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SUSTAINABLE FOOD HABITS IN INDIAN ADULTS: AN EMPIRICAL RESEARCH USING PLS SEM

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ABSTRACT
Embracing sustainable dietary practices is crucial for both our well-being and the ecosystem. Food production accounts for around 25% of global emissions of greenhouse gases, making minor dietary modifications significant. Choosing locally-produced goods minimises carbon emissions and bolsters local producers. Sustainable eating is selecting food options that enhance human and planetary health while considering social and economic considerations. In the food system, sustainable consumption is essential for mitigating environmental issues, securing food supply, and bolstering local communities. The essential tenets of sustainable eating are environmental preservation via reducing carbon emissions, minimising food waste, and selecting locally produced and organic items. This research seeks to explore the sustainable food habits among Indians in the Indian ecosystem. The research seeks to assess the association of Customer Knowledge, Customer Attitude, and Customer Behaviour about Sustainability within the Indian context. Data were gathered from 132 Indian adults. Sustainable Diets Questionnaire (SDQ) to evaluate the customer's knowledge, attitudes, and behaviours on sustainable eating practices. The hypotheses were evaluated using structural equation modelling (PLS). This research aids in comprehending the Indian customer's Food Habits. Finding showed that there is a significant relationship between Customer's Knowledge, Attitude and Behaviour. Customer's Attitude mediates the relationship between Customer's Knowledge and Customer's Behaviour. The moderators, namely Age, Education, and Income, do not influence the relationships among the three constructs: Customer Knowledge, Customer Attitude, and Customer Behaviour. Future study may include additional variables related to knowledge, attitudes, and behaviours about sustainability.
KEYWORDS: Customer's Knowledge, Customer's Attitude, Customer's Behaviour, Sustainable Food Habits, Indian Adults

1. INTRODUCTION

India is a hub of environmentally sustainable businesses. A multitude of entrepreneurs in India are adopting sustainable strategies to operate their enterprises. Moreover, it is not just tiny enterprises; even huge firms are participating (Dhawan et al., 2023). If you want to establish an eco-friendly company in India, several resources and support systems are available to assist you in this endeavour (Chaudhary A., 2023). With proper strategy and implementation, your sustainable company may prosper in this expanding economy. Growing vegetables organically is the premier sustainable business concept gaining global popularity. One might establish a farm that is organic by using natural procedures and insecticides in lieu of detrimental chemicals (Perignon et al., 2016). Organic farming is significant since it contributes to environmental preservation, energy conservation, and the safeguarding of human and animal health (Gupta et al., 2023). This aids in the conservation of water and soil resources while mitigating contamination with pesticides and fertilisers. Organic farming promotes the use of green energies such as solar and wind energy. The production sector for biodegradable items is expanding swiftly in India due to heightened Customer's knowledge about the significance of using eco-friendly alternatives (Hayashi F., 2023). These items include natural ingredients that microbes may decompose into their original components, rendering them more environmentally friendly (Chaudhary et al., 2021). A multitude of Indian businesses are now fabricating biodegradable items, including disposable cups, plates, spoons, forks, and straws. These goods are economical and user-friendly, making them suitable for barbecues and other outdoor occasions. Furthermore, when shopping or transporting food goods, biodegradable bags serve as a practical substitute for plastic bags (Marak et al., 2024). Our earth confronts several trash-related issues, including a concerning volume of trash in the ocean, extensive electronic waste, and insufficient waste disposal

infrastructure. The waste management and recycling sector addresses these issues by purifying the environment and reducing greenhouse gas emissions (Kaner et al., 2024). Organic catering is increasingly gaining popularity in India. As individuals become more aware of their health, they want food that is both palatable and nutritious. Organic catering enterprises provide a substitute for conventional eateries, which frequently use processed products and harmful chemicals. The popularity of organic catering enterprises is increasing due to their provision of nutritious food alternatives, superior flavours in cuisine, and enhanced ecological assistance for regional agriculturalists and enterprises (Baroni et al., 2018). Veganism is increasing in India, leading to a heightened demand for vegan-friendly establishments (Li. A.M.L., 2016). Although India has a limited number of vegan eateries, this figure remains very insignificant in relation to the total population. In recent years, research in nutrition and food science has expanded significantly (Parker et al., 2018). These advancements have elucidated the human body's need for specific nutrients and the influence of eating habits on health and quality of life. Emerging technologies allow the creation of several novel items that satisfy customer demands in the food sector. In response to customer demands, food manufacturers are creating innovative items that comprise the next generation of food (Chen et al., 2019). Shifting nutritional trends compel the food business and engineers to seek creative goods that are not only prepared for immediate consumption but also distinctive in nutritional content and have a minimal number of additives (Misra et al., 2011). The difficulty in persuading individuals to alter their dietary practices in favour of more ecologically friendly food consumption patterns is becoming more urgent. Food preferences, choices, and eating habits are famously difficult to alter, since they constitute a fundamental component of individuals' lives and their socio-cultural contexts (Oliva et al., 2022). A significant number of individuals possess favourable views towards sustainable food; nonetheless, a considerable disparity persists between these good perceptions and the actual purchasing and use of environmentally friendly food items. The intricate relationship among customer knowledge, attitude, and behaviour becomes significant when considering the unique difficulties and possibilities present in sustainability (Rao et al., 2018). There is literature about the link between customer knowledge, attitude, and behaviour. Nevertheless, a significant deficiency exists in examining the same model from a sustainability perspective. This research aims to further the knowledge of the interaction among customer knowledge, attitude, and behaviour via a comprehensive analysis. Section 2 will conduct an analysis of the current literature about customer knowledge, attitude, and behavior. Subsequently, Section 3 will outline the approach, while Part 4 will articulate the analysis and outcomes. Ultimately, Section 5 will focus on the summary and conclusions derived from the research.

2. LITERATURE REVIEW

Diversifying diets toward leafy vegetables, pulses, and coarse grains, decreasing reliance on rice, and lowering agricultural greenhouse gas emissions—all while addressing nutritional inadequacies within food budgets—can help Indian adults develop sustainable eating habits (Rao, et al.,2018; Baroni, et al.,2018). Choosing local foods, making the most of food purchases and storage, appreciating food, using leftovers, eating millets, and minimizing food waste are all ways that Indian adults can develop sustainable eating habits that improve nutrition and reduce environmental impact (Mallick et al., 2024; Chaudhary, 2023; Perignon, et al., 2016). The study of Marak et al., 2024 highlighted the value of sustainable nutrition and promotes organic farming, plant-based diets, and locally grown produce. It draws attention to the necessity of people making thoughtful food choices (Omidvar et al., 2014), which can greatly highlight ecological footprints and improve the health of both humans and the Earth (Francis et al., 2022). Using five categories—aware consumers, conscious consumers, consumers in transition, unwilling consumers, and rejecters—the study examined sustainable consumer behaviour among Indian millennials, emphasizing their greater concern for environmental issues than social and economic ones. The study examined the present situation of veganism in India, pointing up obstacles like cost, gender, age, and level of awareness. It examines consumer behaviour and makes recommendations for measures like nudges and a fat tax to encourage the nation's sustainable food consumption (Misra et al., 2011; Manchanda, et al.,2022). But even though the diet is sustainable for the environment, the lower demographics cannot afford a healthy food that meets international standards, so accessibility must be prioritized (Kaner et al.,2024; Gupta et al., 2023). According to the study, eating processed food is associated with obesity in India, especially in women. While ultra-processed meals affect higher socioeconomic categories and require specialized dietary interventions, semi-processed foods contribute to greater obesity rates among lower-middle socioeconomic status groups (Purushottam et al., 2023). In order to improve food security and environmental sustainability within the Indian food system, the study emphasizes the significance of encouraging sustainable eating habits among Indian adults through comprehensive legislation, support for sustainable agriculture, and local food systems (Dhawan et al., 2023).

To study sustainable food habits in Indian Adults, systematic Literature review was carried out. The review sought to answer the following five major research questions in literature:

1) What are major sustainable food habits adopted by Indian adults and the impact on their overall health?
2) How do various Indian demographics characteristics differ in their understanding of sustainable nutrition in terms of consumer knowledge, attitude and behaviour?
3) What are various factors influencing the adoption of sustainable food habits among Indian adults?

4) How do environmental sustainability and sustainable eating practices among Indian adults relate to each other?

5) How can public health policy support the promotion of sustainable food habits among Indian adults?

For the purpose of literature review major database that referred were Science Direct, Elsevier, Research Gate, Semantic Scholar, National Library of Medicine etc. Only selected articles reviewed that were further classified in five different themes as presented below in five different tables 1-5.

Thematic results presented under five different tables below specifying Table 1: Sustainable food habits adopted by Indian adults and the impact on their overall health; Table 2: Indian demographics characteristics differ in their understanding of sustainable nutrition in terms of consumer knowledge, attitude and behaviour; Table 3: Factors influence the adoption of sustainable food habits among Indian adults; Table 4: Environmental sustainability and sustainable eating practices among Indian adults and Table 5: Public health policy & sustainable food habits among Indian adults.

Table 1: Sustainable food habits adopted by Indian adults and the impact on their overall health

Author/ Authors	Methodology	Objectives	Research Gap	Results
Dhawan et al., 2023	Using a systematic review approach, sustainable food initiatives are evaluated.	Examine India's sustainable food consumption habits. Examine programs and policies aimed at ensuring food systems are sustainable.	Collaboration among stakeholders and the promotion of regional food systems are necessary.	Comprehensive policies and assistance for sustainable agriculture are required.
Chaudhary, 2023	Sustainability of the food system measured using a variety of metrics Innovations, behavior modifications, and cross-ministerial cooperation to advance sustainability	Measure the sustainability of India's food system using a variety of metrics. Encourage people to make knowledgeable choices about sustainable food and diets.		Measurement of the sustainability of the current food system using a variety of metrics to make well- informed decisions on food products and diets.
Hayashi, 2023	Suggesting a diet high in vegetables, fish, and grains. Stressing environmental effect, health advantages, and sustainability	Provide a healthy, sustainable nutrition plan. Prevent malnutrition and lower the number of diseases linked to diet.		In order to promote health, nutrition, and a minimal environmental effect, the study proposes a sustainable, healthy diet for Indian adults that consists of a mix of grain meals, fish and meat dishes, and vegetable dishes. It is also flexible enough to accommodate different lifestyles and cultural preferences.
Marak et.al.,2024	Comprehensive evaluation of the Literature. An impartial assessment of research on sustainable development	Determine patterns, difficulties, and possible avenues for further research. clarified the connection between global and personal health.	recognizing patterns and obstacles in the study of sustainable nutrition. investigating possible avenues for further research on sustainable development.	encourages plant-based diets for biodiversity and sustainability. supporters of cutting back on food waste to lessen its negative effects on the environment

Misra, A., 2011	Generally accepted dietary recommendations for a healthy lifestyle. Preventing Asian Indians from developing diabetes, metabolic syndrome, and obesity	Give Asian Indians nutritional recommendations for a healthy lifestyle. Prevent noncommunicable diseases associated with fat.		dietary recommendations for Asian Indians that are generally accepted as being healthful. focuses on cutting back on harmful food consumption to avoid illness.
Rao, et al., 2018	Deficits in food consumption in India is described. Cost and emissions Analysis optimization algorithm.	Get rid of deficits in vitamin A, iron, zinc, and protein. Evaluate compatibility with initiatives to mitigate climate change.	Absence of information on agricultural emissions linked to indirect energy. Understanding food preferences and the factors that influence them is crucial.	Iron and vitamin A are among the micronutrients that two-thirds of Indians do not get enough of. Changes in diet could cut greenhouse gas emissions by as much as 25%.
Mallick et.al., 2024	Reduce waste by making the most of purchases and storage. Eat locally to reduce emissions from transportation.	Discuss the effects of food waste on the environment. Examine sustainable eating practices and the significance of millets.		Encourages dietary practices that are sustainable. Emphasizes the value of millet for the environment and human health.
Agrawal, 2015	The National Family Health Survey's cross-sectional data was examined. Models of multivariable logistic regression are employed to estimate associations.	Analyze the prevalence of diabetes and food consumption in India. Examine the Relationships between particular foods and the risk of diabetes.	Validation from clinical and long-term research is required. Analysis of the physical activity data is lacking.	Vegetarian diets and the risk of diabetes are inversely related. Fish consumption and the incidence of diabetes are positively correlated.
Source: Table created by Authors				

Table 2: Indian demographics characteristics differ in their understanding of sustainable nutrition in terms of consumer knowledge, attitude and behaviour

Author/Authors	Methodology	Objectives	Research Gap	Results
Gupta et al., 2023		Analyze trends in Indian food consumption patterns.		Both urban and rural people consume more calories than is advised. Poor people find it difficult to pay for a healthy diet.

Chaudhary et.al., 2021	Diet identification is done using a nonlinear optimization technique covering 35 Indian states.	Identify sustainable diets for India's 35 states. Ensure diets meet nutrient and environmental requirements.	The study finds sustainable meals that satisfy environmental limits and nutrient requirements for India's 35 states. But the expense of these diets would be half that of present diets, underscoring the necessity for Indian adults to adopt sustainable eating habits.	All 35 Indian states sustainable diets have been determined. In most states, it is 50% more expensive than current diets.
Kaner et al.,2024	A cross-sectional investigation using an online survey was carried out.	Assess knowledge and opinions about sustainable nutrition. Identify factors associated with healthy eating Behaviors.	Adults have a limited understanding of sustainable nutrition. More research is required to fully understand sustainable eating practices.	Adults have little knowledge of sustainable nutrition. Married people and women exhibit healthier eating habits.
Source: Table created by Authors				

Table 3: Factors influence the adoption of sustainable food habits among Indian adults

Author/Authors	Methodology	Objectives	Research Gap	Results
Werner, et.al., 2020	Exploratory factor (EFA) analysis Multiple regression analysis	Examine the attitudes of customers toward sustainable eating. Examine the connection between yoga and food decisions.	Research on the spiritual elements of sustainable diets is lacking. Little research has been done on how consumers choose sustainable foods.	Four factors were found: scattered thinking, supporting mindset, natural spirituality, and supernatural spirituality. Dietary knowledge and food consumption were significantly impacted by factors two and three.
Source: Table created by Authors				

Table 4: Environmental sustainability and sustainable eating practices among Indian adults

Author/Authors	Methodology	Objectives	Research Gap	Results
Perignon, et.al.,2016	Review of Research evaluating foods nutritional value and effects on the environment Finding the key elements to cut diet-related greenhouse gas emissions	Examine the effects of self-selected diets on the environment. Analyse diets, nutritional value and overall health.	Limited availability of nationally representative, standardized food price data.	The main way to lower diet-related greenhouse gas emissions is to consume less meat and less energy. Choosing the right foods to replace meat is essential to lowering greenhouse gas emissions from the entire diet.

Li, 2016	The study summarized research and literature on sustainable diets.	The purpose of the article was to promote opportunities for healthy lifestyle choices and practices.		The issues of the obesity epidemic and unsustainable eating habits are covered in this paper. It highlights how important it is for medical professionals to rethink their jobs.
Oliva, 2022	methodical search for publications about human and planetary health and sustainable diets The systematic review's narrative synthesis method	Identify the effects of various food types on the ecosystem. Determine the co-benefits of sustainable diets for the environment and human health.	Sustainable eating practices among Indian adults are not expressly covered in the paper. It focuses on sustainable diets in general. Cultural influences on dietary acceptance are not taken into account. It is challenging to evaluate the methodological quality of predictive models.	The trinity of food, health, and environmental principles must be improved in order to implement sustainable diets.
Baroni, et al.,2018	study of the literature utilizing the Google Scholar and PubMed databases	Encourage environmentally friendly eating habits to protect the environment. Emphasize how dietary decisions affect resources and health.	Sustainable eating practices among Indian adults are not expressly covered in the paper. A narrative literature review might not be thoroughly analyzed. The durability of self-selected nonvegetarian diets has not been well investigated.	A person who eats primarily animal proteins needs ten times as much land to produce enough food as someone who only eats vegetable proteins.
Chen, et al.,2018	created nine different dietary scenarios using	Examine the various ways that dietary changes	Accurate results need filling in the current data gaps.	With a 36% smaller environmental impact, switching to a healthy
	data on current food consumption. Determined a number of metrics for both conventional and alternative diets, such as human health outcomes, economic considerations, environmental impact, and nutritional quality.	affect sustainability. Use a variety of dietary scenarios and indicators to identify trade-offs.	There are research gaps in evaluations of dietary sustainability.	Swiss diet is the most sustainable option. Adopting a diet high in meat or protein has negative effects.

	Francis et.al., 2022	The 'Value Belief Norm (VBN)' framework created by Stern et al. (1999) is used in this article. To modify and broaden the framework for the Indian context, the study makes use of exploratory factor analysis.	Examine how Indian millennials behave as sustainable consumers. Divide millennials' purchasing habits into several groups.		The study divides Indian millennials into five groups according to how they behave as sustainable consumers. The environmental impact of purchasing is a greater concern for millennials in India.
	Source: Table created by Authors				

Table 5: Public health policy & sustainable food habits among Indian adults

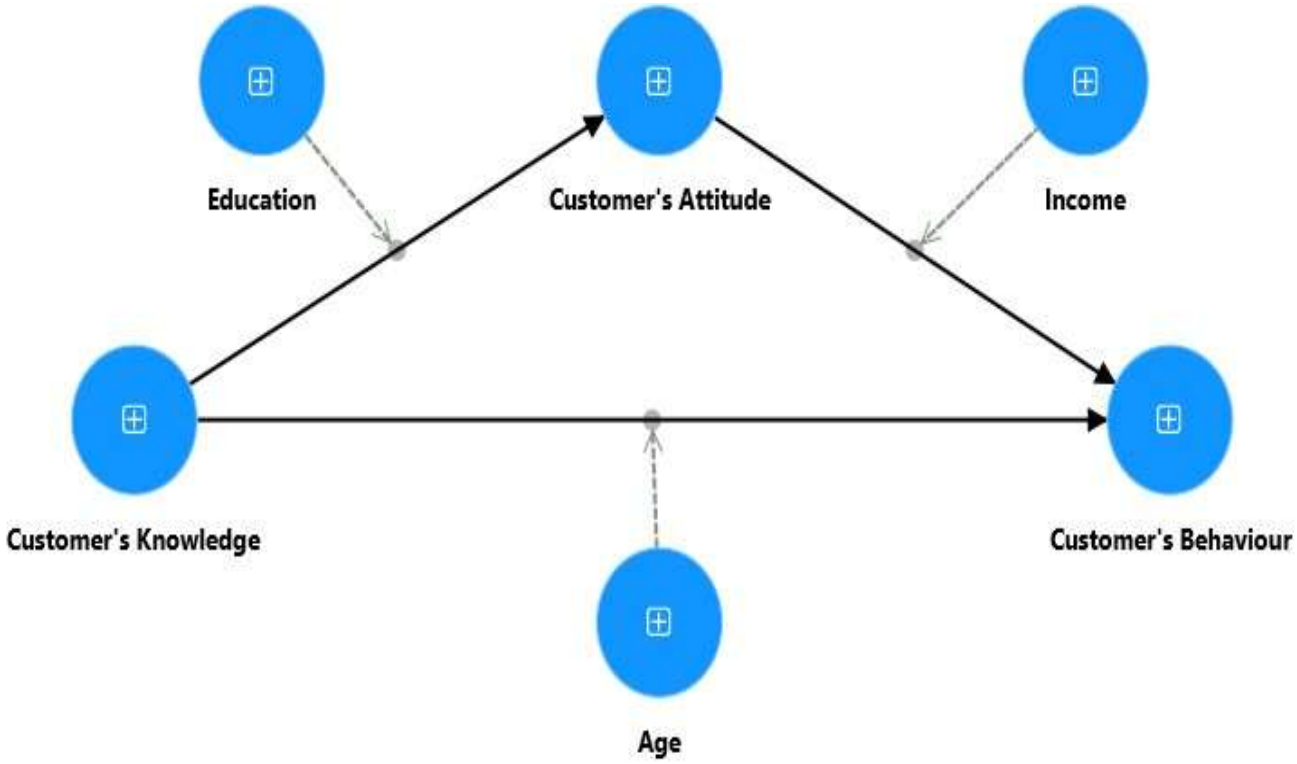
Author/Authors	Methodology	Objectives	Research Gap	Results
Parker et.al., 2018	promoting comprehensive dietary recommendations as a component of national and global policy responses to NCDs linked to nutrition.	The study focuses on comprehensive dietary recommendations that support environmentally and health-conscious food choices. The concepts can be used to promote sustainable, better eating practices worldwide, even though it does not explicitly target Indian people.	Possible issues under the law governing foreign investment and commerce. Analysis of the effects of holistic standards on the food environment.	makes the case for comprehensive dietary recommendations as a component of national and international policy responses to NCDs linked to food. Holistic dietary - recommendations address environmental sustainability and human health while serving as a basis for policy.
Ellen, et al., 2017	Online survey that is cross-sectional and quantitative. Convenience sampling methodology	Examine how consumers view sustainable and healthful diets. Recognize the driving forces behind sustainable and healthful eating habits.	little research on the obstacles to choosing sustainable, healthful foods. Insufficient investigation of trade-offs in food choices.	Plant-based, sustainable, and healthful diets are thought to be quite compatible.

Purushotham, et al., 2023	Cross-sectional data analysis	Examine the effects of dietary changes on obesity in India. Analyze how socioeconomic factors affect the intake of processed foods.	For the lower-middle SES category, interventions are required. Policy tools to increase the affordability and accessibility of a healthy diet.	Among women from lower-middle socioeconomic status (SES), a larger percentage of calories from semi-processed foods (SPF) is linked to a higher prevalence of obesity. Women with higher socioeconomic status are more likely to be obese if they consume excessive amounts of calories from ultra processed foods (UPF).
Source: Table created by Authors				

3. Theoretical Foundation

The **Knowledge–Attitude–Behaviour (KAB)**[1] Theory is a model that states that human behaviour occurs in a sequential manner, whereby knowledge affects attitude, which in turn affects behaviour. The theory is based on the assumption that people learn information and awareness about a specific issue before they act. This knowledge influences their beliefs, perceptions and understanding, which results in the development of positive or negative attitudes. These attitudes then lead people to accept or reject a behaviour. Thus, the role of knowledge and positive attitudes is that they are among the factors that cause behaviour change. The KAB theory is commonly used in the fields of health, nutrition, environmentally sustainable behaviour and consumer behaviour research to explain the role of awareness and education in achieving desirable behaviour changes (Manickavasagan A., 2013). From a sustainable consumption perspective, the KAB theory proposes that individuals with sufficient knowledge of sustainable diets, environmental protection, nutrition benefits and long-term food system effects are more likely to have positive attitudes towards sustainable consumption of food (Nosratabadi et al., 2019). These attitudes foster behaviour changes like eating local foods, minimizing food waste, eating more plant-based foods, buying food with an environmental impact, and favouring sustainable farming practices. Therefore, consumer knowledge is the stepping stone to forming positive attitudes that result in sustainable food consumption behaviour (Reisch et al., 2013). The KAB theory is used as the primary theory in the present study because the proposed conceptual framework is in the sequential order presented in the KAB theory. The independent variable of this study is customer's knowledge about sustainable food habit while customer's attitude is the mediating variable and the dependent variable is customer's behaviour. The study assumes that an increase in knowledge regarding the sustainable use of food positively affects the customer's attitude and that this positive attitude in turn leads to sustainable food consumption behaviour (Vermeir et al., 2020). Hence the KAB theory is found to be a suitable theory to comprehend the attitudinal shift and behavioural change in terms of knowledge among Indian consumers. In addition, the KAB theory also justifies the mediation of attitude between knowledge and behaviour. Knowledge raises consumers' consciousness of sustainability related issues, but it is not a simple process of behavioural change. The person first takes in the information received, forms positive attitudes on the basis of his beliefs and values and finally transforms these attitudes into concrete behaviours. It is therefore the attitude is an important psychological pathway that links knowledge to sustainable consumption behaviour. This theory further validates the proposed mediation model and offers a theoretical rationale for studying how customers' knowledge, attitude, and sustainable food consumption behaviour are related.

[1] Knowledge-attitude-behaviour (KAB) framework - The Learning Engineer's Knowledgebase



Source: Primary Data

Figure 1: Research Model

Independent Variable: Customer's Knowledge
Mediating Variable: Customer's Attitude
Dependent Variable: Customer's Behaviour
Moderating Variables: Education, Age and Income

4. RESEARCH METHODOLOGY

Research Type: The methodology section elucidates philosophical concepts, theoretical frameworks, methodologies, and the research procedures used in the study. We develop the questionnaire, assess the study elements, and gather the results. We will finish with a succinct summary of the data from the statistical analysis. This study employs objectivism, asserting that truth and knowledge are quantifiable and independent of subjectivity. Objectivists maintain the conviction that society is objective, characterised by observable norms and rules that are amenable to scientific scrutiny. The positivist theoretical framework and objective epistemological methodologies of this study resulted in survey research. We assessed the theoretical models via the use of questionnaires. Survey research, grounded in positivist philosophy and objectivism, impacts customers' knowledge, attitudes, and behaviours.

Sample and Data Collection Procedure: Samples were groupings or occurrences derived from a population. The demographics of this research include all customers aged 18 and above from India. We disseminated the questionnaire using Google Forms on social media sites to randomly pick customers for quantitative analysis. The ideal sample size is five times the quantity of study items. Consequently, the final sample of 132 respondents in our survey was enough for this study. Verifying instrument flaws is essential prior to commencing analysis. The pilot research assessed the validity and reliability of the data, including the questionnaire items. We used data from 50 respondents for the purpose of pilot testing.

Measurement: This study included online survey tools. The questionnaire's format had different sections. The first section of the questionnaire enquired about multiple aspects of respondents' demographic profiles, including age, gender, educational attainment, work position, income, and relationship status. The second part of the procedure included a survey segment that aimed to evaluate the customer's comprehension of sustainability terminology. The third section of the questionnaire included enquiries that evaluate customers' views by determining the significance of a series of statements related to sustainable diets. The fourth part of the study incorporated questions concerning customer behaviour towards sustainable food habits. We used a five-point Likert scale, ranging from one to five. We used this scale to assess the responses to all enquiries related to customers' knowledge, attitudes, and behaviours related to sustainability. The rating ranged from 1 (not at all important) to 5 (extremely important).

5. DATA ANALYSIS AND INTERPRETATION

This part uses Structural Equation Modelling (SEM) to examine the data. A two-step procedure was used for the computation. The construct's reliability and validity were first assessed using a measuring methodology. In the subsequent stage, the proposed connections were evaluated using a structural model.

5.1 Measurement Model

SMART PLS 4 evaluates the model. The partial least squares structural equation model is advantageous for evaluating complicated models. Initially, we evaluated the construct's reliability and validity (Table 6). All composite reliability values above the criterion of 0.70 confirm the strength of our composite dependability. Furthermore, Cronbach's alpha value surpasses 0.7, confirming the internal consistency of our metrics. At the construct level, we assessed the average variance extracted (AVE), which is above the threshold limit of 0.5. We analysed the outer loadings to assess the relationships between the latent variable and its reflected indicators in the outer model. We preserved indicators with outer loadings over 0.6 and discarded those below this threshold. The majority of the items fell under the permissible outer loading limit of 0.6, indicating dependability, as seen in Table 7.

TABLE 6: CONSTRUCT RELIABILITY AND VALIDITY

Construct's	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance extracted (AVE)
Customer's Knowledge	0.906	0.916	0.928	0.683
Customer's Attitude	0.871	0.875	0.903	0.609
Customer's Behaviour	0.768	0.777	0.864	0.679

TABLE 7: FACTOR LOADINGS

Customer's Knowledge	Outer Loadings	Customer's Attitude	Outer Loadings	Customer's Behaviour	Outer Loadings
CK1	0.834	**CA2**	0.788	**CB3**	0.845
CK2	0.881	**CA3**	0.711	**CB4**	0.818
CK3	0.729	**CA4**	0.805	**CB8**	0.808
CK4	0.749	**CA5**	0.781		
CK5	0.890	**CA6**	0.765		
CK6	0.862	**CA7**	0.826		

We assessed discriminant validity with the Fornell-Larcker Criterion, which entails assessing the cross-loadings of the indicators. Table 8 presents the Fornell-Larcker values. Another tool for assessing discriminant validity is the HTMT. Table 9 shows that the value should be higher than 0.85 or 0.90 to give the concept enough discriminant.

TABLE 8: DISCRIMINANT VALIDITY - FORNELL LARCKER CRITERION

Construct	Age	Customer's Attitude	Customer's Behaviour	Customer's Knowledge	Education	Income

Age	1.000					
Customer's Attitude	-0.113	0.78				
Customer's Behaviour	-0.109	0.527	0.824			
Customer's Knowledge	-0.064	0.534	0.52	0.826		
Education	0.317	0.193	0.265	0.436	1.000	
Income	0.411	0.114	0.082	0.293	0.422	1.000

TABLE 9: HETEROTRAIT MONOTRAIT RATIO

	Age	**Customer's Attitude**	**Customer's Behaviour**	**Customer's Knowledge**	**Education**	**Income**	**Education x Customer's Knowledge**	**Age x Customer's Knowledge**	**Income x Customer's Attitude**
Age									
Customer's Attitude	0.174								
Customer's Behaviour	0.129	0.625							
Customer's Knowledge	0.077	0.585	0.592						

Education	0.317	0.204	0.291	0.454					
Income	0.411	0.122	0.088	0.31	0.422				
Education x Customer's Knowledge	0.146	0.197	0.222	0.36	0.125	0.158			
Age x Custome r's Knowledge	0.285	0.096	0.156	0.211	0.158	0.071	0.504		
Income x Custome r's Attitude	0.203	0.165	0.268	0.131	0.23	0.042	0.411	0.309	

A VIF greater than 3.3 indicates abnormal collinearity. Furthermore, it is thought to signify the possible contamination of a model by common technique bias. The model is free from common method bias if the collinearity test results indicate that all VIFs (Table 10) in the inner model are 3.3 or below (Kock 2015). Since all VIF values are below 3.3, this model is deemed devoid of common method bias.

TABLE 10: VIF

	VIF
Age -> Customer's Behaviour	1.462
Customer's Attitude -> Customer's Behaviour	1.442
Customer's Knowledge -> Customer's Attitude	1.384
Customer's Knowledge -> Customer's Behaviour	1.643
Education -> Customer's Attitude	1.235
Income -> Customer's Behaviour	1.408
Education x Customer's Knowledge -> Customer's Attitude	1.139
Age x Customer's Knowledge -> Customer's Behaviour	1.248

Income x Customer's Attitude -> Customer's Behaviour	1.157

The R^2 value (Table 11) is modest for customer knowledge, customer attitude, and customer behaviour. Significant Q^2 (Table 12) values exceed zero. Values above 0, 0.25, and 0.50 indicate weak, medium, and substantial effects, respectively. The PLS route model perspective is correct. The values are within a reasonable range.

TABLE 11: R SQUARE

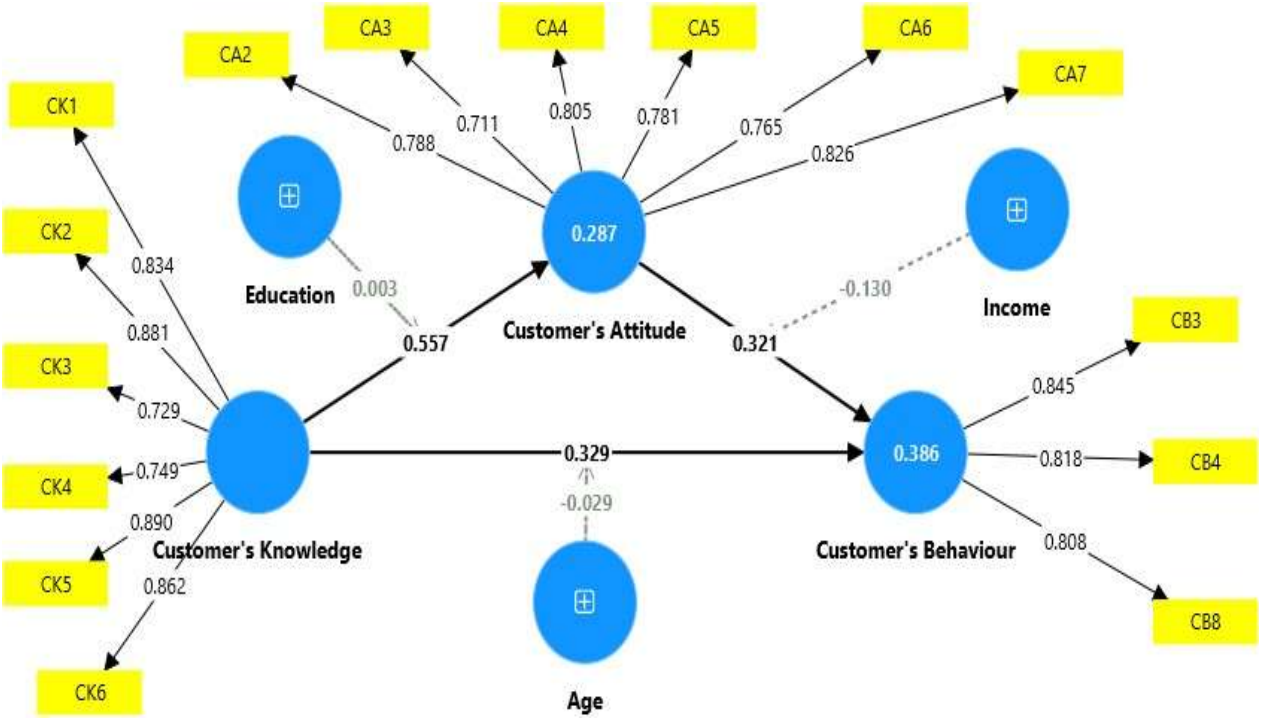
	R-square	R-square adjusted
Customer's Attitude	0.287	0.270
Customer's Behaviour	0.386	0.356

TABLE 12: Q^2

	Q^2 predict
Customer's Behaviour	0.199
Customer's Attitude	0.214

5.2 Structural Model

Detailed analysis of the path coefficients was conducted and the results were summarised in Table 8. The significance and direction of path coefficients within the structural model were examined using PLS estimates. Notably, Customer's Knowledge has a significant influence on Customer's Attitude and Customer's Behaviour but Age, Education and Income has no influence on the relationship among all the three constructs namely Customer's Knowledge, Attitude and behaviour at a level of 0.05. To sum up, hypotheses H1, H2, H3 and H4 are supported, while hypotheses H5, H6, and H7 are not supported. A comprehensive examination of the path coefficient was performed, and the findings are reported in Table 13. We analysed the significance of path coefficients using PLS.



Source: Primary Data

Figure 2: Conceptual Model with Indicators

TABLE 13: PATH COEFFICIENTS (Hypothesis Testing)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Result
Age -> Customer's Behaviour	-0.080	-0.073	0.072	1.110	0.267	**Not Supported**
Customer's Attitude -> Customer's Behaviour	0.321	0.312	0.105	3.043	0.002	**Supported**
Customer's Knowledge -> Customer's Attitude	0.557	0.557	0.087	6.396	0.000	**Supported**
Customer's Knowledge -> Customer's Behaviour	0.329	0.337	0.096	3.437	0.001	**Supported**
Education -> Customer's Attitude	-0.049	-0.041	0.113	0.435	0.663	**Not Supported**
Income -> Customer's Behaviour	-0.027	-0.028	0.072	0.367	0.714	**Not Supported**
Education x Customer's Knowledge -> Customer's Attitude	0.003	-0.005	0.113	0.031	0.976	**Not Supported**
Age x Customer's Knowledge -> Customer's Behaviour	-0.029	-0.039	0.076	0.387	0.699	**Not Supported**

Income x Customer's Attitude -> Customer's Behaviour	-0.130	-0.125	0.083	1.578	0.115	**Not Supported**

6. IMPLICATIONS, LIMITATIONS, FUTURE RESEARCH AND CONCLUSION

This research aims to elucidate the correlation between customer's knowledge, attitudes, and behaviours towards sustainability. The conceptual model has been established and verified among the three constructs. The findings indicate that customer's knowledge has a substantial correlation with customer attitude. Furthermore, the customer's attitude has a substantial positive correlation with their behaviour. The research found no significant correlation between education, age, and income when examining the relationship between these three constructs. This research elucidates that customer's knowledge, though Customer's Attitude serves as a predictor of customer's behaviour, especially among Indians. Subsequent research should expand its focus to include more sustainability terms. Every research project has certain constraints that may influence the conclusions drawn from it. The constraints hinder its generalisation and require additional study. The dependence on self-report data in all analyses raises questions about the inferences derived from the research. The principal limitation in this investigation is the restricted sample size from Indian customers. Future study may broaden by evaluating other notions of sustainability. Researchers may gather data from various sample sets to facilitate generalisation. This research primarily targets Indian clients; however, there is a possibility for a comparable study with customers from other nations.

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