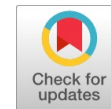


Estimating The Engel-Kallat-Balackwell Measurement Consumer Behavior Model for Organic Food Products



I Narsis

Abstract: Purpose The study analyses consumer purchasing behavior using the Engel-Kallat-Balackwell model, focusing on organic food products. Objective: This research paper's main objective is to understand customer purchasing behaviours for organic food items utilizing a five-stage procedure created by Engel-Kallat-Balackwell. Methodology: This confirmatory study to measure the five stage of consumer behavior developed by Engel-Kallat-Balackwell. This study conducted among 182 respondents who are living in Tiruchy Urban area. Data Analysis: The collected primary data finally entered for analysis using statistical software SPSS 20. The frequency distribution table used to know the position of respondents participated in the study. The confirmatory analysis has done to know the influence of each stage of consumer behavior process to the next. Findings: It is found that awareness of organic food makes the consumer go further to gather more information about it and gathering further Information about organic food has positive effect consumer's evaluation process

Keywords: Consumer Behavior - Engel-Kallat-Balackwell model – Path analysis - Organic food product

I. INTRODUCTION

Chemicals, insecticides, and fertilisers are not used in the agriculture used to grow organic products. This style of farming works at the grass-roots level, conserving the soil's potential for reproduction and regeneration, good plant nutrition, solid soil management, and the production of nutrient-rich, vibrant food that is disease-resistant. Due to its agroclimatic location, India is endowed with a lot of potential to produce all sorts of agricultural products. This offers hope for organic producers to access the constantly expanding local market in relation to the export market.

II. CONSUMER BUYING BEHAVIOR

Consumer behavior has long been a hot topic in marketing since understanding how and why consumers behave a specific way and make certain purchasing decisions enables businesses to enhance their marketing tactics and increase their market share.

Thus, one of the challenges facing all marketers today is how to persuade people to buy their goods or services. Therefore, understanding consumer purchasing behaviour provides insight into the psychology of how consumers reason, feel, and choose among available options (such as brands, products, and retailers), as well as how the consumer's environment (such as culture, family, and the media) influences him or her. It also reveals how consumer motivation and decision-making differ between products.

III. ENGEL-KALLAT-BALACKWELL MODEL OF CONSUMER BEHAVIOR

The foundational research on consumer behaviour lays the platform for quantitative research that looks at both current theories and emerging patterns in consumer behaviour. There are essentially two different types of consumer behaviour models. Modern and traditional models of consumer behaviour are also used. Economic experts created traditional behaviour models in an effort to comprehend what consumers buy based on their needs and wants. Modern theories of consumer behaviour place more emphasis on intentional, logical decision-making than subconscious desires or emotions. One of the top modern models for measuring customer behaviour is the Engel-Kallat-Balackwell model. There are five elements explained in this model. Awareness about the product, Information about the product, Evaluating the product, taking Purchasing decision and finally consumer outcomes. The first edition of Consumer Behaviour (Engel, Kollat, Blackwell, 1968) [1] was being prepared when it became clear that a number of fundamental issues had slowed down development in consumer research before 1968 and were likely to do so again unless they were acknowledged and fixed, or at the very least accommodated. These issues, which were eventually addressed in an article that appeared in the Journal of Marketing Research (Kollat, Engel, Blackwell, 1970) [2]. related to the evolution of what was called a research tradition or strategy of inquiry. In modelling consumer behaviour, the Engel-Kollat-Blackwell (EKB) model is well-known. It is customary to use the Engel-Kallat-Balackwell model to analyse consumer behaviour when making purchasing decisions. A complete measurement scale of perceived quality from an operations perspective, based on the traditional Engel-Kollat-Blackwell (EKB) decision-making process, was one of the key goals of the study carried out by Chao Wen et al, (2014) [3] to evaluate the consumer decision-making process. The five stages of consumer behaviour used in this study are product awareness, product information, product evaluation, purchasing choice, and customer outcomes.

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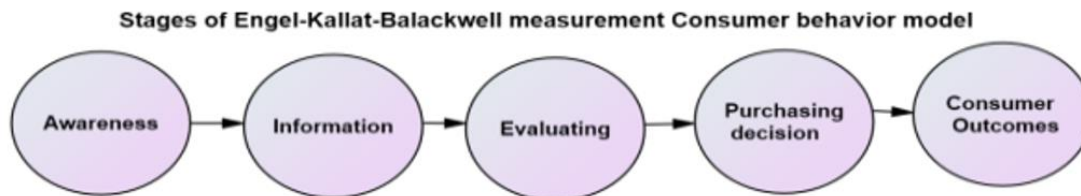


Fig. 1. Model conception

IV. REVIEW OF LITERATURE

The researcher attempted to apply these four constraints among the consumers using organic product. Due to the significant risk associated with purchasing expensive goods, especially organic goods, the buyer's engagement in complex purchasing behaviour is particularly high. Customers take their time studying and deciding whether to buy things like organic items. It becomes clear that there is a wide variety of inexpensive goods available on the market. Health, quality, and the environment are organic products' three most crucial qualities. Promotion of these advantages may show that, despite their increased cost, they still represent good value (David & Joanna 2008) [4]. Due to improved consumer knowledge, more people are buying organic food. In 2005, India adopted a policy pertaining to organic farming. Since then, the public's awareness of organic foods has grown steadily as more and more people realise the link between diet, health, and the environment. According to Renee Shaw Hughner et al, (2007) [5], there are a number of themes that reflect the many justifications that customers give for choosing to buy organic food. In order to examine consumer behaviour in organic products using the five stages of the Engel-Kallat-Balackwell model of consumer behaviour, the current study was done among consumers who are selecting any organic food product in luxury supermarkets at Tiruchirappalli district super markets or malls located in urban area. The results of the study by Khansa Zaman et al, (2023) [6] reveal that customers' purchasing decisions about biodegradable bags are influenced by their sense of ethical self-identity. Because the subjective norm, perceived behavioural control, and attitude were found to have a significant impact on purchase intention, which further predicts the actual consumer behaviour, the theory of planned behaviour in this study has greater implications for predicting consumer buying behaviour. The goal of Mujahid Siddiqui et al, (2023) [7] study, "Consumers' Buying Behaviour Towards Agri-Food Products: A Mixed-Method Approach," is to determine the variables that can affect customer purchase behaviour in the agri-food market. This study offered a model to explain purchasing behaviour that incorporated environmental influences as well as a set of cognitive processes, based on the Stimulus-Organism-Behaviour-Consequence theory.

The research conducted by Narsis I (2009) [8] to know the impact of the relationship management on customer buying decision, he concluded that through the influence of different inner and extrinsic elements on the customer's purchasing decisions, their relationship with a certain brand may have an impact on the customer's overall purchasing decisions. The research by Jianmin Zhang et al (2020) [9] explores an extension of the EKB model that is then developed to explain the behaviours of residential energy consumption, including

derived demand characteristics, habit change process, behaviour change process, internal feedback, external stimulus factors, and environment factors. This model extension is then used to implement a green information system that will assist the residents in making the transition to alternative energy sources. The standards used by Rau, P., and Samiee (1981) [10] to assess the current state of consumer behaviour models are mostly sourced from model-building sources in diverse domains. The findings show that even though the models' scope is extremely amazing, they are too poor from the outset to be any use to marketing professionals. Since the models lack specificity and are therefore challenging, if not impossible to operationalize, none of them have actually been evaluated as a whole in their original form.

V. OBJECTIVES

This research paper's main objective is to understand customer purchasing behavior for organic food items utilizing a five-stage procedure created by Engel-Kallat-Balackwell. Based on the specified following goals.

1. To know the constructs developed by Engel-Kallat-Balackwell on consumer buying behavior process.
2. To identify various indicators involved in each stage of consumer buying behavior
3. To analyze the impact of consumer buying behavior stage by stage.

VI. HYPOTHESIS (ALTERNATIVE)

Ha1: Awareness of organic food makes the consumer go further to gather more information about it.

Ha2: Different information about organic food positive effect on consumer's evaluation process of buying organic products.

Ha3: Consumers' assessment of organic food positively affects the consumer's purchase decision.

Ha4: The purchase decision of the consumer buying behavior process of organic food products has a positive outcome.

VII. METHODOLOGY

This confirmatory study to measure the five stage of consumer behavior developed by Engel-Kallat-Balackwell. This study conducted at Urban area of Tiruchirappalli district of Tamilnadu and the respondents are consuming any type of organic food products are inducted in the study.

Data Collection: The researcher has used both primary and secondary data. Primary data such as, Questionnaire should be employed to know the consumers buying behavior process in consuming any organic food products.

Sampling Method: The researcher has intended to adapt a Non-probabilistic sampling namely purposive sample would be used to select the sample from the infinity population of the study. Purposive sampling selects sample members from well-defined criteria based on researcher's expertise and knowledge, convenience sampling chooses its sample members based on proximity to the researcher (OBILOR, Ezezi Isaac 2023) [11]. **Sample size:** In order to get deep analyses the research objectives and better estimation accuracy the researcher has likely to adapt a large sample for this study. This study admit 182 sample respondents from various background such as, Age, Education, Gender, Monthly income and Occupation. In order to achieve the Research objective of this study the primary data would be employed. **Structure of the questionnaire:** Structured questionnaires are ones that contain specific, predefined, and concrete questions pertaining to the topic and in the researcher's favour when gathering data. The closed-ended, open-ended, multiple-choice, and five-point Likert scale rating items would be included in the structured questionnaires that would be framed and constructed. The questionnaire consists of two parts. Part one related to measure the demographic details of respondents and part two related to the measure the consumer's buying behavior process. There are five demographic questions such as Age, Gender, Education, Occupation and Income measured with nominal, interval and ratio scale. There are eighteen consumer buying behavior process indicators measured with five point likert's scale (1 as strongly disagree and 5 as Strongly agree). **Data analysis:** The collected primary data finally entered for analysis using statistical software SPSS 20. The frequency distribution table used to know the position of respondents participated in the study. The confirmatory analysis has done to know the influence of each stage of consumer behavior process to the next. More than to identify the emerging indicators with in the eighteen consumer buying behavior indicators.

Table. I: Distribution of Sample Respondent on the Basis of Personal and Demographic Profile

Demographic factors	Levels	Frequency	Percent	Cumulative Percent
Gender	Male	103	56.6	56.6
	Female	79	43.4	100.0
	Total	182	100.0	
Age	Below 35	54	29.7	29.7
	36 - 45	61	33.5	63.2
	46 - 60	30	16.5	79.7
	61 and above	37	20.3	100.0
	Total	182	100.0	
Education	Primary//Secondary/Higher Sec level	48	26.4	26.4
	College Level	69	37.9	64.3
	Professional degree	65	35.7	100.0
	Total	182	100.0	
Employment	Government sector	55	30.2	30.2
	Private Sector	65	35.7	65.9
	Self-employed	62	34.1	100.0
	Total	182	100.0	
Income	Below Rs.25,000	47	25.8	25.8
	Rs.25,001 - 40,000	36	19.8	45.6
	Rs40,001 - 55,000	38	20.9	66.5
	Rs.55,001-70,000	44	24.2	90.7
	70,001 and above	17	9.3	100.0
	Total	182	100.0	

VIII. DEMOGRAPHIC FACTORS.

The study has conducted in among the Consumers residing at urban area of Tiruchirappali District. There are 182 sample consumers are respondent of this study to know their buying behavior process while buying any kind of organic products.. They are classified according to their Age, Gender, Income, Education and Occupation. This personal Demographic classification is necessary to understand what level of respondents has participated in the study for carryout further analysis. The above table displays the frequency distribution of sample respondents on the basis of their demographic variables. Male respondents make up 56.6 percent of the 182 sample respondents, while female respondents make up the remaining 43.4 percent. 33.5 percent of respondents fell within the 36 to 45 age range among the four levels of respondent age classification. 37.9% of survey participants have completed at least a bachelor degree. Additionally, it was discovered that 34.1 percent of respondents were self-employed and 35.7 percent of respondents worked in the private sector. Five levels of income were assigned to them. 25.8 percent of respondents have a monthly income of less than Rs. 25,000.

IX. RELIABILITY AND VALIDITY

Assuming the anticipated path model is accurate, there is a 4.779 percent chance that there will be a discrepancy greater than 606.706. The mismatch in the anticipated structural model is $606.906 / 127 = 4.779$ degrees of freedom. For the path mode, the CFI is.974, GFI is.595, AGFI is.699, RMR is 0.207, and IFI is.604. The "p value" for testing the null hypothesis that the root mean square error of approximation (RMSEA) in the population is less than.05. The estimated root mean square error of approximation (RMSEA) is.144. It is concluded that all the fit indices are not within the acceptable range. The five stages of consumer buying behavior indicators achieved a reliability score of cronbach's Alpha 0.841. Gliem&Gliem (2003) [12] presented in the table can be a guide to evaluate the reliability coefficient. ifcronbach's Alpha value greater tan .90 is Excellent, Greater than .80 is Good, Greater than .70 is acceptable, greater than .60 is Questionable, Greater than .50 is Poor and it Less than .50 is Unacceptable. It is concluded that all the eight perceived value indicators achieved a strong indices to do path analysis.



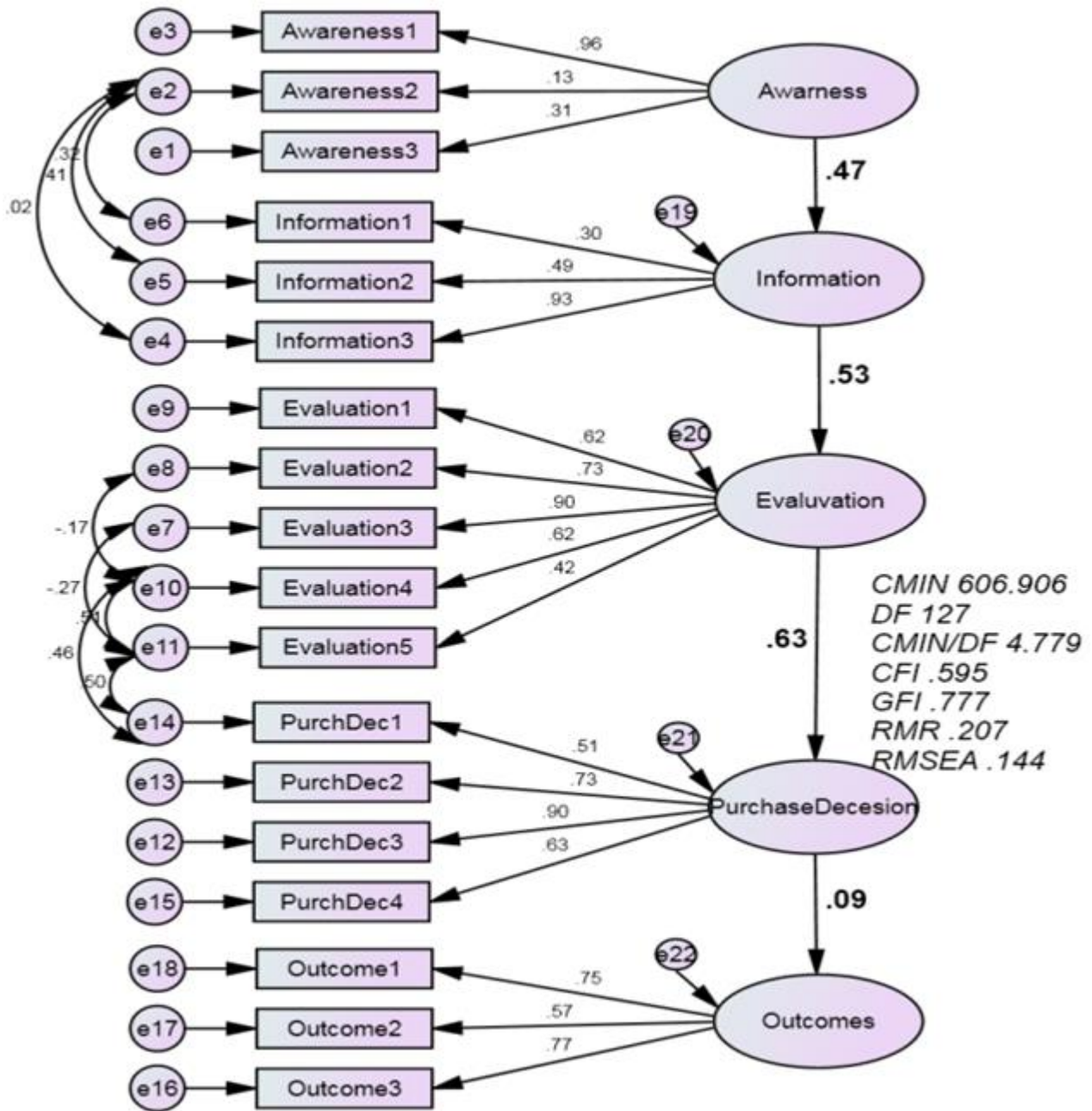


Fig. 2. Path model shows the influence of consumer buying behavior process in each stage.

Table. II: Standardized regression weights for consumer buying behaviour process indicators

Indicators	Latent	Beta	S.E.	T value	Sig
The impression, attitudes, and beliefs surrounding the use of organic products have grown.	Consumer Awareness	.313	.153	2.277	.023
Products are raised in harmony with the environment.		.130	.071	1.590	.112
Labels and items for organic products are easier to recognise.		.956	Reference Point		***
Based on necessity, purchasing organic products.	Gathering Information	.931	Reference Point		***
I'm looking for feedback on the advantages of using organic products.		.494	.064	6.350	***
Consuming organic products is in vogue.		.304	.056	3.908	***
Organic products are highly regulated and guaranteed to be safe.	Evaluating the product	.903	Reference Point		***
More recent than typical food.		.726	.059	11.484	***

Indictors	Latent	Beta	S.E.	T value	Sig
The environment is less contaminated while using organic goods.		.616	.054	9.209	***
It is a positive representation of using organic products.		.616	.061	9.333	***
All organic goods from certified organic farming are available.		.425	.067	5.457	***
The family members do not have any reservations about using organic products.	Purchase Decision	.902	Reference Point		***
Organic goods are easier to find on the market.		.732	.059	11.272	***
Organic food was of excellent quality and taste.		.515	.051	7.769	***
Organic goods don't cost a lot.		.635	.047	9.302	***
Protecting resources for future generations.	Outcomes	.771	Reference Point		
Aid your neighborhood's small farmers.		.568	.094	7.262	***
Support the sustainable and organic movements.		.754	.092	9.218	***

***Significant at 0.001 level

X. RESULT AND DISCUSSION

The consumer awareness about the organic food product consist of three indicators. They are Labels and items for organic products are easier to recognize, Products are raised in harmony with the environment and the impression, attitudes, and beliefs surrounding the use of organic products have grown. It is revealed that the awareness indicators “The impression, attitudes, and beliefs surrounding the use of organic products have grown” and “Labels and items for organic products are easier to recognize” significantly predicted the consumer awareness. It is revealed that when consumer awareness regarding organic food product goes up by 1 standard deviation, their consideration of “Labels and items for organic products are easier to recognize”. goes up by 0.956 standard deviations.

The consumer gathering information that is knowing more about the organic food products consist of three indicators such as, Consuming organic products is in vogue, I'm looking for feedback on the advantages of using organic products and Based on necessity, purchasing organic products. The table clearly indicates that all the consumer information criteria significantly predicted. The highest standardized score of 0.931 happened on “Based on necessity, purchasing organic products”. It is found when consumer interest on gathering additional information about the organic food product goes up 1 standard deviation, their consideration of “Based on necessity, purchasing organic products” goes up by 0.931 standard deviation.

Consumer prefer for trail for using organic food products that is evaluation consist of five indicators such as, The environment is less contaminated while using organic goods, More recent than typical food, Organic products are highly regulated and guaranteed to be safe, It is a positive

representation of using organic products and All organic goods from certified organic farming are available. The third stage of consumer behavior process consist of five indicators emerged under consumer evaluation. All the indicators significantly predicted the consumer evaluation process of consuming organic food products. It is found that when consumer rediness to evaluate the organic food products goes up by 1 standard deviation, their evaluation indicator on “Organic products are highly regulated and guaranteed to be safe” are goes up by 0.903 standard deviation.

Based on the evaluation of organic product, consumer ready to take purchasing decision. It involved four indicators such as, Organic food was of excellent quality and taste, Organic goods are easier to find on the market, The family members do not have any reservations about using organic products and Organic goods don't cost a lot. The four consumer purchasing decision indictors significantly emerged to predict the latent constructs. It is revealed that when consumer’s Purchase Decision over buying organic food products goes up by 1 standard deviation, “The family members do not have any reservations about using organic products” goes up by 0.902 standard deviations.

The final outcomes that is Support the sustainable and organic movements, Aid your neighborhood's small farmers and Protecting resources for future generations are all outcome of their experience by using the organic food products. The three indicators significantly predicted the consumer final outcome. The highest standardized regression weights happened on “Protecting resources for future generations”. It is revealed that when consumer final outcomes after buying organic food product. goes up by 1 standard deviation, their final outcomes is “Protecting resources for future generations” goes up by 0.771 standard deviations

Table. III: Hypothesis test result summary

Hypothesis	Beta	S.E.	C.R.	Sig.	Result	Inferences
Ha1	.467	.233	2.444	.015	Accept	Awareness of organic food makes the consumer go further to gather more information about it
Ha2	.530	.090	6.134	***	Accept	Information about organic food has positive effect consumer's evaluation process

Hypothesis	Beta	S.E.	C.R.	Sig.	Result	Inferences
Ha3	.631	.082	8.436	***	Accept	Organic food evaluations by consumers influence those consumers' purchasing choices favourably.
Ha4	.091	.071	1.004	.315	Reject	The purchase decision of the consumer buying behavior process of organic food products has a not derive positive outcome.

Results of the hypothesis test are shown in the above table. Based on the hierarchy created by Engel-Kallat-Balackwell, the hypothesis is built. Theoretically, it has been demonstrated that customer knowledge of organic food products prompts consumers to move on to the next stage of the purchasing process, which is gathering more data before making a purchase. Before making a purchase choice, consumers assess all organic food products in the second step of the purchasing process. In the third step, consumers evaluate organic products before making a purchase. Ultimately, their results determine whether they keep using the organic food product or not.

Ha1: The probability of getting a critical ratio as large as 2.444 in absolute value is .015. The regression weight for consumer awareness of organic food products in the prediction of their interest in gathering additional Information is significantly different from zero at the 0.05 level. It is confirmed that consumer awareness goes up by 1 standard deviation, consumer showing interest in gathering additional Information goes up by 0.467 standard deviations. It is concluded that Awareness of organic food makes the consumer go further to gather more information about it.

Ha2: The probability of getting a critical ratio as large as 6.134 in absolute value is less than 0.001. The regression weight for consumer interest in gathering additional Information in the prediction of Evaluation of organic product is significantly different from zero at the 0.001 level. It is found that when consumer interest in gathering additional Information goes up 1, the consumer readiness of evaluating the organic product is goes up by 0.53 standard deviation. It is concluded that Information about organic food has positive effect consumer's evaluation process.

Ha3: The probability of getting a critical ratio as large as 8.436 in absolute value is less than 0.001. The regression weight for consumer readiness to evaluate the organic food product in the prediction of their Purchase Decision is significantly different from zero at the 0.001 level. It is concluded that when consumer readiness to evaluate the organic food product goes up by 1 standard deviation, their Purchase Decision goes up by 0.631. It is concluded that Consumers' assessment of organic food has positive effect on consumer's purchase decision

Ha4: The probability of getting a critical ratio as large as 1.004 in absolute value is .315. The regression weight for consumer purchasing decision of organic food product in the prediction of their outcomes is not significantly different from zero at the 0.05 level. It is revealed that when consumer purchasing decision goes up by 1 standard deviation, Outcomes goes up by 0.091. It is concluded that the purchase decision of the consumer buying behavior process of organic food products has a not derive positive outcome.

XI. FINDINGS

1. This research paper's main objective is to understand customer purchasing behaviours for organic food items utilizing a five-stage procedure created by Engel-Kallat-Balackwell. based on the specified following goals.

2. Out of 182 sample respondents, 56.6 percentage of respondents are Male respondents. Out of four level classification of respondent age, 33.5 percentage of respondents in the age between 36 – 45.

3. It is found that 35.7 percentage of respondent working in Private sector and 34.1 percentage of respondents were self employed. Their income classified into five levels. 25.8 percentages of respondents earn a monthly income below Rs. 25,000

4. It is found that all the fit indices are not within the acceptable range. The five stages of consumer buying behavior indicators achieved a reliability score of cronbach's Alpha 0.841.

5. It is found that when consumer awareness regarding organic food product goes up by 1 standard deviation, their consideration of "Labels and items for organic products are easier to recognize". goes up by 0.956.

6. It is found when consumer interest on gathering additional information about the organic food product goes up 1 standard deviation, their consideration of "Based on necessity, purchasing organic products" goes up by 0.931.

7. It is found that when consumer readiness to evaluate the organic food products goes up by 1 standard deviation, their evaluation indicator on "Organic products are highly regulated and guaranteed to be safe" are goes up by 0.903.

8. It is revealed that when consumer final outcomes after buying organic food product. goes up by 1 standard deviation, their final outcomes is "Protecting resources for future generations" goes up by 0.771

9. It is found that awareness of organic food makes the consumer go further to gather more information about it and gathering further Information about organic food has positive effect consumer's evaluation process.

10. It is found that Consumers' assessment of organic food has positive effect on consumer's purchase decision and their purchase decision of the consumer buying behavior process of organic food products has a not derive positive outcome

XII. CONCLUSION

This short-term research discovered that people are acting favorably towards purchasing organic goods. The above findings lead us to the conclusion that the state and central governments should take action to increase the productivity of agricultural land through the use of organic farming, including organic manures and fertilizers.



To enrich the soil's productivity while minimizing any negative effects on the environment, in order to meet the demand for agricultural products. By raising public awareness through various program and commercials on TV and other channels, it is vital to enhance the trend towards the consumption of organic food. Additionally, it is important to move forward with providing subsidies for organic producers. Marketers might launch certain unique promotions to draw buyers of organic food, as well as upscale stores and packages to serve all customers.

MANAGERIAL IMPLICATION

The organic food industry must better understand the range of consumer motivations, perceptions, and attitudes towards organic foods and their consumption if they are to effectively serve both their own long-term interests and those of other stakeholders in the food marketing industry.

DECLARATION

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Conflicts of Interest/ Competing Interests	No conflicts of interest to the best of our knowledge.
Ethical Approval and Consent to Participate	No, the article does not require ethical approval and consent to participate with evidence.
Availability of Data and Material/ Data Access Statement	Yes, this research done with a primary data collected from the sample respondents. All the personal and demographic information and their opinion on core questions are strictly confidential. This data are used only for an purpose of research paper.
Authors Contributions	I am only the sole author of the article.

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