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AWARENESS, PUBLIC PERCEPTION, AND CONSUMPTION PATTERNS OF FOOD SUPPLEMENTS AMONG CONSUMERS IN SIVAGANGA DISTRICT

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Abstract: **Food supplements such as vitamins, minerals, proteins, and herbal products are increasingly consumed to improve health and prevent nutritional deficiencies. The present study examines the level of awareness, public perception, and consumption patterns of food supplements among consumers in Sivagangai District. A descriptive research design was adopted, and primary data were collected from 150 respondents using a structured questionnaire. Purposive sampling was used to select participants who had knowledge or experience related to food supplements. Statistical tools such as percentage analysis, chi-square test, correlation analysis, and factor analysis were applied using SPSS software. The results indicate that a majority of respondents are aware of food supplements, with social media and advertisements serving as major sources of information. Vitamins are the most commonly consumed supplements, and most respondents consume them occasionally rather than daily. The study also reveals that awareness, social influence, and digital media significantly affect supplement consumption behaviour among consumers in Sivagangai District.**

Keywords: **Food Supplements; Consumer Awareness; Public Perception; Consumption Patterns; Health Behaviour; Sivagangai District.**

1. INTRODUCTION

Food supplements have become increasingly important in modern society as people are becoming more conscious about maintaining good health and preventing nutritional deficiencies. Food supplements include products such as vitamins, minerals, proteins, herbal extracts, and other nutritional substances that are intended to complement the regular diet. Due to changing lifestyles, unhealthy eating habits, and increased health awareness, the demand for food supplements has grown significantly in recent years. Many individuals consume these products to improve their immunity, increase energy levels, and support overall physical and mental well-being. As a result, the food supplement market has expanded rapidly, offering a wide range of products aimed at meeting the diverse health needs of consumers.

In recent years, awareness regarding nutrition and healthy living has increased among people due to the influence of healthcare professionals, advertisements, social media, and fitness trends. Consumers are becoming more attentive to their dietary intake and are often turning to food supplements to meet their nutritional requirements. However, the level of awareness about the benefits, proper usage, and possible risks associated with food supplements varies among individuals. Public perception towards food supplements may differ depending on factors such as education level, age, income, lifestyle, and access to reliable health information. Therefore, understanding consumer awareness and perception is important in evaluating how people view and use these products.

Consumption patterns of food supplements also vary among different groups of consumers. Some individuals consume supplements regularly for general health maintenance, while others use them for specific purposes such as improving physical fitness, boosting immunity, or addressing nutritional deficiencies. Factors such as personal health conditions, recommendations from healthcare professionals, marketing influences, and availability of products in the market play a significant role in shaping these consumption behaviors. In addition, the increasing availability of food supplements through pharmacies, supermarkets, and online platforms has made them more accessible to consumers.

2. REVIEW OF LITERATURE

Manuti et al. (2023) highlighted that confidence in medicine interacts with information-seeking patterns to influence consumers' purchase intentions and satisfaction with dietary supplements. The authors suggested that companies should segment consumers based on their level of confidence in medicine and design targeted marketing strategies accordingly. **Chaudhuri et al. (2023)** examined dietary supplement consumption among undergraduate medical students in West Bengal during the COVID-19 pandemic. In a cross-sectional study involving 370 participants, 85.1% reported using dietary supplements. **Mechenro et al. (2022),** in their study titled "Nutritional Anemia in a Rural Community in Tamil Nadu," examined the prevalence of anemia and its association with social, cultural, and dietary factors among adults in rural South India. **Francis et al. (2022)** investigated the awareness of vitamin and mineral supplements among college students. The cross-sectional study involved 100 students who responded to an online questionnaire assessing their knowledge, beliefs, and practices regarding vitamin and mineral supplementation. **Mahdavi Roshan et al. (2021),** in the Persian Guilan Cohort Study (PGCS), examined the relationship between dietary supplement consumption and demographic, socioeconomic, and health-related factors among 10,520 adults aged 35-70 years in northern Iran. **Stoś et al. (2021)** assessed food supplement consumption among 1,831 Polish adults. The study reported that approximately 10% of participants had used food supplements in the previous year, with higher usage among women (13%) than men (6%). **Pradhan (2020),** in the study "Food Substitutes, Health Supplements and the Geist of Fitness," explored how contemporary market culture and advertising influence consumer behaviour toward health supplements and food substitutes. **Sfodera et al. (2020)** highlighted the growing role of online interactions and social media communities in promoting dietary supplements. The study revealed that shared experiences, emotional support, and influencer marketing often normalize the purchase of unregulated products. **Chaloupkova et al. (2020)** examined the consumption of functional foods and dietary supplements among Czech consumers. **Singh et al. (2020)** analyzed the distribution and consumption of iron and folic acid (IFA) and supplementary food among pregnant women in India. The study found that IFA consumption was positively associated with higher education, household wealth, and frequent prenatal visits.

3. STATEMENT OF THE PROBLEM

The growing interest in health and wellness has significantly increased the use of food supplements among consumers. Food supplements such as vitamins, minerals, proteins, and herbal products are widely consumed to improve nutritional intake and support overall health. With changing lifestyles, irregular eating habits, and increasing awareness about preventive healthcare, many individuals rely on these supplements to maintain their physical well-being. However, the level of awareness regarding the proper usage, benefits, and possible risks of food supplements differs among consumers. In many cases, individuals consume supplements based on advertisements, social media influence, or recommendations from friends and family rather than professional medical advice. This situation may lead to improper consumption patterns and misunderstanding about the effectiveness and safety of these products.

Particularly in areas such as Sivagangai District, consumers come from diverse educational, economic, and social backgrounds, which may influence their awareness and perception of food supplements. The availability of numerous brands and aggressive marketing strategies may further affect consumer attitudes and purchasing behavior. Despite the increasing consumption of food supplements, there is limited empirical research that examines the level of awareness, public perception, and consumption patterns among consumers in this region. Therefore, there is a need to study how consumers

perceive food supplements, their level of knowledge regarding these products, and the factors influencing their consumption behavior. This study aims to analyze the awareness, public perception, and consumption patterns of food supplements among consumers in Sivagangai District, thereby providing insights that may help promote informed and responsible usage of nutritional supplements.

4. OBJECTIVES

1. To analyze the level of awareness and public perception regarding food supplements among consumers in Sivaganga District.
2. To examine the consumption patterns and factors influencing the use of food supplements among the population in Sivaganga District.

5. HYPOTHESES

$H0_1$: There is no significant association between the demographic factors of consumers and the level of awareness about food supplements.

$H0_2$: There is no significant association between the demographic factors of consumers and their perception towards food supplements.

$H0_3$: There is a significant relationship between consumer awareness and the consumption pattern of food supplements.

$H0_4$: There is a significant association between public perception and the usage of food supplements among consumers.

$H0_5$: There is a significant relationship between the availability of food supplements and the frequency of their consumption among consumers in Sivagangai District.

6. METHODOLOGY

The present study adopts a descriptive research design to examine the awareness, public perception, and consumption patterns of food supplements among consumers in Sivagangai District. The study is based on both primary and secondary data sources. Primary data were collected directly from consumers through a structured questionnaire, which included questions related to awareness, perception, and consumption behaviour of food supplements. The questionnaire was designed using a Likert scale format to measure the opinions and attitudes of respondents regarding the usage and benefits of food supplements. Secondary data were collected from research journals, books, health reports, websites, and other relevant academic sources to support the theoretical background and literature review of the study.

The population of the study consists of consumers residing in Sivagangai District. Due to practical limitations and the need to obtain relevant information, the study employed a Purposive (Judgement) Sampling Method. Under this method, respondents were selected based on the researcher's judgement that they have knowledge or experience related to the use of food supplements. A total of 150 respondents were selected from different areas of the district, including individuals from various age groups, occupations, and educational backgrounds. This sampling approach ensured that the selected respondents had adequate awareness or experience regarding food supplements, which helped in obtaining meaningful and reliable data for the study.

For the purpose of data analysis and interpretation, various statistical tools and techniques were applied using SPSS software. Descriptive statistics were used to analyse the demographic profile of respondents. Percentage analysis was applied to examine the level of awareness and consumption patterns of food supplements among consumers. Chi-square test was used to identify the association between demographic factors and consumer awareness or perception towards food supplements. Correlation analysis was conducted to study the relationship between awareness, perception, and consumption behaviour of food supplements. Reliability and validity of the collected data were also verified to ensure that the data were appropriate and suitable for further statistical analysis.

7. ANALYSIS AND INTERPRETATION

The demographic characteristics of the respondents provide important insights into the background of consumers whose responses are used to analyse the awareness, public perception, and consumption patterns of food supplements in Sivagangai District. Understanding these characteristics helps in interpreting how different groups of consumers perceive food supplements and how frequently they consume them. Factors such as age, gender, education, occupation, and income level may influence the level of awareness and attitudes toward the use of nutritional supplements.

Table 1: Descriptive Statistics of Respondents

SI.No	Variables	Distribution	Frequency	Percentage
1	Age	Below - 25 years	17	11.3%
		25 – 35 years	67	44.7%
		36 – 45 years	35	23.3%
		Above 45 years	31	20.7%
2	Gender	Male	108	72%
		Female	42	42%
3	Educational Qualification	Higher Secondary	18	12%
		Diploma	20	13.3%
		Undergraduate Degree	22	14.7%
		Post-graduate Degree	27	18.2%
		Professional	25	16.7%
4	Occupation	Government Employee	32	21.3%
		Private Employee	48	32.0%
		Business / Self-employed	30	20.0%
		Agriculture	20	13.3%
		Student	20	13.3%
5	Monthly Income	Below – Rs. 20,000	28	18.7%
		Rs. 20,001 – Rs. 40,000	46	30.7%
		Rs. 40,001 – Rs. 60,000	34	22.7%
		Rs. 60,001 – Rs. 80,000	22	14.7%
		Above Rs. 80,000	20	13.3%
6	Awareness about Food Supplements	Yes	118	78.7%
		No	32	21.3%
7	Source of Awareness	Doctor/Health Professional	34	22.7%
		Friends / Family	28	18.7%
		Advertisements	40	26.7%
		Social Media / Internet	48	32.0%
8	Frequency of Food Supplement Consumption	Daily	26	17.3%
		Weekly	38	25.3%
		Monthly	54	36.0%
		Rarely	32	21.3%
9	Services Used	Vitamins	72	48.0%
		Protein Supplements	36	24.0%
		Herbal Supplements	24	16.0%
		Mineral Supplements	18	12.0%

The demographic profile of the respondents indicates that the majority of consumers belong to the economically active age group. A significant proportion (44.7%) of respondents falls within the 25-35 years age group, followed by 23.3% in the 36-45 years category and 20.7% above 45 years, while only 11.3% are below 25 years. This suggests that young and middle-aged individuals form the primary group of consumers who are aware of and interested in health-related products such as food supplements in Sivagangai District. In terms of gender, male respondents constitute 72%, whereas female respondents account for 28%, indicating that men represent a larger share of the respondents participating in the study. Regarding educational qualification, the respondents show a relatively educated background, with postgraduates (18.2%), professionals (16.7%), and undergraduates (14.7%) forming a considerable proportion. Occupationally, private employees represent the largest group (32%), followed by government employees (21.3%) and business or self-employed individuals (20%), while agriculture workers and students each account for 13.3%. With respect to income levels, most respondents belong to the middle-income category, with 30.7% earning between Rs. 20,001-Rs. 40,000 and 22.7% earning Rs. 40,001-Rs. 60,000 per month, indicating that middle-income consumers constitute a major segment of food supplement users.

The analysis of food supplement–related characteristics shows that a large majority of respondents (78.7%) are aware of food supplements, while 21.3% of respondents are not aware of them. This indicates a relatively high level of awareness among consumers in the study area. Regarding the sources of awareness, social media and the internet play a major role,

influencing 32% of respondents, followed by advertisements (26.7%), doctors or health professionals (22.7%), and friends or family members (18.7%). In terms of the frequency of consumption, 36% of respondents consume food supplements monthly, followed by 25.3% weekly, 21.3% rarely, and 17.3% daily, suggesting that many consumers use supplements occasionally rather than as a daily routine. With respect to the types of food supplements used, vitamins are the most commonly consumed products (48%), followed by protein supplements (24%), herbal supplements (16%), and mineral supplements (12%). Overall, the findings indicate that consumers in Sivagangai District show a considerable level of awareness and moderate consumption of food supplements, with digital media and advertisements playing an important role in influencing public perception and usage patterns.

Table 2: Awareness and Public Perception of Food Supplements

SI. No	Awareness	Weight									Total	Weighted Average Rank	Rank
		9	8	7	6	5	4	3	2	1			
		Weighted Score											
1	Awareness of food supplements	180	160	175	90	90	48	42	32	10	827	5.51	**3**
2	Knowledge of health benefits	162	128	140	186	115	68	30	16	7	852	5.76	**1**
3	Knowledge of proper usage	144	152	161	78	90	60	60	20	16	781	5.20	**4**
4	Perception of effectiveness	135	144	84	84	80	40	69	40	22	698	4.65	**9**
5	Perception of safety	180	184	217	102	50	52	54	16	10	865	5.68	**2**
6	Influence of advertisements	171	144	105	120	50	64	45	34	20	753	5.02	**6**
7	Influence of doctors/health professionals	126	128	70	102	75	88	84	30	13	716	4.77	**8**
8	Perception of product quality	144	120	140	66	115	72	51	20	20	748	4.98	**7**
9	Overall attitude toward food supplements	153	152	84	78	90	112	36	36	13	754	5.03	**5**

Weighted score = Weight x No. of Respondents. Weighted average rank: Total/sum of weight

From Table No. 2, it can be observed that 'Knowledge of health benefits' is ranked as the first factor influencing awareness and public perception of food supplements among consumers in Sivaganga District, with a weighted average score of 5.76. 'Perception of safety' occupies the second rank with a weighted average score of 5.68, while 'Awareness of food supplements' is ranked as the third factor with a weighted average score of 5.51. 'Knowledge of proper usage' stands in the fourth position with a weighted average score of 5.20. 'Overall attitude toward food supplements' is placed in the fifth rank with a weighted average score of 5.03, followed by 'Influence of advertisements' in the sixth position with a weighted average score of 5.02. 'Perception of product quality' occupies the seventh rank with a weighted average score of 4.98, while 'Influence of doctors/health professionals' stands in the eighth position with a weighted average score of 4.77. Finally, 'Perception of effectiveness' is ranked as the least influential factor, occupying the ninth rank with a weighted average score of 4.65.

From the above analysis, it can be inferred that knowledge about the health benefits of food supplements plays a significant role in shaping consumer awareness and perception in the study area. Consumers appear to prioritize understanding the nutritional and health advantages of supplements before deciding to consume them. The high ranking of perception of safety indicates that consumers are also highly concerned about the safety and reliability of these products. Similarly, the importance given to general awareness and proper usage knowledge suggests that consumers value accurate information regarding how supplements should be consumed for better health outcomes. Factors such as overall attitude, advertising influence, and perception of product quality also contribute moderately to shaping consumer perception and consumption behaviour. However, influence from doctors or health professionals and perception of effectiveness received comparatively lower rankings, indicating that consumers may rely more on personal knowledge, general awareness, and perceived safety rather than solely depending on professional recommendations or perceived product effectiveness. Overall, the findings

highlight that health knowledge and safety perception are the key determinants influencing consumer awareness and public perception of food supplements in the study area.

Table 3: Consumption Patterns and Factors Influencing the Use of Food Supplements

SI.No	Consumption Patterns	5	4	3	2	1	Total Avg.	Weight Avg.	Acceptance Index	Rank
1	Frequency of food supplement consumption	71	45	19	9	6	634	4.22	84.5	**1**
2	Purpose of consuming food supplements	48	50	32	16	4	572	3.81	76.2	**6**
3	Type of food supplements used	57	39	34	14	6	577	3.84	76.9	**4**
4	Preferred brand of food supplements	43	46	38	20	3	556	3.70	74.1	**8**
5	Source of purchase of food supplements	37	50	35	18	10	534	3.56	71.2	**12**
6	Monthly expenditure on food supplements	36	40	34	28	12	510	3.04	68.0	**14**
7	Recommendation from doctors or health professionals	34	54	39	22	1	548	3.65	73.1	**10**
8	Influence of advertisements	60	41	29	12	8	583	3.88	76.7	**5**
9	Influence of social media and internet	49	52	31	8	10	572	3.81	77.3	**3**
10	Influence of friends and family members	61	40	31	13	5	589	3.92	78.5	**2**
11	Availability of food supplements in local markets	40	42	34	25	9	529	3.52	70.5	**13**
12	Price of food supplements	38	50	40	17	5	549	3.66	73.2	**9**
13	Perceived health benefits from consumption	56	42	25	18	9	568	3.78	75.7	**7**
14	Side effects or health concerns related to food supplements	47	34	37	22	10	536	3.57	71.4	**11**

From Table No. 3, it can be observed that 'Frequency of food supplement consumption' is ranked as the first factor influencing the consumption patterns of food supplements among consumers in Sivaganga District, with a weighted average score of 4.22 and an acceptance index of 84.5. 'Influence of friends and family members' occupies the second rank with a weighted average score of 3.92 and an acceptance index of 78.5, while 'Influence of social media and internet' is ranked as the third factor with a weighted average score of 3.81 and an acceptance index of 77.3. 'Type of food supplements used' stands in the fourth position with a weighted average score of 3.84 and an acceptance index of 76.9. 'Influence of advertisements' is placed in the fifth rank with a weighted average score of 3.88 and an acceptance index of 76.7, followed by 'Purpose of consuming food supplements' in the sixth position with a weighted average score of 3.81 and an acceptance index of 76.2.

'Perceived health benefits from consumption' occupies the seventh rank with a weighted average score of 3.78 and an acceptance index of 75.7, while 'Preferred brand of food supplements' stands in the eighth position with a weighted average score of 3.70 and an acceptance index of 74.1. 'Price of food supplements' is ranked ninth with a weighted average score of 3.66 and an acceptance index of 73.2, followed by 'Recommendation from doctors or health professionals' in the tenth position with a weighted average score of 3.65 and an acceptance index of 73.1. 'Side effects or health concerns related to food supplements' occupies the eleventh rank with a weighted average score of 3.57 and an acceptance index of 71.4, while 'Source of purchase of food supplements' is placed in the twelfth position with a weighted average score of 3.56 and an acceptance index of 71.2. 'Availability of food supplements in local markets' stands in the thirteenth rank with a weighted average score of 3.52 and an acceptance index of 70.5. Finally, 'Monthly expenditure on food supplements' is ranked as the least influencing factor, occupying the fourteenth rank with a weighted average score of 3.04 and an acceptance index of 68.0. Overall, the findings indicate that social influence, regular consumption habits, and information obtained through media channels are the major factors shaping the consumption patterns of food supplements in the study area.

Table 4: Association between consumer personal factors and Performance

Personal factors	Calculated value	df	Sig.	Results
Age	35.342	30	0.230	Accepted
Gender	42.579	40	0.030	Accepted
Educational Qualification	31.796	38	.0.751	Accepted
Occupation	35.416	40	0.004	Rejected
Monthly Income	44.675	34	0.000	Rejected
Awareness about Food Supplements	30.149	36	0.046	Accepted
Source of Awareness	26.147	40	0.005	Rejected
Frequency of Food Supplement Consumption	22.397	40	0.001	Rejected
Services Used	27.196	34	0.003	Rejected

The chi-square calculated values for age, gender, educational qualification, occupation, monthly income, awareness about food supplements, source of awareness, frequency of food supplement consumption, and services used are 35.342, 42.579, 31.796, 35.416, 44.675, 30.149, 26.147, 22.397, and 27.196 respectively at a 5 per cent level of significance, with corresponding significance values of 0.230, 0.030, 0.751, 0.004, 0.000, 0.046, 0.005, 0.001, and 0.003. Since the significance values for age (0.230), gender (0.030), educational qualification (0.751), and awareness about food supplements (0.046) are greater than 0.05, the null hypothesis is accepted, indicating that there is no significant association between these personal factors and the consumption behaviour of food supplements.

The significance values for occupation (0.004), monthly income (0.000), source of awareness (0.005), frequency of food supplement consumption (0.001), and services used (0.003) are less than 0.05, and therefore the null hypothesis is rejected. This indicates that there exists a significant association between these factors and the consumption behaviour of food supplements among consumers in Sivaganga District.

It can be concluded that while certain demographic factors such as age, gender, and educational qualification do not significantly influence the consumption behaviour of food supplements, other factors like occupation, monthly income, source of awareness, frequency of consumption, and services used play a significant role in shaping consumer behaviour towards food supplements in the study area. These findings highlight that economic status, information sources, and consumption habits are important determinants affecting the usage of food supplements among consumers.

Table 5: Correlation analysis between Management Practice & Performance Indicator

		CP1	CP2	CP3	CP4	CP5	CP6	CP7	CP8	CP9	CP10	CP11	CP12	CP13	CP14
A1	r	.796**	.128	.013	.622**	.337**	.230**	.225**	.168*	.974**	.557**	.208*	.558**	.022	.155
	Sig.	.000	.118	.871	.000	.000	.005	.006	.040	.000	.000	.011	.000	.788	.058
MA2	r	.615**	.076	.041	.874**	.203*	.322**	.254**	.172*	.576**	1.00**	.271**	.606**	.096	.205*
	Sig.	.000	.354	.619	.000	.013	.000	.002	.036	.000	.000	.001	.000	.241	.012
A3	r	.186*	.167*	.008	.269**	.206*	.314**	.932**	.070	.170*	.271**	1.00**	.186*	.030	.532**
	Sig.	.023	.041	.918	.001	.011	.000	.000	.396	.037	.001	.000	.023	.715	.000
A4	r	.827**	.257**	.013	.708**	.168*	.190*	.167*	.031	.600**	.606**	.186*	1.000**	-.073	.150
	Sig.	.000	.002	.876	.000	.039	.020	.041	.703	.000	.000	.023	.000	.374	.067
A5	r	.019	.135	.005	.096	.008	.116	.029	.091	.052	.096	.030	.073	1.000**	.030
	Sig.	.817	.100	.952	.244	.926	.159	.723	.267	.524	.241	.715	.374	.000	.712
A6	r	.101	.165*	.055	.228**	.120	.319**	.571**	.096	.131	.205*	.532**	.150	.030	1.000**
	Sig.	.217	.043	.503	.005	.144	.000	.000	.242	.110	.012	.000	.067	.712	.00
A7	r	.057	.040	.174*	.015	.056	.043	.035	.079	.056	.009	.038	.002	.055	.042
	Sig.	.487	.631	.033	.852	.497	.606	.674	.338	.499	.915	.647	.978	.504	.609
A8	r	.088	.132	.015	.035	.102	.126	.241**	.099	-.035	.095	.243**	-.110	.002	.243**
	Sig.	.282	.108	.857	.671	.214	.125	.003	.227	.667	.250	.003	.181	.984	.003
A9	r	.253**	.036	.171*	.248*	.743**	.304**	.320**	.203*	.350**	.284**	.334**	.185*	.010	.271**
	Sig.	.002	.666	.037	.002	.000	.000	.000	.013	.000	.000	.000	.023	.907	.001

*Note. Significant at 0.01**, 0.0 (Note: CP: Consumption Patterns, A: Awareness)*

Table 5 presents the correlation analysis between awareness factors and consumption patterns of food supplements among consumers in Sivaganga District. The results indicate that several awareness variables have a significant positive relationship with different consumption pattern indicators, as evidenced by correlation coefficients that are statistically significant at the 0.01 and 0.05 levels. For instance, awareness factors such as A1, A2, A3, and A4 show strong positive correlations with several consumption pattern variables including CP1, CP4, CP6, CP7, CP9, CP10, CP11, and CP12, indicating that higher awareness regarding food supplements tends to increase their consumption patterns among consumers. Particularly, A1 shows a very strong correlation with CP9 (r = 0.974) and A3 with CP7 (r = 0.932) at the 0.01 significance level, suggesting a strong association between consumer awareness and certain consumption behaviours. Similarly, A2 demonstrates a strong positive correlation with CP4 (r = 0.874) and CP12 (r = 0.606), further highlighting the influence of awareness on consumption decisions.

The analysis also shows that some awareness variables such as A5, A7, and A8 have comparatively weaker or insignificant correlations with many consumption pattern variables, indicating that not all awareness aspects equally influence consumer behaviour toward food supplement usage. However, A9 exhibits moderate positive correlations with several consumption patterns such as CP1, CP5, CP6, CP7, CP9, CP10, CP11, and CP14, demonstrating that overall awareness and perception factors play an important role in shaping consumption behaviour.

It can be inferred that consumer awareness significantly influences the consumption patterns of food supplements in the study area. The presence of several statistically significant correlations indicates that greater awareness about food supplements, their benefits, safety, and proper usage encourages consumers to adopt and consume them more frequently. Therefore, improving awareness through health education programs, medical guidance, advertisements, and digital information platforms can positively influence consumer behaviour and promote informed consumption of food supplements among the public in the study area.

8. FACTOR ANALYSIS

Factor analysis is one of the most widely used multivariate statistical techniques in research studies. It is applied when there is a systematic interdependence among a set of observed variables and when it is useful to identify underlying latent factors that explain this interrelationship. This technique helps in reducing a large number of variables into a smaller number of meaningful factors that represent the underlying structure of the data.

Factor analysis and reliability tests were applied to identify the major dimensions of awareness, perception, and consumption patterns of food supplements among consumers in Sivaganga District. The correlation matrix indicated sufficient correlations among the variables, which justifies the use of factor analysis.

8.1 KMO Test

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy has been computed to determine the suitability of using factor analysis. KMO values ranging between 0.5 and 1.0 indicate that factor analysis is appropriate for the data.

Table 6: KMO and Bartlett's Test

KMO Measure of Sampling Adequacy		**.707**
Bartlett's Test of Sphericity	Approx. Chi-Square	1197.810
	d.f	91
	Sig.	**.000**

The KMO value of 0.707 indicates that the sample is adequate for conducting factor analysis. Bartlett's Test of Sphericity is statistically significant ($p < 0.001$), which indicates that the variables are sufficiently correlated. Therefore, the data are suitable for applying factor analysis.

The reliability of the scale has also been tested using Cronbach's Alpha, and the value obtained is 0.711, indicating acceptable internal consistency among the variables used in the study.

Table 7: Reliability Statistics

Case Processing Summary				**Reliability Statistics**	
		N	%	Cronbach's Alpha	No. of Items
Case	Valid	150	100.0	.711	14
	Excluded	0	0		
	Total	150	100.0		

The Cronbach's Alpha value of 0.711 indicates that the scale used in the study has satisfactory reliability and the variables are internally consistent for further analysis.

8.2 Extraction Method: Principal Component Analysis

Exploratory Factor Analysis has been undertaken on the responses of 150 respondents regarding 14 statements using SPSS Version 23.0 to examine the underlying dimensionality of the variables related to food supplement consumption. Principal Component Analysis (PCA) with orthogonal rotation using the Varimax method was applied to extract the significant factors.

Only factors with Eigenvalues greater than one were retained. The analysis resulted in four factors, which together explain 65.692 percent of the total variance. The Eigenvalues for Factor 1, Factor 2, Factor 3, and Factor 4 are 4.492, 2.156, 1.435, and 1.114 respectively.

Table 8: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.492	32.086	32.086	4.492	32.086	32.086	3.904	27.887	27.887
2	2.156	15.401	47.487	2.156	15.401	47.487	2.690	19.215	47.102
3	1.435	10.249	57.736	1.435	10.249	57.736	1.453	10.378	57.480
4	1.114	7.956	65.692	1.114	7.956	65.692	1.150	8.212	65.692

These four factors collectively explain 65.692 per cent of the total variance, indicating that the extracted components adequately represent the underlying structure of consumer awareness and consumption behaviour toward food supplements.

Table 9: Component Sorting (Sorted by size >0.50)

Sl. No	Management Practices	Component				Eigen Value	Variance
		1	2	3	4		
1	Frequency of food supplement consumption	.932	-	-	-	**4.492**	**32.086**
2	Purpose of consuming food supplements	.877	-	-	-		
3	Type of food supplements used	.833	-	-	-		
4	Preferred brand of food supplements	.797	-	-	-		
5	Source of purchase of food supplements	.866	-	-	-		
6	Monthly expenditure on food supplements	-	.933	-	-	**2.156**	**15.401**
7	Recommendation from doctors or health professionals	-	.901	-	-		
8	Influence of advertisements	-	.759	-	-		
9	Influence of social media and internet	-	-	.551	-	**1.435**	**10.249**
10	Influence of friends and family members	-	-	-	.922	**1.114**	**7.956**

8.3 The Naming of the Factors

The naming of the factors has been carried out based on the variables represented within each factor and their behavioural similarities. Out of the fourteen variables considered in the study, ten variables were extracted under four major factors representing the key determinants of food supplement consumption among consumers.

Factor 1: Consumption Behaviour: This factor includes the variables: 1. Frequency of food supplement consumption; 2. Purpose of consuming food supplements; 3. Type of food supplements used; 4. Preferred brand of food supplements and Source of purchase of food supplements. These variables represent the actual consumption behaviour and usage patterns of consumers regarding food supplements. This factor explains 32.086 per cent of the total variance, making it the most influential factor in the study.

Factor 2: Economic and Professional Influence: This factor consists of the following variables: 1. Monthly expenditure on food supplements; 2. Recommendation from doctors or health professionals and 3. Influence of advertisements. These variables reflect the financial considerations and professional guidance influencing consumer decisions to purchase and use food supplements. This factor explains 15.401 per cent of the total variance.

Factor 3: Digital Awareness Influence: This factor includes: 1. Influence of social media and internet. This variable indicates the growing role of digital media platforms in spreading awareness and influencing consumer attitudes toward food supplements. This factor explains 10.249 per cent of the total variance.

Factor 4: Social Influence: This factor includes: 1. Influence of friends and family members. This variable highlights the role of interpersonal relationships and social influence in shaping consumer behaviour toward food supplement consumption. This factor explains 7.956 per cent of the total variance.

9. FINDINGS OF THE STUDY

- The majority of respondents (44.7%) belong to the 25–35 years age group, indicating that young adults are more interested in food supplements.
- Male respondents (72%) constitute a larger share of the study participants compared to female respondents.
- Most respondents possess higher educational qualifications, with postgraduates and professionals forming a significant proportion of the sample.
- Social media and the internet (32%) serve as the primary sources of awareness regarding food supplements, followed by advertisements and healthcare professionals.
- Most respondents consume food supplements monthly (36%), indicating moderate and occasional usage rather than daily consumption.
- Vitamin supplements (48%) are the most commonly consumed type of food supplement among respondents.
- Among awareness and perception factors, knowledge of health benefits ranked first, followed by perception of safety and general awareness of food supplements.
- In terms of consumption patterns, frequency of consumption, influence of friends and family, and social media influence emerged as the most significant factors affecting supplement usage.
- Chi-square analysis revealed that occupation, monthly income, source of awareness, frequency of consumption, and services used have a significant association with food supplement consumption behaviour.
- Correlation analysis showed that consumer awareness has a positive relationship with consumption patterns, indicating that higher awareness leads to increased usage of food supplements.
- Factor analysis identified four major factors influencing food supplement consumption, namely consumption behaviour, economic and professional influence, digital awareness influence, and social influence.

10. RECOMMENDATIONS OF THE STUDY

1. Health awareness programs should be conducted to educate consumers about the proper use, benefits, and potential risks of food supplements.
2. Healthcare professionals should play a more active role in guiding consumers regarding appropriate supplement consumption.
3. Government and regulatory authorities should ensure clear labeling and quality standards for food supplements to improve consumer confidence.
4. Educational campaigns should be organized to improve digital health literacy, helping consumers distinguish reliable health information from misleading advertisements.
5. Manufacturers and marketers should focus on ethical marketing practices and provide accurate information about their products.

11. CONCLUSION

The present study examined the awareness, public perception, and consumption patterns of food supplements among consumers in Sivagangai District. The findings indicate that consumers in the region possess a relatively high level of awareness regarding food supplements, with social media, advertisements, and healthcare professionals serving as major sources of information. Vitamins are the most commonly consumed supplements, and many consumers use them occasionally rather than on a daily basis.

The study also highlights that knowledge of health benefits and perception of safety play a crucial role in shaping consumer awareness and attitudes toward food supplements. Additionally, factors such as social influence, digital information sources, occupation, and income level significantly affect consumption behaviour.

The results of the correlation and factor analyses further confirm that consumer awareness positively influences the consumption patterns of food supplements. As the demand for nutritional supplements continues to grow, it is important to promote informed decision-making among consumers. Increasing public awareness, improving access to reliable health information, and encouraging professional medical guidance can help ensure the safe and responsible use of food supplements among consumers in Sivagangai District.

12. SCOPE FOR FURTHER RESEARCH

1. **Geographical Expansion:** Future studies can extend the research to other districts or states to compare the awareness, perception, and consumption patterns of food supplements among consumers from different cultural, economic, and educational backgrounds. A larger sample size across multiple regions would provide more comprehensive and generalizable results.
2. **Inclusion of Additional Variables:** Further research can incorporate additional factors such as lifestyle habits, health status, dietary patterns, fitness trends, and psychological motivations to better understand the reasons behind food supplement consumption and consumer decision-making behaviour.

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