer Loyalty ($\beta = 0.224$, $p < .01$). These findings demonstrate that among Kochi Metro Rail users, environmental sustainability is critical to improving customer identification and loyalty.

Table 9: Standardised direct and indirect effect

Path	Direct effect	Indirect effect	Total effect	p value	VAF
ENV > CID > CL	0.386	0.069	0.455	<.001	0.152

Note: *Significant at 5% level*

Source: *Author compilation*

H4: The effect of Environmental Sustainability on Customer Loyalty of the Kochi metro passengers is mediated by Customer Identification.

In this analysis, the effect of Environmental Sustainability on Customer Loyalty among Kochi Metro passengers is partially mediated by Customer Identification, as indicated by both direct and indirect effect paths. Environmental sustainability has a strong direct impact on customer loyalty ($\beta = 0.386$, $p < .001$), and it also has an indirect influence through customer identification ($\beta = 0.069$), for a total effect of 0.455. Customer Identification appears to be a weak partial mediator in the relationship, as indicated by the Variance Accounted For (VAF) of 0.152. This implies that while Environmental Sustainability has a direct positive impact on Customer Loyalty, Customer Identification also contributes, though to a lesser extent, to strengthening this relationship.

Discussion

This study investigated the relationship between perceived environmental sustainability and customer loyalty. In particular, the impact of customer identification as a mediator has been examined. The results showed that the direct effect of perceived environmental sustainability on loyalty of passengers of Kochi Metro is significant. This result is consistent with the research done by Oana-Adriana Gică and Ovidiu-Ioan Moisescu (2020). The high correlation ($\beta = 0.386$, $p < .01$) suggests that Kochi Metro's customers are more loyal to the company because they understand its dedication to sustainable practices. The findings demonstrate that while choosing a mode of transportation, consumers take into account both the environmental sustainability measures and the service quality features of Kochi Metro Rail Transport System. In general terms, the results of the study show that, companies that focus on sustainable

initiatives may not only attract new customers but also retain existing ones, as loyalty is often rooted in shared values and trust.

Second objective deals with the investigation of the mediating effect of customer identification with the company (CID) between perceived environmental sustainability and customer loyalty. Environmental sustainability has a considerable direct impact on consumer loyalty ($\beta = 0.386$), suggesting that sustainable actions by themselves greatly increase customer loyalty. On the other hand, the indirect effect via Customer Identification ($\beta = 0.069$) indicates that a mediation function exists, but it is relatively weak. This suggests that although Customer Identification is a mediating component in the relationship between Environmental Sustainability and Customer Loyalty, there are probably other important contributing factors as well. This result is consistent with the research done by Hsu, S.H., et al (2013).

Conclusion and Implications

In conclusion, the data emphasizes the complexity of consumer behaviour while simultaneously supporting a positive correlation between environmental sustainability and customer loyalty, with customer identification acting as a weak partial mediator. The direct influence of environmental sustainability emphasizes its critical role in building loyalty, even while customer identification plays a limited mediating role. This suggests that transport companies shouldn't rely just on sustainability messaging to generate loyalty. In order to increase customer loyalty, companies should adopt a holistic strategy that incorporates sustainable practices with high-quality customer service to enhance consumer identity, trust, and overall customer experience. Improved service quality at a fair price will significantly increase client loyalty. Subsequent investigations may examine other possible intermediaries or modifiers in this correlation, furnishing more profound perspectives on the ways in which companies can proficiently utilize sustainability to foster loyal customers.

Scope for further research

1. The study's exclusive emphasis on the transportation sector restricts the applicability of its conclusions to other industries. As a result, future studies might focus on different industries, enabling results to be compared and generalized.

2. Additionally, taking into account pertinent theories, customer identity was employed as the mediating variable. A number of mediating variables, including customer satisfaction and customer trust, might be studied in order to add even more to the body of literature.

3. This study is limited to Kochi Metro in Kerala. Similar study can be carried out in other metro rail projects across the world.

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