

CELEBRITY INFLUENCE IN THE INDIAN PROTEIN SUPPLEMENT MARKET: A STUDY ON CONSUMER PURCHASING BEHAVIOUR

A DISSERTATION

**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE
OF**

**MASTER OF BUSINESS ADMINISTRATION
IN
HUMAN RESOURCE AND BUSINESS ANALYTICS**

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CANDIDATE'S DECLARATION

I Rani Kumari, 2K23/UMBA/80 students of MBA. Human Resource and Business Analytics, hereby declare that the project Dissertation titled **“Celebrity Influence in the Indian Protein Supplement Market: A Study on Consumer Purchasing Behaviour”** Which is submitted by me to the Department of **Delhi School Of Management, Delhi Technological University, Delhi** in partial fulfilment of the requirement for the award to the degree of **Master of Business Administration**, is original and not copied from any source without proper citation. This work has not previously formed the basis for the award of any Degree, Diploma Associateship, Fellowship or other similar title or recognition.

Place: Delhi

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Date:

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CERTIFICATE BY THE SUPERVISOR

I hereby certify that the Project Dissertation titled "Celebrity Influence in the Indian Protein Supplement Market: A Study on Consumer Purchasing Behaviour" which is submitted by **Rani Kumari**, Roll No **2K23/UMBA/80** **Delhi School Of Management, Delhi Technological University, Delhi** in partial fulfilment of the requirement for the award of the degree of **Master of Business Administration**, is a record of the project work carried out by the students under my supervision. To the best of my knowledge, this work has not been submitted in part or full for any Degree or Diploma to this University or elsewhere.

Place: Delhi
Date:

Ms. Shikha Tomar
SUPERVISOR

ABSTRACT

This study comprehensively examines all facts of celebrity endorsements and their impact on consumer behaviour. The study employed logistic regression analysis as the major methodology to assure the reliability of the findings. This statistical methodology is frequently used in research studies to assess the relationship between independent variables, such as factors associated with celebrity endorsement, and a binary outcome variable, which in this case would likely be the consumer's decision to purchase or not purchase protein supplements.

The study comprised 243 people from diverse demographic backgrounds, yet it was noted that the majority of the sample shared comparable traits. The sample predominantly comprised MBA students from DSM, DTU India, aged between 19 and 25 years. While the limited diversity of the sample may limit the generalizability of the findings to a broader population, it provides vital insights into the beliefs and behaviours of this particular demographic group. These observations may be particularly relevant for marketing tactics targeting young, well-educated consumers in India.

The study findings suggest that celebrity endorsements exert a significant influence on consumers' purchasing decisions regarding protein supplements. Overall, this study provides valuable insights into the complex dynamics of celebrity endorsements and their impact on consumer behaviour in the context of purchasing protein supplements in India. Marketers can optimise the influence of celebrity endorsements in advertising by emphasising the critical importance of trustworthiness and knowledge. This allows them to better their tactics and effectively promote products to customers. Further research in this area should explore other factors and variables to improve our understanding of the complexities associated with consumer responses to celebrity endorsements.

ACKNOWLEDGEMENT

I wish to express our sincere thanks and gratitude to my faculties at DSM, Delhi Technological University for their stimulating guidance, continuous encouragement, and enormous support throughout the program.

I am deeply indebted to the people across the globe who have shared their knowledge and perspectives in the form of online tutorials, books, and other resources which have helped me to a great extent during this endeavour.

I would also like to place on record our sincere thanks to my friends and colleagues for the cooperation they rendered to me during this endeavour. I would like to express my gratitude to our parents and brother for being my constant source of inspiration because without them this endeavour would have never been possible.

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CHAPTER-1 INTRODUCTION

Rising health consciousness across diverse age groups, genders, and socio-economic backgrounds in India has fuelled a surge in demand for protein supplements. This trend is driven by evolving lifestyles, heightened awareness of health and medical conditions, and increased purchasing power. Once primarily used by bodybuilders, athletes, and fitness enthusiasts to meet daily protein needs for muscle growth and recovery, protein supplements are now widely embraced by the general population. Beyond traditional protein sources like lentils, seafood, and poultry, consumers are increasingly turning to convenient, market-ready options available as medically prescribed or over-the-counter (OTC) products. These supplements are offered in various forms, including powders, ready-to-drink beverages, granola bars, and capsules, catering to diverse preferences and needs.

The Indian protein supplement market has witnessed significant growth, with a projected compound annual growth rate (CAGR) of over 10% from 2023 to 2028, driven by urbanization, fitness trends, and the influence of social media. Products are tailored to suit individual requirements, considering factors such as dietary habits, age, demographics, and specific needs (e.g., vegetarian, vegan, or non-vegetarian diets). Popular variants include whey protein (the most widely consumed), casein protein, soy protein, pea protein, egg protein, and hemp protein, each addressing unique nutritional goals, allergy constraints, and taste preferences. This diversification reflects the growing accessibility and appeal of protein supplements, positioning them as a staple in the health and wellness routines of Indian consumers.

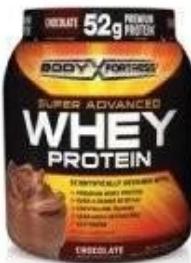
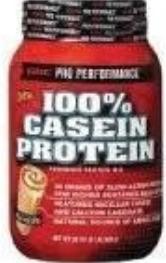
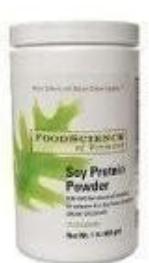
PROTEIN SUPPLEMENTS DEFINED					
					
WHEY	CASEIN	EGG	SOY	PEA	RICE
liquid derived from production of cheese.	a slower digestive process, derived from milk.	good for the lactose intolerant, egg protein is an animal based protein.	a good vegetarian & vegan option, source is from soybeans.	plant derived protein, great for vegetarians and vegans.	friendly gluten-free alternative derived from rice.

Figure 1 Types of protein supplements

1.1-Industry Profile:

The Indian protein supplement market, valued at INR 33,028.5 crore in 2024, is one of the fastest-growing globally, projected to reach INR 1,28,460.5 crore by 2034, with a compound annual growth rate (CAGR) of approximately 14.5%. This highly competitive market lacks a single dominant leader, with top players—Optimum Nutrition, MuscleBlaze, MyProtein, Ultimate Nutrition, and BSN—collectively holding 60% of the market share. To capture broader consumer segments, brands employ diverse marketing strategies, including influencer marketing, celebrity endorsements, product placements, discounts, and social media campaigns, distributed through pharmacies, supermarkets, brand outlets, and e-commerce platforms. Celebrity endorsements, featuring Bollywood stars, sports personalities, and fitness influencers, play a pivotal role in building consumer trust and brand affinity. These endorsements leverage the credibility, achievements, and relatability of endorsers to influence purchasing decisions, particularly as consumer health and well-being are at stake. Careful selection of endorsers, based on their reputation and alignment with brand values, is critical in this customer-facing industry.

1.2 Organization Profile

India's market for protein supplements is a vibrant and quickly expanding industry, propelled by rising disposable incomes, a developing fitness culture, and increased health consciousness. This is a summary of the market's organization landscape:

1. Principal Players: The Indian market for protein supplements is dominated by a few major players, such as:

- Abbott Nutrition, which is well-known for its Ensure brand and sells a variety of protein supplements to suit various consumer demographics.
- Amway: Provides protein supplements with an emphasis on premium formulas and natural components under the Nutrilite brand.
- Herbalife: Well-known for its protein shakes and supplements with an emphasis on wellness and weight control, Herbalife Nutrition goods are offered.
- Convenience and On-the-Go Formats: Busy urban consumers seeking simple ways to meet their nutritional needs are driving up demand for ready-to-drink

protein shakes, protein bars, and single-serve sachets.

- Personalization and Customization: Companies are providing consumers with customized protein supplements based on parameters such as taste preferences, dietary constraints, and fitness objectives.

2. Regulatory Environment: A number of government organizations, such as the Food Safety and Standards Authority of India (FSSAI), which establishes guidelines for food safety and labelling specifications, oversee the Indian market for protein supplements. Companies in this industry must abide by these rules in order to protect the safety and confidence of their customers.

Intense competition, shifting customer preferences, and an increasing emphasis on innovation and quality to satisfy the wide range of demands of health-conscious consumers are the main characteristics of the Indian market for protein supplements.



Figure 2 Protein brands

1.3 Objective of the study

To study the impact of celebrity endorsements on consumers' inclination to buy protein supplements in the Indian market. Celebrity endorsements have become a widespread marketing tactic, especially in the health and wellness industry, where celebrities can play a significant role in changing consumer opinions and actions. This study examines celebrity endorsements' precise influence on consumers' purchasing intentions in the Indian protein supplement market.

Objective: This research aims to evaluate and measure the influence of celebrity endorsements on customers' inclination to purchase protein supplements in India. This involves examining the following crucial elements:

The objective of this study is to assess the impact of celebrity endorsements on increasing brand recognition, consumer perception, and trustworthiness of protein supplement products in the Indian market.

Consumer Attitude Analysis: The objective is to examine the attitudes, beliefs, and perceptions of Indian customers regarding protein supplements that are supported by celebrities. This analysis will focus on understanding the reasons behind their purchasing decisions and the elements that influence their decision-making process.

Assessment of the intention to make a purchase: The objective is to assess the impact of celebrity endorsements on customers' inclination to buy protein supplements, taking into account variables such as the likelihood of purchase, brand loyalty, and readiness to pay a higher price.

To determine potential moderating factors that may impact the correlation between celebrity endorsements and purchase intentions, such as the legitimacy of the celebrity, the relevancy of the product, and the demographics of the consumer.

Technique: The research technique will encompass a blend of quantitative and qualitative methodologies, incorporating surveys, interviews, and experimental experiments. The data collection process will involve gathering information from

a diverse group of Indian customers, selected to represent various demographic divisions and geographical regions. This approach is aimed at ensuring that the findings may be applied to the broader population. The correlations between variables and hypotheses will be examined using

statistical analysis approaches such as regression analysis and structural equation modelling (SEM).

The significance is in comprehending the influence of celebrity endorsements on the purchasing intentions of Indian customers regarding protein supplements. This knowledge holds great importance for marketers, producers, and industry stakeholders. The results of this study will offer valuable understanding into the efficacy of using famous individuals to endorse products as a marketing tactic in the Indian protein supplements market. This will enable businesses to develop more knowledgeable marketing strategies, improve brand positioning, and increase consumer engagement and sales.

CHAPTER-2 LITERATURE REVIEW

Celebrity endorsement has become a prevalent marketing strategy utilized by brands to influence consumer behaviour and enhance brand perception. By leveraging the fame, credibility, and appeal of celebrities, brands aim to create a positive association with their products or services, ultimately driving consumer purchase intentions. This literature review provides a comprehensive analysis of the impact of celebrity endorsement on consumer buying behaviour, synthesizing insights from various scholarly sources and related research. It explores the theoretical frameworks, key factors, and empirical findings that explain the effectiveness of celebrity endorsements, as well as the challenges and limitations associated with this strategy.

2.1 Influence of Celebrity Endorsement on Consumer Buying Behaviour

Research indicates that celebrity endorsements play a crucial role in shaping consumer attitudes and purchase decisions. Celebrities are often perceived as credible and trustworthy, leading consumers to develop positive associations with endorsed products or brands. The attractiveness and likeability of celebrities further contribute to the effectiveness of endorsements, making advertisements more appealing and memorable to consumers. Celebrity endorsement has emerged as a prevalent marketing strategy, with brands leveraging the credibility, attractiveness, and likeability of celebrities to influence consumer attitudes and purchase decisions. The existing body of research highlights the significant impact of celebrity endorsements on various aspects of consumer behaviour.

2.2 Psychological Mechanisms Behind Celebrity Endorsement Effects

The psychological processes underlying celebrity endorsement effects have been the subject of extensive study. Consumers tend to transfer their perceptions of celebrities onto endorsed products, creating a sense of familiarity and trust that influences their buying behaviour. The congruence between the celebrity image and the brand values is essential in establishing a meaningful connection with consumers and driving purchase intentions.

2.3 Influence on Brand Perception and Purchase Intentions

Studies have consistently demonstrated that celebrity endorsements positively influence consumer perceptions of brands and increase purchase intentions. Consumers tend to perceive celebrity-endorsed products as more attractive, credible, and relatable to their lifestyles and interests. This, in turn, leads to favourable brand attitudes and a higher willingness to pay premium prices for endorsed products.

2.4 Role of Celebrity Attributes

The effectiveness of celebrity endorsements is largely attributed to the attributes of the celebrities themselves. Factors such as credibility, trustworthiness, expertise, and congruence between the celebrity image and the brand play a crucial role in shaping consumer responses. Consumers are more likely to be influenced by endorsements from celebrities they perceive as credible and aligned with the brand's values and identity.

2.5 Psychological Mechanisms

The psychological processes underlying the impact of celebrity endorsements on consumer behaviour have been extensively studied. Consumers tend to transfer their perceptions and associations of the celebrity onto the endorsed brand, creating a sense of familiarity and trust that influences their purchase decisions. The congruence between the celebrity image and the brand is a key factor in establishing this meaningful connection with consumers.

2.6 Strategic Considerations

Effective celebrity endorsement strategies involve careful selection of celebrities based on their relevance to the target audience, brand fit, and authenticity. Research suggests that aligning the celebrity's image with the brand identity enhances the credibility of the endorsement and increases consumer engagement. Additionally, the management of celebrity endorsements, including contract negotiations and post-campaign evaluation, plays a vital role in maximizing the impact on consumer buying behaviour.

2.7 Research Gaps

While existing literature provides valuable insights into the impact of celebrity endorsement on consumer behaviour, there are still areas that warrant further exploration. Future research could focus on the long-term effects of celebrity endorsements, the role of social media influencers in comparison to traditional celebrities, and the cross-cultural differences in consumer responses to celebrity endorsements. Understanding these aspects can help marketers refine their strategies and adapt to evolving consumer preferences.

Celebrity endorsement has become a significant industry worldwide, with marketers leveraging celebrities to promote their products and brands in advertisements. This strategic approach aims to enhance sales and positively influence consumers' perceptions, ultimately impacting their buying behaviour. Research studies have consistently highlighted the effectiveness of celebrity endorsements in making advertisements more attractive and increasing brand credibility, leading to a positive relationship between buying behaviour and brand perception.

The influence of celebrity endorsement on consumer behaviour extends beyond mere attractiveness, encompassing attributes such as credibility, trust, expertise, and congruence between the celebrity image and the brand. Consumers tend to perceive celebrity-endorsed products as more relatable to their lifestyles and interests, leading to higher purchase intentions and willingness to pay premium prices. The psychological processes underlying celebrity endorsement effects have been extensively studied, emphasizing the importance of understanding how celebrities shape consumer perceptions and attitudes toward brands.

Moreover, the literature review on celebrity endorsements has identified key research areas, including celebrity prevalence, campaign management, financial effects, persuasion mechanisms, and the transfer of meaning between celebrities and brands. These areas shed light on the complexities of celebrity endorsement strategies and their impact on consumer behaviour, highlighting both key findings and research gaps that warrant further exploration.

2.8 Emerging Trends and Future Directions

While traditional celebrity endorsements have been the focus of existing research, the rise of social media influencers has introduced new dynamics in the field of celebrity endorsement. Future studies could explore the comparative effectiveness of influencer endorsements and traditional celebrity endorsements, as well as the cross-cultural differences in consumer responses to these marketing strategies.

CHAPTER-3 RESEARCH METHODOLOGY

3.1-Nature of Research Problem

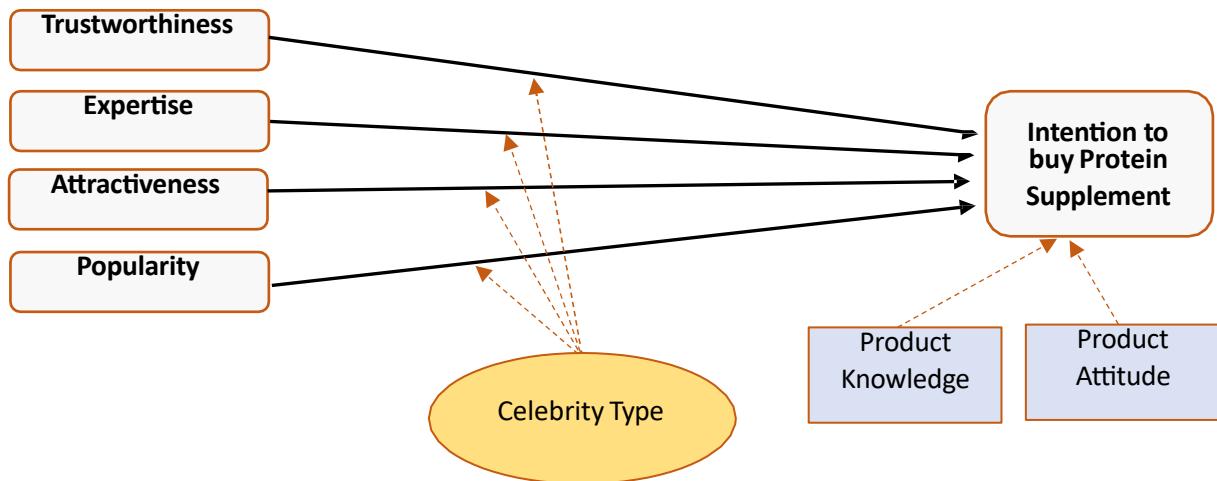


Figure 3 Figurative Model of Concept Definition

Variable Type	Variable Name				
Independent Variables	Trustworthiness (T)	Expertise (E)	Attractiveness (A)	Popularity (P)	
Dependent Variable	Intention to Purchase Protein Supplements (IP)				
Moderating Variable	Celebrity Type (Sports vs Movie)				
Control Variables	Product Knowledge (PK)		Product Attitude (PA)		

Table 1 Concept Variables of the Model

3.2-RESEARCH PROBLEM STATEMENT

THE ROLE OF CELEBRITY INFLUENCE IN SHAPING BUYING INTENTIONS FOR PROTEIN SUPPLEMENTS IN INDIA

Through this research, I seek to correlate the perception of the celebrity endorser, based on Trustworthiness, Expertise, Attractiveness, and Popularity, with the Intention of Indian Consumers to Purchase Protein Supplements being endorsed.

Here, the two celebrities referred to are females and famous in India, but of contrasting fields – Movie and Sports.

I also seek to understand the output, after controlling for Knowledge and Attitude towards the Protein Supplements.

3.3-Research Objectives/ Questions

Does celebrity endorsement have an impact on the consumption of protein supplements?

Objective: Through surveying and analysis, I am to quantifiably determine which factors of celebrity endorsement affect protein supplement consumption the most.

To this end, I draw upon key questions raised through the literature review. They are as follows:

- To examine if celebrity endorsement influences consumer purchasing behaviour

The purpose of our project is to find out the influence of endorsements on purchasing behaviour. While I am aware intuitively and intrinsically that it indeed does, there remains a burden of scientific proof to establish a verifiable relationship. Through this study, one of our objectives is to examine whether celebrity endorsement truly influences purchasing behaviour in any way at all.

- Degree to which celebrity endorsements influence consumer purchasing behaviour

Once a relationship has been established with endorsements and purchasing behaviour, the next step would be to ascertain the degree to which this happens. Yet again, the methods and means to achieve this have been explained in other

sections; however, an important step is to thoroughly quantify not just how endorsements affect consumption but also how much they affect consumption.

- To analyze whether endorsing celebrity credibility influences purchase decisions

Amongst aspects of celebrity endorsements that could be explored, one of the factors highlighted in the literature review is the credibility of the endorsing celebrity. I have noticed that the research papers look across industries, modalities, and populations, to establish whether the perception of the endorser (in terms of positive personal attributes) plays a role in the consumer's decision. Naturally, I would also extend this beyond merely establishing a relationship to ascertaining the degree to which it does, and hopefully use the same in our survey design.

- To examine how traits of celebrities influence the efficacy of endorsements

In addition to credibility, it is intuitive to feel that certain celebrities would have greater sway in purchasing decisions simply due to greater touch points with their target consumer groups. I have found research that also delves into the same within limited populations. I hope to understand how impactful this factor is in swaying consumer views.

- To examine which of the facets/factors of celebrity endorsement influences purchasing decisions the most

As mentioned above, there are various dimensions to celebrity endorsements that can be explored in establishing and quantifying a relationship. In addition to identifying and quantifying their impact, it is also incumbent on us to understand how they would apply when they take effect in unison. The relationship will largely be statistically established considering that it is hard to isolate and apply individual factors, and may perhaps be used to make generalized statements or in trends to display combined effect.

3.4 Hypothesis

H1: For a sports celebrity endorsement, the trustworthiness of the celebrity positively influences the customer's intention to purchase the brand's protein supplement.

According to various research, a sports celebrity endorsing a product can raise brand recognition, reliability, and dependability, which can favorably affect customer attitudes and buying intentions. Customers frequently consider athletes and sportspersons as their role models and subject matter experts; thus, their endorsement of a product can inspire humongous confidence in it.

Specifically in the context of protein supplements, a sports star endorsement can raise customer views of the supplement's efficacy, quality, and safety, which raises buying intentions, very easily as it denotes a sign effectiveness and reliability of the supplement. The success of the endorsement also depends on how trustworthy and clean-imaged the celebrity is, as people are more likely to trust someone, they believe to be trustworthy, credible, and honest. Additional factors may include the popularity of sports as well. For example, a cricketer's promotion might be more impactful than a Table Tennis player's promotion due to both the popularity of the individual and the sport.

H2: For a movie celebrity endorsement, the trustworthiness of the celebrity positively influences the customer's intention to purchase the brand's protein supplement.

Movies are integral part of today's general public, irrespective of their age, gender, culture, beliefs and demography and hence are a great source of general feedback and opinion from its viewer about the celebrity both personally and professionally. Consumers frequently judge movie stars as having higher degrees of attractiveness, likeability, and knowledge, which can translate into better credibility and trustworthiness, according to research. The celebrity's credibility might also be increased if it is thought that they genuinely care about the brand or product they are supporting.

The success of a movie celebrity endorsement, like that of a sports celebrity endorsement, may hinge on several variables, including the celebrity's popularity, relevance to the product, and the demographics and psychographics of the target audience. Nevertheless, there have been studies which suggest that a celebrity's credibility can favourably affect customer behaviour and buy intentions, even though there is relatively little research especially on protein supplements and movie celebrity endorsements.

H3: For a sports celebrity endorsement, the popularity of the celebrity positively influences the customer's intention to purchase the brand's protein supplement.

A well-known sports figure can have a significant impact on how consumers view a product and whether they plan to buy it. The popularity of a sports personality who supports a product might draw more attention to it and make it more widely known. Considering that they have a greater fan base and a significant influence in their industry, consumers may also view well-known sports personalities as being more credible and trustworthy.

Research has indicated that customers typically view popular sports celebrities as role models, which can further boost their effectiveness as endorsers of products, including protein supplements. Customers may be more inclined to believe the advice of a well-known sports celebrity and think the product works because of the celebrity's endorsement.

It is crucial to remember that the success of a sports celebrity endorsement may depend on a number of variables, including the celebrity's applicability to the product and the demographics and psychographics of the target market. A successful endorsement may not always result from a celebrity's fame if the celebrity's image or reputation does not match the brand or item being promoted.

In general, celebrity endorsements, especially those starring well-known athletes, can be a successful marketing tactic for protein supplement companies. The right celebrity should be chosen, and the endorsement message should be carefully crafted to effectively ring true with the intended demographic.

H4: For a movie celebrity endorsement, the popularity of the celebrity positively influences the customer's intention to purchase the brand's protein supplement.

A well-known movie star can have a significant impact on how consumers perceive a product and whether they plan to buy it. When a movie star promotes a product, their fame can draw more attention to it and make it known to a larger audience. Considering that they have a greater fan base and a significant influence in their industry, consumers may also view well-known movie stars as being more credible and trustworthy.

According to studies, consumers frequently consider well-known movie stars as aspirational role models, which can increase their influence as brand ambassadors for goods like protein supplements. If a well-known movie star recommends a product, consumers may be more inclined to assume that it works because of the celebrity's suggestion. Yet, it's crucial to remember that the success of a movie celebrity endorsement may depend on several variables, including the celebrity's applicability to the product and the characteristics of the target market. A successful endorsement may not always result from a celebrity's fame if the celebrity's image or reputation does not match the brand or item being promoted. In general, celebrity

endorsements, especially those involving well-known movie stars, can be a successful marketing tactic for protein supplement products.

Data Analysis

Sample

The purposive sampling approach to collect responses. To obtain a diverse set of respondents, circulated the form outside DTU also, amongst immediate friends and family.

I got a total of 243 responses. Out of these, 5 respondents, chose the willingness to incorporate protein in their diet as 0. Hence, the form was accepted without them moving on to the further questionnaire. Effectively, I analyzed data from 242 responses.

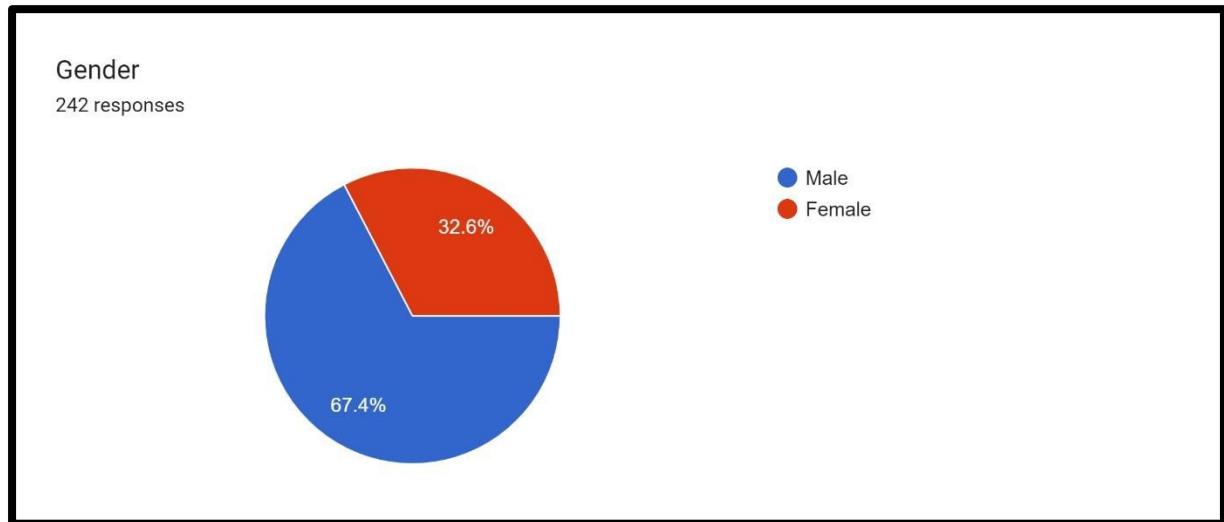


Figure 4 Gender Distribution

Among the aggregate responses gathered, there were 163 male participants and 79 female participants.

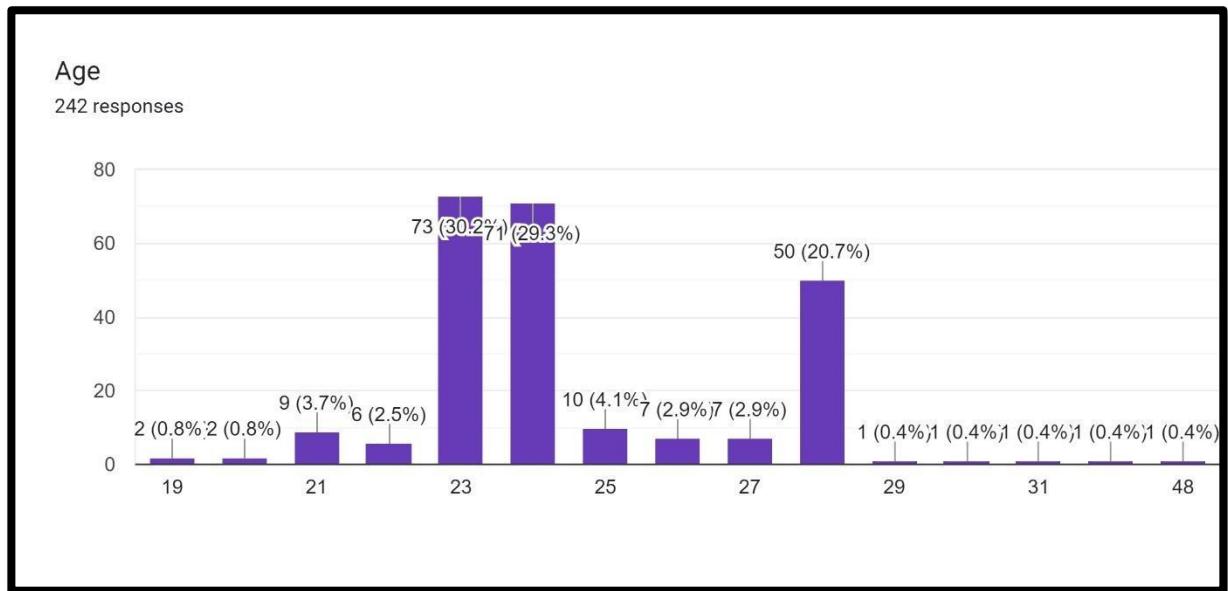


Figure 5 Age Distribution

The age range of respondents falls between 19 and 48 years.

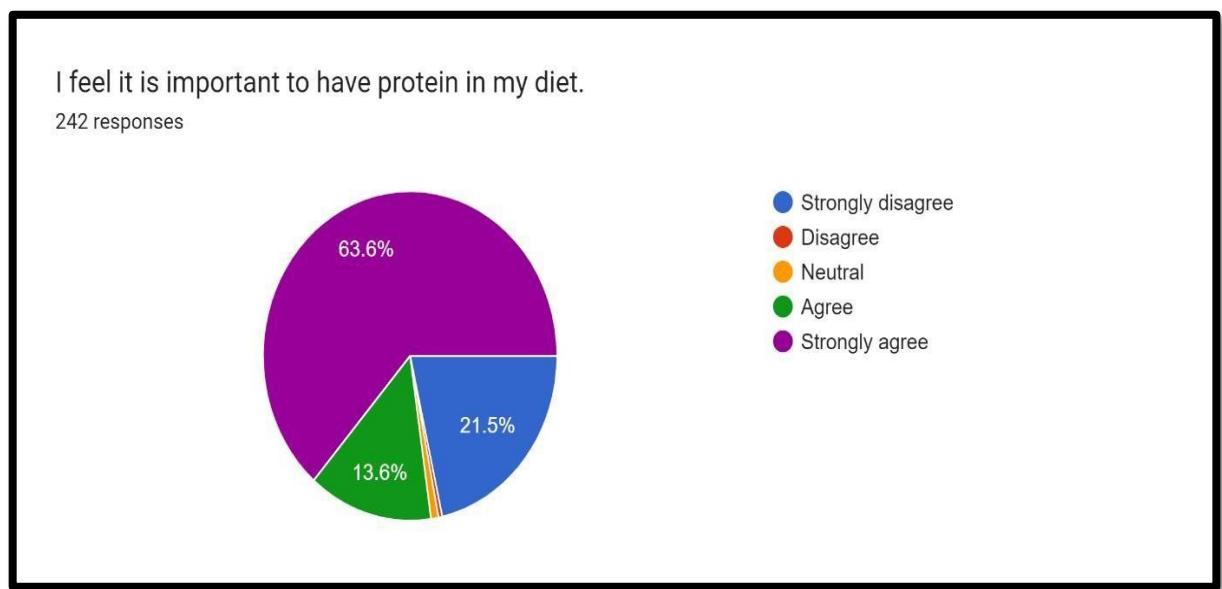


Figure 6 Importance of protein in diet

Among the aggregate responses gathered, 154 respondents, representing 63.6% of the total, expressed the belief that it is important to include protein in the diet.

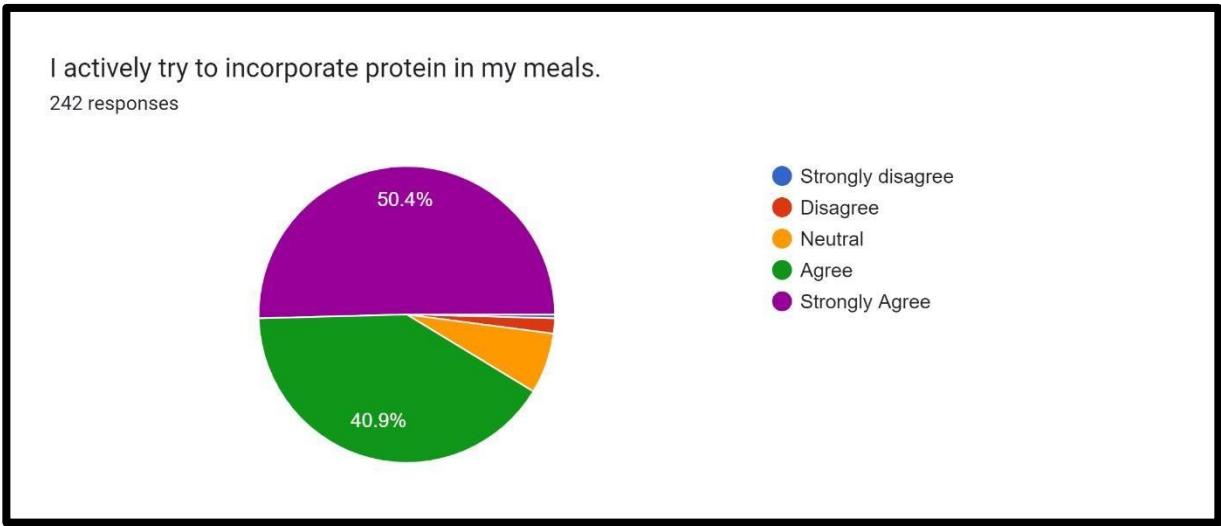


Figure 7 Incorporate protein in the meals

Among the aggregate responses gathered, 122 respondents, representing 50.4% of the total, expressed the belief that it is important to incorporate protein in meals.

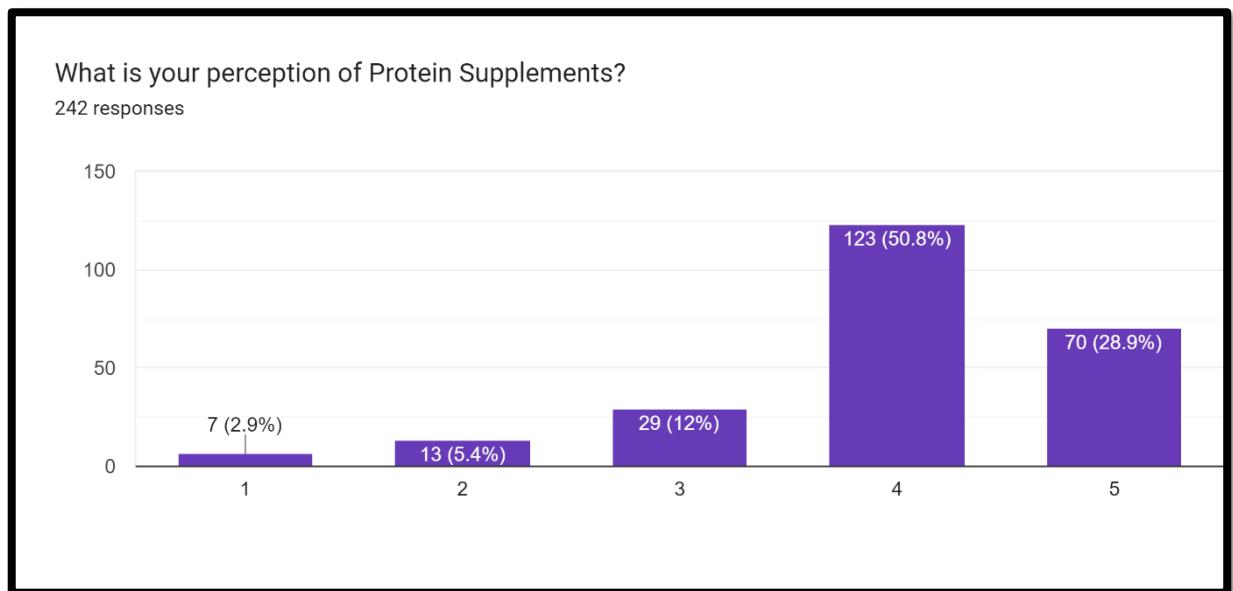


Figure 8 perception of protein

Among the aggregate responses gathered, 123 respondents, constituting 50.8% of the total sample, expressed a favourable stance toward consuming protein supplements.

Based on the importance experts are giving to consumption of protein, how willing are you to incorporate it into your diet?
242 responses

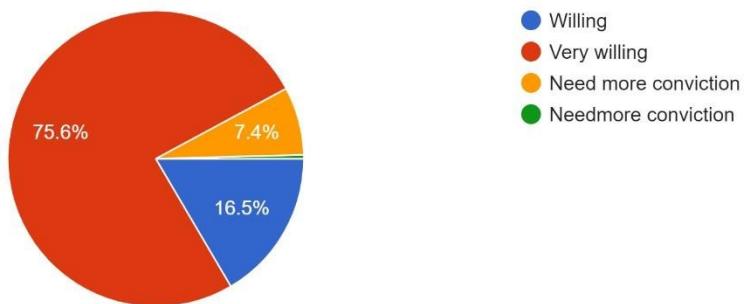


Figure 9 Accepting Experts opinion

Among the aggregate responses gathered, 183 respondents, constituting 75.6% of the total sample, expressed a favorable stance toward consuming protein supplements based on expert's advice.

Preferred mode of protein consumption to meet dietary requirements?
242 responses

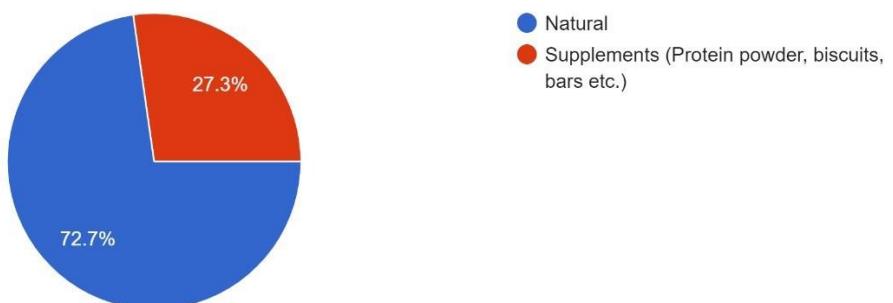


Figure 10 Mode of protein consumption

Among the aggregate responses gathered, 176 respondents, comprising 72.7% of the total sample, indicated that they obtain protein from natural sources.

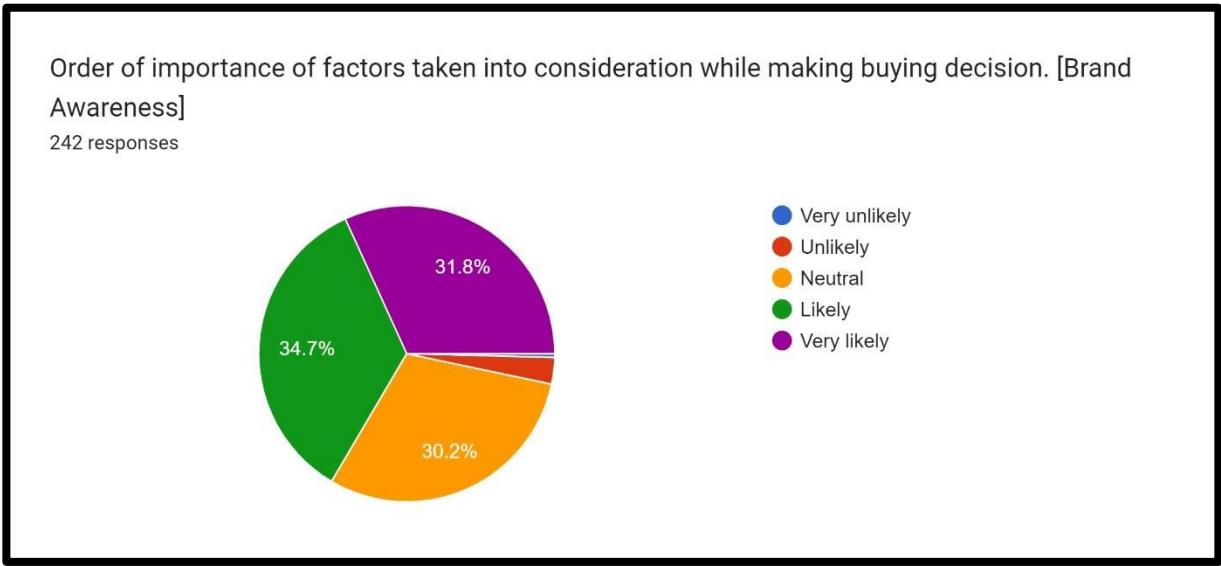


Figure 11 Order of importance- Brand Awareness

Among the aggregate responses gathered, 161 respondents, comprising 66.5% of the total sample, indicated that they have brand awareness regarding protein supplements.

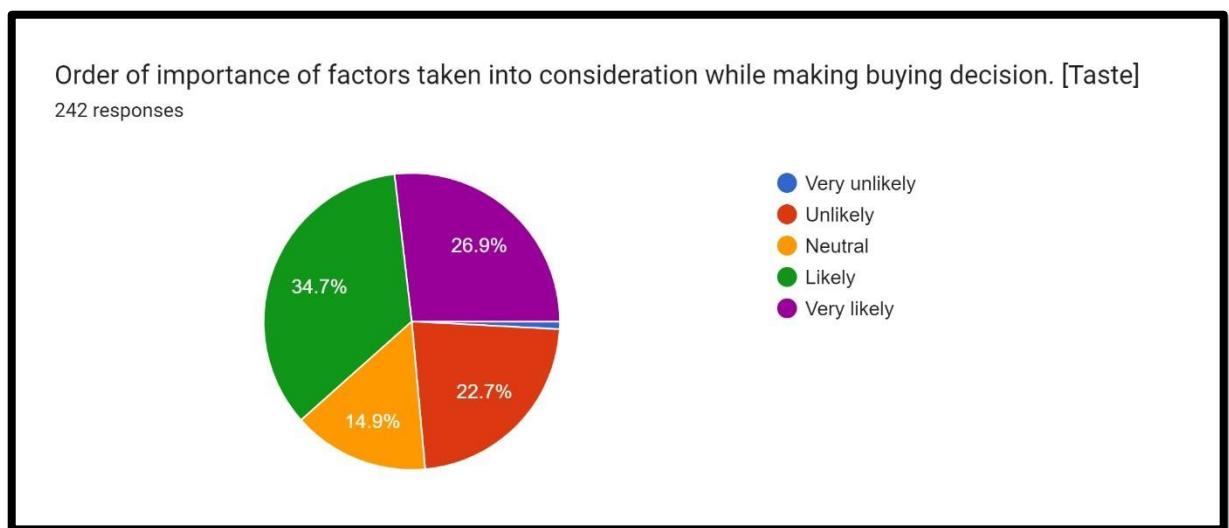


Figure 12 Order of Importance- Taste

Among the aggregate responses gathered, 149 respondents, comprising 61.6% make a buying decision based on the taste of protein supplements.

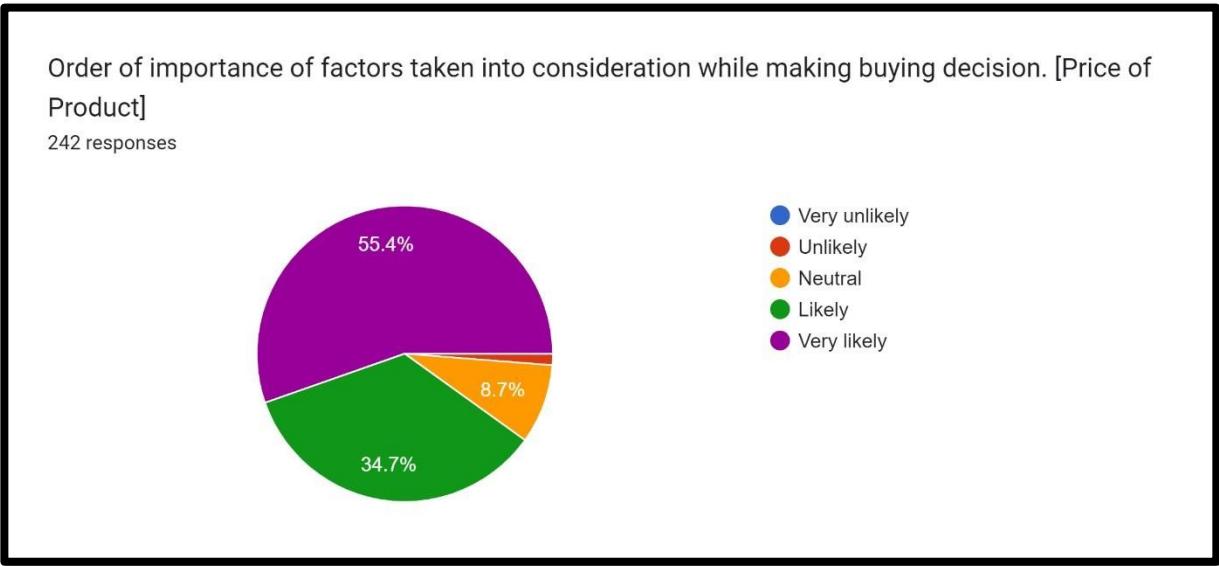


Figure 13 Order of importance- Price of product

Among the aggregate responses collected, it was found that 134 respondents, constituting 55.4% of the total sample, make purchasing decisions influenced by the price of protein supplements. This indicates a significant portion of the surveyed population places considerable emphasis on pricing when selecting protein supplements.

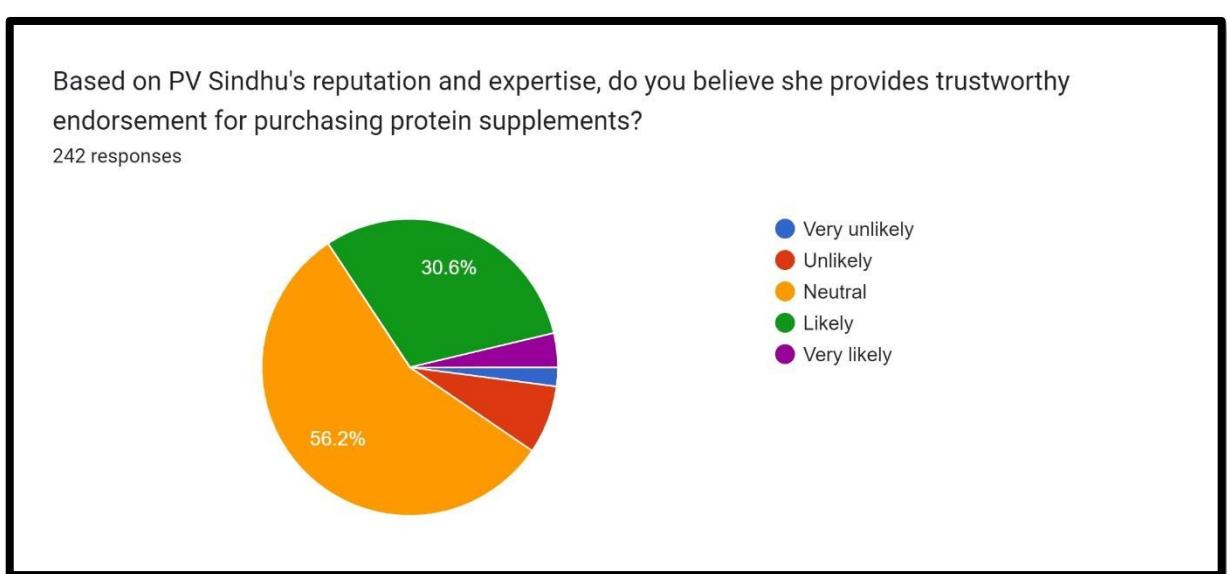


Figure 14 PV Sindhu's trustworthy opinion

Among the aggregate responses collected, it was revealed that 156 respondents, representing 56.2% of the total sample, base their purchasing decisions for protein supplements on PV Sindhu's esteemed reputation and expert endorsement.

To what extent do consumers believe that popularity of sports celebrity endorsements enhance the credibility of protein supplement brands?

242 responses

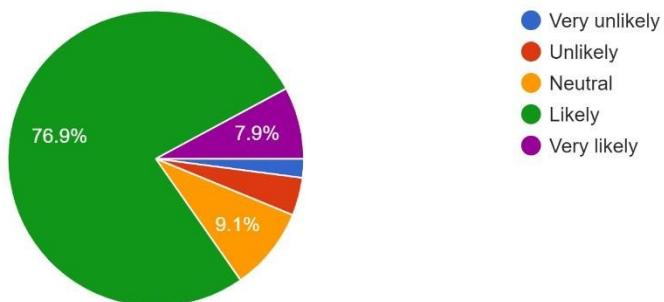


Figure 15 Credibility of sports celebrity

Among the aggregate responses collected, it has been discerned that 186 respondents, comprising 76.9% of the total sample, predicate their purchasing decisions for protein supplements on the popularity of PV Sindhu. This significant proportion underscores the influential role her public perception plays in shaping consumer preferences within the surveyed population.

Based on Shilpa Shetty's reputation and expertise, do you believe she provides trustworthy endorsement for purchasing protein supplements?
242 responses

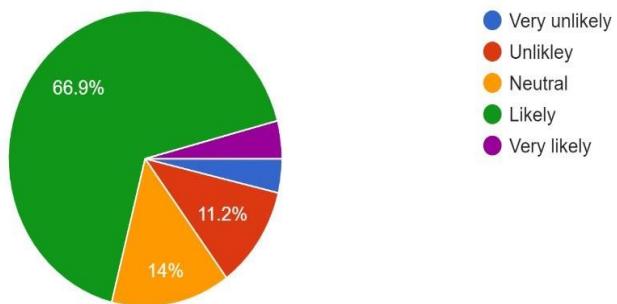


Figure 16 Shilpa Shetty's trustworthy opinion

Among the aggregate responses collected, it was revealed that 162 respondents, representing 66.9% of the total sample, base their purchasing decisions for protein supplements on Shilpa Shetty's esteemed reputation and expert endorsement. This indicates a substantial reliance on her credibility and expertise within the surveyed population when considering protein supplement purchases.

To what extent do consumers believe that popularity of movie celebrity endorsements enhance the credibility of protein supplement brands?

242 responses

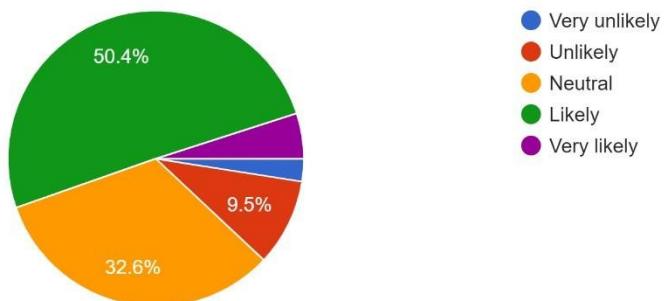


Figure 17 Credibility of movie celebrity

Among the aggregate responses collected, it has been discerned that 122 respondents, comprising 50.4% of the total sample, predicate their purchasing decisions for protein supplements on the popularity of Shilpa Shetty. This significant proportion underscores the influential role her public perception plays in shaping consumer preferences within the surveyed population.

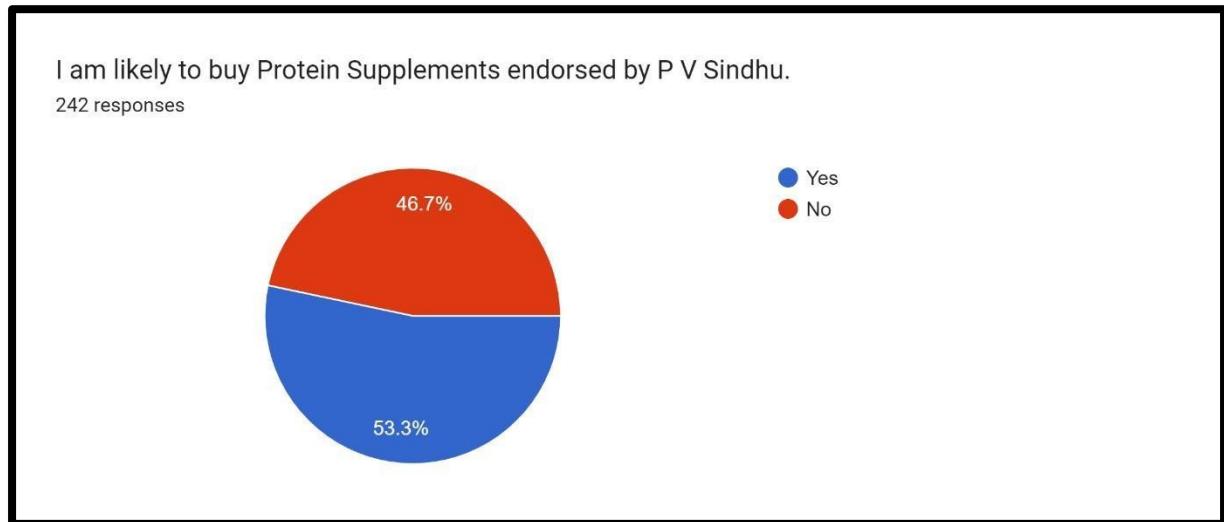


Figure 18 Purchasing decision-based on PV Sindhus endorsement

Among the aggregate responses collected, it has been discerned that 129 respondents, constituting 53.3% of the total sample, base their purchasing decisions for protein supplements on the popularity of PV Sindhu. This statistic underscores the substantial influence of her public image on consumer behaviour within the surveyed population.

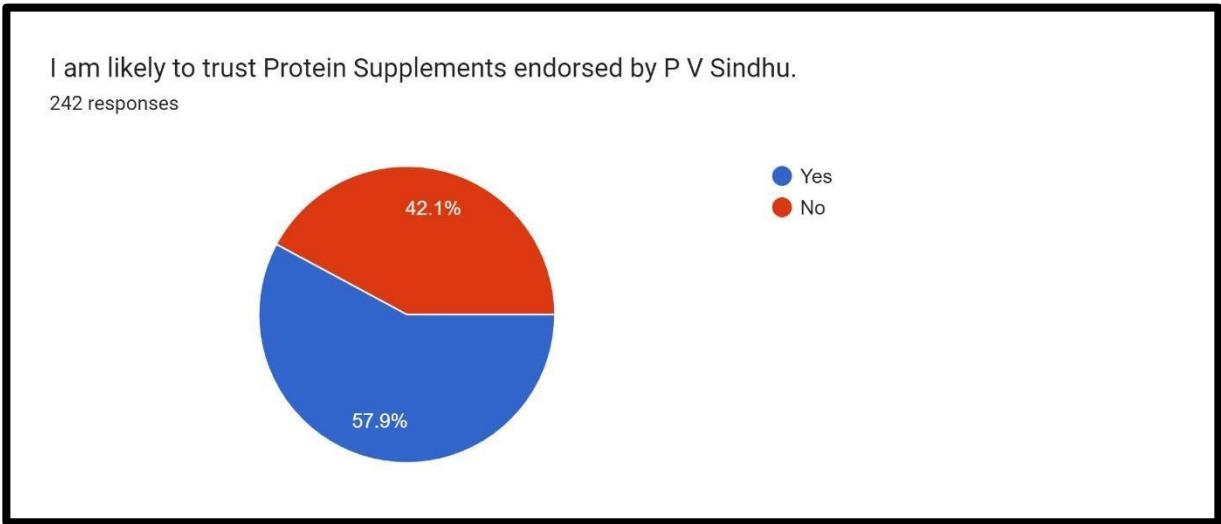


Figure 19 Trust in protein supplements endorsed by PV Sindhu

Among the aggregate responses collected, it has been discerned that 140 respondents, comprising 57.9% of the total sample, predicate their purchasing decisions for protein supplements on the trustworthy factor associated with PV Sindhu. This statistic underscores the significant influence of her esteemed reputation and credibility on consumer behaviour within the surveyed population.

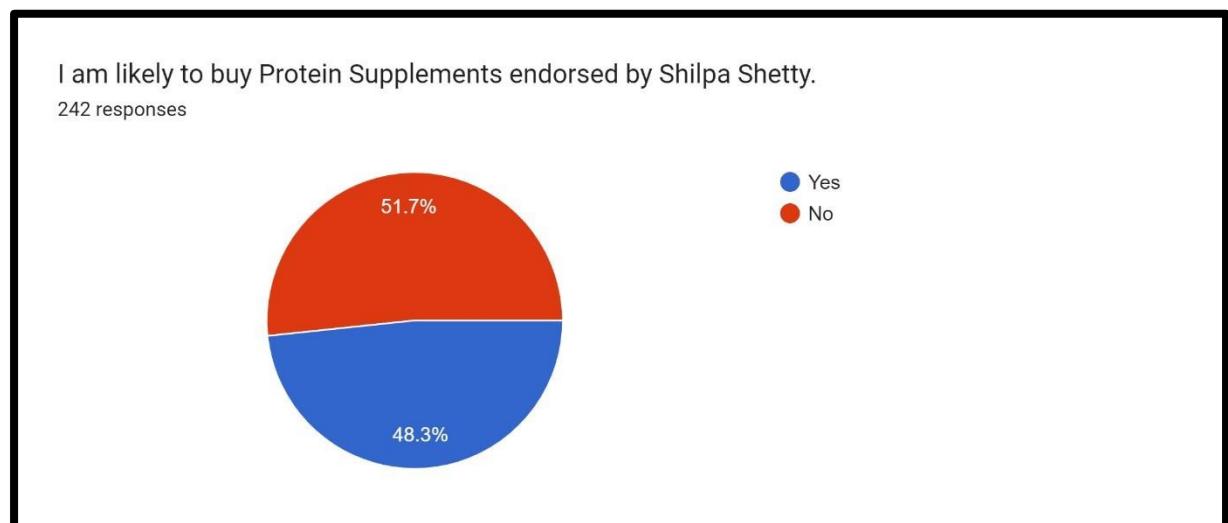


Figure 20 Purchasing decision based on Shilpa Shetty's endorsement

Among the aggregate responses collected, it has been discerned that 117 respondents, constituting 48.3% of the total sample, base their purchasing decisions for protein supplements on the popularity of Shilpa Shetty.

I am likely to trust Protein Supplements endorsed by Shilpa Shetty.

242 responses

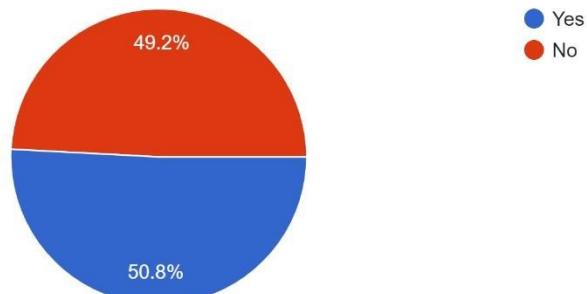


Figure 21 Trust in protein supplements endorsed by Shilpa Shetty

Among the aggregate responses collected, it has been discerned that 123 respondents, comprising 50.8% of the total sample, predicate their purchasing decisions for protein supplements on the trustworthy factor associated with Shilpa Shetty.

Analysis of Responses on Sports Celebrity (P.V Sindhu)

Block 0: Beginning Block

Classification Table^{a,b}

Observed	Predicted		Percentage Correct
	0	1	
Step 0 buy_PS_suppl_PV_Sindhu	0	113	.0
	1	128	100.0
Overall Percentage			53.1

a. Constant is included in the model.

b. The cut value is .500

The Block 0 Classification Table from the logistic regression output provides the following information:

- **Observed vs. Predicted:** It compares the observed values of the dependent variable `buy_PS_suppl_PV_Sindhu` with the values predicted by the model at Step 0, which is the initial step before any predictors are entered into the model.
- **Correct Predictions:** The table shows that the model correctly predicted all cases where `buy_PS_suppl_PV_Sindhu` is 1 (100% accuracy), but failed to predict any cases where `buy_PS_suppl_PV_Sindhu` is 0 (0% accuracy).
- **Overall Percentage:** The overall percentage of correct predictions at this step is 53.1%, which is not very high, indicating that the initial model without predictors is not effective in classifying the cases.
- **Cut Value:** The cut value used to determine the predicted category is .500, meaning that predicted probabilities above this threshold are classified as 1, and those below as 0.

This table is used to assess the classification accuracy of the logistic regression model at the initial stage. The low accuracy for predicting 0s suggests that the inclusion of predictor variables in subsequent steps is necessary to improve the model's performance.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	279.201	23	.000
	Block	279.201	23	.000
	Model	279.201	23	.000
Step 2 ^a	Step	-.854	3	.837

	Block	278.348	20	.000
	Model	278.348	22	.000
Step 3 ^a	Step	-.260	1	.610
	Block	278.087	19	.000
	Model	278.087	19	.000
Step 4 ^a	Step	-4.200	4	.380
	Block	273.887	15	.000
	Model	273.887	18	.000

a. A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

The Omnibus Tests of Model Coefficients and the Variables in the Equation from the logistic regression output:

- **Omnibus Tests:**
 - The Omnibus Tests of Model Coefficients show a Chi-square value of 279.201 with 23 degrees of freedom and a significance level of .000 after the first step. This indicates that the model is a good fit for the data at this step.
 - As steps progress, the Chi-square value slightly decreases, but the model remains significant, suggesting that the predictors contribute to the model.
- **Model Coefficients:**
 - The Variables in the Equation table list the B coefficients, standard errors (S.E.), Wald statistics, degrees of freedom (df), significance levels (Sig.), and the Exp(B) for each predictor variable.
 - Significant predictors have a Sig. value less than .05, indicating they contribute meaningfully to the model. For example, 'consumption(1)' has a B value of - 3.615, S.E. of 1.780, Wald of 4.126, df of 1, Sig. of .042, and Exp(B) of .027 at step 1, showing it's a significant predictor at this step.
 - Exp(B) values represent the odds ratio for each predictor, with values greater than 1 indicating increased odds, and values less than 1 indicating decreased odds of the outcome variable occurring.

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	53.961 ^a	.686	.916
2	54.815 ^a	.685	.914
3	55.076 ^a	.685	.914
4	59.276 ^a	.679	.907

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Interpratation of Block 1 Model Summary table from the logistic regression output:

- **-2 Log Likelihood:** This is a measure of the model's fit, with lower values indicating a better fit. The value provided here would be compared against the value in the null model (without predictors) to assess improvement.
- **Cox & Snell R Square:** This statistic measures the proportion of variance in the dependent variable explained by the model. It ranges from 0 to less than 1.
- **Nagelkerke R Square:** This is an adjusted version of the Cox & Snell R Square that adjusts the scale so that it can reach a maximum of 1. It provides a better estimate of explained variance.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	29.540	6	.000
2	3.971	6	.681
3	37.799	6	.000
4	32.711	6	.000

The Hosmer and Lemeshow test is a goodness-of-fit test used in logistic regression to determine how well the model fits the data.

- **Test Statistic:** The test generates a Chi-square statistic for each step of the model.
- **Degrees of Freedom:** The degrees of freedom (df) for each step correspond to the number of groups minus two.
- **Significance (Sig.):** The p-value indicates whether the model's predictions deviate significantly from the observed data.
- **Results Interpretation:**
 - A **large p-value** (typically >0.05) suggests that the model fits the data well.
 - A **small p-value** (≤ 0.05) indicates a poor fit, suggesting that the model does not adequately describe the data.

Classification Table^a

Observed	Predicted		Percentage Correct
	0	1	
Step 1 buy_PS_suppl_PV_Sindhu	0	109	96.5
	1	5	96.1
Overall Percentage			96.3
Step 2 buy_PS_suppl_PV_Sindhu	0	106	93.8
	1	6	95.3
Overall Percentage			94.6

Step 3 buy_PS_suppl_PV_Sindhu	0	106	7	93.8
	1	4	124	96.9
Overall Percentage				95.4
Step 4 buy_PS_suppl_PV_Sindhu	0	106	7	93.8
	1	7	121	94.5
Overall Percentage				94.2

a. The cut value is .500

- **Dependent Variable:** The analysis focuses on the variable `buy_PS_suppl_PV_Sindhu`, which is likely related to purchasing behavior.
- **Independent Variables:** Several predictors are used, including `consumption`, `mode_of_cons`, `brandawareness_quant`, `Taste`, `pop`, `PV_sindhu_trustworthy`, `con_believe_on_sports_personality`, and `trust_ps_by_PV`.
- **Model Summary:** The logistic regression model has been iterated 20 times with various statistics reported, such as -2 Log likelihood, Cox & Snell R Square, and Nagelkerke R Square.
- **Classification Table:** A table is presented showing the observed and predicted values of the dependent variable, along with the percentage correctly predicted.

Analysis of Responses on Film Celebrity (Shilpa Shetty)

		Classification Table ^{a,b}		Percentage Correct	
		Predicted			
		buy_ps_by_SS			
		0	1		
Step 0	buy_ps_by_SS	0	124	100.0	
		1	117	.0	
Overall Percentage				51.5	

a. Constant is included in the model.
b. The cut value is .500

The **Block 0 Classification Table** from the logistic regression output indicates the following:

- **Predicted vs. Observed:** It compares the observed values of the dependent variable (buy_ps_by_SS) with the values predicted by the model at step 0, which is the initial step before any predictors are entered into the model.
- **Correct Predictions:** The model correctly predicted all cases where buy_ps_by_SS is 0 (100% correct), but failed to predict any cases where buy_ps_by_SS is 1 (0% correct).
- **Overall Percentage:** The overall percentage of correct predictions at this step is 51.5%, which is not better than chance, indicating that the model without any predictors is not effective.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	207.538	11	.000
	Block	207.538	11	.000
	Model	207.538	11	.000
Step 2 ^a	Step	-.334	1	.563
	Block	207.204	10	.000
	Model	207.204	9	.000
Step 3 ^a	Step	-4.374	2	.112
	Block	202.830	8	.000
	Model	202.830	8	.000

a. A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

The Omnibus Tests of Model Coefficients from the logistic regression output assess whether the predictors, as a set, reliably distinguish between the categories of the dependent variable.

- **Chi-square Value:** This is the test statistic used to evaluate the significance of the model. A large chi-square value indicates that the model with predictors fits the data better than the model without predictors.
- **Degrees of Freedom (df):** This represents the number of predictors tested in the model.
- **Significance (Sig.):** The p-value indicates the probability of observing the chi-square value if the null hypothesis is true (no relationship between predictors and the dependent variable). A small p-value (typically less than 0.05) suggests that the model with predictors is significantly different from the null model.

For example, in Step 1, the chi-square value is 207.538 with 11 degrees of freedom and a significance level of 0.000, indicating a highly significant set of predictors at this step. The process continues with backward stepwise selection, removing the least significant predictor at each step until the most parsimonious model is achieved. The final model should retain only significant predictors.

		Model Summary	
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	126.355 ^a	.577	.770
2	126.689 ^a	.577	.769
3	131.063 ^a	.569	.759

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

- **Variables Analyzed:** The model includes variables related to the likelihood of purchasing protein supplements endorsed by Shilpa Shetty, such as trustworthiness, belief in celebrity endorsements, taste, brand awareness, mode of consumption, and others.
- **Model Method:** Backward Stepwise (Likelihood Ratio) method was used for logistic regression.
- **Significant Predictors:**
 - **Brand Awareness:** Different levels of brand awareness significantly predict the likelihood of purchase.
 - **Popularity (pop):** Popularity levels have a significant impact on the purchase decision.
 - **Mode of Consumption:** Whether the protein supplement is consumed as a drink or food influences the likelihood of purchase.
- **Model Performance:**
 - The final model has a high overall correct classification rate of approximately **92.9%**.
 - The Nagelkerke R Square value is **0.759**, indicating a good fit of the model to the data.

Classification Table^a

Observed		Predicted		Percentage Correct
		0	1	
Step 1	buy_ps_by_SS	0	115	92.7
		1	10	91.5
Overall Percentage				92.1
Step 2	buy_ps_by_SS	0	117	94.4
		1	11	90.6
Overall Percentage				92.5
Step 3	buy_ps_by_SS	0	117	94.4
		1	10	91.5
Overall Percentage				92.9

a. The cut value is .500

The classification table from the logistic regression output indicates the following:

- **Predictive Accuracy:** The model's ability to correctly predict whether a person would buy protein supplements endorsed by Shilpa Shetty.
- **Observed vs. Predicted:** Compares the actual observed outcomes (0 or 1) with the predicted outcomes from the model.
- **Percentage Correct:** The percentage of cases correctly predicted by the model for each category (0 or 1) and overall.
- **Step 3 Results:** At step 3, the model had a predictive accuracy of 92.9% overall, with 94.4% for category 0 and 91.5% for category 1.

CHAPTER-4 FINDINGS

Discussion on the Uniqueness of Findings

In this project, I ran the SPSS software to find the findings of 200+ respondents to find out the relation between the independent variables' trustworthiness, expertise in the field, attractiveness, and popularity with the buying intention of the consumers for the promoted Protein supplement brand. I ran exploratory factor analysis and multiple regression to find the significance and beta, which helped us in determining what factors might play a role when a consumer does the decision-making of whether to buy the product or not.

I started with cleaning the data that I had received. While looking at data I was pretty confident of the variety and spread of data as I ranged right from the age of 18- to 48-year-old respondents, with a fair gender distribution according to the population of India (2:1 male to female ratio). I analyzed the first controlling factor, product knowledge by asking the respondents if they were aware of their daily protein intake and their preferred mode of intake. The second controlling factor viz., product attitude was gauged by asking about their willingness to incorporate the protein supplement in their diet. Even though the majority were inclined to inculcate protein in their diets in one way or another, I did receive some responses who were not at all interested in this mode of intake. Once I was clear with the controlling variables, I moderated our study into the celebrity type of being a movie star or a sports person. With the profession as moderator, I went ahead to gauge the 4 independent variables by further dividing them into sub-factors. I used a 5-factor scale and took the inputs of the respondents in line with their final willingness to buy the product if endorsed by the two celebrities viz., Ms. P.V. Sindhu (sports person) and Ms. Shilpa Shetty (movie celebrity). To keep other factors constant and just the profession the same, I kept the gender and assumed popularity of both celebrities the same.

With this study I was finally able to formulate 2 hypotheses with 2 sub-parts each, which were proven supported/unsupported by the tests run on the SPSS software. Our final observation, had a very uniform message, stating the significant

importance of trustworthiness and expertise of the celebrity in both controlled and without controlled tests.

CHAPTER-5 IMPLICATIONS OF FINDINGS OF STUDY

Through this study, I have tried to study the Celebrity Influence in the Indian Protein Supplement Market: A Study on Consumer Purchasing Behaviour. In this course of collecting and analysing data, I concluded that a consumer forms the intent to purchase based on the trustworthiness and expertise of the endorser, rather than their popularity and attractiveness, as these 4 were the independent variables of our study. However, only a part of the intent is influenced by this. Other factors, like price, availability, taste, and brand are also relevant.

- The first set of results was obtained **without accounting or the controlling variable**. Here, I found that the consumers were more affected if Shilpa Shetty was the endorser (Can be in a negative way also - i.e. because of the lack of trustworthiness). Trustworthiness and Expertise were more related to the intention to purchase, rather than attractiveness and popularity.
- Next, **I controlled each variable** for the attitude of consumers towards the protein supplements. I found that here, the variables concerning **PV Sindhu** **were more significantly changing** concerning the changing intentions to buy protein supplements.
- Analysing the response summary, I found that the respondents have rated **Shilpa Shetty as not a very trustworthy person**, and accordingly, will not prefer to purchase items endorsed by her. i.e. Consumers tend to project the endorser traits on the products they endorse.

There are real-life examples also, many brands cancel the contract with sports or movie stars, as soon as they get into any controversial matter, which reflects the importance of the clean image of the endorser irrespective of their expertise and trustworthiness.

Brands use this to signal their intentions, ethics, values, mission, and vision as well for their products, to influence customer's intentions.

CHAPTER-6 LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Limitations of the Study

1. Sample size and representativeness: Our data collection was done through convenience sampling, a non-probability sampling method, rather than a probability sampling method, such as random sampling. Most of our respondents fall in the age category of 20-30, which means the data is heavily skewed towards the younger generation and their perception rather than the whole.
2. Choosing the best model for the selection of celebrity endorsers: About the four dimensions of the scale, the selection of attractiveness, expertise, popularity, and trustworthiness was motivated by previous theoretical work and empirical observations. The quantitative study, therefore, indicates the validity and reliability of the scale rather than proving their existence. Therefore, one should be cautious.
3. Self-reporting data: Our research relied on self-reported data, which has its own set of biases from the respondents leading to inaccurate information.
4. Personal biases: Since I designed the questionnaire, our perceptions and preferences may have coloured it.
5. Non-exhaustive questionnaire: The questionnaire is not exhaustive as I haven't covered all the factors that can be considered.
6. Celebrities chosen: I chose two highly popular celebrities; hence, the data collected is skewed towards stars with high popularity.

Directions for Future Research:

1. Pre and post-treatment analysis: A focus group/personal interview can be set up where the people whose data we're collecting are interviewed on their views before and then shown advertisements post, which data is collected again to gain deeper insights.

2. Qualitative research: Doing qualitative research before forming a hypothesis would help us identify more factors affecting the research problem, leading to more comprehensive research.
3. Increasing specificity: Different target groups can be studied for different reactions to study celebrity endorsements' effects and effectiveness to gain more profound and specific knowledge about certain sects.
4. Improvement of the scale: Since our study adopted a scale from previous literary works as the study was exploratory, as findings continue, the existing scale can be expanded or modified to get better results.

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CHAPTER-8 APPENDIX

Questionnaire

The link to Questionnaire for filling –

https://docs.google.com/forms/d/e/1FAIpQLSf7GM6gqOaxtSLBIHi6ezghKCkCvEDnVlfnL8DziCn-rZPJeg/viewform?usp=sf_link

1. Name
2. Age (in years)
3. Gender
4. I feel it is important to have protein in my diet.
5. I actively try to incorporate protein in my meals.
6. What is your perception of Protein Supplements?
7. Based on the importance experts are giving to consumption of protein, how willing are you to incorporate it into your diet?
8. Preferred mode of protein consumption to meet dietary requirements?
9. Order of importance of factors taken into consideration while making buying decision. [Brand Awareness]
10. Order of importance of factors taken into consideration while making buying decision. [Taste]
11. Order of importance of factors taken into consideration while making buying decision. [Price of Product]
12. Based on PV Sindhu's reputation and expertise, do you believe she provides trustworthy endorsement for purchasing protein supplements?
13. To what extent do consumers believe that the popularity of sports celebrity endorsements enhances the credibility of protein supplement brands?
14. Based on Shilpa Shetty's reputation and expertise, do you believe she provides trustworthy endorsement for purchasing protein supplements?
15. To what extent do consumers believe that the popularity of movie celebrity endorsements enhances the credibility of protein supplement brands?
16. I am likely to buy Protein Supplements endorsed by P V Sindhu.
17. I am likely to trust Protein Supplements endorsed by P V Sindhu.
18. I am likely to buy Protein Supplements endorsed by Shilpa Shetty.
19. I am likely to trust Protein Supplements endorsed by Shilpa Shetty.

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CELEBRITY INFLUENCE IN THE INDIAN PROTEIN SUPPLEMENT MARKET: A STUDY ON CONSUMER PURCHASING BEHAVIOR

A DISSERTATION

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE
OF

MASTER OF BUSINESS ADMINISTRATION
IN
HUMAN RESOURCE AND BUSINESS ANALYTICS

Submitted by:

Rani Kumari
(Roll No. 2K23/UMBA/80)

Under the Supervision of:
Ms. Shikha Tomar
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MAY, 2025

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CANDIDATE'S DECLARATION

I Rani Kumari, 2K23/UMBA/80 students of MBA. Human Resource and Business Analytics, hereby declare that the project Dissertation titled **“Celebrity Influence in the Indian Protein Supplement Market: A Study on Consumer Purchasing Behavior”** Which is submitted by me to the Department of **Delhi School Of Management, Delhi Technological University, Delhi** in partial fulfilment of the requirement for the award to the degree of **Master of Business Administration**, is original and not copied from any source without proper citation. This work has not previously formed the basis for the award of any Degree, Diploma Associateship, Fellowship or other similar title or recognition.

Place: Delhi
Date:

Rani Kumari

DELHI SCHOOL OF MANAGEMENT
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CERTIFICATE BY THE SUPERVISOR

I hereby certify that the Project Dissertation titled "Celebrity Influence in the Indian Protein Supplement Market: A Study on Consumer Purchasing Behavior" which is submitted by **Rani Kumari**, Roll No **2K23/UMBA/80** **Delhi School Of Management, Delhi Technological University, Delhi** in partial fulfillment of the requirement for the award of the degree of **Master of Business Administration**, is a record of the project work carried out by the students under my supervision. To the best of my knowledge, this work has not been submitted in part or full for any Degree or Diploma to this University or elsewhere.

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Ms. Shikha Tomar
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ABSTRACT

This study comprehensively examines all facts of celebrity endorsements and their impact on consumer behavior. The study employed logistic regression analysis as the major methodology to assure the reliability of the findings. This statistical methodology is frequently used in research studies to assess the relationship between independent variables, such as factors associated with celebrity endorsement, and a binary outcome variable, which in this case would likely be the consumer's decision to purchase or not purchase protein supplements.

The study comprised 243 people from diverse demographic backgrounds, yet it was noted that the majority of the sample shared comparable traits. The sample predominantly comprised MBA students from DSM, DTU India, aged between 19 and 25 years. While the limited diversity of the sample may limit the generalizability of the findings to a broader population, it provides vital insights into the beliefs and behaviors of this particular demographic group. These observations may be particularly relevant for marketing tactics targeting young, well-educated consumers in India.

The study findings suggest that celebrity endorsements exert a significant influence on consumers' purchasing decisions regarding protein supplements. Overall, this study provides valuable insights into the complex dynamics of celebrity endorsements and their impact on consumer behavior in the context of purchasing protein supplements in India. Marketers can optimize the influence of celebrity endorsements in advertising by emphasizing the critical importance of trustworthiness and knowledge. This allows them to better their tactics and effectively promote products to customers. Further research in this area should explore other factors and variables to improve our understanding of the complexities associated with consumer responses to celebrity endorsements.

ACKNOWLEDGEMENT

66
I wish to express our sincere thanks and gratitude to my faculties at DSM, Delhi Technological University for their stimulating guidance, continuous encouragement, and enormous support throughout the program.

10
I am deeply indebted to the people across the globe who have shared their knowledge and perspectives in the form of online tutorials, books, and other resources which have helped me to a great extent during this endeavor.

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Rani Kumari

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CHAPTER-1 INTRODUCTION

Rising health consciousness across diverse age groups, genders, and socio-economic backgrounds in India has fuelled a surge in demand for protein supplements. This trend is driven by evolving lifestyles, heightened awareness of health and medical conditions, and increased purchasing power. Once primarily used by bodybuilders, athletes, and fitness enthusiasts to meet daily protein needs for muscle growth and recovery, protein supplements are now widely embraced by the general population. Beyond traditional protein sources like lentils, seafood, and poultry, consumers are increasingly turning to convenient, market-ready options available as medically prescribed or over-the-counter (OTC) products. These supplements are offered in various forms, including powders, ready-to-drink beverages, granola bars, and capsules, catering to diverse preferences and needs.

The Indian protein supplement market has witnessed significant growth, with a projected compound annual growth rate (CAGR) of over 10% from 2023 to 2028, driven by urbanization, fitness trends, and the influence of social media. Products are tailored to suit individual requirements, considering factors such as dietary habits, age, demographics, and specific needs (e.g., vegetarian, vegan, or non-vegetarian diets). Popular variants include whey protein (the most widely consumed), casein protein, soy protein, pea protein, egg protein, and hemp protein, each addressing unique nutritional goals, allergy constraints, and taste preferences. This diversification reflects the growing accessibility and appeal of protein supplements, positioning them as a staple in the health and wellness routines of Indian consumers.

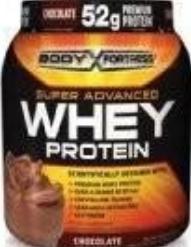
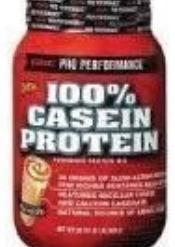
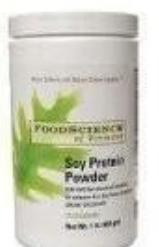
PROTEIN SUPPLEMENTS DEFINED					
					
WHEY	CASEIN	EGG	SOY	PEA	RICE
liquid derived from production of cheese.	a slower digestive process, derived from milk.	good for the lactose intolerant, egg protein is an animal based protein.	a good vegetarian & vegan option, source is from soybeans.	plant derived protein, great for vegetarians and vegans.	friendly gluten-free alternative derived from rice.

Figure 1 Types of protein supplements

1.1-Industry Profile:

The Indian protein supplement market, valued at INR 33,028.5 crore in 2024, is one of the fastest-growing globally, projected to reach INR 1,28,460.5 crore by 2034, with a compound annual growth rate (CAGR) of approximately 14.5%. This highly competitive market lacks a single dominant leader, with top players—Optimum Nutrition, MuscleBlaze, MyProtein, Ultimate Nutrition, and BSN—collectively holding 60% of the market share. To capture broader consumer segments, brands employ diverse marketing strategies, including influencer marketing, celebrity endorsements, product placements, discounts, and social media campaigns, distributed through pharmacies, supermarkets, brand outlets, and e-commerce platforms. Celebrity endorsements, featuring Bollywood stars, sports personalities, and fitness influencers, play a pivotal role in building consumer trust and brand affinity. These endorsements leverage the credibility, achievements, and relatability of endorsers to influence purchasing decisions, particularly as consumer health and well-being are at stake. Careful selection of endorsers, based on their reputation and alignment with brand values, is critical in this customer-facing industry.

1.2 Organization Profile

India's market for protein supplements is a vibrant and quickly expanding industry, propelled by rising disposable incomes, a developing fitness culture, and increased health consciousness. This is a summary of the market's organization landscape:

1. Principal Players: The Indian market for protein supplements is dominated by a few major players, such as:

- Abbott Nutrition, which is well-known for its Ensure brand and sells a variety of protein supplements to suit various consumer demographics.
- Amway: Provides protein supplements with an emphasis on premium formulas and natural components under the Nutrilite brand.
- Herbalife: Well-known for its protein shakes and supplements with an emphasis on wellness and weight control, Herbalife Nutrition goods are offered.
- Convenience and On-the-Go Formats: Busy urban consumers seeking simple ways to meet their nutritional needs are driving up demand for ready-to-drink

protein shakes, protein bars, and single-serve sachets.

- Personalization and Customization: Companies are providing consumers with customized protein supplements based on parameters such as taste preferences, dietary constraints, and fitness objectives.

2. Regulatory Environment: A number of government organizations, such as the

Food Safety and Standards Authority of India (FSSAI), which establishes

guidelines for food safety and labeling specifications, oversee the Indian market for protein supplements. Companies in this industry must abide by these rules in order to protect the safety and confidence of their customers.

Intense competition, shifting customer preferences, and an increasing emphasis on innovation and quality to satisfy the wide range of demands of health-conscious consumers are the main characteristics of the Indian market for protein supplements.



Figure 2 Protein brands

1.3 Objective of the study

To study the impact of celebrity endorsements on consumers' inclination to buy protein supplements in the Indian market. Celebrity endorsements have become a widespread marketing tactic, especially in the health and wellness industry, where celebrities can play a significant role in changing consumer opinions and actions. This study examines celebrity endorsements' precise influence on consumers' purchasing intentions in the Indian protein supplement market.

Objective: This research aims to evaluate and measure the influence of celebrity endorsements on customers' inclination to purchase protein supplements in India. This involves examining the following crucial elements:

The objective of this study is to assess the impact of celebrity endorsements on increasing brand recognition, consumer perception, and trustworthiness of protein supplement products in the Indian market.

Consumer Attitude Analysis: The objective is to examine the attitudes, beliefs, and perceptions of Indian customers regarding protein supplements that are supported by celebrities. This analysis will focus on understanding the reasons behind their purchasing decisions and the elements that influence their decision-making process.

Assessment of the intention to make a purchase: The objective is to assess the impact of celebrity endorsements on customers' inclination to buy protein supplements, taking into account variables such as the likelihood of purchase, brand loyalty, and readiness to pay a higher price.

To determine potential moderating factors that may impact the correlation between celebrity endorsements and purchase intentions, such as the legitimacy of the celebrity, the relevancy of the product, and the demographics of the consumer.

Technique: The research technique will encompass a blend of quantitative and qualitative methodologies, incorporating surveys, interviews, and experimental experiments. The data collection process will involve gathering information from

a diverse group of Indian customers, selected to represent various demographic divisions and geographical regions. This approach is aimed at ensuring that the findings may be applied to the broader population. The correlations between variables and hypotheses will be examined using statistical analysis approaches such as regression analysis and structural equation modeling (SEM).

 44 The significance is in comprehending the influence of celebrity endorsements on the purchasing intentions of Indian customers regarding protein supplements. This knowledge holds great importance for marketers, producers, and industry stakeholders. The results of this study will offer valuable understanding into the efficacy of using famous individuals to endorse products as a marketing tactic in the Indian protein supplements market. This will enable businesses to develop more knowledgeable marketing strategies, improve brand positioning, and increase consumer engagement and sales.

CHAPTER-2 LITERATURE REVIEW

Celebrity endorsement has become a prevalent marketing strategy utilized by brands to influence consumer behaviour and enhance brand perception. By leveraging the fame, credibility, and appeal of celebrities, brands aim to create a positive association with their products or services, ultimately driving consumer purchase intentions. This literature review provides a comprehensive analysis of the impact of celebrity endorsement on consumer buying behaviour, synthesizing insights from various scholarly sources and related research. It explores the theoretical frameworks, key factors, and empirical findings that explain the effectiveness of celebrity endorsements, as well as the challenges and limitations associated with this strategy.

Influence of Celebrity Endorsement on Consumer Buying Behaviour

Research indicates that celebrity endorsements play a crucial role in shaping consumer attitudes and purchase decisions. Celebrities are often perceived as credible and trustworthy, leading consumers to develop positive associations with endorsed products or brands. The attractiveness and likeability of celebrities further contribute to the effectiveness of endorsements, making advertisements more appealing and memorable to consumers. Celebrity endorsement has emerged as a prevalent marketing strategy, with brands leveraging the credibility, attractiveness, and likeability of celebrities to influence consumer attitudes and purchase decisions. The existing body of research highlights the significant impact of celebrity endorsements on various aspects of consumer behaviour.

Psychological Mechanisms Behind Celebrity Endorsement Effects

The psychological processes underlying celebrity endorsement effects have been the subject of extensive study. Consumers tend to transfer their perceptions of celebrities onto endorsed products, creating a sense of familiarity and trust that influences their buying behaviour. The congruence between the celebrity image and the brand values is essential in establishing a meaningful connection with consumers and driving purchase intentions.

Influence on Brand Perception and Purchase Intentions

2 Studies have consistently demonstrated that celebrity endorsements positively influence consumer perceptions of brands and increase purchase intentions.

Consumers tend to perceive celebrity-endorsed products as more attractive, credible, and relatable to their lifestyles and interests. This, in turn, leads to favourable brand attitudes and a higher willingness to pay premium prices for endorsed products.

Role of Celebrity Attributes

9 The effectiveness of celebrity endorsements is largely attributed to the attributes of the celebrities themselves. Factors such as credibility, trustworthiness, expertise, and congruence between the celebrity image and the brand play a crucial role in shaping consumer responses. Consumers are more likely to be influenced by endorsements from celebrities they perceive as credible and aligned with the brand's values and identity.

Psychological Mechanisms

46 The psychological processes underlying the impact of celebrity endorsements on consumer behaviour have been extensively studied. Consumers tend to transfer their perceptions and associations of the celebrity onto the endorsed brand, creating a sense of familiarity and trust that influences their purchase decisions. The congruence between the celebrity image and the brand is a key factor in establishing this meaningful connection with consumers.

Strategic Considerations

59 Effective celebrity endorsement strategies involve careful selection of celebrities based on their relevance to the target audience, brand fit, and authenticity. Research suggests that aligning the celebrity's image with the brand identity enhances the credibility of the endorsement and increases consumer engagement. Additionally, the management of celebrity endorsements, including contract negotiations and post-campaign evaluation, plays a vital role in maximizing the impact on consumer

Research Gaps

While existing literature provides valuable insights into the impact of celebrity endorsement on consumer behaviour, there are still areas that warrant further exploration. Future research could focus on the long-term effects of celebrity endorsements, the role of social media influencers in comparison to traditional celebrities, and the cross-cultural differences in consumer responses to celebrity endorsements. Understanding these aspects can help marketers refine their strategies and adapt to evolving consumer preferences.

Celebrity endorsement has become a significant industry worldwide, with marketers leveraging celebrities to promote their products and brands in advertisements. This strategic approach aims to enhance sales and positively influence consumers' perceptions, ultimately impacting their buying behaviour. Research studies have consistently highlighted the effectiveness of celebrity endorsements in making advertisements more attractive and increasing brand credibility, leading to a positive relationship between buying behaviour and brand perception.

The influence of celebrity endorsement on consumer behaviour extends beyond mere attractiveness, encompassing attributes such as credibility, trust, expertise, and congruence between the celebrity image and the brand. Consumers tend to perceive celebrity-endorsed products as more relatable to their lifestyles and interests, leading to higher purchase intentions and willingness to pay premium prices. The psychological processes underlying celebrity endorsement effects have been extensively studied, emphasizing the importance of understanding how celebrities shape consumer perceptions and attitudes toward brands.

Moreover, the literature review on celebrity endorsements has identified key research areas, including celebrity prevalence, campaign management, financial effects, persuasion mechanisms, and the transfer of meaning between celebrities and brands. These areas shed light on the complexities of celebrity endorsement strategies and their impact on consumer behaviour, highlighting both key findings and research gaps that warrant further exploration.

Emerging Trends and Future Directions

While traditional celebrity endorsements have been the focus of existing research, the rise of social media influencers has introduced new dynamics in the field of celebrity endorsement. Future studies could explore the comparative effectiveness of influencer endorsements and traditional celebrity endorsements, as well as the cross-cultural differences in consumer responses to these marketing strategies.

CHAPTER-3 RESEARCH METHODOLOGY

3.1-Nature of Research Problem

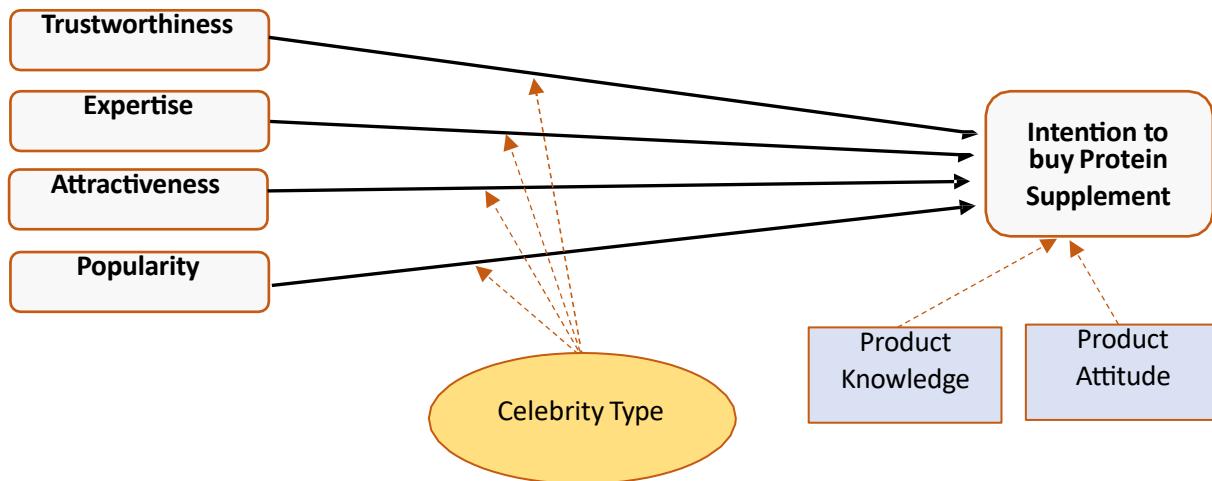


Figure 3 Figurative Model of Concept Definition

Variable Type	Variable Name			
Independent Variables	Trustworthiness (T)	Expertise (E)	Attractiveness (A)	Popularity (P)
Dependent Variable	Intention to Purchase Protein Supplements (IP)			
Moderating Variable	Celebrity Type (Sports vs Movie)			
Control Variables	Product Knowledge (PK)		Product Attitude (PA)	

Table 1 Concept Variables of the Model

3.2-RESEARCH PROBLEM STATEMENT

THE ROLE OF CELEBRITY INFLUENCE IN SHAPING BUYING INTENTIONS FOR PROTEIN SUPPLEMENTS IN INDIA

Through this research, I seek to correlate the perception of the celebrity endorser, based on Trustworthiness, Expertise, Attractiveness, and Popularity, with the Intention of Indian Consumers to Purchase Protein Supplements being endorsed.

Here, the two celebrities referred to are females and famous in India, but of contrasting fields – Movie and Sports.

I also seek to understand the output, after controlling for Knowledge and Attitude towards the Protein Supplements.

3.3-Research Objectives/ Questions

Does celebrity endorsement have an impact on the consumption of protein supplements?

Objective: Through surveying and analysis, I am to quantifiably determine which factors of celebrity endorsement affect protein supplement consumption the most.

To this end, I draw upon key questions raised through the literature review. They are as follows:

- To examine if celebrity endorsement influences consumer purchasing behavior

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The purpose of our project is to find out the influence of endorsements on purchasing behavior. While I am aware intuitively and intrinsically that it indeed does, there remains a burden of scientific proof to establish a verifiable relationship. Through this study, one of our objectives is to examine whether celebrity endorsement truly influences purchasing behavior in any way at all.

- Degree to which celebrity endorsements influence consumer purchasing behavior

Once a relationship has been established with endorsements and purchasing behavior, the next step would be to ascertain the degree to which this happens. Yet again, the methods and means to achieve this have been explained in other

sections; however, an important step is to thoroughly quantify not just how endorsements affect consumption but also how much they affect consumption.

- To analyze whether endorsing celebrity credibility influences purchase decisions

Amongst aspects of celebrity endorsements that could be explored, one of the factors highlighted in the literature review is the credibility of the endorsing celebrity. I have noticed that the research papers look across industries, modalities, and populations, to establish whether the perception of the endorser (in terms of positive personal attributes) plays a role in the consumer's decision. Naturally, I would also extend this beyond merely establishing a relationship to ascertaining the degree to which it does, and hopefully use the same in our survey design.

- To examine how traits of celebrities influence the efficacy of endorsements

In addition to credibility, it is intuitive to feel that certain celebrities would have greater sway in purchasing decisions simply due to greater touchpoints with their target consumer groups. I have found research that also delves into the same within limited populations. I hope to understand how impactful this factor is in swaying consumer views.

- To examine which of the facets/factors of celebrity endorsement influences purchasing decisions the most

As mentioned above, there are various dimensions to celebrity endorsements that can be explored in establishing and quantifying a relationship. In addition to identifying and quantifying their impact, it is also incumbent on us to understand how they would apply when they take effect in unison. The relationship will largely be statistically established considering that it is hard to isolate and apply individual factors, and may perhaps be used to make generalized statements or in trends to display combined effect.

3.4 Hypothesis

9

H1: For a sports celebrity endorsement, the trustworthiness of the celebrity positively influences the customer's intention to purchase the brand's protein supplement.

According to various research, a sports celebrity endorsing a product can raise brand recognition, reliability, and dependability, which can favorably affect customer attitudes and buying intentions. Customers frequently consider athletes and sportspersons as their role models and subject matter experts; thus, their endorsement of a product can inspire humongous confidence in it.

Specifically in the context of protein supplements, a sports star endorsement can raise customer views of the supplement's efficacy, quality, and safety, which raises buying intentions, very easily as it denotes a sign effectiveness and reliability of the supplement. The success of the endorsement also depends on how trustworthy and clean-imaged the celebrity is, as people are more likely to trust someone, they believe to be trustworthy, credible, and honest. Additional factors may include the popularity of sports as well. For example, a cricketer's promotion might be more impactful than a Table Tennis player's promotion due to both the popularity of the individual and the sport.

9

H2: For a movie celebrity endorsement, the trustworthiness of the celebrity positively influences the customer's intention to purchase the brand's protein supplement.

Movies are integral part of today's general public, irrespective of their age, gender, culture, beliefs and demography and hence are a great source of general feedback and opinion from its viewer about the celebrity both personally and professionally. Consumers frequently judge movie stars as having higher degrees of attractiveness, likeability, and knowledge, which can translate into better credibility and trustworthiness, according to research. The celebrity's credibility might also be increased if it is thought that they genuinely care about the brand or product they are supporting.

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The success of a movie celebrity endorsement, like that of a sports celebrity endorsement, may hinge on several variables, including the celebrity's popularity, relevance to the product, and the demographics and psychographics of the target audience. Nevertheless, there have been studies which suggest that a celebrity's credibility can favourably affect customer behaviour and buy intentions, even though there is relatively little research especially on protein supplements and movie celebrity endorsements.

H3: For a sports celebrity endorsement, the popularity of the celebrity positively influences the customer's intention to purchase the brand's protein supplement.

A well-known sports figure can have a significant impact on how consumers view a product and whether they plan to buy it. The popularity of a sports personality who supports a product might draw more attention to it and make it more widely known. Considering that they have a greater fan base and a significant influence in their industry, consumers may also view well-known sports personalities as being more credible and trustworthy.

Research has indicated that customers typically view popular sports celebrities as role models, which can further boost their effectiveness as endorsers of products, including protein supplements. Customers may be more inclined to believe the advice of a well-known sports celebrity and think the product works because of the celebrity's endorsement.

It is crucial to remember that the success of a sports celebrity endorsement may depend on a number of variables, including the celebrity's applicability to the product and the demographics and psychographics of the target market. A successful endorsement may not always result from a celebrity's fame if the celebrity's image or reputation does not match the brand or item being promoted.

In general, celebrity endorsements, especially those starring well-known athletes, can be a successful marketing tactic for protein supplement companies. The right celebrity should be chosen, and the endorsement message should be carefully crafted to effectively ring true with the intended demographic.

H4: For a movie celebrity endorsement, the popularity of the celebrity positively influences the customer's intention to purchase the brand's protein supplement.

A well-known movie star can have a significant impact on how consumers perceive a product and whether they plan to buy it. When a movie star promotes a product, their fame can draw more attention to it and make it known to a larger audience. Considering that they have a greater fan base and a significant influence in their industry, consumers may also view well-known movie stars as being more credible and trustworthy.

According to studies, consumers frequently consider well-known movie stars as aspirational role models, which can increase their influence as brand ambassadors for goods like protein supplements. If a well-known movie star recommends a product, consumers may be more inclined to assume that it works because of the celebrity's suggestion. Yet, it's crucial to remember that the success of a movie celebrity endorsement may depend on several variables, including the celebrity's applicability to the product and the characteristics of the target market. A successful endorsement may not always result from a celebrity's fame if the celebrity's image or reputation does not match the brand or item being promoted. In general, celebrity

endorsements, especially those involving well-known movie stars, can be a successful marketing tactic for protein supplement products.

Data Analysis

Sample

The purposive sampling approach to collect responses. To obtain a diverse set of respondents, circulated the form outside DTU also, amongst immediate friends and family.

I got a total of 247 responses. Out of these, 5 respondents, chose the willingness to incorporate protein in their diet as 0. Hence, the form was accepted without them moving on to the further questionnaire. Effectively, I analyzed data from 242 responses.

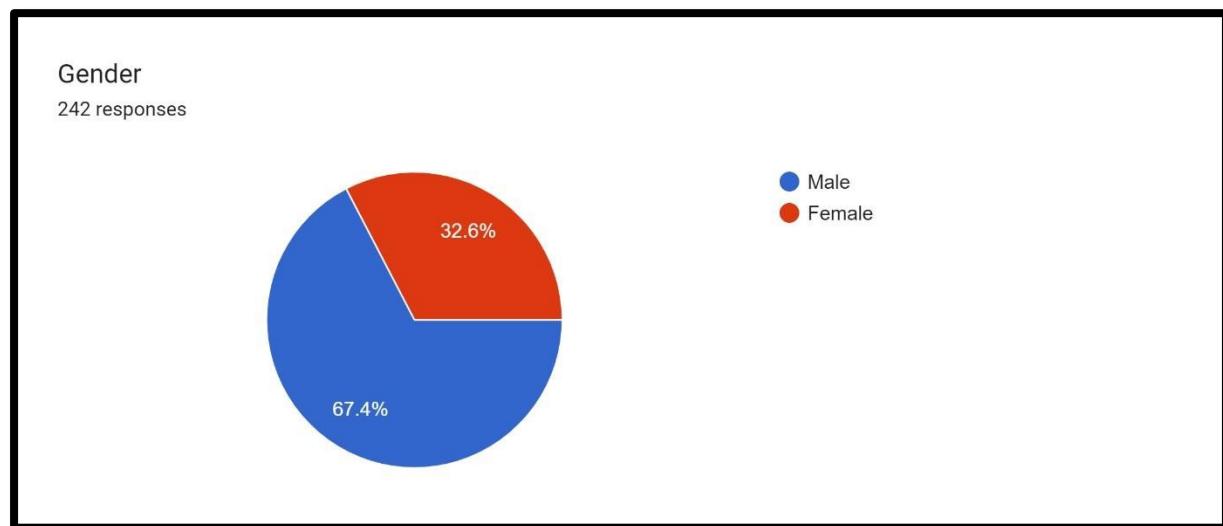


Figure 4 Gender Distribution

Among the aggregate responses gathered, there were 163 male participants and 79 female participants.

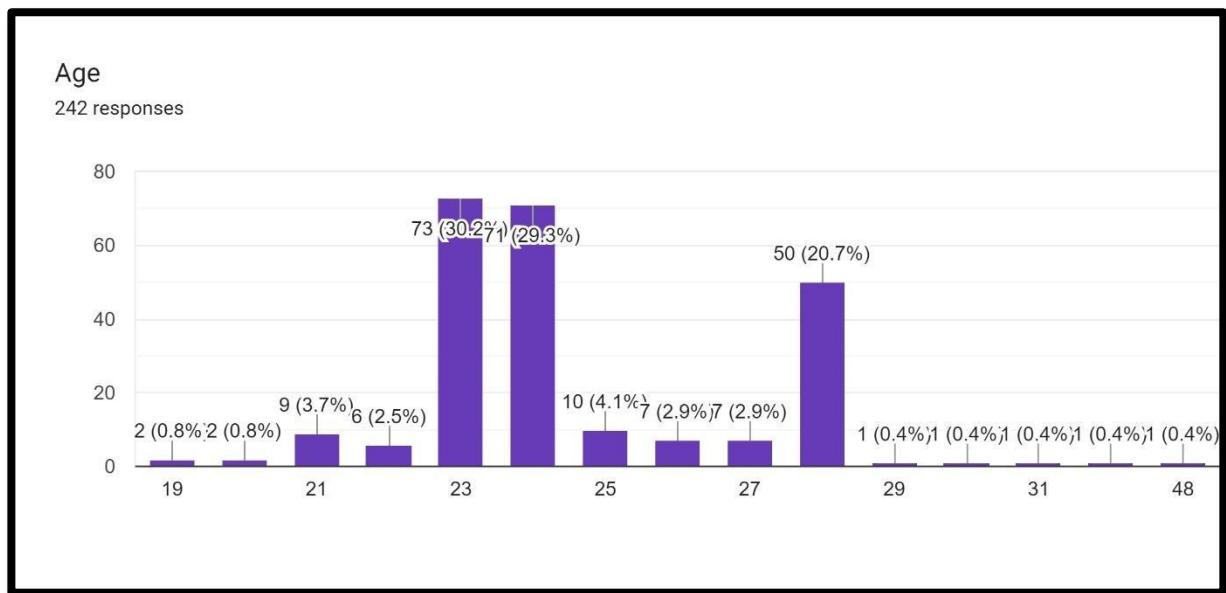


Figure 5 Age Distribution

The age range of respondents falls between 19 and 48 years.

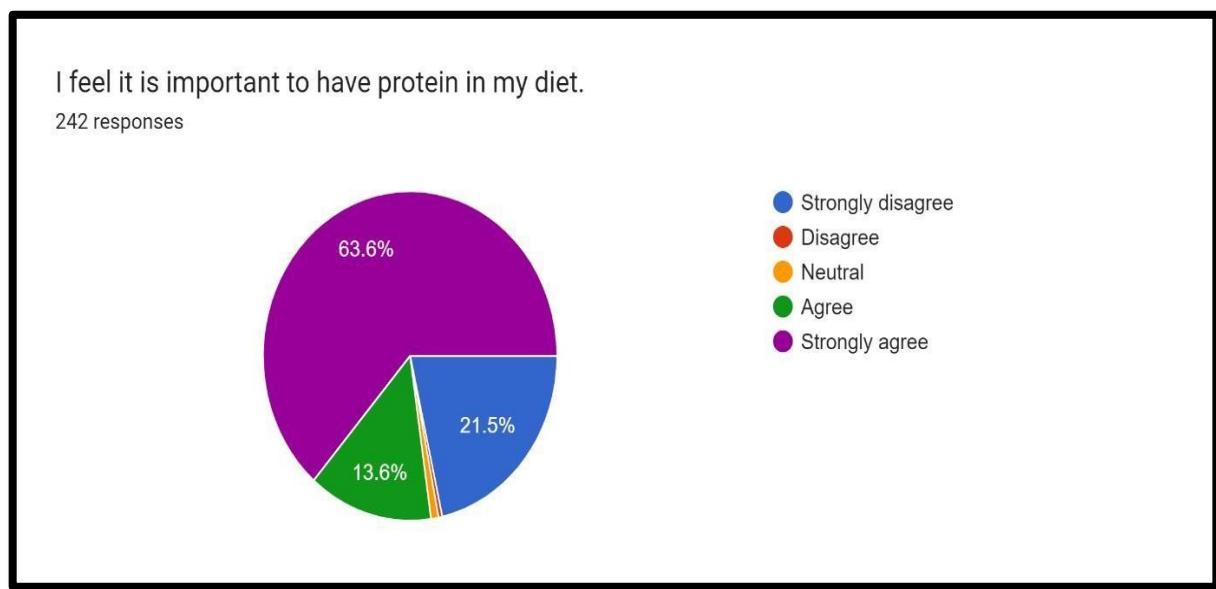


Figure 6 Importance of protein in diet

Among the aggregate responses gathered, 154 respondents, representing 63.6% of the total, expressed the belief that it is important to include protein in the diet.

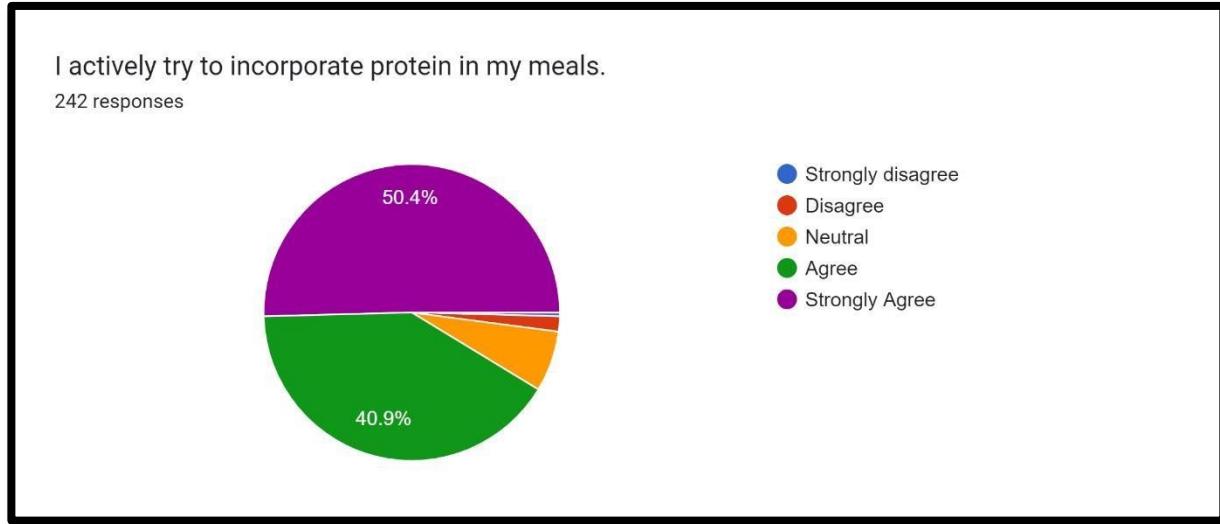


Figure 7 Incorporate protein in the meals

Among the aggregate responses gathered, 122 respondents, representing 50.4% of the total, expressed the belief that it is important to incorporate protein in meals.

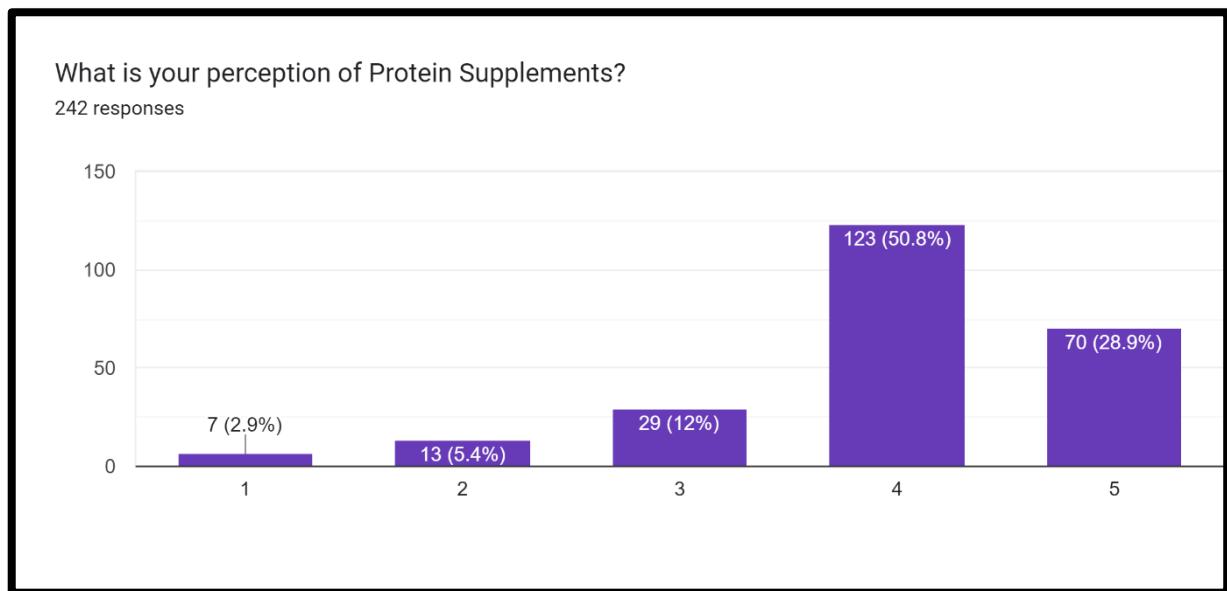


Figure 8 perception of protein

Among the aggregate responses gathered, 123 respondents, constituting 50.8% of the total sample, expressed a favorable stance toward consuming protein supplements.

Based on the importance experts are giving to consumption of protein, how willing are you to incorporate it into your diet?

242 responses

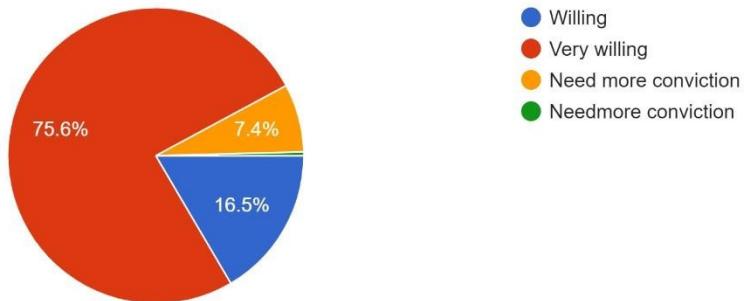


Figure 9 Accepting Experts opinion

Among the aggregate responses gathered, 183 respondents, constituting 75.6% of the total sample, expressed a favorable stance toward consuming protein supplements based on expert's advice.

Preferred mode of protein consumption to meet dietary requirements?

242 responses

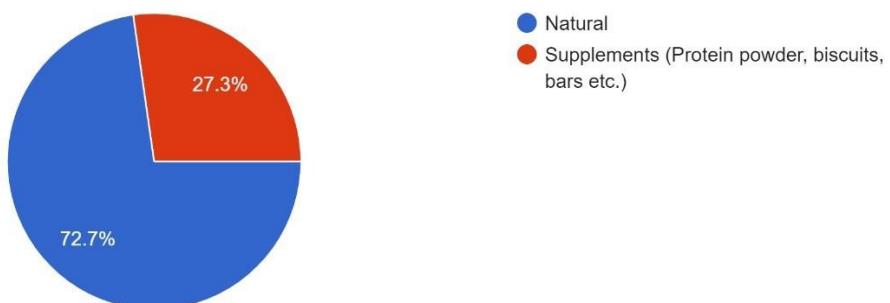


Figure 10 Mode of protein consumption

Among the aggregate responses gathered, 176 respondents, comprising 72.7% of the total sample, indicated that they obtain protein from natural sources.

Order of importance of factors taken into consideration while making buying decision. [Brand Awareness]
242 responses

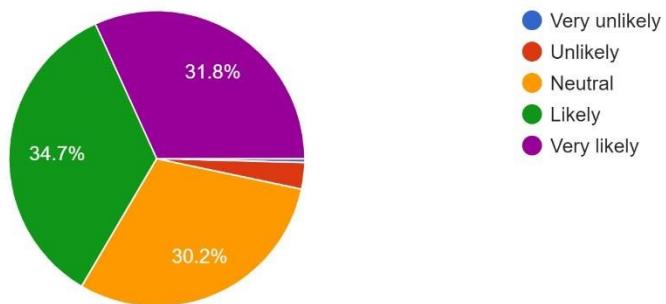


Figure 11 Order of importance- Brand Awareness

Among the aggregate responses gathered, 161 respondents, comprising 66.5% of the total sample, indicated that they have brand awareness regarding protein supplements.

Order of importance of factors taken into consideration while making buying decision. [Taste]
242 responses

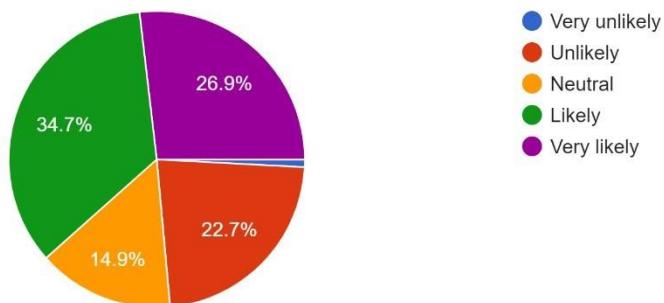


Figure 12 Order of Importance- Taste

Among the aggregate responses gathered, 149 respondents, comprising 61.6% make a buying decision based on the taste of protein supplements.

Order of importance of factors taken into consideration while making buying decision. [Price of Product]
242 responses

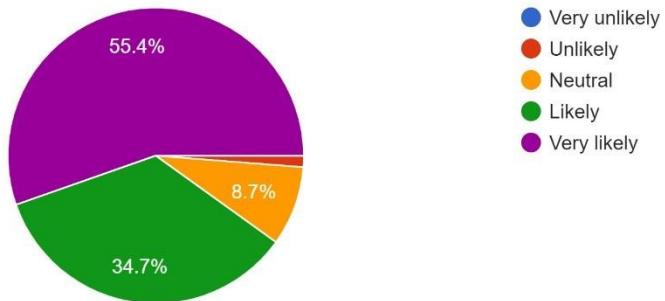


Figure 13 Order of importance- Price of product

Among the aggregate responses collected, it was found that 134 respondents, constituting 55.4% of the total sample, make purchasing decisions influenced by the price of protein supplements. This indicates a significant portion of the surveyed population places considerable emphasis on pricing when selecting protein supplements.

Based on PV Sindhu's reputation and expertise, do you believe she provides trustworthy endorsement for purchasing protein supplements?

242 responses

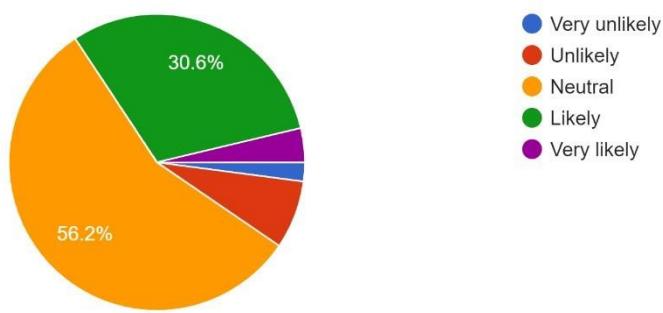


Figure 14 PV Sindhu's trustworthy opinion

Among the aggregate responses collected, it was revealed that 156 respondents, representing 56.2% of the total sample, base their purchasing decisions for protein supplements on PV Sindhu's esteemed reputation and expert endorsement.

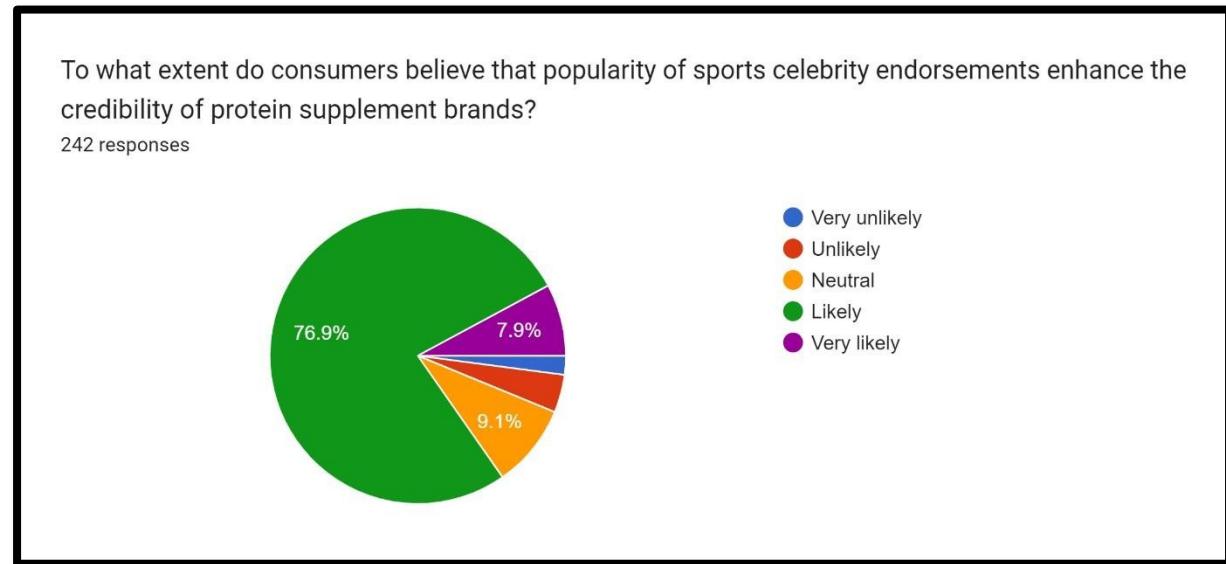


Figure 15 Credibility of sports celebrity

Among the aggregate responses collected, it has been discerned that 186 respondents, comprising 76.9% of the total sample, predicate their purchasing decisions for protein supplements on the popularity of PV Sindhu. This significant proportion underscores the influential role her public perception plays in shaping consumer preferences within the surveyed population.

Based on Shilpa Shetty's reputation and expertise, do you believe she provides trustworthy endorsement for purchasing protein supplements?
242 responses

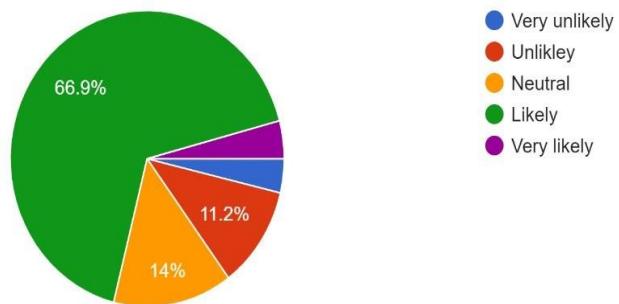


Figure 16 Shilpa Shetty's trustworthy opinion

Among the aggregate responses collected, it was revealed that 162 respondents, representing 66.9% of the total sample, base their purchasing decisions for protein supplements on Shilpa Shetty's esteemed reputation and expert endorsement. This indicates a substantial reliance on her credibility and expertise within the surveyed population when considering protein supplement purchases.

To what extent do consumers believe that popularity of movie celebrity endorsements enhance the credibility of protein supplement brands?
242 responses

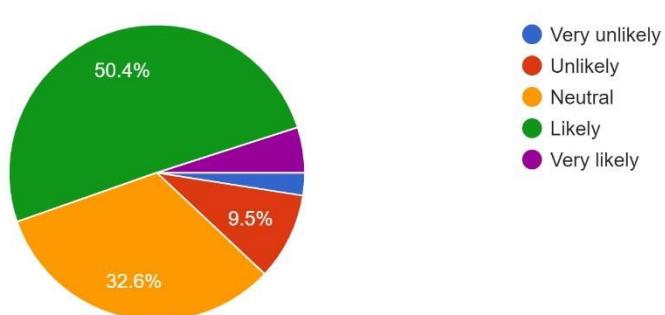


Figure 17 Credibility of movie celebrity

Among the aggregate responses collected, it has been discerned that 122 respondents, comprising 50.4% of the total sample, predicate their purchasing decisions for protein supplements on the popularity of Shilpa Shetty. This significant proportion underscores the influential role her public perception plays in shaping consumer preferences within the surveyed population.

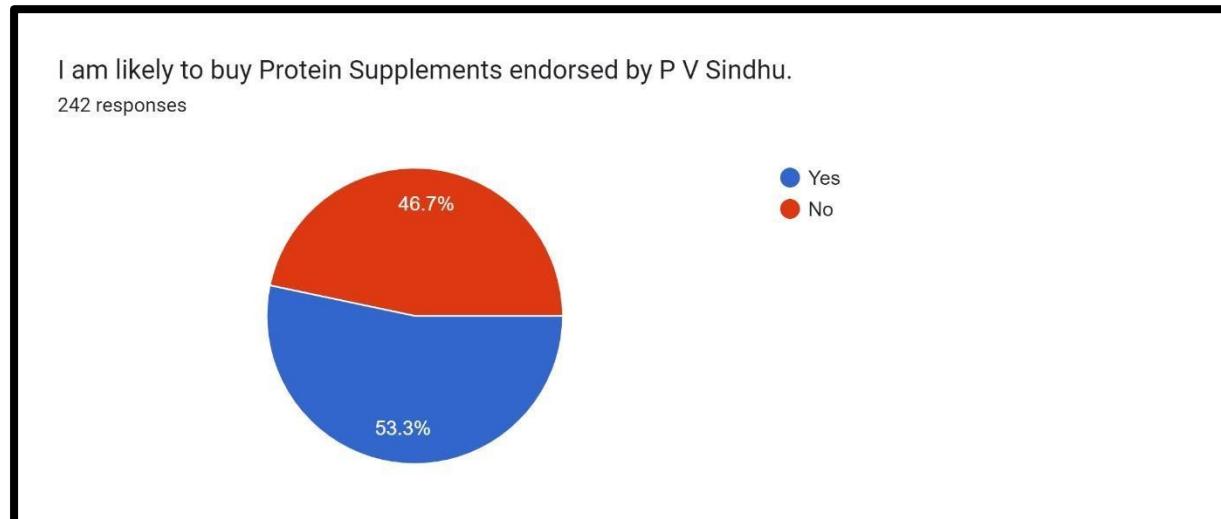


Figure 18 Purchasing decision-based on PV Sindhus endorsement

Among the aggregate responses collected, it has been discerned that 129 respondents, constituting 53.3% of the total sample, base their purchasing decisions for protein supplements on the popularity of PV Sindhu. This statistic underscores the substantial influence of her public image on consumer behavior within the surveyed population.

I am likely to trust Protein Supplements endorsed by P V Sindhu.

242 responses

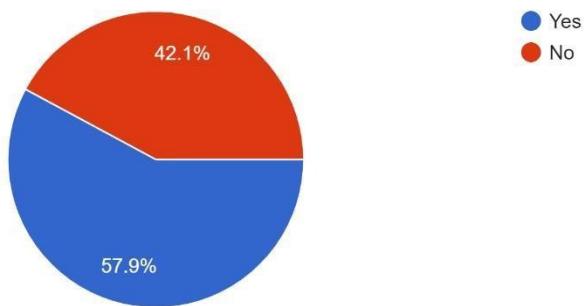


Figure 19 Trust in protein supplements endorsed by PV Sindhu

Among the aggregate responses collected, it has been discerned that 140 respondents, comprising 57.9% of the total sample, predicate their purchasing decisions for protein supplements on the trustworthy factor associated with PV Sindhu. This statistic underscores the significant influence of her esteemed reputation and credibility on consumer behavior within the surveyed population.

I am likely to buy Protein Supplements endorsed by Shilpa Shetty.

242 responses

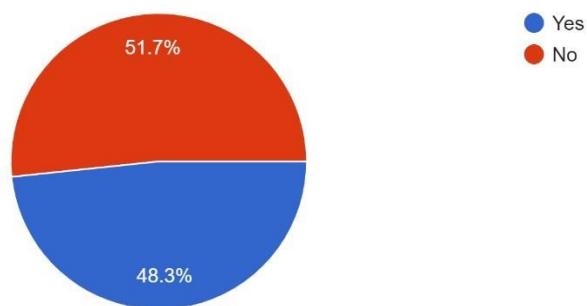


Figure 20 Purchasing decision based on Shilpa Shetty's endorsement

Among the aggregate responses collected, it has been discerned that 117 respondents, constituting 48.3% of the total sample, base their purchasing decisions for protein supplements on the popularity of Shilpa Shetty.

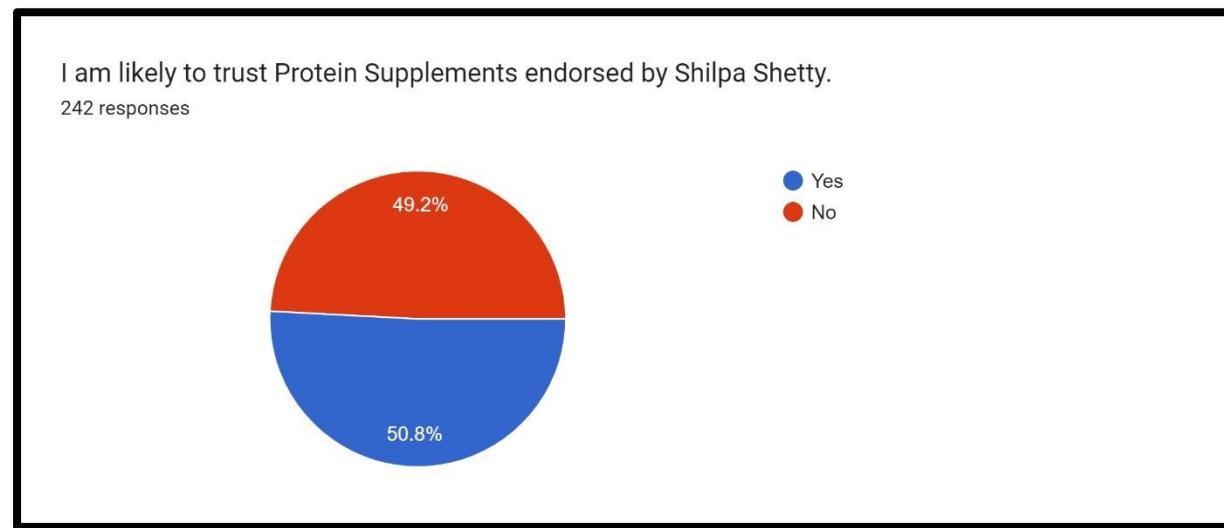


Figure 21 Trust in protein supplements endorsed by Shilpa Shetty

Among the aggregate responses collected, it has been discerned that 123 respondents, comprising 50.8% of the total sample, predicate their purchasing decisions for protein supplements on the trustworthy factor associated with Shilpa Shetty.

Analysis of Responses on Sports Celebrity (P.V Sindhu)

Block 0: Beginning Block

Classification Table^{a,b}

Observed		Predicted		Percentage Correct
		0	1	
Step 0	buy_PS_suppl_PV_Sindhu	0	113	.0
		1	0	100.0
Overall Percentage				53.1

a. Constant is included in the model.

b. The cut value is .500

The Block 0 Classification Table from the logistic regression output provides the following information:

- **Observed vs. Predicted:** It compares the observed values of the dependent variable `buy_PS_suppl_PV_Sindhu` with the values predicted by the model at **Step 0**, which is the initial step before any predictors are entered into the model.
- **Correct Predictions:** The table shows that the model correctly predicted all cases where `buy_PS_suppl_PV_Sindhu` is 1 (100% accuracy), but failed to predict any cases where `buy_PS_suppl_PV_Sindhu` is 0 (0% accuracy).
- **Overall Percentage:** The overall percentage of correct predictions at this step is 53.1%, which is not very high, indicating that the initial model without predictors is not effective in classifying the cases.
- **Cut Value:** The cut value used to determine the predicted category is .500, meaning that predicted probabilities above this threshold are classified as 1, and those below as 0.

This table is used to assess the classification accuracy of the logistic regression model at the initial stage. The low accuracy for predicting 0s suggests that the inclusion of predictor variables in subsequent steps is necessary to improve the model's performance.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	279.201	23	.000
	Block	279.201	23	.000
	Model	279.201	23	.000
Step 2 ^a	Step	-.854	3	.837

Step 3 ^a	Block	278.348	20	.000
	Model	278.348	22	.000
	Step	-.260	1	.610
Step 4 ^a	Block	278.087	19	.000
	Model	278.087	19	.000
	Step	-4.200	4	.380
	Block	273.887	15	.000
	Model	273.887	18	.000

a. A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

6 The Omnibus Tests of Model Coefficients and the Variables in the Equation from the logistic regression output:

- **Omnibus Tests:**

- The Omnibus Tests of Model Coefficients show a Chi-square value of 279.201 with 23 degrees of freedom and a significance level of .000 after the first step. This indicates that the model is a good fit for the data at this step.
- As steps progress, the Chi-square value slightly decreases, but the model remains significant, suggesting that the predictors contribute to the model.

- **Model Coefficients:**

- The Variables in the Equation table list the B coefficients, standard errors (S.E.), Wald statistics, degrees of freedom (df), significance levels (Sig.), and the Exp(B) for each predictor variable.
- Significant predictors have a Sig. value less than .05, indicating they contribute meaningfully to the model. For example, 'consumption(1)' has a B value of - 3.615, S.E. of 1.780, Wald of 4.126, df of 1, Sig. of .042, and Exp(B) of .027 at step 1, showing it's a significant predictor at this step.
- Exp(B) values represent the odds ratio for each predictor, with values greater than 1 indicating increased odds, and values less than 1 indicating decreased odds of the outcome variable occurring.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	53.961 ^a	.686	.916
2	54.815 ^a	.685	.914
3	55.076 ^a	.685	.914
4	59.276 ^a	.679	.907

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Interpratation of Block 1 Model Summary table from the logistic regression output:

- **-2 Log Likelihood:** This is a measure of the model's fit, with lower values indicating a better fit. The value provided here would be compared against the value in the null model (without predictors) to assess improvement.
- **Cox & Snell R Square:** This statistic measures the proportion of variance in the dependent variable explained by the model. It ranges from 0 to less than 1.
- **Nagelkerke R Square:** This is an adjusted version of the Cox & Snell R Square that adjusts the scale so that it can reach a maximum of 1. It provides a better estimate of explained variance.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	29.540	6	.000
2	3.971	6	.681
3	37.799	6	.000
4	32.711	6	.000

3 The Hosmer and Lemeshow test is a goodness-of-fit test used in logistic regression to determine how well the model fits the data.

- **Test Statistic:** The test generates a Chi-square statistic for each step of the model.
- **Degrees of Freedom:** The degrees of freedom (df) for each step correspond to the number of groups minus two.
- **Significance (Sig.):** The p-value indicates whether the model's predictions deviate significantly from the observed data.
- **Results Interpretation:**
 - A large p-value (typically >0.05) suggests that the model fits the data well.
 - A small p-value (≤ 0.05) indicates a poor fit, suggesting that the model does not adequately describe the data.

Classification Table^a

	Observed	Predicted		Percentage Correct	
		0	1		
Step 1	buy_PS_suppl_PV_Sindhu	0	109	4	
		1	5	123	
Overall Percentage				96.3	
Step 2	buy_PS_suppl_PV_Sindhu	0	106	7	
		1	6	122	
Overall Percentage				95.3	
				94.6	
Step 3	buy_PS_suppl_PV_Sindhu	0	106	7	
		1	4	124	
Overall Percentage				95.4	
Step 4	buy_PS_suppl_PV_Sindhu	0	106	7	
		1	7	121	
Overall Percentage				94.2	

a. The cut value is .500

- **Dependent Variable:** The analysis focuses on the variable `buy_PS_suppl_PV_Sindhu`, which is likely related to purchasing behavior.
- **Independent Variables:** Several predictors are used, including `consumption`, `mode_of_cons`, `brandawareness_quant`, `Taste`, `pop`, `PV_sindhu_trustworthy`, `con_believe_on_sports_personality`, and `trust_ps_by_PV`.
- **Model Summary:** The logistic regression model has been iterated 20 times with various statistics reported, such as `-2 Log likelihood`, `Cox & Snell R Square`, and `Nagelkerke R Square`.
- **Classification Table:** A table is presented showing the observed and predicted values of the dependent variable, along with the percentage correctly predicted.

Analysis of Responses on Film Celebrity (Shilpa Shetty)

		Classification Table ^{a,b}			
		Predicted		Percentage	
		buy_ps_by_SS	0	1	
Step 0	buy_ps_by_SS	0	124	0	100.0
		1	117	0	.0
Overall Percentage				51.5	

^a. Constant is included in the model.
^b. The cut value is .500

The **Block 0 Classification Table** from the logistic regression output indicates the following:

- **Predicted vs. Observed:** It compares the **observed values of the dependent variable** (buy_ps_by_SS) with **the values predicted by the model at step 0**, which is **the initial step before any predictors are entered into the model**.
- **Correct Predictions:** The model correctly predicted all cases where buy_ps_by_SS is 0 (100% correct), but failed to predict any cases where buy_ps_by_SS is 1 (0% correct).
- **Overall Percentage:** The overall percentage of correct predictions at this step is 51.5%, which is not better than chance, indicating that the model without any predictors is not effective.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	207.538	11	.000
	Block	207.538	11	.000
	Model	207.538	11	.000
Step 2 ^a	Step	-.334	1	.563
	Block	207.204	10	.000
	Model	207.204	9	.000
Step 3 ^a	Step	-4.374	2	.112
	Block	202.830	8	.000
	Model	202.830	8	.000

a. A negative Chi-squares value indicates that the Chi-squares value has decreased from the previous step.

7 The Omnibus Tests of Model Coefficients from the logistic regression output assess whether the predictors, as a set, reliably distinguish between the categories of the dependent variable.

- 69 • **Chi-square Value:** This is the test statistic used to evaluate the significance of the model. A large chi-square value indicates that the model with predictors fits the data better than the model without predictors.
- 7 • **Degrees of Freedom (df):** This represents the number of predictors tested in the model.
- 3 • **Significance (Sig.):** The p-value indicates the probability of observing the chi-square value if the null hypothesis is true (no relationship between predictors and the dependent variable). A small p-value (typically less than 0.05) suggests that the model with predictors is significantly different from the null model.

For example, in Step 1, the chi-square value is 207.538 with 11 degrees of freedom and a significance level of 0.000, indicating a highly significant set of predictors at this step. The process continues with backward stepwise selection, removing the least significant predictor at each step until the most parsimonious model is achieved. The final model should retain only significant predictors.

Model Summary			
Step	-2 Log likelihood	Cox & Snell R	Nagelkerke R
		Square	Square
1	126.355 ^a	.577	.770
2	126.689 ^a	.577	.769
3	131.063 ^a	.569	.759

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

- **Variables Analyzed:** The model includes variables related to the likelihood of purchasing protein supplements endorsed by Shilpa Shetty, such as trustworthiness, belief in celebrity endorsements, taste, brand awareness, mode of consumption, and others.
- **Model Method:** Backward Stepwise (Likelihood Ratio) method was used for logistic regression.
- **Significant Predictors:**
 - **Brand Awareness:** Different levels of brand awareness significantly predict the likelihood of purchase.
 - **Popularity (pop):** Popularity levels have a significant impact on the purchase decision.
 - **Mode of Consumption:** Whether the protein supplement is consumed as a drink or food influences the likelihood of purchase.
- **Model Performance:**
 - The final model has a high overall correct classification rate of approximately **92.9%.**
 - The Nagelkerke R Square value is **0.759**, indicating a good fit of the model to the data.

Classification Table^a

Observed		Predicted		Percentage Correct
		0	1	
Step 1	buy_ps_by_SS	0	115	92.7
		1	10	91.5
Overall Percentage				92.1
Step 2	buy_ps_by_SS	0	117	94.4
		1	11	90.6
Overall Percentage				92.5
Step 3	buy_ps_by_SS	0	117	94.4
		1	10	91.5
Overall Percentage				92.9

a. The cut value is .500

40 The classification table from the logistic regression output indicates the following:

- **Predictive Accuracy:** The model's ability to correctly predict whether a person would buy protein supplements endorsed by Shilpa Shetty.
- **Observed vs. Predicted:** Compares the actual observed outcomes (0 or 1) with the predicted outcomes from the model.
- **Percentage Correct:** The percentage of cases correctly predicted by the model for each category (0 or 1) and overall.
- **Step 3 Results:** At step 3, the model had a predictive accuracy of 92.9% overall, with 94.4% for category 0 and 91.5% for category 1.

CHAPTER-4 FINDINGS

Discussion on the Uniqueness of Findings

In this project, I used the SPSS software to find the findings of 200+ respondents to find out the relation between the independent variables' trustworthiness, expertise in the field, attractiveness, and popularity with the buying intention of the consumers for the promoted Protein supplement brand. I used exploratory factor analysis and multiple regression to find the significance and beta, which helped us in determining what factors might play a role when a consumer does the decision-making of whether to buy the product or not.

I started with cleaning the data that I had received. While looking at data I was pretty confident of the variety and spread of data as I ranged right from the age of 18- to 48-year-old respondents, with a fair gender distribution according to the population of India (2:1 male to female ratio). I analyzed the first controlling factor, product knowledge by asking the respondents if they were aware of their daily protein intake and their preferred mode of intake. The second controlling factor viz., product attitude was gauged by asking about their willingness to incorporate the protein supplement in their diet. Even though the majority were inclined to inculcate protein in their diets in one way or another, I did receive some responses who were not at all interested in this mode of intake. Once I was clear with the controlling variables, I moderated our study into the celebrity type of being a movie star or a sports person. With the profession as moderator, I went ahead to gauge the 4 independent variables by further dividing them into sub-factors. I used a 5-factor scale and took the inputs of the respondents in line with their final willingness to buy the product if endorsed by the two celebrities viz., Ms. P.V. Sindhu (sports person) and Ms. Shilpa Shetty (movie celebrity). To keep other factors constant and just the profession the same, I kept the gender and assumed popularity of both celebrities the same.

With this study I was finally able to formulate 2 hypotheses with 2 sub-parts each, which were proven supported/unsupported by the tests run on the SPSS software. Our final observation, had a very uniform message, stating the significant

importance of trustworthiness and expertise of the celebrity in both controlled and without controlled tests.

CHAPTER-5 IMPLICATIONS OF FINDINGS OF STUDY

Through this study, I have tried to study the Celebrity Influence in the Indian Protein Supplement Market: A Study on Consumer Purchasing Behaviour. In this course of collecting and analysing data, I concluded that a consumer forms the intent to purchase based on the trustworthiness and expertise of the endorser, rather than their popularity and attractiveness, as these 4 were the independent variables of our study. However, only a part of the intent is influenced by this. Other factors, like price, availability, taste, and brand are also relevant.

- The first set of results was obtained **without accounting or the controlling variable**. Here, I found that the consumers were more affected if Shilpa Shetty was the endorser (Can be in a negative way also - i.e. because of the lack of trustworthiness). Trustworthiness and Expertise were more related to the intention to purchase, rather than attractiveness and popularity.
- Next, **I controlled each variable** for the attitude of consumers towards the protein supplements. I found that here, the variables concerning **PV Sindhu were more significantly changing** concerning the changing intentions to buy protein supplements.
- Analysing the response summary, I found that the respondents have rated **Shilpa Shetty as not a very trustworthy person**, and accordingly, will not prefer to purchase items endorsed by her. i.e. Consumers tend to project the endorser traits on the products they endorse.

There are real-life examples also, many brands cancel the contract with sports or movie stars, as soon as they get into any controversial matter, which reflects the importance of the clean image of the endorser irrespective of their expertise and trustworthiness.

Brands use this to signal their intentions, ethics, values, mission, and vision as well for their products, to influence customer's intentions.

CHAPTER-6 LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Limitations of the Study

1. Sample size and representativeness: Our data collection was done through convenience sampling, a non-probability sampling method, rather than a probability sampling method, such as random sampling. Most of our respondents fall in the age category of 20-30, which means the data is heavily skewed towards the younger generation and their perception rather than the whole.
2. Choosing the best model for the selection of celebrity endorsers: About the four dimensions of the scale, the selection of attractiveness, expertise, popularity, and trustworthiness was motivated by previous theoretical work and empirical observations. The quantitative study, therefore, indicates the validity and reliability of the scale rather than proving their existence. Therefore, one should be cautious.
3. Self-reporting data: Our research relied on self-reported data, which has its own set of biases from the respondents leading to inaccurate information.
4. Personal biases: Since I designed the questionnaire, our perceptions and preferences may have coloured it.
5. Non-exhaustive questionnaire: The questionnaire is not exhaustive as I haven't covered all the factors that can be considered.
6. Celebrities chosen: I chose two highly popular celebrities; hence, the data collected is skewed towards stars with high popularity.

Directions for Future Research:

1. Pre and post-treatment analysis: A focus group/personal interview can be set up where the people whose data we're collecting are interviewed on their views before and then shown advertisements post, which data is collected again to gain deeper insights.
2. Qualitative research: Doing qualitative research before forming a hypothesis would help us identify more factors affecting the research

problem, leading to more comprehensive research.

3. Increasing specificity: Different target groups can be studied for different reactions to study celebrity endorsements' effects and effectiveness to gain more profound and specific knowledge about certain sects.
4. Improvement of the scale: Since our study adopted a scale from previous literary works as the study was exploratory, as findings continue, the existing scale can be expanded or modified to get better results.

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CHAPTER-8 APPENDIX

Questionnaire

Questionnaire for filling –

1. Name
2. Age (in years)
3. Gender
4. I feel it is important to have protein in my diet.
5. I actively try to incorporate protein in my meals.
6. What is your perception of Protein Supplements?
7. Based on the importance experts are giving to consumption of protein, how willing are you to incorporate it into your diet?
8. Preferred mode of protein consumption to meet dietary requirements?
9. Order of importance of factors taken into consideration while making buying decision. [Brand Awareness]
10. Order of importance of factors taken into consideration while making buying decision. [Taste]
11. Order of importance of factors taken into consideration while making buying decision. [Price of Product]
12. Based on PV Sindhu's reputation and expertise, do you believe she provides trustworthy endorsement for purchasing protein supplements?
13. To what extent do consumers believe that the popularity of sports celebrity endorsements enhances the credibility of protein supplement brands?
14. Based on Shilpa Shetty's reputation and expertise, do you believe she provides trustworthy endorsement for purchasing protein supplements?
15. To what extent do consumers believe that the popularity of movie celebrity endorsements enhances the credibility of protein supplement brands?
16. I am likely to buy Protein Supplements endorsed by P V Sindhu.
17. I am likely to trust Protein Supplements endorsed by P V Sindhu.
18. I am likely to buy Protein Supplements endorsed by Shilpa Shetty.
19. I am likely to trust Protein Supplements endorsed by Shilpa Shetty.