

# Revolutionizing The Indian Shrimp Industry: Unleashing The Power Of Value-Added Shrimp For Global Market Dominance - A Comprehensive Perspective

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## ABSTRACT

*From Shrimp Success to Global Leadership: India's Journey and the Imperative for Value-Added Innovation. Despite rising as the world's second-largest farmed shrimp producer, India faces challenges in global markets. Explore the potential of value-added shrimp products, from eco-labelling to innovative cuts, as the key to enhanced profitability and sustainable growth. Uncover the economic advantages, with EBIT margins soaring to 20%, and discover how upgrading processing facilities can secure India's spot as a leader in the global shrimp market. This paper offers a forward-looking perspective on the future of the Indian shrimp industry, urging a transformative shift towards value-added processing for lasting success. This paper also explores the key to sustained success, emphasizing the need for innovation, enhanced processing capabilities, and a shift towards high-value offerings. Join the journey towards economic growth, profitability, and a sustainable future for India's shrimp industry!"*

**Keywords:** Indian Shrimp Industry, Value-added shrimp, Earnings before Interest and Taxes, Profitability and Sustainable future.

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## INTRODUCTION

India's Shrimp Brilliance: Navigating the Global Seas of Success. Currently, a global powerhouse, India's shrimp industry undergoes basic processing, yet there's an untapped world of potential in value addition. Approximately 30% of India's farmed shrimp embarks on a journey to Vietnam for additional processing, revealing the appetite for enhanced shrimp products. Value addition, the secret sauce, involves innovative processing, unique ingredients, and creative packaging, transforming shrimp into a delectable experience. It's not just about changing the product; it's about elevating its essence, adding value at every stage. The benefits are two-fold: functional advantages like quality and nutrition, coupled with emotional benefits such as convenience and sensory appeal. To meet the evolving demands of global consumers and their dynamic lifestyles, India's shrimp industry is poised for a revolution. Join the journey as the industry unlocks its potential, turning shrimp into a variety of high-value, ready-to-enjoy products. While the road to value-added processing is limited, the profit potential is limitless. India's shrimp industry stands at the crossroads of innovation, ready to redefine convenience and quality in the global market."

## LITERATURE REVIEW

**Unlocking the Future:** The Evolution of India's Shrimp Industry through Value Addition. In the culinary world, value addition signifies not just a process but a journey that enhances the usability, culinary allure, and economic viability of food items. The shifting landscape of consumer demands, particularly in Western countries, has sparked a surge in the processing of shrimp into a diverse array of value-added products. These range from ready-to-eat delicacies to offerings requiring minimal preparation, catering to the evolving preferences of modern lifestyles.

**Diving into the Essence:** Understanding Value Addition in Shrimp Processing. Value addition in the shrimp industry extends beyond the conventional perception of added coatings or sauces. It is a multifaceted measure, encompassing factors woven into the very fabric of the product at each stage of production. The impetus for value addition lies in the pursuit of higher profits, improved processing utilization, alignment with consumer trends, and the provision of a diverse product range. The vast array of value-added shrimp products, distinguished by variations in shapes, sizes, flavours, and textures, paints a dynamic canvas of innovation and culinary exploration.

**Charting New Territories:** The Unique Dynamics of Marketing Value-Added Shrimp. Unlike traditional shrimp trade, marketing value-added shrimp requires a dynamic, sensitive, and sophisticated approach. Traditional market channels are often inadequate, leading to the emergence of a new paradigm - supermarket chains eager to source directly from the producers. Appearance, packaging, and display emerge as pivotal factors in successfully marketing value-added products, with clean, crisp, and appealing retail packs inspiring consumer confidence in experimenting with new culinary delights.

**A Sea of Opportunities:** Navigating the Future of Shrimp Industry through Value Addition. The potential for value addition and product development, particularly in Ready-To-Eat/Ready-To-Cook (RTE/RTC) segments, beckons as a promising horizon for both domestic consumption and global exports. As consumer preferences veer towards convenient, nutritionally superior on-the-go products, the industry is poised to harness technological upgradation as a cornerstone for value addition. A holistic approach encompassing capacity upgradation, skilled labour efficiency, technological innovation, and synergistic government policies becomes the beacon for making the Indian shrimp industry a global force to be reckoned with.

### **Objectives Of The Study**

The primary goals of this study include:

- Identifying the key challenges faced by the Indian shrimp industry.
- Examining the factors that contribute to the Indian shrimp industry's lack of competitiveness compared to Ecuador, Indonesia, Vietnam, China, and Thailand.
- Investigating the reasons behind India's limited capacity for value-adding processing in the shrimp industry.
- Identifying the principal varieties of value-added shrimp products that India can potentially supply to the global market.
- Exploring potential strategies for the Indian shrimp industry to enhance its access and presence in the global market.

The hypotheses of the study are

- **Null Hypothesis-1:** There is no statistically significant correlation between the identified factors influencing the competitiveness of the value-added shrimp processing industry in India.
- **Null Hypothesis-2:** There are no statistically significant connections between the challenges, strategies in the Indian shrimp industry and India's competitiveness in the global shrimp market achieved through value-added processing.

### **data and methodology**

This research study employed a Random Sampling Method to select a representative sample of 50 MPEDA registered Indian manufacturer-exporter companies in the shrimp industry. The sample, comprising 7% of MPEDA registered entities, was strategically chosen to reflect the industry's diversity. Notably, 20 companies hail from Andhra Pradesh, the largest shrimp-producing state, while 5 companies each represent West Bengal, Gujarat, Odisha, Tamil Nadu, Maharashtra, and the rest of India. A structured questionnaire, meticulously designed after discussions with industry stakeholders, was employed to collect primary data from these companies. The study also utilized secondary data from various sources, including journals, research articles, government publications, and books. This comprehensive approach ensures a robust analysis of the challenges, competitiveness, processing capabilities, product potential, and global market strategies within the Indian shrimp industry.

### **RESULTS & RECOMMENDATIONS**

The research focused on the significance of adding value to shrimp products, examining factors influencing this process, challenges faced, and potential strategies for global market access. Adding value to shrimp meets diverse market needs, especially in creating protein-rich convenience foods. The economic benefits extend throughout the production and distribution network, making value-added shrimp a lucrative venture. These products cater to changing consumer lifestyles, offering better utilization, convenience, and health benefits. With increasing global demand due to demographic and economic shifts, Indian shrimp producers must aim to meet this demand through product development and differentiation. Assuring the global market of the safety, taste, ease of preparation, low calories,

digestibility, and nutritional value of value-added shrimp is crucial for the Indian shrimp industry's success.

### 5.1 IMPORTANCE OF THE VALUE- ADDING PROCESS AND FACTORS CONTRIBUTING TO THE MODEL

S. No.	Answer Choice	No. of Respondents	%
1	Indian shrimp Industry is not competitive with Ecuador, Indonesia, Vietnam, China and Thailand due to lack of skilled labour force for the value -adding process.	50	100
2	Shortage of skilled labourers & Less support from the Government are main reasons for not having value-adding processing facilities by major exporters in India	42	84
3	Breaded & Battered Shrimp, Marinated Shrimp, Skewered Shrimp, Stretched Shrimp (Nobashi), Shrimp Spring Roll and Blanched/Cooked Shrimp are value-added- shrimp varieties identified by the exporters in India	50	100
4	Indian Shrimp Industry is losing revenue opportunity due to limited value-added shrimp products supply to the global market.	31	62
5	Earnings before interest and Taxes for value-added shrimp products is 20%.	39	78
6	Earnings before interest and Taxes for minimum processed shrimp is about 8%.	37	74
7	In spite of increasing demand for value-added shrimp in the global market, the volume is not same as basic processed frozen shrimp volume.	34	68
8	Value added- shrimp require stringent quality and safety assurance programs throughout processing and distribution chain.	50	100
9	India will benefit with job creation and higher economic activity if value-added shrimp processing activities take place in India rather than importing country.	38	76
10	Production, Sales and Distribution of value-added products to the global market does not require large economic resources for marketing and promotion	38	76
11	Value-added shrimp are marketed in big food chains and department stores in the global market.	50	100
<b>Total No. of Respondents</b>		<b>50</b>	

Table -5.1 shows that Lack of skilled labour force is the key reason for the Indian shrimp industry being not competitive with Ecuador, Indonesia, Vietnam, China and Thailand for the value -adding process with 100% respondents. Shortage of skilled labourers and less support from the Government are main reasons for many Indian shrimp exporters not having value-adding processing facilities with 84% respondents. Braded & Battered shrimp, Marinated Shrimp, Skewered shrimp, Stretched Shrimp (Nobashi), Shrimp spring roll and Blanched/Cooked shrimp are possible value-added shrimp varieties identified by Indian shrimp exporters for exports with 100% respondents. The Earnings before interest and taxes for value-added shrimp products is 20% with 78% respondents whereas the Earnings before interest and taxes for minimum processed shrimp is about 8% with 74% respondents. In spite of increasing demand for value-added shrimp in the global market, the volume is not same as basic processed frozen shrimp volume with 68% respondents. Value added-shrimp

require stringent quality and safety assurance programs throughout processing and distribution chain with 100% respondents. India will benefit with job creation and higher economic activity if value-added shrimp processing activities take place in India rather than importing country with 76% respondents. Production, Sales and Distribution of value-added products to the global market does not require large economic resources for marketing and promotion with 76% respondents. Value-added shrimp are marketed in big food chains and department stores in the global market with 100% respondents.

➤ **Null Hypothesis-1:** There is no statistically significant correlation between the identified factors influencing the competitiveness of the value-added shrimp processing industry in India.

Test Statistics				
S. No	Answer Choice	Chi-Square	df	Asymp. Sig.
1	Indian shrimp Industry is not competitive with Ecuador, Indonesia, Vietnam, China and Thailand due to lack of skilled labour force for the value -adding process.	46.080 <sup>a</sup>	1	.000
2	Shortage of skilled labourers & Less support from the Government are main reasons for not having value-adding processing facilities by major exporters in India	23.120 <sup>a</sup>	1	.000
3	Breaded & Battered Shrimp, Marinated Shrimp, Skewered Shrimp, Stretched Shrimp (Nobashi), Shrimp Spring Roll and Blanched/Cooked Shrimp are value-added- shrimp varieties identified by the exporters in India	46.080 <sup>a</sup>	1	.000
4	Indian Shrimp Industry is losing revenue opportunity due to limited value-added shrimp products supply to the global market.	2.880 <sup>a</sup>	1	.090
5	Earnings before interest and Taxes for value-added shrimp products is 20%.	15.680 <sup>a</sup>	1	.000
6	Earnings before interest and Taxes for minimum processed shrimp is about 8%.	11.520 <sup>a</sup>	1	.001
7	In spite of increasing demand for value-added shrimp in the global market, the volume is not same as basic processed frozen shrimp volume.	6.480 <sup>a</sup>	1	.011
8	Value added- shrimp require stringent quality and safety assurance programs throughout processing and distribution chain.	46.080 <sup>a</sup>	1	.000
9	India will benefit with job creation and higher economic activity if value-added shrimp processing activities take place in India rather than importing country.	13.520 <sup>a</sup>	1	.000
10	Production, Sales and Distribution of value-added products to the global market does not require large economic resources for marketing and promotion	13.520 <sup>a</sup>	1	.000
11	Value-added shrimp are marketed in big food chains and department stores in the global market.	46.080 <sup>a</sup>	1	.000
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 25.0.				

The hypothesis test table provides insights into factors affecting the competitiveness of the Indian shrimp industry compared to other major players:

- Lack of skilled labour force for value-adding processes is identified as a significant reason for India's lack of competitiveness with other countries ( $p < 0.001$ ).
- Shortage of skilled labourers and insufficient government support contribute to the absence of value-adding processing facilities among major exporters in India ( $p < 0.001$ ).
- Various value-added shrimp varieties, such as breaded & battered shrimp, marinated shrimp, etc., have been recognized by Indian exporters ( $p < 0.001$ ).
- Limited supply of value-added shrimp products globally results in revenue loss for the Indian shrimp industry ( $p = 0.090$ ).
- Earnings before interest and taxes (EBIT) for value-added shrimp products are substantially higher compared to minimum processed shrimp ( $p < 0.001$ ).
- Despite increasing demand, the volume of value-added shrimp products doesn't match that of basic processed frozen shrimp ( $p = 0.001$ ).
- Stringent quality and safety assurance programs are crucial throughout the processing and distribution chain for value-added shrimp ( $p < 0.001$ ).
- Shifting value-added shrimp processing activities to India rather than importing countries could lead to job creation and higher economic activity ( $p < 0.001$ ).
- Production, sales, and distribution of value-added products globally don't demand significant economic resources for marketing and promotion ( $p < 0.001$ ).
- Value-added shrimp products are predominantly marketed in big food chains and department stores globally ( $p < 0.001$ ).

These findings emphasize the importance of addressing labour shortages, enhancing government support, ensuring quality assurance, and promoting value-added shrimp products to improve the competitiveness of the Indian shrimp industry on the global stage.

## 5.2 CHALLENGES AND POSSIBLE STRATEGIES FOR THE INDIAN SHRIMP INDUSTRY TO GET ACCESS TO THE GLOBAL MARKET

S. No.	Answer Choice	No. of Respondents	%
1	Limited value-added processing capabilities, Low productivity and Lack of Traceability are the challenges of the Indian shrimp Industry to get better access to the global market.	30	60
2	India needs to shift to value-added shrimp products to achieve higher sales prices for shrimp in the global market.	50	100
3	Marketing of value-added shrimp products is completely different from traditional marketing of raw frozen shrimp in the global market.	39	78
4	India exports mainly raw frozen shrimp products and only very limited quantities of value-added shrimp products to the global market.	50	100
5	India is unable to extract full benefits from their aquatic resources due to very limited value-added shrimp processing and exports to the global market.	37	74
6	India requires technology upgradation and modernization to be a processor of high -quality value-added shrimp products to compete in the global market.	50	100
7	Quality Assurance is the most important factor in the success of value-added production and export to the global market.	50	100

8	Well educated, trained and skilled labour force help overall performance of the modern seafood processing units in India to compete in the global market with high quality value-added shrimp products.	44	88
9	India requires joint ventures in processing and marketing to supply value-added shrimp products to the global market to achieve improved economics and sustainability.	41	82

**Total No. of Respondents**

**50**

Table-5.2 shows that Limited value-added processing capabilities, Low Productivity and Lack of traceability are major challenges of the Indian shrimp Industry to get better access to the global market with 60% respondents. India needs to shift to value-added shrimp products to achieve higher sales prices for shrimp in the global market with 100% respondents. Marketing of value-added shrimp products is completely different from traditional marketing of raw frozen shrimp in the global market with 78% respondents. India exports mainly minimum processed frozen shrimp and only very limited quantities of value-added shrimp products to the global market with 100% respondents. India is unable to extract full benefits from their aquatic resources due to very limited value-added shrimp processing and exports to the global market with 74% respondents. India requires technology upgradation and modernization to be a processor of high-quality value-added shrimp products to compete in the global market with 100% respondents. Quality Assurance is the most important factor in the success of value-added production and export to the global market with 100% respondents. Well educated, trained and skilled labour force help overall performance of the modern seafood processing units in India to compete in the global market with high quality value-added shrimp products with 88% respondents. India requires joint ventures in processing and marketing to supply value-added shrimp products to the global market to achieve improved economics and sustainability with 82% respondents.

**Null Hypothesis-2: There are no significant associations regarding challenges and strategies in the Indian shrimp industry with India's competitiveness in the global shrimp market through value-added processing.**

Test Statistics				
S. No	Answer Choice	Chi-Square	df	Asymp. Sig.
1	Limited value-added processing capabilities, Low productivity and Lack of Traceability are the challenges of the Indian shrimp Industry to get better access to the global market.	2.000 <sup>a</sup>	1	.157
2	India needs to shift to value-added shrimp products to achieve higher sales prices for shrimp in the global market.	46.080 <sup>a</sup>	1	.000
3	Marketing of value-added shrimp products is completely different from traditional marketing of raw frozen shrimp in the global market.	15.680 <sup>a</sup>	1	.000
4	India exports mainly raw frozen shrimp products and only very limited quantities of value-added shrimp products to the global market.	46.080 <sup>a</sup>	1	.000
5	India is unable to extract full benefits from their aquatic resources due to very limited value-added shrimp processing and exports to the global market.	11.520 <sup>a</sup>	1	.001
6	India requires technology upgradation and modernization to be a processor of high -quality value-added shrimp products to compete in the global market.	46.080 <sup>a</sup>	1	.000

7	Quality Assurance is the most important factor in the success of value-added production and export to the global market.	46.080 <sup>a</sup>	1	.000
8	Well educated, trained and skilled labour force help overall performance of the modern seafood processing units in India to compete in the global market with high quality value-added shrimp products.	28.880 <sup>a</sup>	1	.000
9	India requires joint ventures in processing and marketing to supply value-added shrimp products to the global market to achieve improved economics and sustainability.	20.480 <sup>a</sup>	1	.000
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 25.0.				

The hypothesis test table highlights significant associations regarding challenges and strategies in the Indian shrimp industry:

- Limited value-added processing capabilities, low productivity, and lack of traceability are challenges hindering better access to the global market ( $p = 0.157$ ).
- Shifting to value-added shrimp products could lead to achieving higher sales prices in the global market ( $p < 0.001$ ).
- Marketing of value-added shrimp products differs significantly from traditional marketing of raw frozen shrimp ( $p < 0.001$ ).
- Despite being a major exporter of raw frozen shrimp, India exports only limited quantities of value-added shrimp products globally ( $p < 0.001$ ).
- Limited value-added processing and exports restrain India from fully benefiting from its aquatic resources ( $p = 0.001$ ).
- Technology upgradation and modernization are essential for India to compete globally in producing high-quality value-added shrimp products ( $p < 0.001$ ).
- Quality assurance plays a crucial role in the success of value-added production and export ( $p < 0.001$ ).
- A well-educated, trained, and skilled labor force enhances the performance of seafood processing units to compete globally ( $p < 0.001$ ).
- Joint ventures in processing and marketing are necessary for supplying value-added shrimp products to achieve improved economics and sustainability ( $p < 0.001$ ).

These findings underscore the need for strategic interventions, including technological upgrades, quality assurance measures, and collaborative ventures, to enhance India's competitiveness in the global shrimp market through value-added processing.

## RECOMMENDATIONS

Here are the recommendations from the research study:

1. **Skill Development for Competition:** India should invest in improving the skills of its workforce to compete effectively with countries like Ecuador, Indonesia, Vietnam, China, and Thailand in supplying value-added shrimp globally.
2. **Embrace Value-Added Processing:** To increase revenue and achieve a 20% EBIT from shrimp exports, India should focus on value-added shrimp processing and exports.
3. **Stringent Quality and Safety Measures:** To maintain and enhance its competitive position globally, India needs robust quality and safety programs throughout the processing and distribution chain for value-added shrimp.
4. **Maximize Benefits Locally:** For job creation and increased economic activity, India should prioritize increasing value-added shrimp processing within the country instead of letting importing countries reap all the benefits.
5. **Boost Processing and Exports:** Increasing the processing and export of value-added shrimp from India will improve access to the global market for the Indian shrimp industry.

6. **Shift to Value-Added Processing:** To secure higher sales prices globally, India must shift towards value-added shrimp processing and exports, emphasizing product development and differentiation to fully utilize its aquatic resources.
7. **Technology Upgradation and Quality Assurance:** India needs to upgrade technology and modernize processing facilities while implementing stringent quality assurance programs to export high-quality value-added shrimp globally.
8. **Skilled Workforce:** A well-educated, trained, and skilled workforce is essential for competitive processing and exports of value-added shrimp.
9. **Encourage Joint Ventures:** The Indian shrimp industry should explore joint ventures in processing and marketing value-added shrimp products to achieve improved economics, sustainability, and a leadership position in the global market.

## CONCLUSION

Charting a Course for Success: India's Shift from Frozen to Value-Added Shrimp. While basic shrimp processing has been the norm, the real treasure lies in value-added shrimp products, a realm where profitability thrives. India, with its limited value-added processors, is at the crossroads of an opportunity to diversify and revolutionize its shrimp industry. To seize the high demand and exceptional growth potential in the global market, a rapid transition is needed. Indian processors must embrace the latest technology, offering not just consistent quality but also a tantalizing array of innovative, convenient value-added shrimp products. Beyond Frozen, Towards Innovation: The Call for a Mindset Shift. It's time for India to transcend the conventional focus on mass production of frozen shrimp. The key lies in fostering a mindset shift towards value-added shrimp processing and exports. This strategic move is not just about immediate gains but about crafting a sustainable, innovative business model for long-term success. Such a transformation not only cements India's leading position globally but also opens doors for existing exporters to diversify into novel value-added products and sparks the rise of new entrepreneurial ventures. A Vision for Sustainable Success: Looking Beyond Short-Term Gains. India's journey towards becoming a global hub for value-added shrimp products is more than a shift in strategy; it's a commitment to inclusive sustainability. By meeting and exceeding consumer expectations of wholesomeness, sustainability, and responsibility in the shrimp business, India paves the way for long-lasting success. This visionary approach not only meets the surging international demand but also creates a ripple effect, sparking domestic demand for value-added shrimp products. In essence, it's a strategic, forward-thinking move that positions India at the forefront of the evolving global shrimp market.

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