

**CONSUMER PREFERENCE FOR ECO-LABEL FISH: A CASE STUDY
OF ISLAMABAD**



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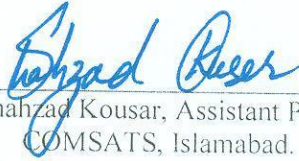
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Dedication

Dedicated to my loving parents who are my

actual source of inspiration

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Abstract

The present study focuses on the consumer preference for eco-label fish. The study is based on the primary data collected from six selected marts in the capital city “Islamabad” through questionnaires and interviews from the managers. The selected marts are Metro, Medina, Punjab, Day and Nit cash and carries, D. Watson and Save mart. The sample size of the study is 299 customers. The basic purpose of the study is to be determine the existing status of the ecolabels and factors affecting the consumer preference for eco-label fish (i.e. Shrimp, Prawn, Rahu, Mushka, Black Pomfret, and Pam Plate). Findings reveled that quality of services, education, income and prices have positive impact on the consumer preference for eco-label products (fish). During survey it is observed that customer wants that government should have proper monitoring system amid public awareness for eco-labels. Customers are also conscious about their health and they consider quality of services provided by the marts. It is also recommended that government should strict legislative regime for maintenance of regulations pertaining to eco-labels and impositions of fines and penalties for the violators. The government should also do uniform standardization control for eco-label.

Chapter 1

Introduction

1.1 Background of the study

Fish is a healthy protein predominant and it has many categories and products which are widely traded in the world markets. The trade in the fishery and sea fish product is an important part of the developing countries. According to study in 2000, the total supply of the fish all around the world is approximately 130 million tones with roughly 66% of this come from marine and inland water catch fisheries, and one third being given by aquaculture (FAO 2012). A big share of fish production is part of international trade, which is nearly 37%. Least developing countries also play an important part in this trade, which is approximately 20% of the exports. Asia overwhelms both fish production and trade, providing more than 85 for each penny of aggregate world generation and being in charge of US\$18 to 19 billion of fares (reference).

Eco-labelling is the market based tool to promote the sustainable use of natural resources in the market. Through eco-labeling, voluntary environmental performance certification is done around the globe. The most labels are awarded by an impartial third party or other companies for specific products or services that meet transparent environmental leadership procedure based on life cycle considerations. Environmental labels have been used for decades in different industries for providing information to the consumer about environmental impact. These labels also used in the Seafish industry, but have been restricted due to equivocal or unsure “environment-friendly” claims by the producers. In an attempt to expand the reliability of claims made by the producers of the sea fish industry, World Wildlife Fund (WWF), which is one of the most world largest

environmental conservation department, and Unilever which is topmost buyer of the sea fish product, start a third party eco-labelling pattern in 1996 known as MSC (Marine Stewardship Council). However, after 3 years MSC became independent, and the first MSC product launch in the market. In the beginning, MSC tries to deal with limited retailers, producers, and stakeholders group. But after getting the certificate from the US fishery, it became the world largest fishery. In the starting, most of the companies were not taking interest in the third party Eco label fishes, but after 2005 when there was the demand of Eco label fish in the Europe, Australia and Asia, they applied for certification of MSC. Eco-Label plays an important part when we go for shopping and choose the eatable products during purchase. When we saw the importance of Eco label fish, we can describe it in an easy way that the purpose of eco-labelling is to improve the selling products against the environmental preservation.

1.2 Eco labeled fish

Ecolabel fishing was introduced in 1992 in the united nation conference, which was based on United Nation Conference of Environment and Development (UNCED) in Rio de Janeiro. The basic purpose of eco-labelling certification is to provide appropriate information to the consumers and also gave chance to the consumers to express their ecologic concerns about the products. It has been seen that there is the impact of the consumer choice in the matter of choosing the eco-label fish items as compares to others. This label is gained through define criteria and there are many seekers available in the market who want to get it.

1.3 Types of labels

There are different types of eco-label fish use in the market. Some of these are mentioned here:

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- The European Union “green” label, the products of the International Standards Organization (ISO)
- The World Trade Organization (WTO) Committee on Trade and the Environment.

Some of the non-government organization are (such as Eco-UK, Forest Stewardship Council (FSC), Marine Stewardship Council (MSC), Scientific Certification Systems (SCS), and industry-led initiatives such as IFOAM (the International Federation of Organic Agriculture Movements). Pakistan has exported about 103,277 tons of fish during the first three quarters of fiscal year 2016-17, which constitute a big part of the economy of Pakistan (reference). The real purchasers are China, Thailand, Malaysia, Middle East, Sri Lanka, Japan and so on. The sources claims that the fishery assumes an essential part in Pakistan's economy. It is thought to be a source of occupation for seaside residents. Fisheries' contributes in Gross Domestic Product (GDP) is 0.41 per cent yet has an esteem expansion in send out income (refrence). 2016-17 (July-March), add up to marine and inland fish generation was evaluated at 520,000 tons out of which 375,000 tons were the marine creation and remaining catch originated from inland waters. However, the creation for period 2015-16 (July-March), was evaluated to be 501,000 tons in which 368,000 tons was marine and remaining was delivered by inland fishery division.

Ecologic fish labels frequently affects customers, giving a number of significant advantages for everybody concerned. A portion of these advantages being for case better-educated customer decision, expanded monetary productivity, empowered advertise advancement, persistent ecologic

enhancements of items, better accessibility of instruction for customers expanded rivalry between makers to give naturally inviting items, encouraged observing ecologic fish cases and so forth.

1.4 Benefits gained from eco-labels

Here are some of the classification and benefits gained from eco-labels.

1.4.1 Consumer Choices

Eco-label fishing is a compelling method for educating clients about the natural effects of chosen items. It engages individuals to segregate between items that are unsafe for the earth and the individuals who are perfect with ecologic destinations. Labelling marks make the client more mindful of the advantages of specific items, for instance, reused paper, harmful free cleaning specialists, and naturally developed vegetables, economically gathered fish and so forth. Ecolabels frequently consider the entire life cycle of the item, which at that point consolidates factors that customers would for the most part not consider, for example, vitality effectiveness, squander minimization, item stewardship, and carbon emanations and so on.

1.4.2 Economic Efficiency

Ecologic names are less expensive than administrative controls. Enabling clients and makers to settle on ecologic steady choices keeps the requirement for direction to a base, which is gainful to both government and industry.

1.4.3 Market Development

Clients that pick earth named items have a coordinate effect on free market activity in the commercial Centre. This is a flag that aides the showcase towards more prominent natural mind and in this way animates advertise improvement

1.4.4 Promoting Certification

An ecologic confirmation program is a seal of endorsement that demonstrates that an item meets a specific eco-label fish standard. It gives clients with obvious confirmation of the products attractive quality from a natural point of view. Affirmation along these lines has an instructive part for clients and advances rivalry among producers. Since affirmed items have a noticeable logo to help educate client decisions, the item emerges all the more promptly on store racks. These cases demonstrate that there are conceivably various advantages that ecologic fish labelling can accommodate most partners on all levels of an items life cycle. There are likewise various difficulties related to this kind of naming that should be considered. For instance, issues caused by deluding or fake cases, the presence of uninformative cases, disparate approaches utilized for certificating, production of unjustifiable rivalry, plausibility questions with respect to different items lastly address whether "green consumerism" isn't, in reality, a logical inconsistency in wording and so forth.

1.4.5 Misleading or Fraudulent Claims

Ecologic fish mark has no incentive to the naturally cognizant client on the off chance that it is misdirecting or fake. Trust is a noteworthy part of marking plans believability, and the name must be unquestionably sound. Terms, for example, "manageable", "recyclable", "biodegradable" and "ozone inviting" must be utilize precisely. At the point when claims are utilizing self assertively in promoting and marking, clients will end up befuddled, debilitated, and wary - even of honest to goodness claims.

1.4.6 Uninformative Claims

Labels that give insignificant or unessential "green" data do nothing to decrease natural effects.

1.4.7 Divergent Methodologies

Contrasts in testing and affirmation techniques make challenges in the utilization of ecologic fish labels to a specific item classification. For instance, what systems can be utilized to quantify natural effect? Who figures out what particular? Are ecologic fish effects the most critical? In addition, what criteria are fitting in rating impacts?

1.5 Significance of the Study

In Pakistan, Fisheries' share in Gross Domestic Product (GDP) is 0.41 per cent but has a value addition in export earnings. During 2016-17 (July-March). Environmental protection in the fisheries industry is considered as an important issue globally. We evaluate the existing status of eco-label fish and products and it is important to understand that what type of parameters/ measures have been taken internationally for the storage and preservation of the fish and its products and also gives awareness among people about eco-label fish and its products. As far as I know, no study has been conducted on empirically estimating the determinants of consumer preference for eco-label fish in Pakistan. So, this study bridges this gap. As the Eco labeled products are standardize. They had clearly mentioned expiry dates as well as calculated nutrients are well mentioned on the product packaging. As far as non-ecolabel products are concern majority of people don't know about the expiry of products and also the nutrients level. Which may consume by them lead to health deteriorations and many other problems as well.

1.6 Research Questions

This research will try to seek answers for:

1. Whether consumer prefer eco-label fish and products over non- eco-label fish/local fish and products?

2. What factors influence consumer choices regarding eco-labelled fish and products?

1.7 Objectives of the Study

This study aims to:

1. To evaluate the existing status of the eco-label fish and products in the study area.
2. To estimate the effects of various influencing factors of consumer preference for eco-label fish.

1.8 Structure of Study

This study is structured into five chapters. The second chapter provides the literature on consumer preferences for eco-label products (fish) studies. The third chapter included data and methodology. Chapter four provides the results and discussions. And chapter five is about conclusion and policy implications.

Chapter 2

Literature Review

To recap, eco-labelling is a market-based tool to promote sustainable use of Nature Resources. Environmental labels are the signature seals that are given to the products they believe to be owned less effect on the environment than products of a similar functionally or competitively. The environmental mark itself is a mark or label placed on a product that bears witness to the product it was produced in an environmentally friendly way. The tag provides information in the point of sale linking the product to the condition of the supplier and/or its associated Management System. The natural concern is not new. Since the late 1960s and once the expanding and unsafe weight of the generation frameworks on nature perceive, a few endeavors have been made to move towards more manageable and earth inviting methodologies. They have gone from green charges and the meaning of property rights to strict bans and other administrative measures. As of late one of the methodologies that have gained expanding, the significance is that of 'natural marking' or on the other hand 'eco-labelling'.

The first eco-labelling initiatives for fisheries emerged in the early 1990s and were largely take care of by-catch or by-catch during fishing. For example, the "Dolphin. The safe designation 12 was based on the standards developed by the non-governmental American Land Organization The Al Jazeera Institute focuses on dolphin by-catch in the tuna industry sustainability of fish stocks. Other mechanisms used by non-governmental organizations include. Campaigns or organized boycotts of certain species considered to be Such as the campaign to "give the fence a break" in the United States In the late 1990s, or the "Take a Seabass" campaign.

The demand for sea fish per-capita globally increases and it will continue to increase over the time people are becoming more conscious about the quality of fish, their nutrients, and its safety other environmental and ethical aspects showed more concerned. Those who have a positive attitude towards their preferences regarding fish choose and eat more try to maximize the quality of fish at a low price (Conte et al.2014). The importance of eco-labelling concepts is that there is a demand for products that are environmentally friendly (Uchida et al, 2014). The smatter understanding of eco-label fish consumer depends on their works and demographics (Hicks et al, 2008). Fishes are a healthy diet as it contains protein and many of its products and kinds are widely traded on world markets. FAO (2000) the trade of fish and their products are considered as an important component for the developing countries Methods to guide consumers away from species that are often at risk. A blunt tool because they fail to distinguish between responsible and less responsible fishermen who target the same species or even work in the same fisheries. For example, Drive "Take a Pass on the Seabass" to encourage consumers to avoid the seabass from. A particular country, based on concerns about illegal, unreported and unregulated fishing and fishing practices, other fishermen of the same species were affected regardless of the extent of their responsibility. Moreover, confusion occurs when species are included in the "red lists" but some of the fisheries of these species have been adopted as sustainable through the ecolabelling system (Such as New Zealand hoki, Chilean sea bass and some tuna fisheries). Try to create Consensus Manual Sea fish by the Sustainable Sea fish Initiative University of Rhode Island (URI) (Kafa et al, 2013). Showing similarities and the difference between different fish guides. Standards with evidence are created as well as their recommendations. For example, Greenpeace Deep Sea the bottom line is the main threat to marine resources, while other groups focus Incidental catch cases.

By definition, Fish guides are simple; they are designed to be used by consumers when making purchasing decisions. They are not sophisticated enough for use by fish buyers or other industry stakeholders “Studies showed that consumer has less or limited knowledge about the type of Eco-labels” (Saleem et al, 2014) that buyers can barely name natural naming plan and the distinctions between them. The part of the buyer inside the naming procedure is a fundamental one and relates to the suitability of the plan. The customer's capacity to recognize and purchase a marked item will rely upon an ability to react to natural issues. Buyer trust and attention to the plan are fundamental conditions for progress. On the off chance that the market winds up soaked with contending plans, the customer is probably going to come back to non-marked brands or not have the capacity to recognize contending names.

Advancement of the name, the improvement of a straightforward standard and evaluation process, and the advancement of motivations for the fisheries area to look for accreditation are in a way fundamental segments of an effective affirmation conspire. Labelling projects look for first to energize a move towards all the naturally benevolent utilization designs, and second to initiate profitable structures, governments and different specialists to increment the natural gauges of the items and administrations in the economy. Confirmation of where, when and how fishes are gotten is rising as an essential fisheries administration apparatus. The historical backdrop of eco-labelling in the fisheries part is moderately short and real encounters of ecomarking are constrained, in spite of the fact that a rising pattern is forming in European and US markets.

There is sufficient confirmation as in a considerable piece of condition issues have to do with the utilization of products. On another hand, clearly once the great is created, outlined and conveyed into the showcase, there isn't much that should be possible to keep away from natural

harm. Customers' responses are, subsequently, critical. In other words, because there is a need to impact the way merchandise is created, changes in purchaser conduct are critical and eco-label fishes constitute a reaction. “Despite eco-labelling initiatives increasing in the fisheries sector, research that demonstrates the benefits of labelling to fisheries management and the industry participants remain limited “(FAO, 2011). The market of the environmental market worldwide is probably going to have a lift since customers' requests for biological nourishment have been continually developing. In addition, these requests are engaged to proceed in the next years.

There are principally three reasons for taking environmental as an incline in sustenance industry. Right off the bat, customers' observations on sustenance as far as both quality what is more, security increment? Also, the issue of condition brings prominence to natural nourishment. Purchasers have understood the positive ecologic impact, which brings by obtaining and the generation of biological sustenance. Finally, from the point of view of organizations' advancement, organizations are required to contend with the natural item later on. Likewise, the improvement of environmental sustenance has been profoundly energizing by the government (Bombia et al, 2018).

Du et al, (2010) the principle the inspiration for buying natural sustenance originates from worries on both well-being and nourishment security. Fish scares including frantic bovine malady, pesticide positions, and over the hereditary building (GE), has exceedingly empowered the buy of natural sustenance.

A great many people trust that environmental sustenance is more advantageous than non-natural nourishment. Appropriately, these individuals buy environmental sustenance for their longing of guaranteeing their wellbeing since they accept environmental nourishment is delivered with no substance (Wikins and Hillers, 1994). One gathering of synthetic as pesticides utilized as

a part of horticulture is seemed to be a noteworthy wellbeing worry with long-haul obscure impact on wellbeing (Jeyaratnam,1990). Nonetheless, natural sustenance cannot 100% guarantee to be more advantageous than regular nourishment. Despite the fact that the natural vegetables and organic product less pesticide and nitrate than traditional nourishments, they may normally deliver poisons, which drives another wellbeing concern. The same circumstance happens with the deference of nourishment creatures delivered naturally, these creatures often happen to get bacterial tainting than those creatures delivered traditionally because of forbiddance of utilizing any anti-infection when encouraging creatures. Due to this reason, for specific nations, wellbeing claim relating to environmental nourishment is precluded since there is no adequate confirmation to state natural generation is unrivalled in regard of with either wellbeing or nourishing structure. Siderer and Maquet (2005) next to the purchasers' wellbeing concerns, natural agribusiness can likewise secure homestead laborers since the expanded utilization of horticulture compound may cause a medical issue. Alludes to the nourishment business, environmental sustenance possesses huge market potential in long terms of running. Manageability will be one basic focused edge, which helps the organization to win the new turns of rivalry later on. This pattern is driven by various factors (Walker et al, 2003). The ecologic fish issues, for example, a worldwide temperature alteration, the consumption of the ozone layer, and woods corruption have been dynamically grabbed individuals' eye around the world. Individuals feel social duty about ensuring the earth. Likewise, it drives heaps of organizations in various enterprises to the reaction the test and to green their business. As a noteworthy reason for ecologic impacts including land debasement and nursery impact, farming practice faces difficulties of sustaining nine billion individuals while thinking about manageability too (Godfray et al, 2010). According to (Fagerli,

R. A. and Wandel, M. 1999) in the part of agribusiness, the rivalry for land, water, and vitality mean to be significantly more escalate than previously since the sensational expanding requests on sustenance from the constant populace development around the globe. The 70 to 100 rates more sustenance is evaluated to be required by 2050. Confronting the circumstance over, the nourishment organization with no uncertainty needs to check the negative ecologic impact of nourishment creation. Subsequently, natural cultivating has been connecting to augment organizations' long-haul benefits while keeping up a normal asset.

2.1 Eco-label in Pakistan

The following eco-labels are available in Pakistan for different food checks according to the (ecolabelindex.com), but here we also observe that there is no ecolabel for sea food and their items available in Pakistan.

2.1.1 Earth Check

Earth Check is a benchmarking affirmation and warning gathering for movement and tourism. Since 1987, Earth Check have helped organizations, networks and governments to convey perfect, sheltered, prosperous and solid goals for voyagers to visit, live, work and play. Earth Check's approach has been to enable administrators to break asset challenges into reasonable moves that can be made forward by the administration.

2.1.2 Fairtrade

Fairtrade is a moral exchange framework that puts individuals first. Fairtrade offers ranchers and specializes in creating nations a superior arrangement, and the chance to enhance their lives and

put resources into their future. Fairtrade gives customers the chance to help diminish neediness and induce change through regular shopping.

2.1.3 Global Organic Textile Standard

The Global Organic Textile Standard (GOTS) was created with the expected to bring together. The different existing norms and draft gauges in the field of eco material preparing and to characterize overall perceived necessities, that guarantee the natural status of materials, from collecting of the crude materials, through the earth and socially mindful assembling up to marking keeping in mind the end goal to give a sound affirmation to the end shopper

2.1.4 Program for the Endorsement of Forest Certification (PEFC) schemes

The Program for the Endorsement of Forest Certification (PEFC) is a global non-benefit, a non-administrative association devoted to advancing Sustainable Forest Management (SFM) through autonomous outsider affirmation. It works all through the whole timberland inventory network to advance great practice in the woods and to guarantee that timber and non-timber woodland items are created with deference for environmental, social and moral principles.

PEFC is an umbrella association. It works by underwriting national woods affirmation plans created through multi-partner procedures and customized to nearby needs and conditions. Every national woods confirmation plot experiences thorough outsider appraisal against PEFC's one of a kind Sustainability Benchmark.

2.2 Role of Eco-label fish

The overall goal of Eco-label fish is pointed out as “contribution to reducing environmental impact from consumption”. The purpose of eco-label fish is as follow to animate the advancement of item and administration that are related to a lesser natural weight. To inform the consumers and buyers according to their desire nature interesting buying. Eco marking plan initially pulls in buyers' consideration, and after that raises their needs for Eco-item. It closes with shoppers' buy conduct to fulfil their need. Shoppers who as of now purchased the items are required to send a few signs to the makers. As the outcome, makers are urged to enhance their item to meet with the requests and the prerequisites. Talk promote about the part of Eco-mark, in synopsis; the part of Eco-name can be seen under both purchaser point of view and maker viewpoint. From buyers' point of view, the primary target of Eco-mark is to raise buyers' mindfulness on the positive natural impact of items, and to give data about ecologic normal for items (UNEP, 1997) referred to by Youssef, (2008) .At the end of the day, Eco-name assumes the part of controlling buyers' decision towards items that have a more positive effect on condition (Grankvist et al, 2004). In another perspective, for makers, Eco-name goes about as the promoting instrument for item separation with other contenders' item. What's more, it positions the item's picture. Proto (2007) by accentuating the Eco-efficiency of item or administration, Eco-mark is the instrument of both correspondence and administration for the organization under condition point of view (empower organization submits in dealing with the vital condition factors amid item life cycle: from item make to item transfer).

2.3 How Does Consumer know about eco-label

Consistently, there are two different ways of presenting item data to shoppers through media publicizing station: radio, daily paper, TV, and so forth or through data given by the name. In these two different ways, upgraded nourishment marking was a vital wellspring of data that is a fundamental procedure of flagging quality. Ecologic fish marking is the transmission of the sign, code, and image. It will be decode by shoppers and be reflected in their item decision. By passing on the critical data of trustworthiness, hunt, and experience property, like a quality flag, marking straightforwardly impacts to customer buy decisions (Dimara, 2005). With everything taken into account, it goes about as a correspondence instrument to shoppers with extraordinary normal for item and wellbeing claim. It is a piece of information that buyers regularly search for natural data on item mark Bruc (2007), expressed that once shoppers increased adequate learning about the ecolabel fish result, their mindfulness level would be expanded, therefore, facilitate their buy conduct towards green items would be possibly empowered.

Moreover, the kind of message, which postures on the name, may likewise impact customer's recognition of wellbeing and natural dangers of the item. It will influence buyer's acknowledgements with these items (Roe, B., & Teisl, M. F. 2007). Consequently, it is essential for advertisers to convey the data through image or claim on the name as one of the principal benefits that green items offer. Since the naming data has to effect on customers, it suggests that enhancing data quality can change customer state of mind to Eco-items

2.4 Standards and the fish market

According to act No. F. 9(46)/97 –Legis. Which is passed on 3rd December 1997 state us that no one can built his own fish processing plant until pay such fees and follow the instructions which is part of registration. No person can import/Export fish unless he is register with the registration authority. There is a survey will be conduct to check the fish processing is either eligible for fitness certificate or not. A fisher officer has the authority to inspect any fish processing plant to ensure the law is obey or not. And he does not need any warrant to inspect the plant and also has authority to arrest the person. Moreover, the worker in the fish processing plant is not affected from any disease like tuberculosis, polio and etc. The fisheries component was developed by 1.8% Central 2011-12, 24.2% is not exactly concentration of 956,000 tons. The establishment of inland fish was bleak contrasting and marine fish generation in the nation. Fisheries as a subset of agriculture, it is one is considered necessary financial exercises along coast of Sindh, balochistan (GOP, 2012). Center 2012-13, they embraced two activities by fishing teams in both rumors and governments. These activities included enrichment excess housing, exordium of angler approaches start, offer compact elements of great value and change Financial States of fishermen. One nation is place from leading exporters in department of Fisheries (Fish) and Fish prepare plants steadily increase to add to working age (GOP, 2013a).

2.5 Consumer preference and fish market

Pakistani consumers have been purchasing fish from the unhygienic fish market, which is not recognized by any government authority. After studying the consumer behavior for the fish market we found that the majority of the consumers belongs to upper or middle-class family.it is also found that most consumers prefer freshness rather than the price of fish

Approximately greater than 90 per cent of consumers have newly shifted to organized retail outlets from local markets for purchasing fish, and during buying the fish consumer also check the species of the fish. The consumer preferences and the market competitions both play a critically important role in the development of business (Thong and Solgaard, 2017). Consumers personal behaviour in response to a sea fish choice was measured on psychological factors include their fish motives and their socio-demographic characteristics of French's adults on a national level with high-income people they more to buy and eat more fishes but those people living alone and not prefer to eat fishes more than that. In the view of social benefits, the Chinese consumer able to pay more for green eco-labelled sea fish products more, over non eco-labelled fish products (Xu et al, 2012).

Through eco-labelling it attracts the consumers' interests and thus promotes the use of the environmentally friendly or sustainable fisheries and its products around the globe. A study conduct in the U.S by (Wessells and Donath, 1999). From the consumers' response through a survey regarding their preferences for fish through eco-labelling" (Pirog 2003).

Kaimakoudi et al, (2013) have investigated the Greek consumer's attitudes toward the fisheries products. They can try to make the possible linkage between the characteristic of consumers and markets aspects which are related to the fisheries products. The results showed that consumers' attitude depends upon their monthly income and most of the people belong to the low-income groups. The preference of consumer depends on the country and its culture from where they belong (Loureiro & McCluskey, 2000). Consumer choice for the qualities and sustainability is in fish products for UK and Denmark by (Jaffry et al., 2001). He analyzed that if individuals are a resident of UK and Denmark and further, they are ready to pay a premium for fish that is either for higher qualities or from eco-labelled fisheries. For this, a choice experiment format was carry out in these two selected countries i.e. in Denmark and in the UK. In their study, they found that people were able to pay more for sustainable fish, which shows the significant among the age, education, and their income level (Pirog 2003).

Cowley & Coulon (2014) have found that people with low level of education are able to pay less for that seafood which particularly caught locally rather than those who have higher education level so that they are able to pay more for eco-labeled seafood. People who live near the oceanic area are able to pay more for only that fish which caught locally but with higher income people are able to pay more for both eco-labeled and also for that seafood which caught locally.

Roheim, and Johnston (2004) describes a choice experiment (in which they ranked their choices) for the stated preferences for eco-labelled fish the experiment was designed for choices made for the attributes to attract the fish consumers". The data collected from a mail survey through Connecticut household, which was completed during the period of 2001. Further, a survey that

includes the focus group discussion and the results shows that consumers were able to pay more for the cod and haddock, which is eco-labelled, and they do not want to sacrifice their taste in any case by choosing a fish which have no such kind of taste that they want (Oakdene Hollins 2011).

Meas and Hu (2014) conducted the survey which is on the perceptions and issues of consumers" which were found in the consumption and in the production of fish by using a choices experiments which are used to investigate the consumer preference for those fish species they consumed most". Therefore, they suggested that from the results showed that consumers were more interested to pay a premium for those fishes which are properly Eco labeled and further they preferred domestically caught fish by using the eco-friendly techniques by feeding them with natural vegetables and then sell them in the market of U.S. However, pricing strategies regarding eco-label fish products have done by (Asch et al., 2013). They used the hedonic price model for fish that sold the UK (Glasgow) and the results showed that substantial variations in the price premium of different eco-labels vary across retailer chains. (Wessells and Johnston 1999). Fish purchasing done by the consumers is a key part in the production and marketing of the fishing products. Shoppers settle on purchasing choices as indicated by economic situations and to different traits of the item, specifically the species, and the shape, the place of procurement, the size and the quality. The study also shows that whole fish are the most preferred forms of purchase for rural and urban consumers to low-income consumers, on the other hand, a large number of high-income consumers living in urban areas prefer mainly fish (Oakdene and Hollins 2011). It clearly shows that their opportunity for research and commercial production Marketing of new value-added fish and shrimp products. Which will further develop entrepreneurship in this field?

In late decades in Pakistan, because of development in the urban way of life and training cause increment in the person discretionary cash flow.

Due to the modernization of sustenance exchange, customers took Interest in the quality natural product. Our goal, in this examination, is the way shoppers in Pakistan see quality and creation the tendency to pay premium value for eco-label fish. It is worth mentioning that among the many new organic products are create specifically in Pakistan. All the things that have been taken into account, the use of fish in Pakistan has been deeply established, the residential market, in the end of the season (winter), invest 70-85% in fisheries sector (CSF, 2007). Pakistan has a total coastline of 1,050 km and a combined coastal area of about 300,270 square meters. The fishing grounds in Pakistan are named as extremely rich in marine presence with a huge variety of species that are rated business. In any case, this potential is not reflected in the acquisition of the fare of the Department of Fisheries, which has been dormant for about 150 million US dollars, within a decade. Thanks in this circumstance mainly to the very slippery nature of the special area, the absence of the centre in Governance arrangements and minimum institutional projects (in light of broad daylight and special projects) this part. Fish use in Pakistan is known as one of the lowest at 1.6 kg per person/year. This example of use is related to the expansion of inland fish production (61,631 tons in 1997/1998 to 3,675 tons in 1997) leaving a small area to be displayed nearby Marine Fish. Accordingly, the focus on external business sectors remains mainly in Europe, the United States and Japan Middle East countries. Since the marketing ideas are all about the customer needs. To understand these changes, it join with the requirements of organizations to develop, has ultimately the basic progress is made with the offer (Woodruff, 1997).

2.6 Eco-labels for fisheries' sustainability

There is broad agreement in the World community that a large number of commercial fisheries in the world are in a state of instability. Ecolabel fish's plans are gradually being considered as a pathway to maintain profitability and monetary valuation of fisheries with incentives to strengthen fisheries management and protection. In the fisheries sector, the purpose of ongoing eco-label fish activities was to complement and support efforts to implement economic frameworks for fisheries management. These plans have met with fluctuating degrees of recognition.

The parts of the environmental label that give rise to concern include the following: the logical premise of the proposed standards for fisheries environmental labelling schemes; customer behaviour towards these plans and the potential impact of these plans on world Fish Markets and Fishing. Specifically, there are concerns that eco-labelling schemes may cause the repression angle is being sent from countries and nations with economies that are undergoing a major change.

This short survey mainly targets the thinking of producers of approach, industry, and the common community (for example, Non-governmental organizations), associations based on groups of people and fisherman associations (in the United Nations) solid enthusiasm for naming fish and fish species. It is not expected to be a comprehensive review of the specialized angles and deconstructions of ecological markers. Or perhaps this is probably explained by the major issues raised by eco-labels, what's more, suggest the importance and advantages of the most honest commitment by all countries and partners in global talks about the different ways they can be dealt with. Reasons for commitment include.

There is a high probability that eco-labelling schemes for fisheries are still in the long term. Due to participating in various departments, one can expect that these activities will prevail in relation to specialty segments elements and that discount plans may create.

- Countries have clear interests in defending the benefits of their exchange and ensuring environmental naming schemes try not to form disguised protectionism.
- Operations, for example, ongoing exchanges in (WTO 2000) allow all partners to ensure which hear its various advantages and advanced. By participating in ongoing talks, countries can ensure the plans for current and future environmental labels are consistent with the basic criteria for clarity support and that standards for environmental labels are produce taking into account their particular circumstances moreover, needs. To be confused about the concept of being environmental. In particular, environmental fish refers to the production process rather than the product itself. At the same time, through literature, the review has been referring to the benefits of being environmental in the fish industry. Moreover, the current situation of the Pakistani ecolabel fish market was a description of the purpose of providing research basis. Since the trend of growth eco-label fish market, environmental marketing has taken environmental labels as an effective way to exploit consumer concerns. The literature review also describes the environmental scheme, in which the environmental poster is located. The only type that indicates a tag that specifies the general environment Product preference based on the life cycle (starting with raw materials Extraction through production, distribution and disposal). In addition, the literature review demonstrates how an eco-label can change consumer behaviour to environmental products. The key to the point is that consumers need to first aware of the

environmental label. On the other hand, too States that the main problem of an environmental mark is about confusion towards the meaning of the environmental label. Thøgersen (2000) the causal path model of the central model of this research He pointed out: in order to confirm the effectiveness of environmental labels, three key conditions must be met first, consumers need an environmental incentive. Second, they are Need to know enough about the environmental label. Thirdly, ecologic fish products need to be available in the market. Moreover, demographic figures have proved Have an impact on stimulating consumers and their knowledge of environmental purchasing behaviour. From reviewing the literature, our research questions are formed in order to reach the purpose of this research: to investigate the effectiveness of environmental label to Pakistani choose a student product towards environmental fish. Research questions Focus on the relationships between four factors: awareness of the environmental brand, the environment Motivation, ecologic fish knowledge, ecologic fish availability with consumer interest to environmental label and purchase decision to environmental fish.

Chapter 3

Data and Methodology

3.1 Introduction

This chapter provides details on the study site, nature of data and sources, sampling designs further it consists the analytical tools followed by econometric model, specification of the variables, theoretical variables in the subsequent sections:

3.2 Study site

The study has conducted in the capital city of Pakistan Islamabad. Which is the 9th largest city of Pakistan. According to census of 2017 Islamabad population is nearly 1 million. Due to capital of the country different government offices, foreign embassies located here. This study has used primary data which is collected from six Marts located in Islamabad through questionnaires and interviews. The questionnaires have filled from the customers and interviews were conducted from the six managers of the marts which is located in the capital city of the Pakistan, Islamabad. Two types of questionnaire have used, one for the consumers (see Appendix A), and second one is for the managers of the selected marts in the study area for conducting their interviews for checking the existence of the international standards in marts of Islamabad (see appendix B).

Consumer preference for eco-label fish in terms of selected six fish categories i.e. Shrimp, Prawn, Rahu, Mushka, Black Pomfret, Pam Plate was checked and further asked the question regarding their preferences for these fishes, prices of these fishes, quality of services provided them in the marts.

The selected marts are as follows:

1. Metro Cash and Carry (I-11/1).
2. Save Mart (G/6).
3. Punjab Cash and Carry (G-9 Markaz).
4. Medina Cash and Carry (G/9 Markaz).
5. D. Watson (G/11 Markaz).
6. Day and Night Cash and Carry (G/9 Markaz).

In order to achieve the first objective, the standards/quality services will be checked in the sampled area. For evaluation of existing status of eco-label fish and products in the study area, it is important to know that what type of parameters and measures have been taken internationally for the storage and preservation of the fish and its products (Table 4), are freezing level, temperature in the storage area, Icing, wet Storage and additive (chemicals). Some of these parameters will be taken for the research and then further check with the international standards and then compare it with the existing situation of the study area. These information would obtained from six selected marts from the customers through questionnaire and mangers through interviews. The international standards for eco-label fish have taken from the Primary Production and Processing standards for eco-label fish used in Australia and Codex Alimentary Standards for fish and fish products used in USA.

3.3 Sampling Design

The sample size of the study is 299 customers. For the each selected fish type (Shrimp, Prawn, Rahu, Mushka, Black Pomfret and Pamp Plate), and this sample size were taken from the six selected marts of Islamabad.

3.4 Analytical Tools

Theoretical background

The study evaluates consumers' possible acceptance of an Eco labeling program for seafood products, based on a contingent choice survey in which respondents chose between a variety of certified and uncertified seafood. We expect that consumers may demonstrate heterogeneous preferences (Holland and Wessells, 1998; Swallow et al. 1994) for labeled seafood, determined at least in part by demographic and other factors unique to specific consumer groups. Thus, we assess the role of the following factors in the choice of certified versus uncertified products: a) price; b) species; c) consumer preference indicators; d) demographics; e) preferences for the certifying agency; and f) knowledge and perceptions of the status of fish stocks.

3.4.1 Econometric Model

The study employed logit model, as used in empirical literature (Asche et al., 2017). In logistic regression the dependent side of model is treated as probabilities, so there is no need to discuss magnitude of coefficients but only sign of parameters will be discuss. In logit model there is an association between dependent variable and a set of explanatory (independent) variable.

Whereas, the dependent variable is a binary response. It is used when dependent variable has only 2 possible predicted outcomes that is 0 or 1 and Yes or No.

Its mathematical form as follows:

$$P = \frac{1}{1+e^{-z}} \dots\dots\dots(1)$$

This study applied the following econometric models to evaluate the impact of various influencing factors on consumer preference for eco-label fish (products) in the fish market (markets) will be estimated and analyzed through the following proposed functional form:

$$\text{Log} \left(\frac{P}{1-P} \right) = z \dots\dots\dots(2)$$

Equation (2) is logistic regression model. Where,

$$z = CPE = b_0 + b_1Y + b_2EDU + b_3QOS + b_4P + \epsilon \dots\dots\dots(3)$$

In equation 3,

Z = dependent variable is consumer preferences for ecolabel fish.

Y= income of consumer in Rupees.

EDU= year of schooling.

QOS= quality of services.

P= price of ecolabel fish per/kg.

3.5 Specification of Variables

Consumer preference for eco-label fish (dependent variable) = dummy variable taking value 1 if the consumer prefers ecolabel fish/product and 0 otherwise. The fish type include Shrimp, Prawns, Black Pomfret (available in both packed and in fresh forms), Rahu, Mushka, Pam Plate (boneless fish). The fish products includes Shrimps, Prawns, and Black Pomfret. The separate linear logistic

regression will be estimated for each fish type/product. The details of the explanatory variables are given as under:

Income: The per month income of the customers in Rs.

Education: Number of years in education of the customers.

Price: This variable will be taken as per kg retail price of fish/product.

Quality of services: Index for quality services (cutting equipment, gloves, mask, head caps, apron, cold storage suits, environmental friendly bags).

3.5.1 Index for Quality of services

The index for quality of services is generated by using the formula as used in the study of (Ahmed and Hussain 2016). The formula of quality of services are as follows

$$I = \sum S_i F_i / N$$

I = quality of services index, the value of index lies between 0 and 1

N= total number of observation

Si= scale value of ith priority

Fi = frequency of responses of ith priority

Components	Weights (assigned values)
1. Knives for cutting (properly sterilized, washed, and clean)	7
2. Plastic gloves	6

3. Plastic head caps	5
4. Mask	4
5. Apron	3
6. Cold storage suits (for workers)	2
7. Environmentally friendly bags (plastic bag types)	1
8. None	0

For each customer, the sum of each service assigned values will be divided by the number of services availed/observed generating a continuous variable.

3.6 Theoretical Justification of Variables

In the study of (Jaffry et al., 2001) they found that consumers' preference for the eco-label fish is significantly related with the purchasing power and it depends with their income patterns, education level and other like prices. A brief discussion on the independent variables it is presented as follows:

Income: Income is considered as a most important economic factor. The purchasing power of the consumers for eco-label fish and its products depends on their income. In Pakistan, according to their income have three groups such as high, middle and low-income groups. Where the purchasing power of the high-income class is much more than the other two. So income of a consumer plays a vital role in their preference for eco-labeled fish products. People with higher income prefer to

purchase eco-labeled fish products. In many studies, it is proved that income has a positive relationship with the consumer preference and it is significantly tied to income of the people (Salladarré et al., 2010).

Education: Education has a positive relationship with the consumers' preference and it is significantly tied to the education of the people. Education plays an important role in consumer behavior towards eco-label fish and its products. An educated person knows how to read and write, they have all the knowledge. Education provides a vital understanding of the labeling and what does it mean. It provides the path to identify the signs of the labeling. So educated person prefer the eco-labeled fish product more rather than a non-eco-labeled fish product and also shows the positive relationship with the consumer preferences (Krystallis, 2005).

Price: Another important factor that affects the buying preferences is the price of a fish product. If the price of a fish is high then it will be preferred by those consumers which have high-income class. So less consumer preferred that fish. If the price of a fish is low then people with middle and low income will prefer less fish. So price also affect the consumers' preference. Therefore, it is expected that price of eco-labeled fish will positively affect their preferences (Johnston, 2001)

Quality of Services: Quality of services and consumer preference both have a positive impact on each other (Jaffr et al., 2004). If quality of the product is high then the consumer prefer more for eco-labeled fish and products or vice versa. The quality of services which is provided to the customers' plays a vital role in their purchasing decisions.

Chapter 4

Results and Discussions

4.1 Introduction

This Section focuses on presenting the description and construction of the variables, descriptive statistics and also achieving the second objective of the study is to estimate the effect of various influencing factors on the preference of the consumer in the study area (Islamabad). These are given in subsequent sections:

4.2 Description and Construction of Variables

Table 1 Description and Construction of Variables are as:

Variables	Description of Variables	Construction of Variables
CPE	Consumer preference for ecolabel fish (shrimp, prawns, rahu, Mushka, black pomfret, pam plate).	Yes = 1 No = 0
Y	Monthly income of consumers.	Rs (PKR)
EDU	Education level of consumers.	Years of schooling
P	Price of fish (eco-label) in per kg.	Yes= 1 No = 0
QOS	Quality of services (Knives ,head caps, gloves, aprons, mask, environmentally friendly bags).	Yes = 1 No = 0

4.3 Descriptive Statistics

Table 2 Descriptive Statistics for Quantitative Variables

Variables	Observations	Mean	Standard deviation	MIN	Max
Age	299	29.44	8.51	19	60
Income	299	50948.16	24302.5	10000	100000
Education	299	14.41	2.124	10	18

From the above Table 4.2, mean values of different variables age, income and education are 29.44, 50948 and 14.4 respectively. This show that the average consumer age in the collected data is about 29 years. The min and max ages are 19 and 60 respectively. This is also the indication that young people tends to prefer buying eco-labeled products more. The minimum and maximum education are 10 and 18.

Table 3 Descriptive Statistics for Qualitative Variables

SN	Variables	Percentages	
		YES	NO

1	Preference for eco-label fish	69.2%	30.8%
2	Most preferred eco-label fish:		
	Shrimp	23.1%	76.9%
	Prawn	11.0%	89.0%
	Rahu	30.1%	69.9%
	Mushka	17.1%	82.9%
	B Pomfret	9.4%	90.6%
	Pam Plate	9.4%	90.6%
3	Increase in Price of eco-label Fish	68.6%	31.4%
4	Quality of Service	70.2%	29.8%
5	Quality of Service consider by customers:		
	Knives for cutting	32.8%	67.2%
	Plastic Gloves	20.4%	79.6%
	Plastic head capes	11.7%	88.3%
	Masks	8.7%	91.3%
	Aprons	8.4%	91.6%
	Cold storages suits	7.0%	93.0%
	Environmentally Friendly Bags (plastic bags)	11.0%	89.0%
6	Membership/discount cards	66.2%	33.8%

7	Preferred Mart:		
	Metro Cash and Carry	30.1%	69.9%
	D. Watson	30.8%	69.2%
	Medina Cash and Carry	11.0%	89.0%
	Punjab Cash and Carry	6.4%	93.6%
	Day Night	8.4%	91.6%
	Save Mart	13.4%	86.6%
8	Government Response on quality of services:		
	Enhance Monitoring	30.8%	69.2%
	Increase Punishment	40.1%	59.9%
	Policy Making	29.1%	70.9%
9	Awareness in Public for eco-labels	77.6%	22.4%

The above statistics shows as that there are total 299 sample observations in the sample showing preference for ecolabel fish/ products. In which 30.8% people do not prefer to buy Preference for ecolabel fish while remaining 69.2% prefer to buy the ecolabel fish. The ecolabel fish has further various kind, the most preferable ecolabel fish is rahu which is 30.1 %, and others are least desires as shown in the table. The results shows that 68% respondents are ready to pay higher prices for the eco-labeled products. Results also shows that 70% respondents are considered the quality of services when purchasing the ecolabel fish and its product. Consumer considered the quality of services such as cutting knives, plastic gloves, head caps, mask, aprons, and plastic bags respectively.

The result showed that cutting equipment's which is 32.8 % is preferred most other are least desire. Whereas, 66% percent respondents had membership cards available from marts. 40% respondents were willing that government should have taken quality control into account and increase punishments and impose fine. 77% responded said that Government should take some steps for Environmental Education and also create awareness about eco-label products (fish) among people who are not familiar with this concept.

4.4 Results of parameters set at international level versus in study site

In order to achieve the first objective, the standards/measures will be checked in the sampled area (Islamabad). For checking the existing status of eco-label fish and products in the study area, it is important to know that what type of parameters and measures have been taken internationally for the storage and preservation of the fish and its products.

Table 4

Parameters	International Standards	Sample Results
1. Freezing Level	0°C to 5°C temperature To store fish for long period of time and prevent fish from bacterial spoilage and enzymes to maintain its nutritive values.	0°C to 4°C temperature used in the selected marts of the study area (Islamabad).
2. Temperature in freezer storage area (fish)	5°C or below temperature Is used in the storage areas	0°C to 3°C temperature used in the selected marts

	for fish to minimize the toxic and infectious micro-organism's growth.	(Islamabad), by this they were easily control these infectious growth of micro-organisms.
3. Ice Supplier	Ice in contact with the stored fish is made up from the sea water and from the approved supplier.	Ice plants is constructed in the selected marts to store fish and its products which is approved by the authorities of the Islamabad.
4. Wet Storage (containers)	Wet storage or in other words temporary storage for fish like containers or tanks which contains sea water or artificial water.	This standard is not properly used in marts of the study site (Islamabad).
5. Chemicals Additives	5 to 10 ppm range of additives (chlorine) for the preservation of the packed fish.	This standard is not properly identified in the study site (Islamabad).

These parameters have been used at international level for Eco-label fish (products).The first parameter related to the freezing level has been used in Australia and in USA. It is preferred to store fish at temperature 0°C to 5°C, prevent the fish bacterial spoilage. As far as in case of Pakistan, thus selected marts are concerned they are using freezing level from 0°C to 4°C, to preserve the fish. The Second Parameter Temperature is set at minimum 5°C or below at international level. In Pakistan, its range is from 0°C to 3°C, which is acceptable range. Icing is also come through the approved supplier, hence meeting the criteria. However, the last two mentioned parameter i.e. wet storage and additive have not been met the internationally approved standard. During the survey, these marts claim that they don't need these parameters, because they don't have to stock the fish for the much longer time period. Because they have sale the fish on regular basis and in bulks. Their consumers are not only households but also they sell their products to the five star hotels like Serena, Marriott etc.

4.5 Regression Analysis for Consumer Preference for Eco-label Fish

This section focuses on the results of the regression models for selected six fish types. Six regression models were estimated and separately run for Shrimp, Prawns, Rahu, Mushka, Black Pomfret, and Pam Plate.

4.6 Regression Analysis for Consumer Preference for Eco-label Fish (Shrimp)

Table 5

Variable	Coefficient	Std. Error	z-Statistic	Prob.
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EDUCATION	0.249117	0.107680	2.313500	0.0207
INCOME	0.0000206	0.00000865	2.382771	0.0172
PRI_SHRIMP	2.003981	0.331393	6.047150	0.0000
QOS	1.096725	0.163981	6.688114	0.0000
C	-7.854850	1.570445	-5.001672	0.0000

The regression results as shown in the (table 5) for consumer preference for eco-label fish (Shrimp) shows that the coefficient of Education and Income variables have positive and statistically significant. The same results are also found in the study of (Krystallis and Chryssohoidis,2005), because an educated person belongs to the high income group and he/she are more likely prefer to buy eco-label fish (Shrimp).The price variable coefficient shows the positive and statistically significant impact on the consumer preference for eco-label fish (Shrimp). Pirog (2003) also found that the individual having high income is more likely to afford eco-label products (fish) on high prices. The coefficient of quality of services variable also shows the positive and statistically impact on the consumer preference for eco-label fish (Shrimp). It means that consumer are more conscious about the quality of services, and with improved facilities they can prefer and buy more eco-label products (fish) as in line with the study of (Jaffery et al., 2001) in their study quality of services, shows the positive relationship with the preferences of the consumer.

4.7 Regression Analysis for Consumer Preference for Eco-label Fish (Prawn)

Table 6

Variable	Coefficient	Std. Error	z-Statistic	Prob.
EDUCATION	0.395468	0.086692	4.561758	0.0000
INCOME	0.0000156	0.00000789	1.978133	0.0479
P_PRAWN	1.256067	0.305415	4.112657	0.0000
QOS	0.330555	0.134534	2.457035	0.0140
C	-7.168383	1.218705	-5.881968	0.0000

The regression results for the consumer preference for ecolabel fish (Prawn) shown in the (table 6) that Education variable coefficient has positive and statistically significant impact on the consumer preference for eco-label fish (Prawn). The variable of their monthly Income also shows the positive and statistically significant. It means that consumer who have high income are more likely prefer to buy eco-label products (fish). In the study of (Salladarré et al., 2010) he found that variable of income has positive and statistically significant. Coefficient of the Price is also positive and statistically significant for consumer preference for eco-label fish (Prawn). This may be the fact the consumer preference for eco-label fish is more because they can afford it even at high prices. Quality of services shows the positive and statistically significant impact on the consumer preferences.

4.8 Regression Analysis for Consumer Preference for Eco-label Fish (Rahu)

Table 7

Variable	Coefficient	Std. Error	z-Statistic	Prob.
EDUCATION	0.158350	0.072688	2.178507	0.0294
INCOME	0.000013	0.00000685	1.898487	0.0576
PRI_RAHU	1.009309	0.308321	3.273563	0.0011
QOS	0.469589	0.129271	3.632602	0.0003
C	-4.593360	0.919124	-4.997539	0.0000

In the regression analysis for the consumer preference for eco-label fish (Rahu) the results as shown in the (table 7) that the coefficient of Education and Income both variables have positive and statistically significant impact on the consumer preference for eco-label fish (Rahu). It means that the educated person are more knowledgeable about the quality of the product which he/she buy. The variable of income has a positive and statistically significant impact on the consumer preference for eco-label fish (Rahu). It means that more educated person has high level of income and consumer will more likely prefer to buy eco-label fish. In the study of (Pérez, 2015) found that education and income both have positive and statistically significant relationship with consumer preferences for certified products (fish). Coefficient of Price variable and Quality of services are also shows the positive and statistically significant impact on the consumer preference for ecolabel fish (Rahu).

4.9 Regression Analysis for Consumer Preference for Eco-label Fish (Mushka)

Table 8

Variable	Coefficient	Std. Error	z-Statistic	Prob.
EDUCATION	0.188482	0.083498	2.257336	0.0240
INCOME	0.0000148	0.0000075	1.976622	0.0481
PRI_MUSHKA	1.496524	0.308295	4.854191	0.0000
QOS	0.315338	0.136814	2.304866	0.0212
C	-4.273597	1.139267	-3.751180	0.0002

In the regression analysis for the consumer preference for eco-label fish (Mushka) in the (table8) shows that Education has positive and statistically significant impact on the consumer preference for eco-label fish (Rahu). This result are also in line with results of (Hicks et al., 2008) who found that education has positive and statistically significant because generally it is expected that an educated person is more conscious about the food hygiene and there standards so, they are more likely prefer to buy eco-label products (fish).

The coefficient of the variables monthly Income and Price both shows the positive and statistically significant. (Johnston et al., 2001) also found that price is also positive and statistically significant. The variable of Quality of services its coefficient shows the positive and statistically significant relationship with consumer preference for eco-label fish (Mushka). This result are consist in the study of (Jaffry et al., 2004) who also found the same result.

4.10 Regression Analysis for Consumer Preference for Eco-label Fish (Black Pomfret)

Table 9

Variable	Coefficient	Std. Error	z-Statistic	Prob.
EDUCATION	0.301015	0.087625	3.435264	0.0006
INCOME	0.0000146	0.00000713	2.053086	0.0401
PRI_BLACK_POMFERT	1.697808	0.283259	5.993844	0.0000
QOS	0.266601	0.132221	2.016332	0.0438
C	-6.703376	1.266023	-5.294829	0.0000

The (table 9) shows the regression results for the consumer preference for ecolabel fish (Black Pomfret) that coefficient of Education and Income variables shows the positive and statistically significant impact on the consumer preference for eco-label fish (Black Pomfret). These results are also consist in the study of (Onozaka, 2010), because the person who has more knowledge and income will prefer more eco-label product (fish) rather than the person who has less knowledge and income.

Another important variable is Price its coefficient shows the positive and statistically significant impact on the consumer preference for eco-label fish (Black Pomfret). This result are also in line with H1, H1aand H2 (Asche and Bronnmann, 2017) that consumer prefer eco-label fish and they are more likely prefer to buy even at higher prices (price premium at 9.5%). The coefficient of Quality of services variable is positive and statistically significant. It includes the properly washed

knives, hand gloves, head caps, environmentally friendly bags (plastic bags). Its means that an educated person also give priorities to these as he/she is more conscious about their health and hygiene and they prefer to buy ecolabel products (fish).

4. 11 Regression Analysis for Consumer Preference for Eco-label Fish (Pam Plate)

Table 10

Variable	Coefficient	Std. Error	z-Statistic	Prob.
EDUCATION	0.294423	0.080960	3.636633	0.0003
INCOME	0.0000169	0.00000683	2.467032	0.0136
PRI_PAMP_PLATE	0.912955	0.282578	3.230807	0.0012
QOS	0.277963	0.125543	2.214084	0.0268
C	-5.700304	1.117589	-5.100535	0.0000

The (table 10) shows the regression results for the consumer preference for eco-label fish (Pam Plate) that the coefficient of the variable Education has positive and statistically significant impact on the consumer preference for eco-label fish (Pam Plate). Coefficient of Income variable also shows the positive and statistically significant. It means that a consumer with high education and income is more likely to prefer to buy eco-label product (fish). In the study of (Kuminoff, et al., 2008), also found that income variable has positive and statistically significant.

The coefficient of the Price variable also shows the positive and statistically significant impact on the consumer preference for eco-label fish (Pam Plate). It means that a person with high income he/she will more likely prefer to buy eco-label product (fish) even at the high prices because the person is environmentally aware about the products (fish) and he/she also take into account there health concerns. The coefficient of the variable Quality of services shows the positive and statistically significant impact on the consumer preference for eco-label fish (Pam Plate).

Chapter 5

Conclusion and policy recommendations

5.1 Key findings

The present study has been designed to check the consumer preference for Eco label fish in case of Islamabad. The study used logit model for estimation. The first objective of study is to evaluate the existing status of eco-label fish and product. The first objective is achieved by conducting interviews from mart's managers. The structured interview was regarding the implementation of International standards in the marts by authority. The results of interview reveals that some of the parameters like storage container and usage of additives are not applicable in these marts. However, the parameters like freezing level, Icing and appropriate temperature in storage area for fish have been used in the marts according to the internationally set standard. Further, the study used Logit model to check the preferences for eco label fish. The variables used in the study are income of consumer in RS, education (year of schooling), quality of services provided by marts like use of knives, gloves, head caps, aprons and usage of bags. Different fish types have been used in the study i.e. Shrimp, prawns, black pomfret, Rohu, Mushka and Pam Plates. The regression results shows that an educated person with high income tends to consume eco label fish, as they are conscious for eco label product and quality of service .Hence, he/she tends to purchase the fish even at high prices. The results were consistent with the empirical literature.

5.2 Policy Recommendations

This chapter highlights the policy and recommendations of the study.

1. Government should make a strict mechanism for the elimination of fake eco-labels from the market.

2. Government may strengthened fisheries department at the federal, provincial and district level by appointing professional officers from the open-market through transparent manner.
3. Government controls uniform standardization for eco-labels.
4. Government should conduct awareness campaigns through print and electronic media for highlighting the impact of eco-labels.
5. Government should establish eco-label regulatory authority at the federal level for fining prices of eco-labels through the consultation with relevant stakeholders and consumer's associations.
6. Government should make strict legislative regimes for maintenance of regulations pertain to eco-labels and impositions of fines and penalties for the violators.

5.3 Limitations

This is the pioneer study but it is limited by the geographical areas and fish types. The future research may focuses on other mega cities and many other types of indigenous and exported fish. And also focus on impact of sea water pollution and quality of eco-label fish and their impact on human health and further also check the impact of marine life.

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Appendix A

Consumer Questionnaire



Hi! I am student of environmental economics from PIDE. I investigate about *Eco-label fisheries*, which is the topic of my MPhil thesis. You will stay *anonymous* and your answers will only be use in our thesis —Consumer Preference for Eco-label fish (products).

The questionnaire will take approximately 3-4 minutes.

To what extent do you agree or disagree with the following statements. Please circle the Number that corresponds to your answer. (Yes, No)

General information

1. Your gender is: Male Female
2. Your age is _____.
3. What is your monthly income _____ PKR?
4. What is your Education _____?
5. Do you preferred to buy ecolabel fish and its products? a. Yes
b. No
6. Are you aware of the environmental quality of ecolabel fish and its products when you shop? a. Yes
b. No

7. Do you preferred to buy ecolabel fish and its products (Shrimp). a. Yes
b. No
8. Do you preferred to buy ecolabel fish and its products (Prawn). a. Yes
b. No
9. Do you preferred to buy ecolabel fish and its products (Rahu).
a. Yes
b. No

10. Do you preferred to buy ecolabel fish and its products (Mushka)? a. Yes
b. No
11. Do you preferred to buy ecolabel fish and its products (Black Pomfret)? a. Yes
b. No
12. Do you preferred to buy ecolabel fish and its products (Palm Plate)? a. Yes
b. No
13. Do you purchase all or some of the ecolabel fish and its product?
a. Yes
b. No
14. Which of the following one kind of ecolabel fish and its product do you buy most?
 - a. Shrimp
 - b. Prawn
 - c. Rahu
 - d. Mushka
 - e. Black Profret
 - f. Palm Plate

15. Are you preferred to buy ecolabel fish and its product (Shrimp) if the price per kg of Shrimp is 1149 Rs? a. Yes
b. No
16. Are you preferred to buy ecolabel fish and its product (Prawn) if the price per kg of Prawn is 1149 Rs? a. Yes
b. No
17. Are you preferred to buy ecolabel fish and its product (Rahu) if the price per kg of Rahu is 299 Rs?
a. Yes
b. No
18. Are you preferred to buy ecolabel fish and its product (Mushka) if the price per kg of Mushka is 700 Rs? a. Yes
b. No
19. Are you preferred to buy ecolabel fish and its product (Black Pomfret) if the price per kg of Black Pomfret is 749 Rs? a. Yes
b. No

20. Are you preferred to buy ecolabel fish and its product (Palm Plate) if the price per kg of Pam Plate is 600 Rs? a. Yes
b. No
21. If the price of (ecolabel) fish and its product increase then would you preferred to buy?
a. Yes
b. No
22. Are you considered the quality of services when you buy ecolabel fish and its product?
a. Yes
b. No
23. If (YES) which of the following services do you considered while purchasing the ecolabel fish?

Components	Please tick
1. Knives for cutting (properly washed, and clean)	
2. Plastic gloves	
3. Plastic head caps	
4. Mask	
5. Apron	
6. Cold storage suits (for workers)	
7. Environmentally friendly bags (plastic bag types)	
8. None	

24. Do you have any facilities like membership/discount cards available from the marts (such as metro card or other)?
a. Yes
b. No
25. From which mart do you shop most?
a. Metro cash and carry
b. D. Watson
c. Medina cash and carry
d. Punjab cash and carry
e. Day and Night cash and carry
f. Save mart

26. Do you prefer that Government should take some steps for Environmental Education and create awareness about ecolabel products (fish) among people who are not familiar with this? a. Yes
b. No

27. What step should government have to be taken for quality control?
a. To enhance monitoring
b. To increase punishment
c. Policy Making
d. Not specified

Appendix B

Manager Questionnaire (Interview)

General information

5. Your gender is: Male Female
6. Your age is_____.
7. Your Education_____?
8. What is your monthly income_____ PKR?
9. Are you aware of international standard for storage of fish?
- a. Yes
- b. No
10. Are you follow these parameters in Islamabad Marts?

Parameters	International standards	Standards in Islamabad
1. Freezing level.	0°C to 5°C temperature To store fish for long period of time and prevent fish from bacterial spoilage and enzymes to maintain its nutritive values.	
2. The temperature in freezer storage area.	5°C or below temperature Is used in the storage areas for fish to minimize the toxic and infectious micro- organism"s growth.	
3. Icing.	Ice in contact with the stored fish is made up from the sea water and from the approved supplier.	
4. Wet storage (containers).	Wet storage or in other words temporary storage for fish like containers or tanks which contains sea water or artificial water.	
5. Additives (chemical substances).	5 to 10 ppm range of additives (chlorine) for the preservation of the packed fish.	

11. Did your company have Licensed Food Establishment by Local or State Regulatory Authority?

- a. Yes
- b. No

12. Frequency of Inspection in the Marts (Fish Area)?

- a. 1 Time
- b. 2 Times
- c. Has not been inspected
- d. On daily basis
- e. Don't know

13. Keep Records of the Following (checked all that applied)

- a. Sterilizing cutting equipment's
- b. Cleaning/sanitizing fish cutting area(s)
- c. Pest control
- d. Disposal of waste
- e. Other

14. While cutting off fish with cuts on their hands must cover Their hands with a bandage and glove or be reassign? a. Yes

- b. No