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ARTICLE

Marketing Program Implementation of Greek Fisheries Firms

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ABSTRACT

This study analyses the marketing program implementation in Greek fisheries firms. In this perspective, quantitative research with personal interviews to fisheries firms' executives is elaborated. Data were analyzed elaborating cluster and discriminant analysis. Findings reveal that there are two distinct groups of Greek fisheries firms regarding their decisions about the components of marketing mix. The results demonstrate that there are differences among the two groups mainly in terms of price and distribution policies. Particularly, 62.6% of sample firms seem to dispose a differential marketing mix, while 37.4% of sample firms seem to dispose a non-differential marketing mix. Notably, both clusters are not aware of quality and sustainability assurance certifications regarding seafood products. From this perspective, there is a potential for a better organized marketing program implementation aiming to respond efficiently in modern market needs.

1. Introduction

Marketing program implementation constitutes a crucial factor in marketing research field due to the fact that it has been positively related with firm performance, as well as with customer network size and knowledge [1]. Meaning that marketing mix components; product, price, promotion and distribution policies, play a significant role in the achievement of commercial success. Therefore, successful performance at firm level is strongly determined by the focus on marketing mix tactics indicating that these could have a significant impact on the ability of firms to respond efficiently to modern market needs [2]. This is particularly important for fisheries firms who are facing major challenges and threats at global level.

Specifically, fisheries firms are facing a liberazed trade regime. Analytically, rapid changes are occurred in market and consequently in consumer demand particularly in terms of quality and safety issues [3]. Undoubtedly, fisheries and aquaculture industries are of world's most globalized and interconnected industries. At the same time demand for seafood products is increasing. In a globalized economy, this situation should generate high opportunities for any seafood production activity but companies are facing key challenges, and part of the European Union (EU) fisheries sector remains at low levels of profitability. Additionally, the EU is the dominant trader of fisheries and aquaculture products at global level in terms of value, with increasing trends both in imports and in exports [4]. Particularly, Greece has a substantial production of European sea bass and gilthead sea bream at European level constituting the major supplier [5]. It is also worth noted the significance of fishing sector in economy at national level particularly in coastal areas, taking into account that Greece together with Spain, Italy and Portugal, constitute

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the 73% of employment of EU-28 in fishing sector, and Greece is representing the second highest level of employment in the sector [4].

Consequently, the present study aims to investigate and to analyze marketing program implementation of Greek fisheries firms. Since there is a limited detailed empirical research regarding stakeholders' analysis in fisheries and aquaculture sectors, and particularly in terms of marketing mix analysis at firm level, this study is critically significant, in an attempt to provide first insights in marketing program implementation. In conjunction with the fact that in marketing literature, it is continuously recommended to examine the combination of marketing mix elements rather than any single mix element on its own, indicates the necessity for an integrated approach regarding elements of the marketing mix [2]. Therefore, the objective of the study is to investigate and to further analyze marketing mix elements holistically and consequently how marketing program is implemented in Greek fisheries firms. Particularly, the paper reveals different groups of fisheries firms regarding their marketing program implementation whilst provides the potential for different dynamic relationships among firms that would not be feasible with individual observations.

2. Methodology

The study was carried out in major fish wharves in Greece, in terms of distribution volume. Field data was initiated employing personal interviews with executives from fisheries firms who are operating in the entire supply chain of fisheries and aquaculture products. The questionnaire used was simple and consisted seventeen questions separated by two sections. The first section consisted of fourteen questions covering marketing mix elements and particularly referring to product, price, promotion and distribution policies (Table 1). The second section collected general information regarding the major demographic characteristics of fisheries firms, including firm size in terms of employee number [6], firm age and type. Most of the questions in the survey tool employed a five-point Likert scale, ranging from (1) totally disagree to (5) totally agree. The advantage of providing respondents with only five choice positions contributes in avoiding responses converging on the middle response (i.e. three) and additionally, too many scale positions (e.g. seven-point scales) tend to confuse respondents [7].

Furthermore, the questionnaire was pre-tested on a sample of fifteen respondents selected by convenience to obtain face validity. Particularly, the pilot survey conducted with 15 executives from fisheries firms at the basis of personal interviews. Consequently, the necessary improvements were considered and the questionnaire was modified in accordance with the experience gained from the pilot survey. The main methodological steps followed in this study are illustrated in Figure 1.

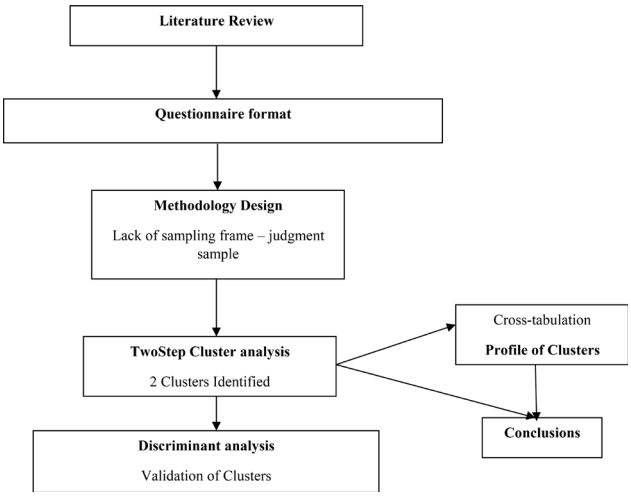

Figure 1. Flow chart of the methodology design

Table 1. Identification of variables used in cluster analysis

Code	Variables
PT	(Packaging type) wooden fish baskets =1, plastic fish boxes=2
QC	(Quality control) YES=1, NO=0
QG	(Quality gradation) YES=1, NO=0
HP	(Higher price due to lack of competition) totally agree =5 – totally disagree=1
PQ	(price policy based on quality) totally agree=5 – totally disagree=1
PMC	(price policy based on market conditions) totally agree=5 – totally disagree=1
PCP	(price policy based on competitors' price) totally agree=5 – totally disagree=1
CFP A	(Common Fisheries Policy (CFP) awareness) totally agree=5 – totally disagree=1
CFP MA	(CFP measures awareness) totally agree=5 – totally disagree=1
CFP MIBP	(CFP measures' impact on business profit) totally agree=5 – totally disagree=1
AT	(Agreement type) informal=1, formal=2
DC	(distribution channel) wholesaler=1, fish vendor=2, retailer=3, direct distribution=4
MPOs	(member in producer organizations) YES=1, NO=0
QSACA	(quality & sustainability assurance certifications' awareness) YES=1, NO=0

Due to the lack of a sampling frame based on more recent information, the snowballing procedure was chosen as the method of data collection [8]. Particularly, in this procedure, population elements are deliberately selected representing three major advantages: (1) they can meet the needs of the research, (2) they are representative of the population of interest, and (3) they can offer researchers the information they need. In all, 99 valid questionnaires

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were collected with this method. The reliability of the information source was assessed by emphasizing the identification of appropriate individuals from whom to elicit the requisite information and the willingness of these individuals to participate in the study. The respondents were considered appropriate if they were in executive positions and serving in firms as managers and/or owners and consequently if they were responsible for making decisions upon marketing program implementation. Thus, the respondents' answers applied to their field of responsibility and provided reliable and accurate information.

In order to identify similar groups of fisheries firms underlying the dimensions of Marketing Program Implementation, the method of cluster analysis was chosen. Clusters were selected aiming to obtain high internal consistency within each cluster, and high differentiation among clusters [9]. The two-cluster solution exhibited the simplest interpretation and showed the highest number of statistically significant differences among the clusters.

Additionally, in order to further validate the results of the cluster analyses [10], a discriminant analysis was applied. The latter is a method designed to derivate a linear combination of independent variables that will discriminate best between a priori defined groups [11]. However, there are limitations in applying this method, which is necessary to be considered and these are: (1) the ratio of sample size to the number of predictor variables must be at least five observations per independent variable, and (2) the sample size of each group must exceed the number of independent variables [12]. Ultimately, these limitations in the present study were considered and were in accordance with the data examined. The next step consisted of applying a cross-tabulation analysis with cluster membership.

3. Results

Table 2 presents the most important results of the methodology applied, regarding marketing program implementation of Greek fisheries firms. The two cluster solution was chosen. Particularly, the small and significant value of Wilk's Lamda represented a high level of discriminating power (Wilk's Lamda: 0.165, $\chi 2$=162,360, $\beta.\varepsilon$=14, p=0.000). Additionally, the hit-ratio (percentage correctly classified) was used, which actually provides how well the discriminant functions classified the objects. According to the hit-ratio, 99% of cases were correctly classified for clustering. Additionally, their respective cluster profiles are represented in Table 3 and are analyzed accordingly.

Cluster 1

The first cluster consisted of 62 fisheries firms, representing 62.6% of the total sample. Most of these firms (64.5%) are small-sized firms with relatively small number of employees and relative inexperienced since they have been in business for no more than 10 years. Additionally, this cluster is mostly represented by retailers. Fisheries firms in this cluster, in terms of product policy, stated that implement procedures of quality control and gradation whilst their primary packaging method regarding their seafood products involved plastic fish boxes. In terms of price policy, stated that this is strongly determined by market conditions (supply & demand) as well as prices are usually high due to lack of competition. Additionally, they use formal agreements. Furthermore, regarding promotion policy, declared that they are not aware of quality and sustainability assurance certifications regarding their seafood products and they do not belong to producers' organizations. The stakeholders also in this cluster are aware of Common Fisheries Policy (CFP) measures and considered that these measures have an impact on their business profit. Finally, in terms of distribution policy, they mainly use the direct distribution channel without intermediates. Based on these characteristics, fisheries firms in this cluster seem to dispose a "differential marketing mix".

Cluster 2

The second cluster consisted of 37 fisheries firms, representing 37.4% of the total sample. Most of these firms (40.5%) are larger firms in contrast with firms who belong to first cluster, with relatively larger number of employees and more experienced since they have been in business for more than 20 years. Additionally, this cluster is mostly represented by wholesalers (35.1%). Fisheries firms in this cluster, in terms of product policy, stated that implement procedures of quality control and gradation whilst their primary packaging method regarding their seafood products involved plastic fish boxes. In terms of price policy, stated that this is strongly determined by market conditions (supply & demand), but they declare that prices are not high due to lack of competition and their price policy is strongly determined by competitors' prices. Additionally, they use informal agreements. Furthermore, regarding promotion policy, declared that they are not aware of quality and sustainability assurance certifications regarding their seafood products and they do not belong to producers' organizations. The stakeholders also in this cluster are not aware adequately regarding CFP measures and considered that these measures may have an impact on their business profit. Finally, in terms of distribution policy, their major distribution channel is through retailers. Based on these characteristics, fisheries firms in this cluster seem to dispose a "non-differential marketing mix".

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Table 2. K-means cluster analysis results (two-cluster solution)

Variables	Codes	Cluster 1(N=62)	Cluster 2(N=37)
Packaging Type	PT	2	2
Quality Control	QC	1	1
Quality Gradation	QD	1	1
Higher Price due to lack of competition	HP	4	2
Price policy based on Quality	PQ	5	5
Price policy based on Market Conditions	PMC	4	5
Price policy based on Competitors' Price	PCP	4	4
CFP Awareness	CFP A	4	3
CFP Measures Awareness	CFP MA	4	3
CFP Measures Impact on Business Profit	CFP MIBP	4	3
Agreement Type	AT	2	1
Distribution Channel	DC	4	3
Membership Producers Organizations'	MPOs	0	0
Quality & Sustainability Awareness Certifications' Awareness	QSACA	0	0

Note: Parentheses = % within cluster

Table 3. Cluster profiles using firm's size, experience and type

Cluster membership		Firm size	
	Small (%)[a]	**Medium (%)[b]**	**Large (%)[c]**
1st cluster	40 (64,5%)	6 (9,7%)	16 (25,8%)
2nd cluster	14 (37,8%)	8 (21,6%)	15 (40,5%)
Total	**54**	**14**	**31**
% total	**54,5%**	**14,1%**	**31,3%**
		Firm experience	
	Small (%)[d]	**Medium (%)[e]**	**Large (%)[f]**
1st cluster	25 (40,3%)	24 (38,7%)	13 (21%)
2nd cluster	8 (21,6%)	13 (35,1%)	16 (43,2%)
Total	**33**	**37**	**29**
% total	**33,3%**	**37,4%**	**29,3%**
		Firm type	
	Fishermen (%)	**Wholesalers (%)**	**Retailers (%)**
1st cluster	8 (12,9%)	16 (25,8%)	31 (50%)
2nd cluster	10 (27%)	13 (35,1%)	7 (18,9%)
Total	**18**	**29**	**38**
% total	**18,2%**	**29,3%**	**38,4%**

Note:

[a] firms with 1 - 3 employees [b] firms with 4 – 6 employees [c] firms with over 6 employees.

[d] firms with 1 - 10 years of experience [e] firms with 11 – 20 years of experience [f] firms with over 20 years of experience.

4. Discussion

In this study, a cluster analysis was implemented in an effort to identify possible distinct groups among fisheries firms regarding their actual choices and perceptions based upon marketing program implementation. Results revealed two distinct clusters.

Analytically, regarding cluster 1, fisheries firms in this cluster stated that prices are usually high due to lack of competition, while fisheries firms in cluster 2 stated that prices are not high due to lack of competition and their price policy is strongly determined by competitors' prices. Additionally, fisheries firms belonging to cluster 1 declare that their type of agreements is formal while in cluster 2, fisheries firms declare that they use informal agreements. This finding is in accordance with previous research results [13], where it has been found that most sales agreements are informal.

However, it is worth mentioned that both clusters declare that they do not belong producers' organizations. This is particularly important finding, since it has been in accordance with previous studies [13], indicating the lack of information services among the whole of supply chain in the examined sectors and suggesting the necessity for the development of an information network. Further studies have revealed [14] that especially in fisheries sector, where producers' organizations have been established, they have represented a modern and sustainable approach to fishery covering all the steps along the value chain, and consequently contributing in balance between supply with market demands and developing added value. Therefore, producers' organizations could contribute in a more stable supply and demand, in a better product quality, and even in better environmental management procedures particularly regarding sustainable aquatic resources.

Furthermore, another important finding is that that both clusters are not aware of quality and sustainability certifications concerning fisheries and aquaculture products. Failure to ensure sustainable fisheries and aquaculture may have consequences for firms' performance as well as the consumers. The results may be deteriorating taking into account possible ineffective policy measures. Although, criticisms to relevant certifications like Marine Stewardship Council (MSC) are growing due to several relevant issues that compromise the future of marine ecosystems [15], several studies have stressed the issues that purchasing is influenced by both context and attribute variables, such as environmental preferences [16] [17] as well as food safety standards [13] [18]. Additionally, in agrofood businesses pursue sustainability as an opportunity to offer new value propositions to customers and improve their competitive

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advantage [19]. Furthermore, particularly in the sectors of fisheries and aquaculture, sustainability has become an important issue, indicating that both for fisheries as well as for aquaculture sector, the conservation of biodiversity and consequently the sustainable management of aquatic resources are main issues [20]. This is also in accordance with the fact that it has been observed that particularly organic seafood is a major concern at consumer level, and consequently it has been found that consumers show a relatively positive attitude towards it, indicating potentially a general trend for organic seafood demand [20,21].

Ultimately, due to the snowballing procedure used in this study, the collection of data with the questionnaire depended on the single-informant approach. Therefore, the validity of research findings is affected by the original choice of quantitative methodology [9].

However, this study may provide an opportunity for further research regarding marketing mix elements analysis at firm level. Possible research avenues may pertain to a more detailed investigation of the factors affecting policy reforms, such as Common Fisheries Policy of E.U and considering changes in consumers' demand at global level for the sectors examined.

5. Conclusions

This study potentially is the first that brings new insights regarding marketing program implementation particularly in fisheries and aquaculture sectors at firm level. However, the research has limitations. The first is the relatively small size of the sample, which limit the external validity of the results. Second, this study was limited at national level. Potentially, field survey data derived by different sample prefectures and countries could additionally reveal major differentiation in marketing program implementation of fisheries firms. Therefore, generalizations of these findings to markedly different contexts should be made cautiously, taking into account the competitive and market structure differences that most likely exist between different prefectures and countries. Finally, this study focused on actual perceptions and choices regarding marketing mix elements, rather than stated preferences of. Future studies could integrate an analysis of perceptions, stated preferences and actual choices.

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