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# Neural Network (NN) Approach: Integrated distribution channels and problem of fisherman families

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**Abstract:** *The distribution channel structure remains an important yet little researched issue, especially in the Indian context. As the pathway along which products, information, and finance flow between manufacturers and end-consumers, designing and maintaining an efficient channel would be important elements in industry competitiveness. The nature of the research is exploratory method, and the sample size is 522 fishermen families in Chennai Coastal Areas, Tamil Nadu, India and data collection method used in the research was "Questionnaire Method" and data were analyzed with help of Neural Network (NN) Approach and frequency distribution. This research has provides an overview of distribution problems and channels identifies the key issues that impact distribution channels in fisherman families in Chennai Coastal Areas. This research paper attempts to develop an agenda for future channel related research by keeping eye on research objectives using neural network approach. The construct of integrated distribution channels in Fishing Industry was measured through an instrument developed by a researcher in other country. Though the instrument shows scientific reliability and validity, yet this is the first study for which it has been adapted in Chennai coastal areas and more studies are required before it is established as an acceptable tool for exploring integrated distribution channels in Fishing Industry.*

**Keywords:** Distribution Channels, Distribution Problems, Fisherman Families and Neural Network Approach

## Introduction

In the last two decades, there has been a land slide movement towards markets liberalization in the world. Although the pace and depth of liberalization have varied from place to place, the movement have affected both international and domestic markets and no continent remains untouched (Onu and Iliyasu, 2008). They further explained that the kinds of markets that have emerged from this movement differ markedly across Sectors and Countries. Several studies that examined the marketing system of fish and its implications for agricultural and Economic development in general have employed the relationship between costs and selling prices of fish (Ali et al., 2008). Marketing and distribution channels are important characteristics in the process of getting produce from source to consumers. Olukosi and Isitor (1990) categorized marketing channels into centralized and decentralized channels. Centralized channels deals with agents who

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serve as middlemen between producers and consumers while decentralized is a kind of channel where both consumers and agents can buy directly from the producers. Fish distribution channel is common to most developing countries with series of middlemen between producers and consumers (Moses, 1992). Eyo (2001) stressed that processed fish is sold as smoked or dried without varieties as fish fingers, cakes and other ready to serve fish foods to stimulate wider interest in marketing, distribution and consumption. Fish supply and marketing suffer from various setbacks ranging from shortage of supply, price fluctuations due to drying up of source, poor distribution and length of chain, spoilage in transit etc. (Tomek and Robinson, 1981).

**Profile of Tamil Nadu Coastal Areas**

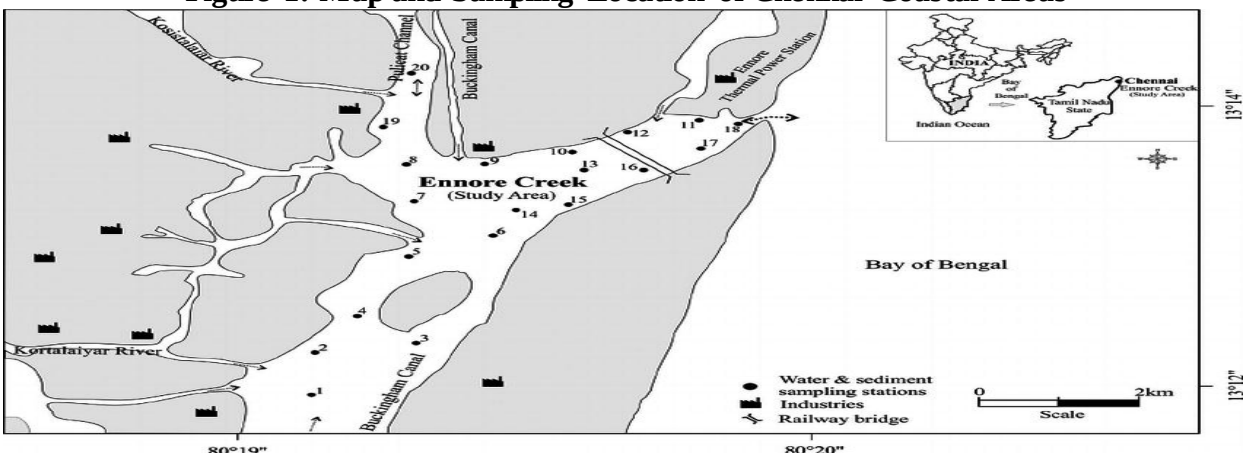
Coastal zone is a dynamic area with many cyclic processes owing to a variety of resources and habitats. Coastal plains and seas include the most taxonomically rich and productive ecosystems on the earth. Mangroves forests are over 20 times more productive than the average open ocean. Estuaries, salt marshes and coral reefs are 5 to 15 times higher and shelf seas and upwelling zones 2 to 5 times higher. These enhanced rates of primary production result in an abundance of other life forms including species of commercial importance. Although occupying only 8% of the total surface, ecologically important areas account for 20-25% of global plant growth. Tamilnadu is the southernmost state in India, flanked by Andhra Pradesh, Karnataka on the north / North West; Indian Ocean on the south; Kerala on the west and Bay of Bengal on the east. The coastline of Tamilnadu has a length of about 1076kms (Table 1.1), constitutes about a 15% of the total coastal length of India and stretches along Bay of Bengal, Arabian Sea and Indian Ocean.

**Table 1: Coastal length of Tamilnadu**

| S.No | Coastal district | Coastal length (Km) |
|---|---|---|
| 1 | Chennai | 19.0 |
| 2 | Thiruvallur | 27.9 |
| 3 | Villupuram | 40.7 |
| 4 | Pudukottai | 42.8 |
| 5 | Thanjavur | 45.1 |
| 6 | Thiruvarur | 47.2 |
| 7 | Tirunelveli | 48.9 |
| 8 | Cuddalore | 57.5 |
| 9 | Kanyakumari | 71.5 |
| 10 | Kanchipuram | 87.2 |
| 11 | Tuticorin | 163.5 |
| 12 | Nagapattinam | 187.9 |
| 13 | Ramanthapuram | 236.8 |
| **Total** | | **1076.0** |

Ports, fishing harbors and a variety of coastal industries like nuclear thermal power plants, refineries, fertilizer, marine chemicals are situated on the coast. Chennai is the capital of Tamilnadu, an important coastal and mega metropolitan city of India having a major port and many coastal industries.

**Figure 1: Map and Sampling Location of Chennai Coastal Areas**




## Literature Review

Sarrafha, K., Rahmati, S. H. A., Niaki, S. T. A., & Zaretalab, A. (2015) suggested Efficient management of supply chain (SC) requires systematic considerations of miscellaneous issues in its comprehensive version. In this paper, a multi-periodic structure is developed for a supply chain network design (SCND) involving suppliers, factories, distribution centers (DCs), and retailers. The nature of the logistic decisions is tactical that encompasses procurement of raw materials from suppliers, production of finished product at factories, distribution of finished product to retailers via DCs, and the storage of raw materials and end product at factories and DCs. Besides, to make the structure more comprehensive, a flow-shop scheduling model in manufacturing part of the SC is integrated in order to obtain optimal delivery time of the product that consists of the makespan and the ship time of the product to DCs via factories. Moreover, to make the model more realistic, shortage in the form of backorder can occur in each period. Duque, P. A. M., Dolinskaya, I. S., & Sörensen, K. (2016) explains every year, hundreds of thousands of people are affected by natural disasters. The number of casualties is usually increased by lack of clean water, food, shelter, and adequate medical care during the aftermath. One of the main problems influencing relief distribution is the state of the post-disaster road network. In this paper, we consider the problem of scheduling the emergency repair of a rural road network that has been damaged by the occurrence of a natural disaster. This problem, which we call the Network Repair Crew Scheduling and Routing Problem addresses the scheduling and routing of a repair crew optimizing accessibility to the towns and villages that demand humanitarian relief by repairing roads. We develop both an exact dynamic programming (DP) algorithm and an iterated greedy-randomized constructive procedure to solve the problem and compare the performance of both approaches on small- to medium-scale instances. Our numerical analysis of the solution structure validates the optimization model and provides managerial insights into the problem and its solutions.

Byahatti, S. (2017) suggested water pollution is a major environmental concern in India. Poor quality of water adversely affects the plant growth and human health. Water pollution is a cause for many diseases and thereby it affects income of a household. Due to illness an individual is not able to work, that is loss of wage in illness period. The medical expenditure increases for recurring diseases due to water pollution. The present study was conducted in Indi taluk of Bijapur district in Karnataka, with an objective to analyze the economic impact of river water quality on agriculture and rural livelihoods. The results revealed that river water is not

suitable for irrigation and not suitable for drinking in the study seasons. Decomposition model showed that in sugarcane crop the contribution of water pollution towards yield difference was 0.88 per cent. Average yield difference between polluted and non-polluted villages was 3.43 tonnes/ha of worth ` 6177.6. Average per annum veterinary expenses by the household was ` 1710, in polluted villages which was more by 34.33 per cent compared to that in non-polluted village. The household in polluted villages spent ` 8,197 per household per annum on medical expenses, which was 16.26 per cent more when compared to medical expenses ` 7,050 spent in non-polluted villages. Hence, Government should initiate urgent effective measures to control or regulate pollution and organize awareness programmes regarding health risks by use of polluted water.

**Methodology**

The nature of the research is exploratory method, and the sample size is 522 fishermen families in Chennai Coastal Areas, Tamil Nadu, India and data collection method used in the research was "Questionnaire Method". Data were analyzed by using SPSS 20.0 and SPSS Modular. Findings, suggestions and conclusions were made by keeping an eye on the research objectives. The data were analyzed with help of statistical tools like Neural Network (NN) Approach and frequency distribution.

**Research objectives**

- To study about the pattern of roles and importance of channel members in Chennai Coastal Areas, Tamil Nadu.
- To find out the perception of the fishermen families in Chennai Coastal Areas, Tamil Nadu and channel members towards the participation in various marketing factors.
- To know about the factors considered for the selection of dealer, whole sealer, retailer, direct sales force and sales promotion of fishermen families in Chennai Coastal Areas, Tamil Nadu.

**Hypotheses**

**(H1):** There is an impact on sales promotion over distribution channel in fishermen families in Chennai Coastal Areas, Tamil Nadu

**(H1):** There is an impact on dealer over distribution channel in fishermen families in Chennai Coastal Areas, Tamil Nadu

**(H3):** There is an impact on whole sealer over distribution channel in fishermen families in Chennai Coastal Areas, Tamil Nadu

**(H4):** There is an impact on retailer over distribution channel in fishermen families in Chennai Coastal Areas, Tamil Nadu

**(H5):** There is an impact on direct sales force over distribution channel in fishermen families in Chennai Coastal Areas, Tamil Nadu

**Demographic Profile of Fisherman Families in Chennai Coastal Areas**

Age is an important factor in business decision in today's scenario. The young category of respondents preferred to implement good quality business conditions and operations under one group. They are totally contra in implement good quality of business conditions with old age category, because the old age respondents were accustomed to maintain the good quality of

supply chain in their business operations. The distribution of sample respondents according to one of the demographic factor-age is shown in the table No 2.

**Table 2: Age Group of the Respondents**

| Statements | Frequency | Percentage |
|---|---|---|
| Less than 35 | 296 | 56.7 |
| 36-50 | 155 | 29.7 |
| 51 and above | 71 | 13.6 |
| **Total** | **522** | **100.00** |

From the table 2, Based on the respondents age as they are classified into 3 categories viz; young (below 35 yrs.), middle aged (36-50 yrs.), and old aged (above 50). The sample consists 296 (56.7%) fishermen's belonged the group in young category 155 (29.7%) responds belonged to middle aged category and 71 (13.6%) responds belonged to old aged categories. This indicates the participation of younger respondents is higher than others. Marital Status and level of satisfaction in utilizing distribution channel is another important factor to assess the effectiveness by the Marital Status. The married person's preference varies with the single respondents. For this purpose the group has divided into two categories one is married respondents and the other is single respondents.

**Table 3: Marital Status of the Respondents**

| Statements | Frequency | Percentage |
|---|---|---|
| Single | 245 | 46.9 |
| Married | 277 | 53.1 |
| **Total** | **522** | **100.00** |

From the table 3, To assess the basic distribution channel, the table shows the marital status of fisherman's. 522 respondents were selected, out of which 245 (46.9%) were 'single' and the remaining 277(53.1%) are 'Married'. This shows the more participation from married respondents. The respondents from different educational background are assessed in this segment. Educational qualification plays major role in making choice as well as decision making. On the purpose of this study Educational qualification of the respondent has been divided into three categories viz; Illiterate, Schooling, and Graduation.

**Table 4: Education Level of the Respondents**

| Statements | Frequency | Percentage |
|---|---|---|
| Illiterate | 76 | 14.6 |
| Schooling | 211 | 40.2 |
| Graduation | 235 | 45.2 |
| **Total** | **522** | **100.00** |

From the table 4, The sample consists of 76 (14.6%) respondents belonged illiterate level, 211 (40.2 %) respondents belonged schooling level, 235 (45.2%) respondents belonged graduation level. The distribution of sample respondents according to respondents each and their distribution channels in the fishing industry are shown in the table. This analysis is made to evaluate the types of family of the respondents. They are classified into two categories. They are

types of family of the respondents, joint family, and nuclear family. This is expressed in the following table.

**Table 5: Types of Family of the Respondents**

| Statements | Frequency | Percentage |
|---|---|---|
| Joint Family | 356 | 68.2 |
| Nuclear Family | 166 | 31.8 |
| **Total** | **522** | **100.00** |

From the table 5, To assess the basic distribution channel, the table shows the distribution channel in fishing industry. 522 respondents were selected, out of which 356 (68.2%) were living as a 'Joint family' and the remaining 166 (31.8%) were living as a 'Nuclear family'. This shows the more participation from Joint family.

**Distribution Channels and Problems for Fisherman Families - Neural Network (NN) Model**
The architecture which provides the best fit for the data is the network with eight input layers, twenty nine covariate variables and one hidden layers and one output layer, as shown in figure. The model used in this work is the Feed Forward Multilayer perception, using the Back Propagation Algorithm.

Where (4-3-1),

8 - Input layers
29- Covariates layers
1- Hidden layers and
1- Output layer

All inputs are analyzed in the experimental validation part, with appropriate output results by the illustration of graphs so that the influences of the parameters of tensile strength are taken into consideration. The network information presented in the table, the validation of the estimated NN and Experimental value illustrations is shown in figure 6.

From the table 6, The factors of sales promotion - distribution channels in Fishing Industry model parameters are modeled by using the Neural Network Method. The parameters are optimized so as to determine the set of parameters, which will influence the increase in the overall satisfaction of the sales promotion - distribution channels in Fishing Industry Neural Networks Architecture and network information.

From the table 7, The table and diagram shows the "schemes and offers" is contributing more towards the output of sales promotion - distribution channels in Fishing Industry. The analysis identifies the fact that among the 6 statements of sales promotion - distribution channels in Fishing Industry. Therefore the above said statement of sales promotion - distribution channels in Fishing Industry is preferred in priority by the Fishing Industry.

**Table 6: Model Summary for Sales Promotion - Distribution Channels in Fishing Industry - Neural Network Model**

| | | | |
|---|---|---|---|
| **Input Layer** | **Factors** | 1 | Price off |
| | | 2 | Discount |
| | | 3 | Premium |
| | | 4 | Extra Quantity or Quantity discount |
| | | 5 | Schemes and offers |
| | | 6 | Gifts |
| | Number of Units | | 25 |
| **Hidden Layer(s)** | Number of Hidden Layers | | 1 |
| | Number of Units in Hidden Layer 1 | | 9 |
| | Activation Function | | Hyperbolic tangent |
| **Output Layer** | Dependent Variables | 1 | Sales Promotion |
| | Number of Units | | 5 |
| | Activation Function | | Softmax |
| | Error Function | | Cross-entropy |

**Table 7: Independent Variable importance for Neural Network Model for the overall satisfaction on Sales Promotion - Distribution Channels in Fishing Industry**

| Independent Variable Importance | Normalized Importance |
|---|---|
| Price off | 28.3% |
| Discount | 48.2% |
| Premium | 50.7% |
| Extra Quantity or Quantity discount | 45.8% |
| Schemes and offers | 53.4% |
| Gifts | 52.0% |

**Figure 2: Network Model for overall satisfaction on Sales Promotion - Distribution Channels in Fishing Industry**

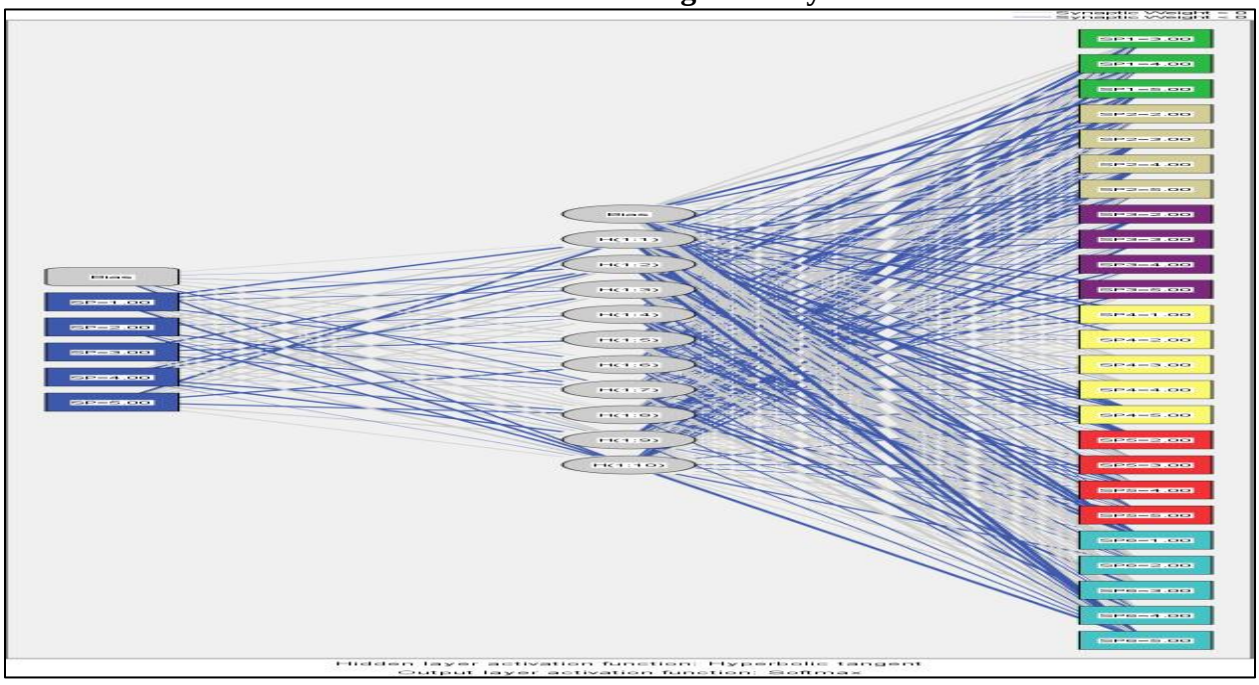


**Table 8: Model Summary for Dealer - Distribution Channels in Fishing Industry - Neural Network Model**

| | | | | |
|---|---|---|---|---|
| **Input Layer** | Factors | | 1 | Dealer |
| | Number of Units | | 4 | |
| **Hidden Layer(s)** | Number of Hidden Layers | | 1 | |
| | Number of Units in Hidden Layer 1 | | 10 | |
| | Activation Function | | Hyperbolic tangent | |
| **Output Layer** | **Independent Variables** | 1 | Commercial queries/tenders | |
| | | 2 | Commercial orders are dealt | |
| | | 3 | Distribution partner is organized | |
| | | 4 | Lead time (between my order confirmation and equipment's reception) to be reasonable | |
| | | 5 | Pricing policy applied to my company | |
| | | 6 | Discount policy applied to my company | |
| | Number of Units | | 23 | |
| | Activation Function | | Softmax | |
| | Error Function | | Cross-entropy | |

From the table 8, The factors of Dealer - distribution channels in Fishing Industry model parameters are modeled by using the Neural Network Method. The parameters are optimized so as to determine the set of parameters, which will influence the increase in the overall satisfaction of the Dealer - distribution channels in Fishing Industry Neural Networks Architecture and network information.

**Table 9: Independent Variable importance for Neural Network Model for the overall satisfaction on Dealer - Distribution Channels in Fishing Industry**

| **Independent Variable Importance** | **Normalized Importance** |
|---|---|
| Commercial queries/tenders | 30.5% |
| Commercial orders are dealt | 34.2% |
| Distribution partner is organized | 54.2% |
| Lead time (between my order confirmation and equipment's reception) to be reasonable | 46.6% |
| Pricing policy applied to my company | 43.8% |
| Discount policy applied to my company | 45.8% |

From the table 9, The table and diagram shows the "Fishing Industry distribution partner is organized" are contributing more towards the output of Dealer- distribution channels in Fishing Industry. The analysis identifies the fact that among the 6 statements of Dealer - distribution channels in Fishing Industry. Therefore the above said statement of Dealer - distribution channels in Fishing Industry is preferred in priority by the Fishing Industry.

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**Figure 3: Network Model for overall satisfaction on Dealer - Distribution Channels in Fishing Industry**

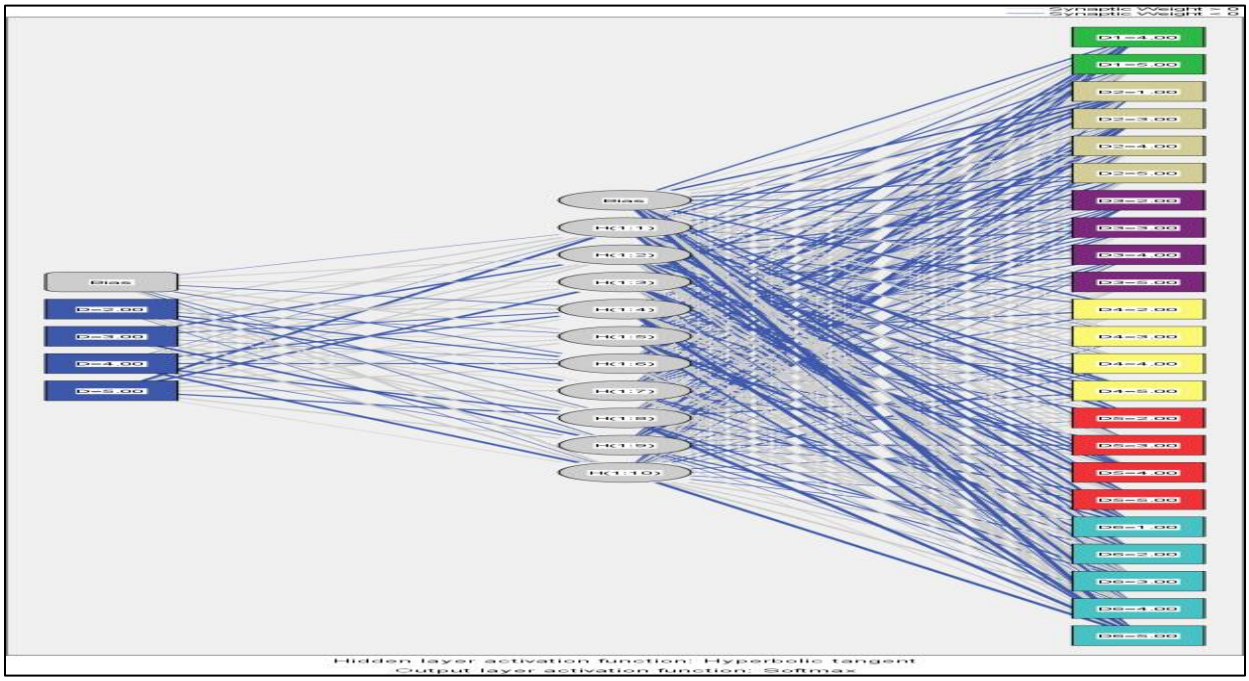


**Table 10: Model Summary for Whole Sealer - Distribution Channels in Fishing Industry - Neural Network Model**

| | | | |
|---|---|---|---|
| **Input Layer** | Factors | 1 | Whole Sealer |
| | Number of Units | | 4 |
| **Hidden Layer(s)** | Number of Hidden Layers | | 1 |
| | Number of Units in Hidden Layer 1[a] | | 11 |
| | Activation Function | | Hyperbolic tangent |
| **Output Layer** | **Independent Variables** | 1 | Improvement in Lead time |
| | | 2 | Improvement in inventory turns |
| | | 3 | Improvement in level of inventory write off |
| | | 4 | Improvement in Time to market (Product development cycle) |
| | | 5 | Improvement of defect rate |
| | | 6 | Improvement in order item fill rate |
| | | 7 | Improvement in stock out situation |
| | Number of Units | | 26 |
| | Activation Function | | Softmax |
| | Error Function | | Cross-entropy |

From the table 10, The factors of Whole Sealer - distribution channels in Fishing Industry model parameters are modelled by using the Neural Network Method. The parameters are optimized so as to determine the set of parameters, which will influence the increase in the overall satisfaction of the Whole Sealer - distribution channels in Fishing Industry Neural Networks Architecture and network information.

**Table 11: Independent Variable importance for Neural Network Model for the overall satisfaction on Whole Sealer - Distribution Channels in Fishing Industry**

| Independent Variable Importance | Normalized Importance |
|---|---|
| Improvement in Lead time | 17.6% |
| Improvement in inventory turns | 28.5% |
| Improvement in level of inventory write off | 60.0% |
| Improvement in Time to market (Product development cycle) | 38.2% |
| Improvement of defect rate | 42.4% |
| Improvement in order item fill rate | 53.9% |

From the table 11, The table and diagram shows the "Improvement in level of inventory write off" is contributing more towards the output of Whole Sealer - distribution channels in Fishing Industry The analysis identifies the fact that among the 6 statements of Whole Sealer - distribution channels in Fishing Industry. Therefore the above said statement of Whole Sealer - distribution channels in Fishing Industry is preferred in priority by the Fishing Industry.

**Figure 4: Network Model for overall satisfaction on Whole Sealer - Distribution Channels in Aluminum Industry in Tamil Nadu**

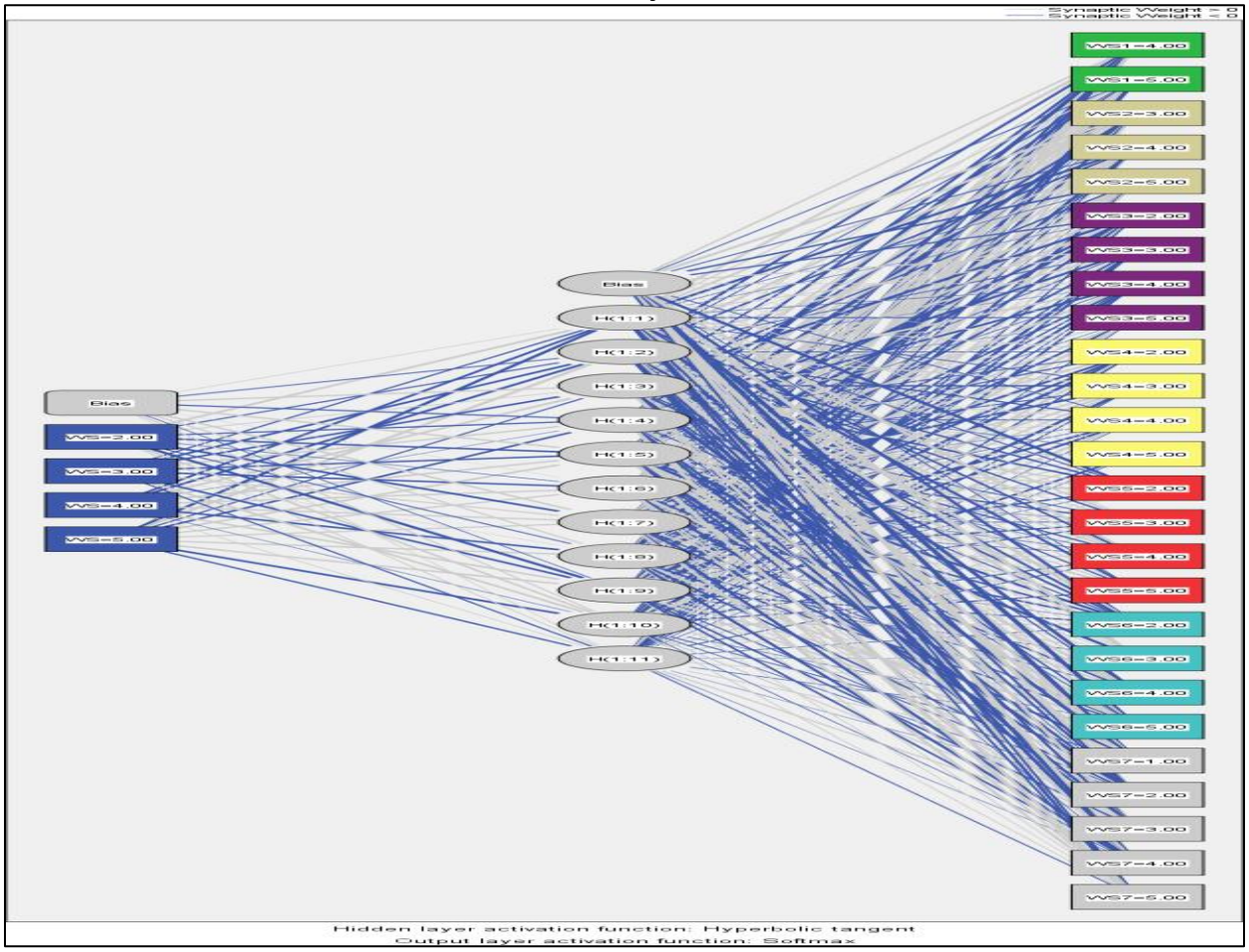

**Table 12: Model Summary for Retailer- Distribution Channels in Fishing Industry - Neural Network Model**

| | | | |
|---|---|---|---|
| **Input Layer** | Factors | 1 | Retailer |
| | Number of Units | | 4 |
| **Hidden Layer(s)** | Number of Hidden Layers | | 1 |
| | Number of Units in Hidden Layer 1[a] | | 8 |
| | Activation Function | | Hyperbolic tangent |
| **Output Layer** | **Independent Variables** | 1 | Increased Coordination with suppliers |
| | | 2 | Increased Coordination with customers |
| | | 3 | Increased Sales |
| | | 4 | Reduced lead-time in procurement |
| | | 5 | Timely Availability of information |
| | | 6 | Cost saving |
| | | 7 | Reduced inventory level |
| | Number of Units | | 26 |
| | Activation Function | | Softmax |
| | Error Function | | Cross-entropy |

From the table 12, The factors of Retailer- distribution channels in Fishing Industry model parameters are modeled by using the Neural Network Method. The parameters are optimized so as to determine the set of parameters, which will influence the increase in the overall satisfaction of the Retailer- distribution channels in Fishing Industry Neural Networks Architecture and network information.

**Table 13: Independent Variable importance for Neural Network Model for the overall satisfaction on Retailer- Distribution Channels in Fishing Industry**

| **Independent Variable Importance** | **Normalized Importance** |
|---|---|
| Increased Coordination with suppliers | 39.4% |
| Increased Coordination with customers | 46.9% |
| Increased Sales | 57.5% |
| Reduced lead-time in procurement | 47.5% |
| Timely Availability of information | 55.0% |
| Cost saving | 38.1% |
| Reduced inventory level | 18.8% |

From the table 13, The table and diagram shows the "Increased Sales" is contributing more towards the output of Retailer- distribution channels in Fishing Industry. The analysis identifies the fact that among the 7 statements of Retailer- distribution channels in Fishing Industry. Therefore the above said statement of Retailer- distribution channels in Fishing Industry is preferred in priority by the Fishing Industry.

**Figure 5: Network Model for overall satisfaction on Dealer - Distribution Channels in Fishing Industry**

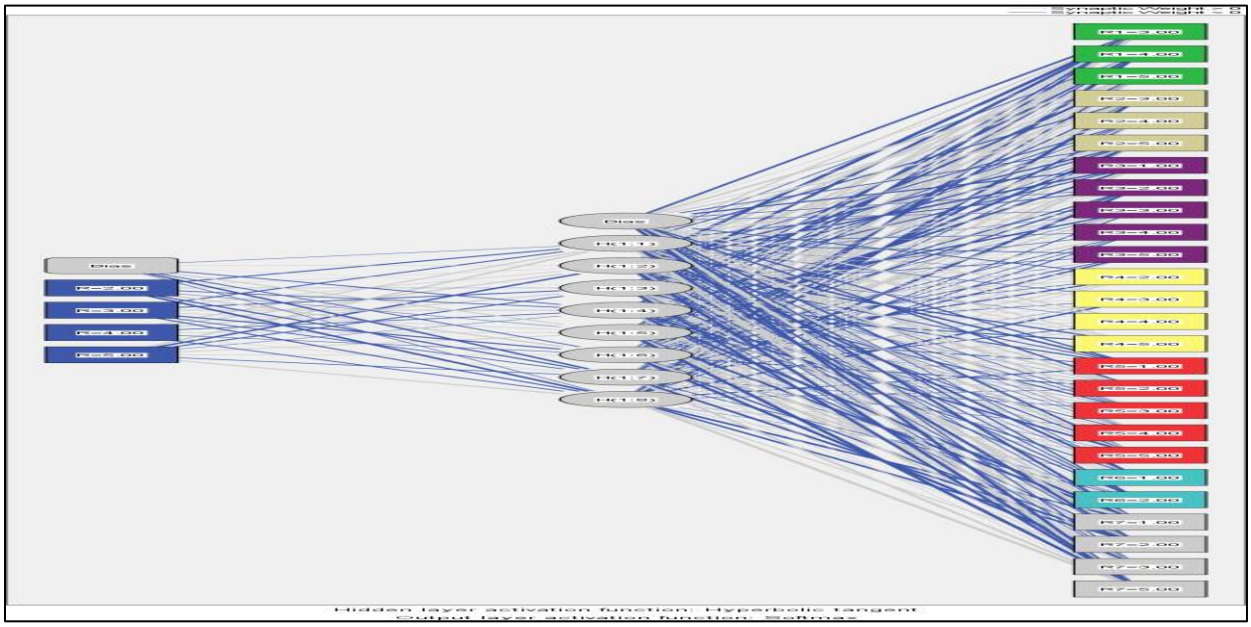

**Table 14: Model Summary for Distribution Channels in Fishing Industry - Neural Network Model**

| | | | |
|---|---|---|---|
| **Input Layer** | Factors | 1 | Distribution Channel |
| | Number of Units | | 5 |
| **Hidden Layer(s)** | Number of Hidden Layers | | 1 |
| | Number of Units in Hidden Layer 1[a] | | 6 |
| | Activation Function | | Hyperbolic tangent |
| **Output Layer** | **Independent Variables** | 1 | Trust on my distribution channels |
| | | 2 | Globally satisfied with my distribution channels |
| | | 3 | Willing to change my distribution channels |
| | | 4 | Willing to promote crane products and service to a third party |
| | | 5 | Promises made to our supply chain members by our business unit are reliable |
| | | 6 | Business unit is knowledgeable regarding our products and/or services when we are doing business with our supply chain members |
| | | 7 | Business unit does not make false claims to our supply chain members |
| | Number of Units | | 39 |
| | Activation Function | | Softmax |
| | Error Function | | Cross-entropy |

From the table 14, The factors of distribution channels in Fishing Industry model parameters are modelled by using the Neural Network Method. The parameters are optimized so as to determine the set of parameters, which will influence the increase in the overall satisfaction of the distribution channels in Fishing Industry Neural Networks Architecture and network information.

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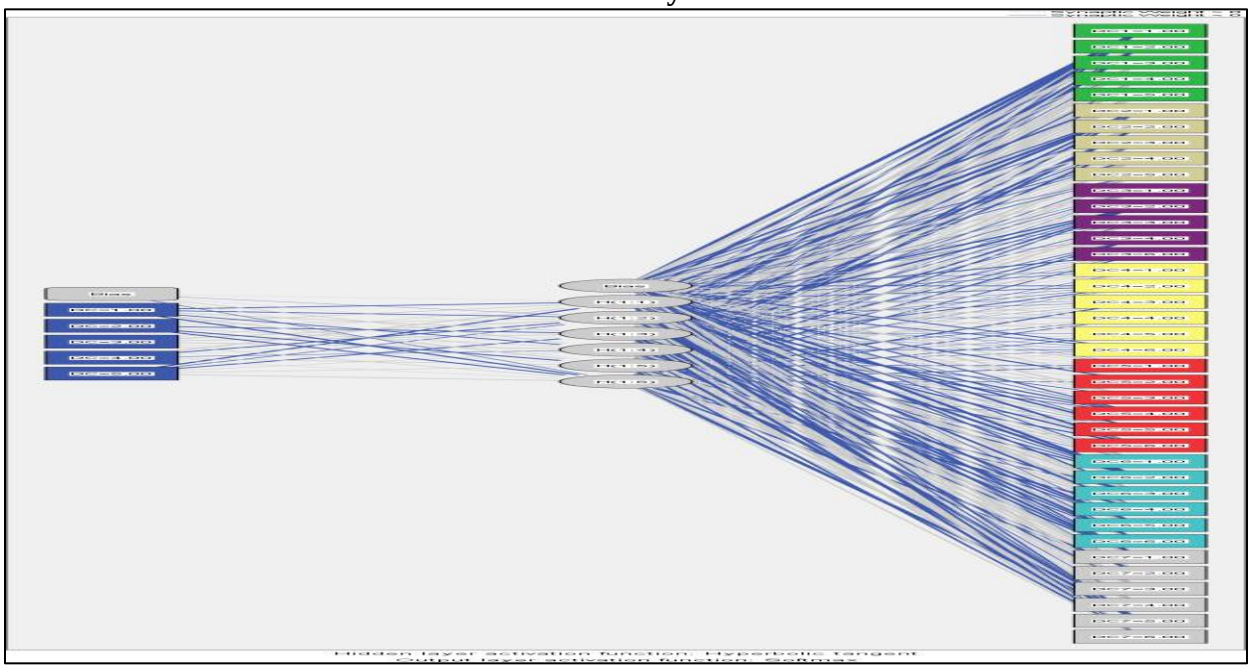
**Table 15: Independent Variable importance for Neural Network Model for the overall satisfaction on Distribution Channels in Fishing Industry**

| Independent Variable Importance | Normalized Importance |
|---|---|
| Trust on my distribution channels | 47.7% |
| Globally satisfied with my distribution channels | 56.1% |
| Willing to change my distribution channels | 47.1% |
| Willing to promote crane products and service to a third party | 45.8% |
| Promises made to our supply chain members by our business unit are reliable | 54.2% |
| Business unit is knowledgeable regarding our products and/or services when we are doing business with our supply chain members | 46.5% |
| Business unit does not make false claims to our supply chain members | 57.4% |

From the table 15, The table and diagram shows the "Business unit does not make false claims to our supply chain members" is contributing more towards the output of distribution channels in Fishing Industry. The analysis identifies the fact that among the 7 statements of Retailer- distribution channels in Fishing Industry. Therefore the above said statement of distribution channels in Fishing Industry is preferred in priority by the Fishing Industry.

**Figure 6: Network Model for overall satisfaction on Distribution Channels in Fishing Industry**



## Conclusions

Fish passes through several intermediaries from the landing centre or fish pond to the consumer. The intermediaries are involved in providing services of head loading, processing, preservation, packing and transporting and these activities result in cost addition at every stage of marketing (Bishnoi, 2005). Tamilnadu is one of the leading States in India in Fisheries Development having coastal length of 1076 km. Tamilnadu is bordered on the north by Andhrapradesh State, on the north west by Karnataka state, on the west by Kerala state and on the east and south by the

Bay of Bengal and the Indian Ocean. Tamilnadu has an area of 1,30,058 sq.km. (50,216 sq.miles). The geographical position of Tamilnadu state lies between north latitude to 8o 5' and 13o 35'east longitude between 76o 15' and 80o 20'. It is separated from Srilanka by narrow palk strait. The climate is tropical. The temperature during summer reaches 40oC and in winter it rarely falls below 20oC. Rain fall occurs during the North east monsoon period from the months of October to December. The normal annual rain fall is 915 m.m. The total population of Tamilnadu is 6,24,05,679. The per capita income at current price is Rs.23,476 and at constant price Rs.13,423. The key intermediaries in fish marketing are: auctioneer, wholesaler, retailer and the vendor. Several other intermediaries like local fish collectors and fishermen cooperatives also exist in several markets. The biggest challenge in documenting intermediaries in fish marketing is their multifunctional performances. There is no strict boundary between intermediaries and they perform several functions while marketing fish. Sales promotion provided by the fishermen's families in Chennai Coastal Areas towards distribution channels in Fishing Industry model parameters are modeled by using the Neural Network Method. The parameters are optimized so as to determine the set of parameters, which will influence the increase in the overall satisfaction of the sales promotion - distribution channels in Fishing Industry Neural Networks Architecture and network information. "Increased Sales" is contributing more towards the output of Retailer- distribution channels in Fishing Industry. The analysis identifies the fact that among the seven statements of Retailer- distribution channels in Fishing Industry. Therefore the above said statement of Retailer- distribution channels in Fishing Industry is preferred in priority by the Fishing Industry.

**Limitations**

a. Samples are taken among the Chennai coastal areas only, so there may be some variation in analysis if other district fisherman families are also added.
b. The construct of integrated distribution channels in Fishing Industry was measured through an instrument developed by a researcher in other country. Though the instrument shows scientific reliability and validity, yet this is the first study for which it has been adapted in Chennai coastal areas and more studies are required before it is established as an acceptable tool for exploring integrated distribution channels in Fishing Industry.

**Directions for Future Research**

The business implications derived from this study are chiefly the explanation and the understanding of the complex construction of integrated distribution channels of fisherman families. We have illustrated that the majority of the concepts are interconnected. Hence, when changing the strategy for one concept, often another concept is influenced. The Integrated Distribution Channels of Fisherman Families gives marketers and fishing inter mediators an important tool to pay attention to when working with a integrated distribution channels.

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