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An Analysis of the Key Factors of Brand Loyalty for Protein Powder Among Gym-Goers in Imphal, Manipur

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Abstract

This study explores the key factors influencing brand loyalty for protein powder among gym-goers in Imphal, Manipur. Focused on understanding the impact of product attributes, social influence, and brand reputation, the research identifies the most critical elements that drive loyalty within this demographic. Using survey data from gym-goers, we analyzed preferences for protein types, forms, and flavours. Findings reveal that brand reputation, flavour, and protein type are primary loyalty drivers, while nutritional content and price hold moderate influence. Notably, social influences were found to have minimal impact. Among brands, Muscle Blaze emerged as the top preference, followed by Optimum Nutrition. Animal-based protein was preferred, particularly whey protein, with concentrate forms and classic flavours like chocolate leading in popularity. Hypothesis testing showed significant relationships between price, flavour, and satisfaction, affirming their roles in brand loyalty, whereas social influence had no substantial effect on perceived value. These insights highlight the need for brands to prioritize product quality, flavour variety, and brand trust to foster consumer loyalty.

Keywords: brand loyalty, protein powder, gym-goers, product attributes, Imphal, Manipur, brand reputation, social influence, consumer preference

1. Introduction

1.1 Background of the Study

With the global rise in health consciousness and fitness awareness, protein supplements have become an essential part of many gym-goers' dietary routines. As individuals increasingly prioritize physical fitness and muscle health, the demand for protein powders has surged, marking significant growth in the health supplement industry. Protein supplements are valued for their ability to support muscle recovery,

enhance physical performance, and contribute to overall nutritional goals, especially for those engaging in strength training and high-intensity workouts. This trend is observable worldwide, and within India, there is an increasing acceptance and usage of protein powders as an accessible form of dietary supplementation among urban populations, including in smaller cities like Imphal.

Brand loyalty in this market has become a critical element, as consumers are often presented with numerous choices regarding types of protein (e.g., whey, plant-based), brand reputation, product attributes, and price. Given the significant investment that regular protein supplementation can represent, many consumers develop loyalty toward brands that align with their values and preferences. Brand loyalty, therefore, not only reflects consumer satisfaction with a product but also encompasses repeated purchasing behaviour, positive brand attitudes, and willingness to recommend a brand to others. Research suggests that consumer loyalty in the health supplement sector is strongly driven by product quality, brand reputation, social influences, and marketing strategies, including endorsements from athletes and fitness influencers.

In the context of Imphal, understanding gym-goers' preferences and brand loyalty drivers offers valuable insights for both marketers and health professionals aiming to improve product offerings. Specific factors like product attributes, including protein content and flavour, and social influences, such as recommendations from gym trainers or peers, are particularly relevant to this demographic. Additionally, the expanding market of dietary supplements in India presents a unique opportunity to examine how brand loyalty is formed and sustained in niche consumer groups, such as those actively engaged in fitness.

This study aims to identify the key factors influencing brand loyalty for protein powder among gym-goers in Imphal, Manipur, focusing on aspects such as product attributes, social influences, and brand reputation. By exploring the most preferred brands and popular product characteristics, this research seeks to shed light on consumer behaviour in a rapidly growing market and offer insights that could guide product development and marketing strategies in the health supplement industry.

1.2 Statement of the Problem

As the health and fitness industry expands globally, the market for protein supplements, especially protein powders, has seen unprecedented growth. With an increasing number of brands entering this competitive space, developing and retaining customer loyalty has become a central focus for companies aiming to stand out in a crowded market. Brand loyalty in this context is influenced by multiple factors, including product quality, price, brand reputation, and social influences, all of which impact gym-goers' purchasing decisions and preferences. However, most existing research on brand loyalty within the health supplement sector primarily focuses on broader, urban markets and does not account for the specific preferences and behaviours in smaller cities or regional contexts.

In Imphal, where consumer awareness and access to various brands of protein powder are rapidly growing, it remains unclear which factors most significantly drive brand loyalty among gym-goers. Traditional factors such as price and brand reputation may play a role, but product attributes (like protein type and flavour) and social influences (such as recommendations from gym trainers or peers) could also

be decisive. The lack of localized research on these specific drivers creates a knowledge gap that limits companies' ability to tailor their products and marketing strategies to this demographic.

This study aims to address this gap by investigating the key factors that contribute to brand loyalty for protein powder among gym-goers in Imphal. By identifying the most influential factors and understanding consumer preferences for specific product attributes and brands, this research will offer valuable insights for companies seeking to strengthen their position in this emerging market. Understanding these dynamics is essential for both companies and stakeholders in the health supplement industry to develop targeted strategies that foster lasting customer loyalty and meet the unique demands of Imphal's fitness-conscious population.

1.3 Significance of the Study

This study aims to provide a comprehensive analysis of brand loyalty factors among gym-goers in Imphal, specifically within the protein powder market, with findings that are anticipated to benefit multiple groups. For protein powder manufacturers and marketers, the study's insights into significant loyalty drivers, such as brand reputation, product attributes, and social influences, can guide strategic development to retain customers. This research will offer manufacturers critical data to align branding, pricing, and product formulation with the unique preferences of gym-goers in niche markets like Imphal, supporting customer retention and growth in market share.

Fitness industry professionals and gym owners, as influential figures in gym-goers' choices, may use these insights to make product recommendations that resonate with their clients' values, enhancing client satisfaction and loyalty. Stocking popular and trusted protein powder brands could also enable gym owners to provide reliable, in-demand nutritional options for their members. For gym-goers and consumers, the study sheds light on the most valued attributes of protein powders, such as product quality, nutritional content, and peer recommendations, enabling them to make more informed decisions that align with their fitness and nutritional goals for greater satisfaction and value.

Finally, this research contributes to the academic field by enhancing the understanding of brand loyalty in health and fitness products, a rapidly growing industry segment. The findings offer a basis for future research on consumer behaviour, particularly within emerging markets and niche fitness demographics. Additionally, the study may serve as a valuable reference for exploring how product attributes, social influence, and brand perception interact to shape brand loyalty in the health and fitness context.

1.4 Structure of the Study

This paper is organized into five sections, each addressing a key aspect of the research on how online reviews influence hotel booking intentions among travelers from Imphal. Introduction covers the study's background, research problem, significance, and structure. Literature Review includes relevant studies on brand loyalty, developing a theoretical framework for the research. Research Methodology describes the study's objectives, scope, sample, data collection and analysis methods, and limitations. Data Analysis and Interpretation analyzes the collected data, covering demographics, descriptive statistics, hypothesis testing, and interpretation of results. Findings and conclusion summarizes key findings, offers practical suggestions, and provides conclusions.

2. Literature review

Brand loyalty has long been a critical area of study in marketing due to its direct impact on customer retention and profitability. For gym-goers, protein powder serves as an essential dietary supplement, and loyalty to specific brands is influenced by multiple factors. This literature review aims to explore the theories surrounding brand loyalty and examine the roles of product attributes, social influences, and brand reputation in cultivating consumer loyalty within the protein supplement market.

The protein supplement market has witnessed remarkable expansion, reflecting growing health consciousness and an increasing number of individuals engaging in fitness activities. Protein plays a pivotal role in muscle growth and overall health, particularly among athletes and physically active people *(Hoffman & Falvo, 2004)*. This growing awareness has led consumers to seek high-quality protein products that not only meet their dietary needs but also align with their lifestyle choices.

In their paper *"Protein – Which is Best?" Hoffman and Falvo (2004)* investigate the significance of protein sources in the diets of endurance and power athletes, addressing the widely accepted notion that higher protein intake is beneficial. The findings suggest that while animal protein plays a crucial role across all age groups, incorporating vegetable proteins can also yield significant health benefits.

In his study *"The Preference of Protein Powders Among Adult Males and Females: A Protein Powder Taste Study, "Manter (2009)* examines the impact of taste on protein supplement consumption among athletes and fitness enthusiasts. The research underscores the importance of high-quality proteins, particularly when, in muscle synthesis and overall health. A total of 162 participants (94 males and 68 females) rated popular protein supplements, including Muscle Milk, BSN, Nesquik Vanilla Milk, and Optimum Nutrition. The findings revealed significant gender differences in taste perceptions, with Nesquik Milk rated positively and Optimum Nutrition receiving a negative rating. BSN and Muscle Milk were viewed as neutral. Manter concludes that **taste is a critical factor** influencing protein powder selection and suggests further investigation into the reasons behind the observed taste preferences.

Kumar and Advani (2005), in their study *"Factors Affecting Brand Loyalty: A Study in an Emerging Market on Fast Moving Consumer Goods,"* investigate the dynamic nature of brand loyalty in the FMCG sector within an emerging market. Their research specifically focuses on the toothpaste category in India, analysing how brand functional benefits, brand symbolism, trust, genetic predisposition, and price consciousness collectively influence consumer loyalty. Drawing from a sample of 444 Indian consumers, the study finds significant effects of brand functional benefits, brand trust, and price consciousness, with genetic influences also shaping loyalty.

Bloemer and Kasper (1995) in their study *"The Complex Relationship Between Consumer Satisfaction and Brand Loyalty"* investigate the intricate interplay between **consumer satisfaction and brand loyalty**. They distinguish between repeat purchasing behaviour and true brand loyalty, clarifying that true brand loyalty is fundamentally different from spurious loyalty. Their findings confirm a moderator effect of elaboration on this relationship, indicating that the dynamics between consumer satisfaction and brand loyalty are complex and not merely straightforward. The authors emphasize the need for a deeper understanding of these relationships in consumer behaviour research.

Hellier et al. (2003) in their study *"Customer Repurchase Intention: A General Structural Equation Model"* develop a comprehensive model of repurchase intention within the service sector, drawing from consumer theory literature. The authors contribute to the field by integrating customer perceptions of equity and value, along with brand preference, into a structural equation model analysing repurchase intentions. Their model identifies seven key factors that influence customer repurchase intentions: service quality, equity and value, customer satisfaction, past loyalty, expected switching costs, and brand preference. Findings indicate that perceived quality does not have a direct effect on customer satisfaction; rather, it influences satisfaction indirectly through perceptions of equity and value. Additionally, the study reveals that past purchase loyalty does not directly correlate with customer satisfaction or current brand preference, positioning brand preference as a mediator between satisfaction and repurchase intention. The primary driver of brand preference identified in the study is **perceived value**, with customer satisfaction and expected switching costs having a comparatively lesser impact.

Unal and Aydın (2013), in their study *"An Investigation on the Evaluation of the Factors Affecting Brand Love"* explore the role of emotional bonds, particularly brand love, in fostering loyalty beyond mere satisfaction. They examine how factors such as social self-concept, variety-seeking behaviour, and brand image contribute to the development of brand love, a concept that has gained interest in recent marketing literature. This research underscores the importance of **emotional attachment** in brand-consumer relationships, suggesting that brands that resonate with consumers' social identity and have a strong, positive brand image are more likely to cultivate long-term loyalty. Unal and Aydın's study highlights the relevance of **emotional connections** over satisfaction in retaining loyal customers, providing valuable insights for brands aiming to leverage brand love in competitive markets.

Chaudhuri and Holbrook (2001) investigate the connections between brand trust, brand affect, and brand performance in their study *"The Chain of Effects from Brand Trust and Brand Affect to Brand Performance."* Their research demonstrates that brand trust significantly influences brand affect, which subsequently enhances brand performance. The findings suggest that building emotional connections with consumers is crucial for fostering brand loyalty, indicating that brands that establish trust can achieve better market outcomes.

Söderlund (2006), in his study *"Measuring Customer Loyalty with Multi-Item Scales: A Case for Caution,"* examines the prevalent approach of using aggregated multi-item scales to measure customer loyalty, particularly in service industries. This approach often combines different aspects of loyalty, specifically repatronage intentions and word-of-mouth intentions, under a single loyalty measure, assuming they represent the same underlying construct. Through two empirical studies, Söderlund investigates whether these facets indeed constitute a unified loyalty measure. The findings reveal that **repatronage intentions** and **word-of-mouth intentions** represent distinct constructs, suggesting that combining them might obscure essential aspects of loyalty and its relationship with other variables.

The literature highlights the multifaceted nature of brand loyalty, emphasizing the importance of product attributes, taste preferences, emotional connections, and brand trust. Understanding these factors is crucial for developing effective marketing strategies that foster brand loyalty among protein powder consumers, particularly in a competitive market.

3. Research methodology

3.1 Theoretical Framework

The theoretical framework for this study draws upon established brand loyalty theories to provide a foundation for examining the factors that influence brand loyalty among gym-goers in Imphal, Manipur, specifically in the context of protein powder consumption. This framework integrates several prominent models of brand loyalty, linking them to the components identified in this study—protein characteristics, value and brand perception, nutritional content, and social influence—and provides rationale for their selection as independent variables.

Behavioral loyalty refers to the frequency and consistency of repeat purchases, while attitudinal loyalty encompasses the consumer's emotional and cognitive commitment to a brand *(Oliver, 1999)*.

Oliver's Four-Stage Loyalty Model: This model defines loyalty as progressing through four stages—cognitive, affective, conative, and action loyalty. At the cognitive stage, brand loyalty is driven by functional attributes, such as price and perceived quality. At the affective stage, emotional attachment to the brand becomes significant. As consumers move into the conative stage, they develop behavioral intentions to repurchase, which may ultimately lead to action loyalty where the consumer consistently chooses the brand even in the presence of competitors. This progression is useful in examining both rational factors (like price and nutritional content) and emotional connections (such as satisfaction and brand trust), which are reflected in the components of this study.

3.2 Objectives of the Study

1. To identify the key factors that impact brand loyalty for protein powder among gym-goers in Imphal.
2. To determine the most preferred brand of protein powder among gym-goers in Imphal.
3. To examine gym-goers' preferences for different types of protein powder, including variations in protein source (e.g., animal-based vs. plant-based), form (e.g., isolate, concentrate), and flavour.

3.3 Nature of the Study

This research employs a mix of descriptive and quantitative nature. It aims to systematically describe the characteristics of the population of gym-goers in Imphal and their preferences for protein powder. Data on factors influencing brand loyalty, such as product attributes, social influences, and brand reputation, will be collected through structured questionnaires. The quantitative approach enables statistical analysis of relationships and patterns within the data, leading to objective conclusions based on a sizable sample.

3.4 Targeted Population

The targeted population consists of gym-goers in Imphal, specifically individuals aged 18 to 40 years who participate in fitness-related activities. This demographic significant as it includes young adults and

early middle-aged individuals, who are often more health-conscious and likely to use protein supplements.

3.5 Sample Size and Sampling Technique

The study collected data from 150 respondents via a structured questionnaire distributed through physical as well as digital medium. Utilizing personal networks and social media platforms focused on gym communities in Imphal, the **non-probability convenience sampling** method provided easy access to participants who fit the target demographic.

3.6 Sources of Information

Primary data was collected through an online questionnaire distributed to gym-goers in Imphal. Responses were gathered using both physical and digital questionnaires shared through social media and gym community groups, ensuring a diverse participant pool.

3.7 Data Collection Instruments

The primary instrument for data collection was a structured questionnaire, designed to gather information on consumer preferences for protein powders among gym-goers. It included multiple-choice questions, Likert scale items, and open-ended questions categorized into sections such as demographics, protein powder preferences, purchasing influences, and satisfaction levels. The use of a 5-point Likert scale facilitated the measurement of attitudes and perceptions.

3.8 Independent and Dependent Variables

In this study, brand loyalty is the dependent variable, while the four components (protein characteristics, value and brand perception, nutritional content, and social influence) are treated as independent variables. By examining the relationship between these independent variables and brand loyalty, the study aims to identify the key factors that impact consumer brand loyalty for protein powder among gym-goers in Imphal.

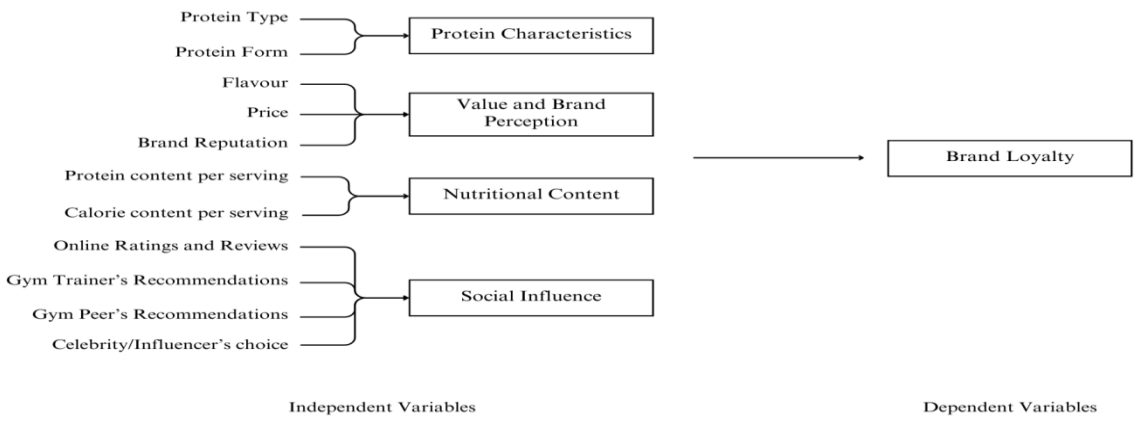

Fig : Dependent and Independent Variables

3.9 Hypotheses of the Study

The hypotheses of this study are formulated to examine the relationship between various factors—such as price, social influence, and product attributes—and the satisfaction and perceived value of protein powders among gym-goers in Imphal. These hypotheses are aligned with the study's objectives to understand brand loyalty, consumer preferences, and influential factors in protein powder selection.

Proposition 1: There is a positive relationship between the price of protein powder and satisfaction among gym-goers in Imphal.

Proposition 2: There is a positive relationship between the price of protein powder and brand loyalty among gym-goers in Imphal.

Proposition 3: There is a positive relationship between social influence and the perceived value of a protein powder product among gym-goers in Imphal.

3.10 Data Analysis

Data analysis for this study was conducted using SPSS (Statistical Package for the Social Sciences). The collected questionnaire responses were coded and entered into SPSS for processing. Descriptive statistics were utilized to summarize the demographic characteristics of the 150 respondents, providing insights into their backgrounds.

Inferential statistics, specifically linear regression analysis, were employed to examine the relationships between independent variables (such as price, brand reputation, and nutritional content) one at a time, or using composite variable,and the dependent variable of brand loyalty. Hypothesis testing was conducted at a significance level of 0.05 to evaluate the proposed hypotheses related to consumer preferences.

This combination of descriptive and inferential statistical techniques allowed for a comprehensive understanding of consumer behavior in the protein powder market, yielding actionable insights for researchers and industry practitioners.

4. Data Analysis and Interpretation

4.1 Descriptive Statistics

This section presents an overview of the descriptive statistics derived from the collected data, focusing on the demographics of the respondents and the factors influencing brand loyalty among gym-goers in Imphal.

4.1.1 Descriptive Statistics for Sample Demographics

Table No-1: Gender Frequency Distribution

Gender	***Frequency***	***Percentage***
Male	109	72.7
Female	41	27.3
Other/Prefer not to say	0	0
Total	**150**	**100**

The data reveals a significant gender disparity among respondents, with males comprising 72.7% and females making up 27.3% of the sample. There were no participants identifying as "Other" or opting for "Prefer not to say."

Table No-2 Age Frequency Distribution

Age	***Frequency***	***Percentage***
Below 20	2	1.3
20-30	85	56.7
30-40	56	37.3
Above 40	7	4.7
Total	**150**	**100**

The age distribution of respondents reveals that the majority of participants fall within the 20-30 age group, accounting for 56.7% (85 respondents). The second largest group is aged 30-40, representing 37.3% (56 respondents). Only a small percentage are below 20 years (1.3%, 2 respondents) or above 40 years (4.7%, 7 respondents). This distribution highlights a strong representation of young to middle-aged adults, suggesting that findings related to brand loyalty and protein powder preferences may be significantly influenced by this demographic's specific needs and preferences.

4.1.2 Descriptive Statistics for Factors Impacting Brand Loyalty

Table 3: Descriptive Statistics for Key Variables Impacting Brand Loyalty

Variable	*Mean*	*Median*	*Std. Deviation*
PT	4.05	4.00	0.717
PF	3.82	4.00	0.676
FL	4.05	4.00	0.775
PR	3.73	4.00	0.684

BR	4.39	4.00	0.633
NC1	3.87	4.00	0.658
NC2	3.76	4.00	0.792
OR	3.60	4.00	0.934
GT	3.03	3.00	0.835
GP	2.82	3.00	0.997
CI	2.15	2.00	0.865

The above table shows high mean scores for several variables related to brand loyalty for protein powder, with Brand Reputation (BR) having the highest mean at 4.39, followed closely by Protein Type (PT) and flavour (FL), each with a mean of 4.05. This suggests that gym-goers place significant importance on brand reputation and protein characteristics. The standard deviations are generally low, indicating that responses are relatively consistent, except for Gym Peer Influence (GP) and Celebrity Influence (CI), which have higher variability.

4.2 Factor Analysis

Factor analysis is used here to uncover patterns among various variables, grouping them into factors that influence brand loyalty.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.669
Bartlett's Test of Sphericity	Approx. Chi-Square	472.021
	df	55
	Sig.	.000

Fig 1: KMO and Bartlett’s adequacy test for factor analysis

The **Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy** yielded a value of 0.669, which is above the minimum acceptable threshold of 0.6 for factor analysis. This suggests that the data collected is suitable for identifying underlying factors.

The **Bartlett's Test of Sphericity** shows a significant result (Approx. chi-square = 472.021, df = 55, sig. = 0.000), indicating that the correlations between variables are adequate for factor analysis. A significant Bartlett’s test supports the assumption that there are sufficient correlations in the data, thus confirming the appropriateness of factor analysis.

To determine the number of factors that effectively capture the data's structure, the Total Variance Explained table was examined alongside a Scree Plot. The table reports the eigenvalues associated with each component, highlighting the amount of variance each component accounts for before and after rotation. The results showed that four components explain 66.96% of the total variance, suggesting that these factors collectively represent the key dimensions of brand loyalty in this study. Components with eigenvalues greater than 1 were retained, as shown in the Initial Eigenvalues column.

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	3.049	27.721	27.721	3.049	27.721	27.721	2.448	22.255	22.255
2	1.827	16.609	44.330	1.827	16.609	44.330	1.911	17.368	39.623
3	1.456	13.240	57.570	1.456	13.240	57.570	1.506	13.695	53.318
4	1.033	9.391	66.961	1.033	9.391	66.961	1.501	13.642	66.961
5	.939	8.535	75.496						
6	.780	7.089	82.584						
7	.544	4.942	87.527						
8	.488	4.439	91.965						
9	.391	3.552	95.518						
10	.276	2.506	98.024						
11	.217	1.976	100.000						

Extraction Method: Principal Component Analysis.

Fig 2: Total Variance Explained by Factors

The Scree Plot was generated to visualize the eigenvalues for each factor, providing a clearer indication of the factors to retain. The "elbow" point in the Scree Plot further supports the selection of four components, as it marks a point where additional factors contribute minimally to explained variance.

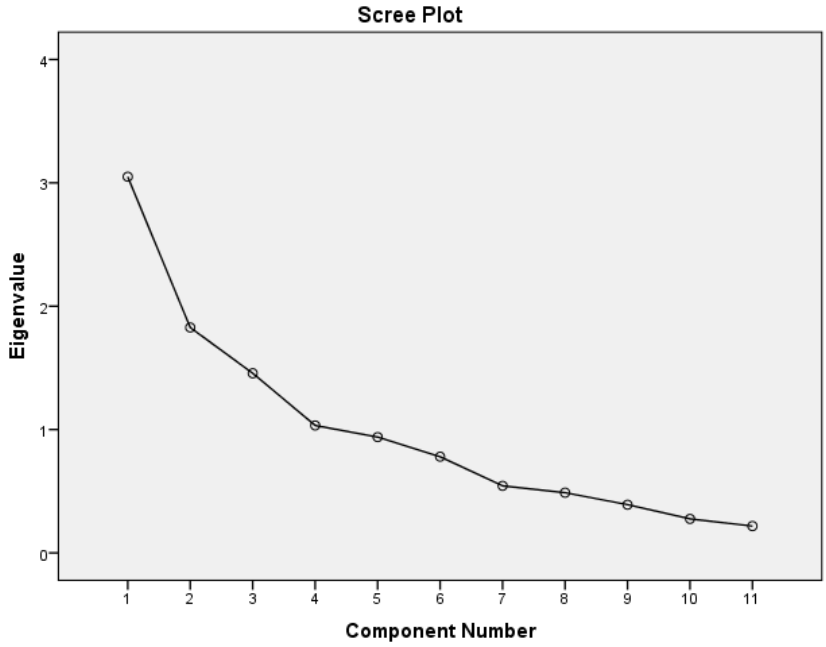

Fig 3: Scree Plot of Factor Analysis

The Rotated Component Matrix highlights four distinct components, each representing a cluster of related variables that contribute to brand loyalty. This rotation maximizes the loading of each variable on a single component, clarifying how the variables are grouped within each dimension:

Rotated Component Matrix[a]

	Component			
	1	2	3	4
PT				.826
PF				.685
FL			.668	
PR			.704	
BR			.610	
NC1		.904		
NC2		.900		
@OR	.597			
@GT	.814			
GP	.883			
CI	.735			

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 5 iterations.

Fig 4: Rotated Component Matrix for Factor Analysis

Component 1: Protein Characteristics

- PT (Type of Protein Powder)
- PF (Form of Protein Powder)

Component 2: Value and Brand Perception

- FL (flavour of Protein Powder)
- PR (Price of Protein Powder)
- BR (Brand Reputation)

Component 3: Nutritional Content

- NC1 (Protein Content Per Serving)
- NC2 (Calorie Content Per Serving)

Component 4: Social Influence

- OR (Online Ratings and Reviews)
- GT (Gym Trainer's Recommendations)

- GP (Gym Peers' Recommendations)
- CI (Choice of Celebrity/Influencer)

4.3 Reliability Test for Brand Loyalty

In this study, brand loyalty was evaluated through six key metrics: *satisfaction, repurchase intention, willingness to stick to the brand, recommendation, emotional attachment, and perceived value*. These variables provide a comprehensive view of consumer loyalty toward protein powder brands.

The reliability of the brand loyalty scale was evaluated using Cronbach's Alpha. The analysis yielded a **Cronbach's Alpha of 0.964**, indicating excellent internal consistency among the six items. This high value suggests that the metrics collectively measure the underlying construct of brand loyalty effectively. Notably, the removal of any single item would not significantly enhance reliability, reinforcing the notion that all metrics contribute meaningfully to the brand loyalty construct.

Reliability Statistics

Cronbach's Alpha	N of Items
.964	6

Fig 5: Cronbach's Alpha Reliability Test Results

Table No- 4 Statistics Reliability Analysis

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SATISFACTION	19.0467	10.837	.790	.967
REPURCHASE	19.2533	10.513	.909	.954
WILLINGNESS_TO_STICK	19.3600	10.474	.902	.955
RECOMMENDATION	19.3267	10.383	.955	.949
EMOTIONAL_ATTACHMENT	19.4600	10.438	.879	.957
PERCEIVED_VALUE	19.4867	10.305	.873	.958

To encapsulate the overall brand loyalty, a composite score was calculated by averaging the responses across the six metrics. This composite score provides an aggregate measure that reflects the level of brand loyalty among gym-goers surveyed.

4.4 Analyzing the Key Factors Impacting Brand Loyalty

Table No 5: Ranking of Key Factors based on Mean Score

Objective 1: ***To identify the key factors that impact brand loyalty for protein powder among gym-goers in Imphal.***

Factors	*Rank*	*Mean Score*
BR	1	4.39
FL	2	4.05
PT	3	4.05
NC1	4	3.87
PF	5	3.82
NC2	6	3.76
PR	7	3.73
OR	8	3.60
GT	9	3.03
GP	10	2.82
CI	11	2.15

The above table ranks the 11 variables influencing brand loyalty for protein powder among gym-goers in Imphal based on their mean scores. The ranking of key factors impacting brand loyalty among gym-goers reveals that Brand Reputation (BR) is the most important, with a mean score of 4.39. flavour (FL) and Protein Type (PT) both follow closely in second place at 4.05. Nutritional content, particularly NC1, ranks fourth (3.87), while Price (PF) comes in fifth at 3.82. Other factors like online ratings and peer recommendations show diminishing importance, with Choice of Celebrity/Influencers (CI) being the least influential at 2.15.

4.5 Correlation analysis

Table 6: Correlation Between Key Factors and Brand Loyalty

Correlation Variables	*Pearson Correlation*
PROTEIN_CHARACTERISTICS_COMP BRAND_LOYALTY_COMP	0.603
VALUE_BRAND_COMP BRAND_LOYALTY_COMP	0.719

NUTRITIONAL_CONTENT_COMP BRAND_LOYALTY_COMP	0.412
SOCIAL_INFLUENCE_COMP BRAND_LOYALTY_COMP	-0.018

The correlation analysis reveals the relationships between each component and overall brand loyalty. Higher correlation coefficients indicate stronger relationships.

4.6 Regression analysis

Table 7: Model Summary for Regression Analysis

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.741[a]	.548	.536	.43971	1.801

a. Predictors: (Constant), SOCIAL_INFLUENCE_COMP, PROTEIN_CHARACTERISTICS_COMP, NUTRITIONAL_CONTENT_COMP, VALUE_BRAND_COMP

b. Dependent Variable: BRAND_LOYALTY_COMP

The R value of 0.741 indicates a strong positive correlation between the predictor variables (Social Influence, Protein Characteristics, Nutritional Content, and Value and Brand Perception) and the dependent variable, brand loyalty. The R^2 value of 0.548 suggests that approximately 54.8% of the variance in brand loyalty can be explained by these four components, demonstrating a substantial level of explanatory power.

The Adjusted R^2 of 0.536 accounts for the number of predictors in the model, confirming that the model remains robust despite the inclusion of multiple variables. The standard error of the estimate (0.43971) provides insight into the average distance that the observed values fall from the regression line.

The Durbin-Watson statistic, reported as 1.801, is close to 2, indicating no significant autocorrelation in the residuals, which is a favorable outcome for the assumptions of regression analysis.

Table 8 : AVOVA Table for Regression Analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.042	4	8.511	44.018	.000[b]
	Residual	28.035	145	.193		
	Total	62.077	149			

a. Dependent Variable: BRAND_LOYALTY_COMP

b. Predictors: (Constant), SOCIAL_INFLUENCE_COMP, PROTEIN_CHARACTERISTICS_COMP, NUTRITIONAL_CONTENT_COMP, VALUE_BRAND_COMP

The ANOVA table indicates that the regression model is statistically significant, as evidenced by the F-statistic of 44.018 and a p-value (Sig.) of 0.000. This p-value is well below the conventional alpha level of 0.05, suggesting that the model significantly predicts brand loyalty among gym-goers in Imphal.

The sum of squares for the regression (34.042) indicates the variation explained by the model, while the residual sum of squares (28.035) represents the unexplained variation. The mean square for the regression (8.511) further supports the strong predictive capability of the model relative to the variance within the data.

These findings affirm that the selected components—social influence, protein characteristics, nutritional content, and value and brand perception—are significant predictors of brand loyalty, thereby contributing valuable insights into consumer behavior in the context of protein powder usage among gym-goers.

Table 9: Coefficients Table for Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.356	.310		1.148	.253
	PROTEIN_CHARACTERISTICS_COMP	.180	.087	.165	2.066	.041
	VALUE_BRAND_COMP	.646	.092	.566	6.996	.000
	NUTRITIONAL_CONTENT_COMP	.093	.061	.098	1.535	.127
	SOCIAL_INFLUENCE_COMP	-.059	.047	-.072	-1.258	.210

a. Dependent Variable: BRAND_LOYALTY_COMP

The coefficients table provided insight into the individual contributions of each predictor:

- Protein Characteristics: This variable had a positive coefficient of 0.180, suggesting that improvements in product characteristics could enhance brand loyalty, and this relationship was statistically significant ($p = 0.041$).
- Value Brand: The most substantial effect was observed in value brand perception, with a coefficient of 0.646 and a significance level of $p < 0.001$. This finding indicates that enhancing perceived value is likely to have a significant impact on brand loyalty.
- Nutritional Content: Although positive, the coefficient for nutritional content (0.093) was not statistically significant ($p = 0.127$), implying that this factor may not be as influential in this context.
- Social Influence: The coefficient for social influence was negative (-0.059) and not statistically significant ($p = 0.210$), suggesting that it may not have a meaningful impact on brand loyalty among gym-goers.

4.7 Analysis of the Most Preferred Brand of Protein Powder

Table 10: Frequency distribution of preferred protein powder brands

Objective 2:To determine the most preferred brand of protein powder among gym-goers in Imphal.

Brand Name	*Frequency*	*Percentage*
MuscleBlaze	39	26.0
Optimum Nutrition (ON)	27	18.0
NAKPRO	19	12.7
Greenex Nutrition (GXN)	17	11.3
AS-IT-IS	12	8.0
GNC Pro Performance	10	6.7
MyProtein	8	5.3
Dymatize Nutrition	7	4.7
bGreen by MuscleBlaze	4	2.7
Oziva	3	2.0
Avvatar	2	1.3
Amul	1	0.7
Kapiva	1	0.7
Total	150	100

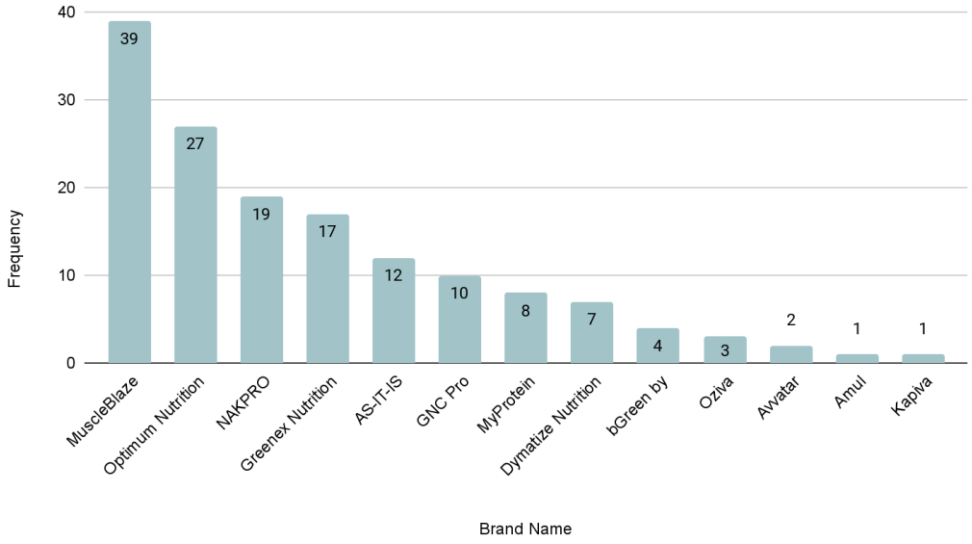

Fig 6: Frequency distribution of preferred protein powder brands

The frequency analysis of the preferred brands of protein powder among gym-goers in Imphal provides insight into the popularity and market reach of each brand. Based on the survey responses from 150 participants, MuscleBlaze emerged as the most preferred brand, chosen by 26.0% of respondents, followed by Optimum Nutrition (ON) with 18.0% and NAKPRO with 12.7%.

4.8 Analysis of the Different Types of Protein Powder (e.g., animal-based vs. plant-based), Forms (e.g., isolate, concentrate), and Flavours

Objective 3:To examine gym-goers' preferences for different types of protein powder, including variations in protein source (e.g., animal-based vs. plant-based), form (e.g., isolate, concentrate), and flavour.

4.8.1 Type of Protein Powder

Table 11. Frequency distribution of preferred type of protein powder

Type	*Frequency*	*Percentage*
Animal-based	104	69.3
Plant-based	29	19.3
Both/No specific preference	17	11.3
Total	150	100

The data indicates a strong preference for **animal-based protein** among gym-goers, with **69.3%** of respondents selecting this type. This finding points to a dominant trend toward animal-based proteins in this demographic. On the other hand, **19.3%** of respondents opted for **plant-based protein**, indicating a substantial interest in alternative protein sources. Additionally, **11.3%** of respondents reported **no specific preference** or a choice of **both types** of protein, showing a level of flexibility or willingness to use either protein type depending on various factors.

4.9 Analysis of Hypotheses

Table 12: Correlation between Price of Protein Powder and Satisfaction

Proposition 1: There is no significant relationship between the price of protein powder and satisfaction among gym goers in Imphal

- *Null Hypothesis (H_0):* There is no significant relationship between the price of protein powder and satisfaction among gym goers in Imphal.
- *Alternative Hypothesis (H_1):* There is no significant relationship between the price of protein powder and satisfaction among gym goers in Imphal.

			PR	SATISFACTION
Spearman's rho	PR	Correlation Coefficient	1.000	.530**
		Sig. (1-tailed)	.	.000
		N	150	150
	SATISFACTION	Correlation Coefficient	.530**	1.000
		Sig. (1-tailed)	.000	.
		N	150	150

**. Correlation is significant at the 0.01 level (1-tailed).

The Spearman's rho correlation coefficient of 0.530 indicates a moderate positive correlation between the price of protein powder and satisfaction among gym-goers in Imphal. This suggests that as the price increases, satisfaction also tends to increase, supporting the hypothesis that higher prices lead to greater satisfaction.

Table 13: Model Summary for Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.553[a]	.306	.301	.5895

a. Predictors: (Constant), PR

In the regression analysis, the model summary shows an R value of 0.553, indicating a moderate correlation between price and satisfaction. The R^2 value of 0.306 implies that approximately 30.6% of the variance in satisfaction is explained by the price of protein powder. This suggests that while price is a significant factor, other variables may also influence satisfaction levels.

Table No - 14 ANOVA Table for Regression Analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.628	1	22.628	65.113	.000[b]
	Residual	51.432	148	.348		
	Total	74.060	149			

a. Dependent Variable: SATISFACTION

b. Predictors: (Constant), PR

The ANOVA results indicate an F value of 65.113 with a p-value of 0.000, confirming the statistical significance of the regression model. This result allows us to reject the null hypothesis (H_0) in favor of the alternative hypothesis (H_1).

Table 15: Coefficients Table for Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.018	.267		7.549	.000
	PR	.569	.071	.553	8.069	.000

a. Dependent Variable: SATISFACTION

The regression coefficient (B) of 0.569 indicates that for each unit increase in price, satisfaction increases by 0.569 units. The standard error of 0.71 and t value of 8.069 further supports the statistical significance of this coefficient, with a p-value of 0.000 reinforcing the conclusion of a positive relationship between price and satisfaction. Given the statistically significant p-value and positive coefficient, we reject the null hypothesis H_0 and conclude that there is a statistically significant positive relationship between the price of protein powder and satisfaction among gym-goers in Imphal.

Table 16: Correlation between Flavor of Protein Powder and Satisfaction

Proposition 2: There is no significant relationship between the flavour of protein powder and satisfaction among gym-goers in Imphal

- *Null Hypothesis (H_0):* There is no significant relationship between the flavour of protein powder and satisfaction among gym-goers in Imphal.
- *Alternative Hypothesis (H_1):* There is a positive relationship between the flavour of protein powder and satisfaction among gym-goers in Imphal.

			FL	SATISFACTION
Spearman's rho	FL	Correlation Coefficient	1.000	.940**
		Sig. (1-tailed)	.	.000
		N	150	150
	SATISFACTION	Correlation Coefficient	.940**	1.000
		Sig. (1-tailed)	.000	.
		N	150	150

**. Correlation is significant at the 0.01 level (1-tailed).

The Spearman's rho correlation coefficient of 0.940 indicates a very strong positive correlation between the flavour of protein powder and satisfaction among gym-goers in Imphal. This suggests that as the flavour improves, satisfaction tends to increase correspondingly, supporting the idea that flavour is a crucial factor for consumer satisfaction in this context.

Table No-17 Model Summary for Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.932[a]	.868	.867	.2571

a. Predictors: (Constant), FL

In the regression analysis, the model summary shows an R value of 0.932, reflecting an extremely strong correlation between flavour and satisfaction. The R^2 value of 0.868 implies that approximately 86.8% of the variance in satisfaction is explained by the flavour of protein powder, highlighting its critical role in determining satisfaction.

Table 18: ANOVA Table for Regression Analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.280	1	64.280	972.745	.000[b]
	Residual	9.780	148	.066		
	Total	74.060	149			

a. Dependent Variable: SATISFACTION

b. Predictors: (Constant), FL

The F value of 972.745 with a p-value of 0.000 indicates that the regression model is statistically significant, allowing us to reject the null hypothesis (H_0) in favor of the alternative hypothesis (H_1).

Table No-19: Coefficients Table for Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.706	.112		6.302	.000
	FL	.847	.027	.932	31.189	.000

a. Dependent Variable: SATISFACTION

The regression coefficient (B) of 0.847 indicates that for each unit increase in flavour rating, satisfaction increases by 0.847 units. The standard error of 0.027 and the t value of 31.189 further confirm the significance of this coefficient, with a p-value of 0.000.

Since the p-value is statistically significant and the coefficient is positive, we reject the null hypothesis H_0 and conclude that there is a statistically significant positive relationship between the flavour of protein powder and satisfaction among gym-goers in Imphal.

Proposition 3: There is no significant relationship between social influence and the perceived value of a protein powder product among gym-goers in Imphal

- *Null Hypothesis (H_0):* There is no significant relationship between social influence and the perceived value of a protein powder product among gym-goers in Imphal.
- *Alternative Hypothesis (H_1):* There is a positive relationship between social influence and the perceived value of a protein powder product among gym-goers in Imphal.

Table No-20: Correlation between Social Influence and Perceived Value

Correlations

			SOCIAL_INFLUENCE_COMP	PERCEIVED_VALUE
Spearman's rho	SOCIAL_INFLUENCE_COMP	Correlation Coefficient	1.000	.034
		Sig. (1-tailed)	.	.339
		N	150	150
	PERCEIVED_VALUE	Correlation Coefficient	.034	1.000
		Sig. (1-tailed)	.339	.
		N	150	150

The Spearman's rho correlation coefficient of **0.034** indicates a very weak correlation between social influence and the perceived value of protein powder among gym-goers in Imphal. This suggests that social influence has little to no effect on how gym-goers perceive the value of protein powder.

Table No-21: Model Summary for Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.014[a]	.000	-.007	.74200

a. Predictors: (Constant), SOCIAL_INFLUENCE_COMP

In the regression analysis, the model summary shows an **R value of 0.014**, which indicates an extremely weak correlation between social influence and perceived value. The **R^2 value of 0.000** implies that social influence does not explain any of the variance in perceived value, suggesting that it is not a significant predictor.

Table No-22: ANOVA Table for Regression Analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.016	1	.016	.029	.866[b]
	Residual	81.484	148	.551		
	Total	81.500	149			

a. Dependent Variable: PERCEIVED_VALUE

b. Predictors: (Constant), SOCIAL_INFLUENCE_COMP

The **F value of 0.029** with a **p-value of 0.866** indicates that the regression model is not statistically significant. This leads us to fail to reject the null hypothesis (H_0), reinforcing the notion that social influence does not significantly impact the perceived value of protein powder among gym-goers.

Table No-23: Coefficients table for Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.739	.237		15.768	.000
	SOCIAL_INFLUENCE_COMP	-.013	.078	-.014	-.169	.866

a. Dependent Variable: PERCEIVED_VALUE

The regression coefficient (B) of **-0.013** indicates a slight negative relationship, suggesting that as social influence increases, perceived value may decrease, but this is negligible given the high standard error of **0.078**. The **t value of -0.169** and the **p-value of 0.866** further confirm that this coefficient is not statistically significant.

The analysis shows no statistically significant relationship between social influence and the perceived value of protein powder products among gym-goers in Imphal. Thus, we fail to reject the null hypothesis H_0 and conclude that there is no significant relationship between social influence and the perceived value of a protein powder product among gym-goers in Imphal.

5. Findings of the Study

- **Brand Reputation** emerged as the **most critical factor**, indicating that gym-goers place high value on the reputation of a brand when choosing protein powder. This preference likely reflects the trust and perceived quality associated with well-known brands.
- **Flavour** and **Protein Type** closely followed brand reputation, each scoring highly in terms of influence. These aspects suggest that sensory appeal and specific protein composition are key considerations, as gym-goers look for enjoyable flavours and effective formulations.
- **Nutritional Content** and **Price** held **moderate influence** on brand loyalty. While gym-goers appreciate the nutritional value, they might weigh it less than brand reputation or flavour. Price, while also relevant, ranked fifth, indicating that quality factors are generally more influential than cost.
- Correlation analysis and regression results indicate that **Social Influence** (e.g., peer recommendations, influencer endorsements) has a **minimal and even slightly negative** impact on brand loyalty, with the analysis showing a small, statistically insignificant relationship. This may imply that gym-goers prioritize personal experience and tangible attributes of the protein powder over external social influences.
- Regression analysis showed that **Brand and Value Perception** had the **strongest impact on brand loyalty**, with a high positive coefficient, highlighting that enhancing this perception may most significantly drive loyalty. **Protein Characteristics also contributed positively**, suggesting that optimizing these product attributes could reinforce loyalty. In contrast, Nutritional Content was positive but not statistically significant, suggesting a limited impact within this study's context. Muscle Blaze leads the market among the surveyed gym-goers, with 26.0% of respondents identifying it as their top choice. This strong preference suggests that Muscle Blaze's brand presence, product appeal, or pricing resonates well with the target demographic.
- Animal-based proteins are the clear favorite, with 69.3% of respondents selecting them, which may reflect a preference for high protein content and muscle recovery benefits commonly associated with whey and egg proteins.
- Plant-based options, chosen by 19.3% of respondents, show a growing interest in alternative proteins, often driven by dietary restrictions and ease of digestion. About 11.3% of respondents express flexibility, indicating they may consider both sources depending on availability or specific needs.
- The analysis of the relationship between the **price** of protein powder and **satisfaction** reveals a statistically significant positive correlation. The regression coefficient of 0.569 indicates that for

every unit increase in price, satisfaction increases by 0.569 units. This strong association is further substantiated by a t-value of 8.069 and a p-value of 0.000. Therefore, we reject the null hypothesis, concluding that higher prices are positively linked to greater satisfaction among gym-goers.

- The examination of **flavour's** impact on **satisfaction** also shows a significant positive relationship. With a regression coefficient of 0.847, the data suggests that an increase in flavour ratings corresponds to a notable increase in satisfaction levels. The results are statistically significant, as evidenced by the p-value of 0.000 and a high t-value of 31.189. Thus, we reject the null hypothesis, confirming that flavour is a critical factor influencing gym-goers' satisfaction with protein powders.
- In contrast, the analysis regarding **social influence** and **perceived value** shows no significant relationship. The regression coefficient of -0.013 indicates a slight negative association, but the high p-value of 0.866 and t-value of -0.169 suggest that this relationship is not statistically significant. Consequently, we fail to reject the null hypothesis, concluding that social influence does not meaningfully affect gym-goers' perceptions of the value of protein powder products.

6. Conclusion

This study examined the key factors that shape brand loyalty for protein powder among gym-goers in Imphal, Manipur. Findings indicate that brand reputation is the strongest driver of loyalty, reflecting gym-goers' preference for trusted brands with a history of quality and transparency. flavour and protein type also emerged as important factors, suggesting that consumers value a pleasing taste experience and specific formulations aligned with their fitness goals. Nutritional content and price, while relevant, played a secondary role, showing that quality and sensory appeal are prioritized over cost among this demographic. Social influence, including peer recommendations and endorsements, demonstrated minimal impact, underscoring gym-goers' preference for individual experience and product attributes over external opinions.

Among brands, Muscle Blaze holds a strong preference among respondents, followed by Optimum Nutrition, with animal-based proteins, particularly whey, as the top choice. Traditional flavours like chocolate remain popular, and the concentrate form is preferred for its balance of nutrition and affordability.

Furthermore, the study found a statistically significant positive relationship between the price of protein powder and satisfaction, indicating that consumers are willing to pay more for perceived quality. Brands are, therefore, encouraged to adopt tiered pricing strategies that cater to various market segments while reinforcing the perceived value of their products.

While social influence was hypothesized to impact perceived value, the findings revealed no significant relationship, suggesting that individual preferences may hold more weight in purchasing decisions than external social factors. This insight is particularly relevant in the context of a growing health and fitness consciousness among consumers, where personal goals often take precedence over peer recommendations.

This study underscores the complexity of factors that drive brand loyalty for protein powder among gym-goers in Imphal. Brands must navigate a landscape where reputation, flavour, and perceived value significantly influence consumer behaviour. By implementing strategic marketing initiatives, focusing on

product quality, and understanding consumer preferences, protein powder brands can enhance loyalty and achieve sustained success in this competitive market.

The implications of this research extend beyond the protein powder industry, offering valuable insights for marketers and brands within the broader health and wellness sector. Future research may explore additional variables influencing consumer preferences, such as emerging trends in plant-based proteins or the impact of digital marketing strategies on brand perception. Overall, the study contributes to a deeper understanding of consumer behaviour in the context of fitness nutrition, paving the way for more targeted and effective marketing approaches in the future.

References

1. Hoffman, Jay R., and Michael J. Falvo. "Protein–which is best?." Journal of sports science & medicine 3.3 (2004): 118.
2. Manter, Joshua. "The Preference of Protein Powders Among Adult Males and Females: A Protein Powder Taste Study." (2009).
3. Ramesh Kumar, S., and Jai YashwantAdvani. "Factors affecting brand loyalty: A study in an emerging market on fast moving consumer goods." Journal of Customer Behaviour 4.2 (2005): 251-275.
4. Bloemer, JoséM M., and Hans DP Kasper. "The complex relationship between consumer satisfaction and brand loyalty." Journal of economic psychology 16.2 (1995): 311-329.
5. Unal, Sevtap, and Hatice Aydın. "An investigation on the evaluation of the factors affecting brand love." Procedia-Social and Behavioural Sciences 92 (2013): 76-85.
6. Chaudhuri, Arjun, and Morris B. Holbrook. "The chain of effects from brand trust and brand affect to brand performance: the role of brand loyalty." Journal of marketing 65.2 (2001): 81-93.
7. Söderlund, Magnus. "Measuring customer loyalty with multi-item scales: A case for caution." International journal of service industry management 17.1 (2006): 76-98.
8. Thomson, Matthew, Deborah J. McInnis, and C. When Park. "The ties that bind: Measuring the strength of consumers' emotional attachments to brands." Journal of consumer psychology 15.1 (2005): 77-91.
9. Oliver, Richard L. "Whence consumer loyalty?" Journal of marketing 63.4_suppl1 (1999): 33-44.
10. Hellier, Phillip K., et al. "Customer repurchase intention: A general structural equation model." European journal of marketing 37.11/12 (2003): 1762-1800.
11. Zeithaml, Valarie A. "Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence." Journal of marketing 52.3 (1988): 2-22.