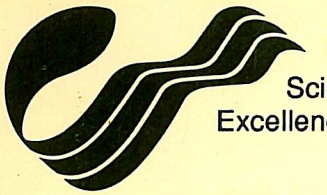

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ANALYSIS OF THE JAPANESE SALMON MARKET

Economic and Commercial Analysis

Report No. 56

Fisheries and Oceans
Pêches et Océans

Canada

ANALYSIS OF THE JAPANESE SALMON MARKET

Economic and Commercial Analysis Division

Program Planning and Economics Branch
Department of Fisheries and Oceans
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October 1989

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ABSTRACT

This report analyzes various aspects of Japan's retail and restaurant market for salmon. The bulk of the research is based on primary information collected from personal interviews conducted in Tokyo wi3th buyers for 15 Japanese trading companies, 12 large retail outlets or department stores and 75 restaurants.

The two main objectives of this paper are:

1) to use the information derived from the survey, in conjunction with secondary data, to better understand Japanese buying practices, behavior and preferences
2) to determine how Canadian salmon is perceived in Japan and to interpret the implications for marketing salmon.

This report provides information on the Japanese market which is not readily available to those in the salmon industry. It should be of considerable interest to the Canadian commercial fishing industry.

RÉSUMÉ

Le rapport examine sous divers angles le commerce de détail et le marché de la restauration au Japon, en tant que débouchés pour le saumon. L'étude s'appuie principalement sur des données primaires recueillies au cours d'entrevues à Tokyo avec les acheteurs de 15 sociétés japonaises de commerce extérieur, de 12 importants points de vente au détail ou grands magasins et de 75 restaurants.

Le rapport poursuit les deux grands objectifs suivants :

1) combiner l'information dégagée de l'enquête et des données préexistantes pour en arriver à mieux comprendre les pratiques d'achat, le comportement et les préférences des Japonais;

2) déterminer comment les Japonais perçoivent le saumon canadien et les conséquences que cela peut avoir du point de vue de la commercialisation du saumon.

Le rapport renferme de l'information sur le marché japonais à laquelle les producteurs de saumon n'ont pas facilement accès. Il devrait présenter un intérêt certain pour l'industrie de la pêche commerciale au Canada.

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1 PURPOSE AND SCOPE OF THE STUDY

The purpose of this research is to analyze Japan's retail and restaurant market for salmon. This report is the second of two studies on the Japanese salmon market. The first, entitled The Japanese Seafood Market: Salmon, was funded by the Department of Fisheries and Oceans, Market Research Division in Ottawa, and completed in April 1989. The first study uses both primary and secondary data, collected during spring and summer of 1988, to produce a primarily descriptive report. The report outlines Japan's salmon market structure, pricing mechanisms and supply and demand trends.

The research presented in this document complements the aforementioned report by analyzing firm level buyer preferences for salmon. This report is based on personal in-depth interviews conducted in Tokyo, Japan with buyers for 15 Japanese trading companies, 12 large retail outlets/department stores and 75 restaurants. The two objectives of this paper are:

1) to analyze the data derived from these surveys to better understand buying practices and preferences; and
2) to suggest strategies based on the analysis which will enhance Canada's marketing of salmon in Japan.

The following section provides a brief overview of Japan's salmon market (greater detail can be found in the previously mentioned report). In Section 3, survey results and buyer preferences for salmon products are evaluated, while the findings are used to provide suggestions for exploiting market opportunities in Section 4.

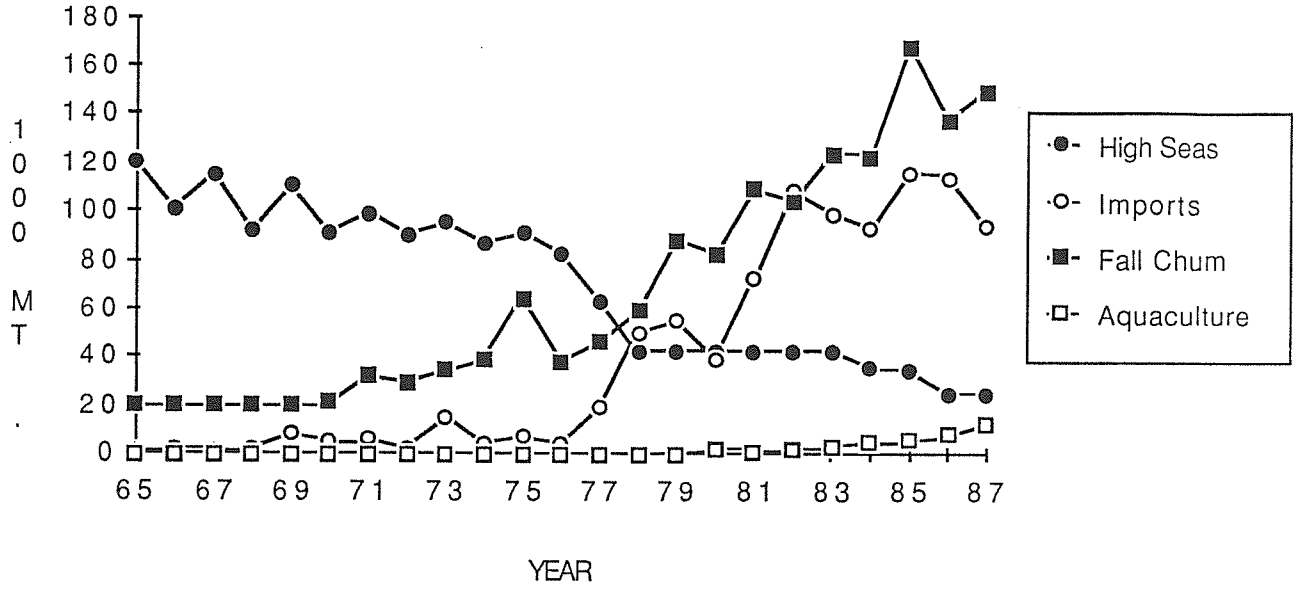
2 AN OVERVIEW OF THE JAPANESE SALMON MARKET

Japanese consumption of salmon amounted to 340,000 metric tons (mt) in 1986, which is about 40 percent of the world's production of salmon (FAO 1987). For many salmon-producing countries, Japan is one of the most important markets. Understanding of the Japanese market has to improve as the world production of aquacultured salmon increases rapidly, resulting in a more competitive world market.

2.1 Supply of Salmon in Japan

Japan presently obtains 60 percent of its salmon from domestic production (coastal set-net catch, high seas catch and aquaculture) and 40 percent from imports. As Figure 2.1 illustrates, a significant change in supply has evolved since 1976 when 200 mile Exclusive Economic Zones (EEZ) were established. By 1987, Japan's high seas catch decreased to approximately 26 percent of its 1976 level. Facing these changes in international water boundaries, the Japanese government started to put serious effort into hatchery programs. As a result, by 1986, the coastal catch (based primarily on hatchery chum salmon returns) increased 323 percent from 1976 levels. Imports, which were insignificant prior to 1976, have increased 2,960 percent (1987) over 1976 levels. Domestic aquaculture production of pen-raised salmon also became a distinctive source of supply several years after the establishment of 200-mile EEZ. Aquaculture production, primarily of coho salmon, has increased from nothing in 1976 to 12,000 mt in 1987, 16,500 mt in 1988 and an anticipated 20,000 mt in 1989. Expressed in percentages, the share of total salmon supply filled by the high seas catch decreased from 65 percent in 1976 to 10 percent in 1986. The coastal set-

Figure 2.1: Japan's Salmon Supply (1965-1987)



Source: Fisheries Agency of Japan

net catch increased from 32 percent to 47 percent of total supply, aquaculture from zero to four percent, and imports from three to 40 percent by 1986.

A close look at trends in imports reveals that changes have occurred in the product forms in which salmon are imported. Some shifts in key suppliers of salmon to Japan have also occurred. Table 2.1 traces Japanese salmon imports by country and by product type between 1980 and 1987. Frozen salmon is the dominant product form which is imported. It represented 97.9 percent of total Japanese salmon imports in 1987. The frozen salmon import market has been dominated by the U.S., Canada, USSR, South Korea, and North Korea. Although the import data does not distinguish between wild and aquacultured salmon, the majority of frozen salmon imported from these countries is thought to be wild. Among these countries, the U.S. is by far the largest supplier of frozen salmon to Japan. In 1987, the U.S. supplied 86.5 percent of Japanese salmon imports, followed by Canada with 8.6 percent. Over 60 percent of frozen salmon imported are sockeye (Canadian Embassy, Tokyo 1988).

The breakdown of frozen salmon imports by country of origin is shown in Table 2.1. The shares of the U.S. and Canada dominate, but Norway, Chile, Denmark, and Sweden have also entered the arena. Frozen salmon imported from these countries are aquacultured salmon. Although still minimal, imports of frozen aquacultured salmon have shown a steady increase in recent years. This can potentially affect the frozen salmon market in which the U.S. and Canada are the leading players.

Table 2.1: Japanese Imports of Salmon by Major Countries (1980-87)

Countries	1980	1981	1982	1983	1984	1985	1986	1987
								Unit: MT
Fresh								
United States	6	38	206	1,272	5	146	115	264
Norway	2	29	33	78	179	281	588	1,096
Korea(ROK)	6	427	5	6	68	69	80	20
Canada	-	-	-	0	1	4	9	25
Sweden	-	-	-	0	-	-	4	23
U.K.	-	-	-	0	-	4	2	17
Newzealand	-	-	-	-	-	-	2	191
Neatherlands	-	-	-	-	-	4	53	-
Other*		1	1	1	0	7	12	35
Total	14	495	245	1,357	253	515	864	1,671
Frozen								
United States	33,019	60,212	93,063	86,669	80,271	102,401	95,894	94,311
Canada	2,641	5,157	10,834	3,837	5,178	9,848	15,087	9,429
U.S.S.R.	1,991	2,546	645	254	1,363	1,505	779	2,998
Korea(DPRK)	1,674	3,002	1,501	1,188	1,661	779	1,103	547
Korea(ROK)	6	359	1,362	1,923	1,982	438	291	554
Taiwan	-	-	-	3,687	*2413	-	-	-
Norway	-	-	-	56	110	157	227	356
Sweden	-	-	-	-	-	-	5	305
Denmark	-	-	-	-	-	-	8	406
Chile	-	-	-	33	-	4	34	20
Newzealand	-	-	-	-	-	-	-	55
Other	1	65	73	194	0	343	0	39
Total	39,331	71,341	107,478	97,848	92,978	115,482	113,428	109,020
Cured								
United States	-	-	-	7	695	1,210	352	208
Canada	-	-	-	121	563	743	676	456
Korea(ROK)	-	-	-			-	22	51
Korea(DPRK)	-	-	-	17	9	37	3	3
Other	-	-	-	-	1	91	1	-
Total	-	-	-	145	1,268	2,081	1,054	717

* Import from Taiwan has banned since June, 1984

Source: Japan Marine Products Importers Association

Until recently, aquacultured salmon was usually imported fresh. Those fresh aquacultured salmon were sold primarily in the restaurant sector, and therefore did not directly compete with wild-caught salmon which are generally found in retail stores. As imports of frozen aquacultured salmon have increased, however, more aquacultured products have entered the retail market outlets. Although stores generally consider these products as adding variety rather than replacing the traditional product line, imports of wild salmon will inevitably be affected as more aquacultured salmon enter the retail sector. In the survey conducted by the authors, Japanese buyers for upscale retail stores pointed out that lower salmon prices and its availability in frozen forms are the major requirements if aquacultured salmon are to be sold in greater volume at their stores.

Recently, the Norwegian suppliers of farmed Atlantic salmon have been making some new attempts to gain market share. Increased production has resulted in a need to better penetrate the Japanese market. Norway expects to be able to sell over 10,000 mt of farmed Atlantic salmon in Japan by 1990. Recent information indicates that the Norwegian price for frozen, semi-dressed has dropped to as low as Y=900/kg. (C$3.80/lb.) C & F Japan (BANR, #291, 3/89) for selected buyers. This is not much above their estimated production cost of about C$3.00/lb. (1987) for head-on dressed salmon in Norway. In addition to Norway, Chile is expanding its exports to Japan. In March, the first shipment of about 110 mt of 2-3 kg. dressed, head-on coho was offered at Y=1200/kilo (C$5.05/lb.) and sold in a week. About 2500-3000 mt of Chilean coho are expected to be sold in Japan this year (BANR, #291 and #293, 3/89).

Although still minimal compared to frozen salmon, imports of fresh salmon have shown a significant increase in recent years. Some highly valued species of salmon, such as chinook and sockeye, are imported fresh from the U.S. during the beginning of the harvest season (May and June). This was once the only form of fresh salmon imported to Japan. However, the increase in aquacultural production around the world has changed the composition of Japanese fresh salmon imports greatly.

Norway overtook the U.S. as the primary supplier of fresh salmon to Japan in 1984, and has since maintained that position. Norway is not the only country which is cutting into the market of historical salmon suppliers such as the U.S., Canada, and South Korea. Thanks to aquacultural production, a number of non-traditional salmon producing countries have entered the arena. Table 2.2 shows Japanese imports of fresh salmon by country between 1983 and 1987. Norway's share is still dominant, but New Zealand, Sweden, Ireland, Canada, Chile, and the U.K. have successfully increased their relative shares in the Japanese market. Fresh salmon imports by air are expected to exceed 3,500 mt in 1988, up from 1,671 mt in 1987. This trend is expected to continue.

2.2 Food Consumption in Japan

Some basic shifts are occurring Japanese food-buying trends. Expenditures on both meat and seafood for home consumption have levelled off in recent years, while expenditures on eating out and pre-cooked meats are increasing (see Figure 2.2). As a percentage of food expenditures, seafood and meat have remained relatively constant at about 13-14 percent for seafood and 10-12 percent for meat (see Figure 2.2). Pre-cooked

Table 2.2: Japanese Import of Fresh Salmon by Country 83-87

	1983	1984	1985	1986	1987
					Unit: MT
Korea(R.O.K)	5.74	67.80	68.56	79.86	19.89
Norway	77.54	179.08	280.67	587.73	1096.48
Canada	0.14	0.91	4.08	8.77	25.47
U.S.A.	1272.39	4.51	146.13	115.41	264.50
Sweden	0.36	-	-	3.98	23.12
U.K.	0.19	-	4.49	2.08	16.99
Belgium	0.36	-	-	-	1.12
France	-	0.10	6.52	-	-
Ireland	-	-	0.61	-	17.97
Netherlands	-	-	4.37	52.50	-
New Zealand	-	-	-	1.96	190.76
Denmark	-	-	-	11.36	1.95
Chile	-	-	-	-	7.74
Australia	-	-	-	-	1.16
Iceland	-	-	-	-	3.74
Total	1356.72	252.00	515.42	863.80	1670.90

Source: Japan Marine Products Importers Association

meals have increased steadily from just over three percent of food expenditure in 1970 to over six percent in 1986. Eating out has increased from a nine percent expenditure share in 1970 to nearly 15 percent in 1986. Within the eating out category, all types of restaurants are experiencing increasing expenditures by consumers. In particular, western-style restaurants and drinking establishments are gaining food expenditure share, while traditional restaurants (oriental, noodle, sushi) are losing in expenditure share (see Figures 2.3 and 2.4).

The statistics found in Figures 2.2 - 2.4 are derived from the Annual Report on the Family Income and Expenditure Survey, 1986. This report excludes one-person households from its survey.1 There are significant differences between one-person households and two or more person households in spending patterns.

In 1986, while the two or more person household spent, on average, 14.8 percent of its total food expenditure on eating out, the average one person household spent 52.5 percent of total food expenditure on eating out (Report on Consumer Behavior, Vol 6, One Person Household, 1984). This tendency is even stronger in the average male one person household, which spends over 70 percent of total food expenditure on eating out.

2.3 Salmon Consumption in Japan

Salmon consumption has increased substantially since 1970; it is now the most widely consumed fish in Japan (Figure 2.6 and Table 2.3) accounting for eight percent of the total quantity and nine percent of total value of seafood purchased for home consumption. Most

Figure 2.2: Percentage of Food Expenditure on Selected Food Categories (1970-1986)

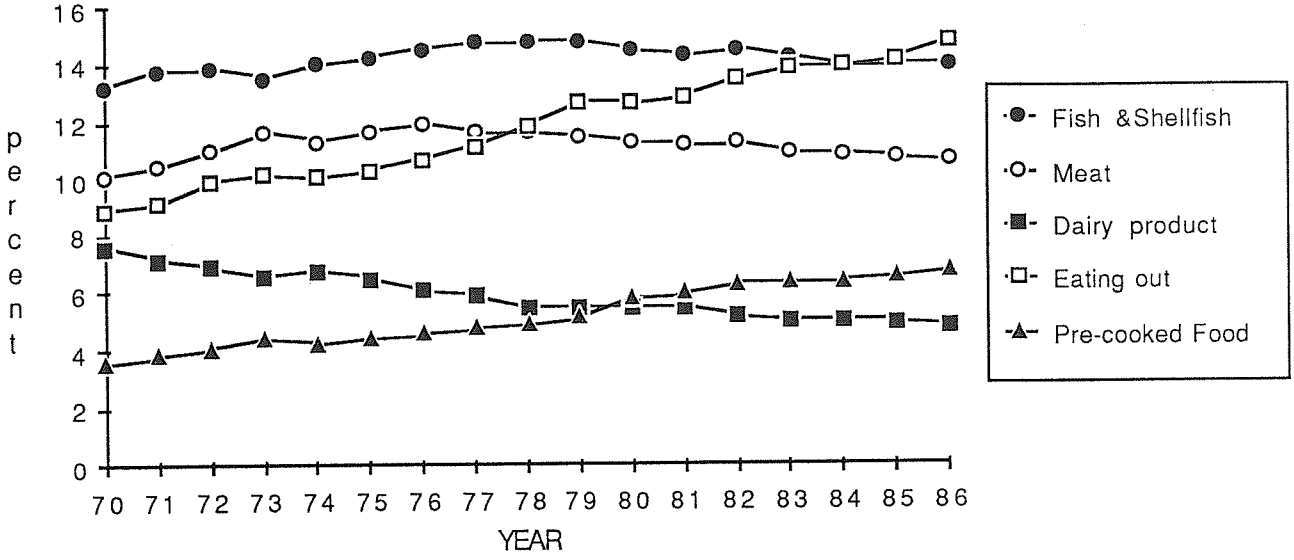


Figure 2.3: Average Monthly Expenditure on Eating-Out by Category (1970-1986)

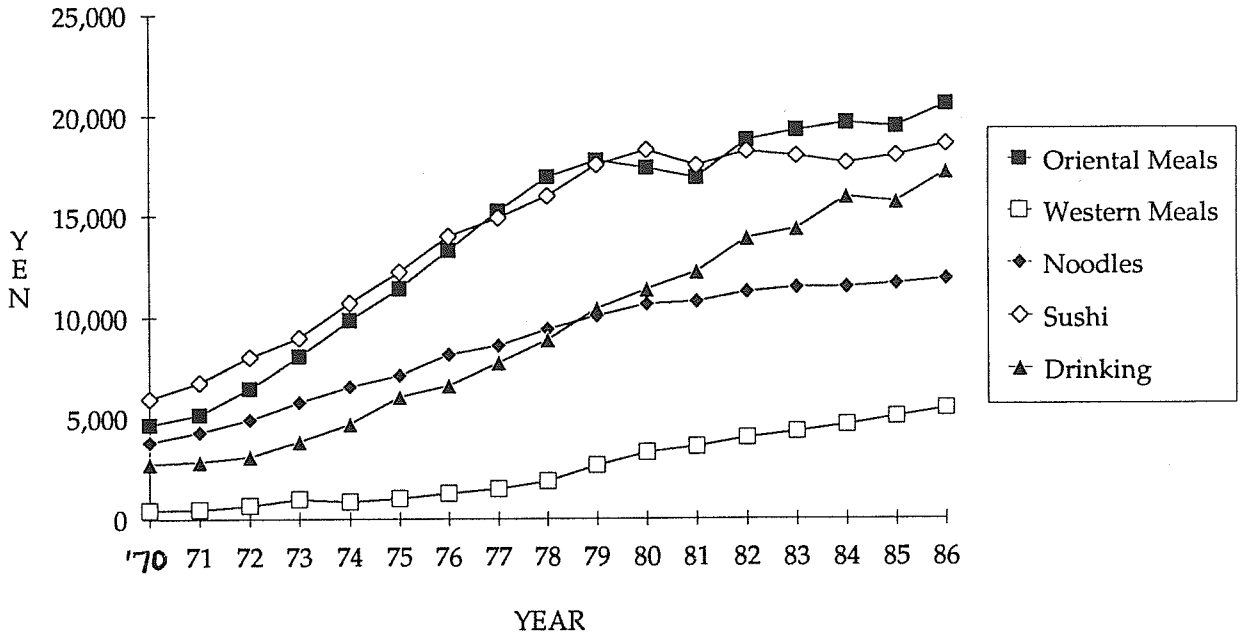


Figure 2.4: Share of Yearly Expenditure on Eating-Out by Category

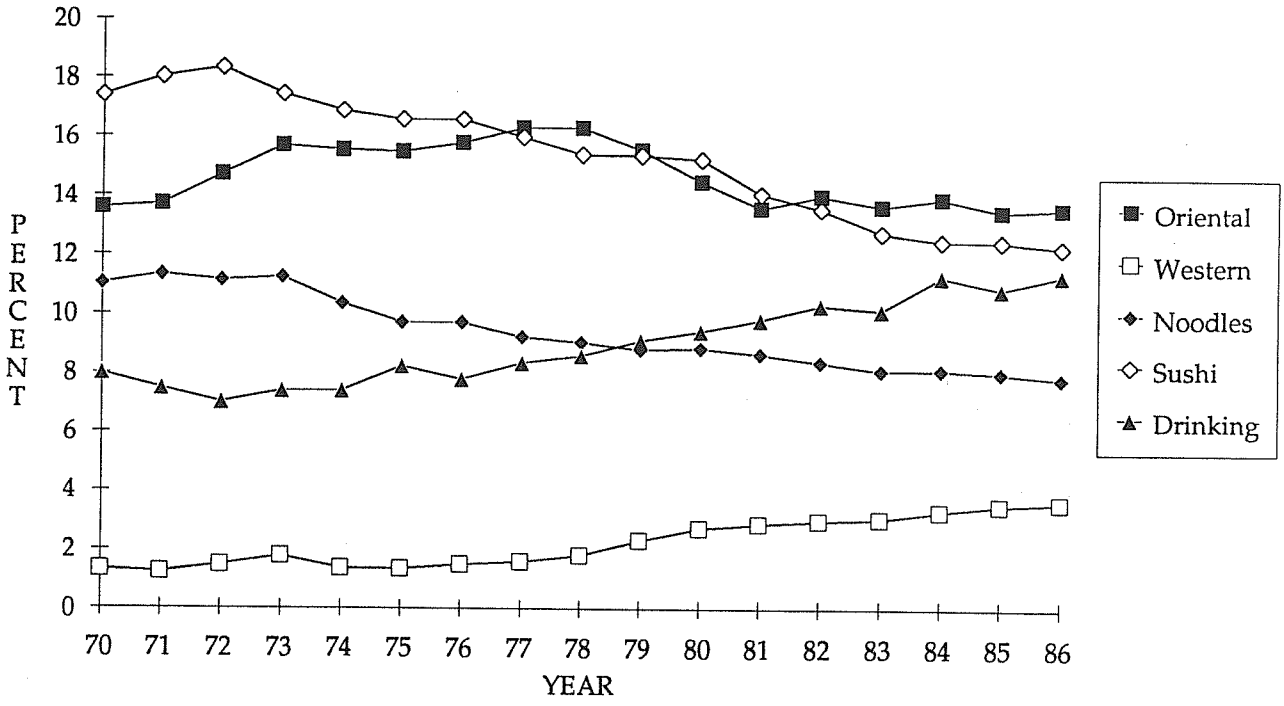


Figure 2.5: Yearly Consumption of Salmon per Household (1963-1986)

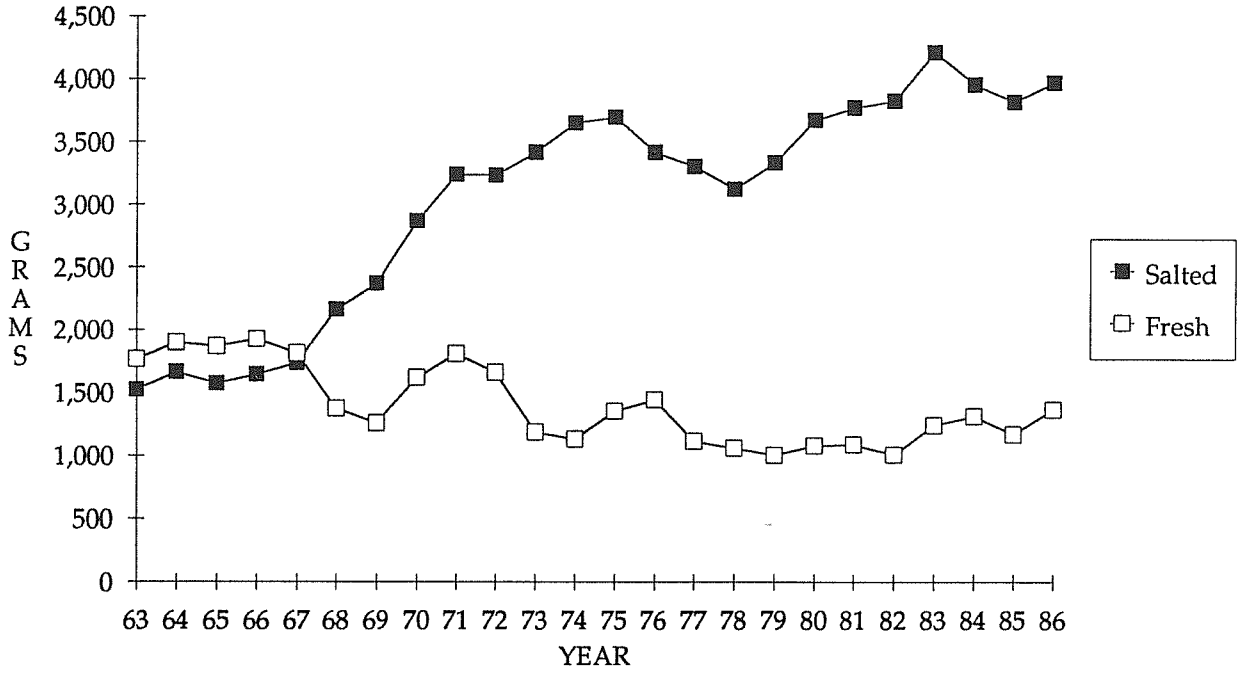


Figure 2.6: Frequency of Usage of Seafood by Restaurant

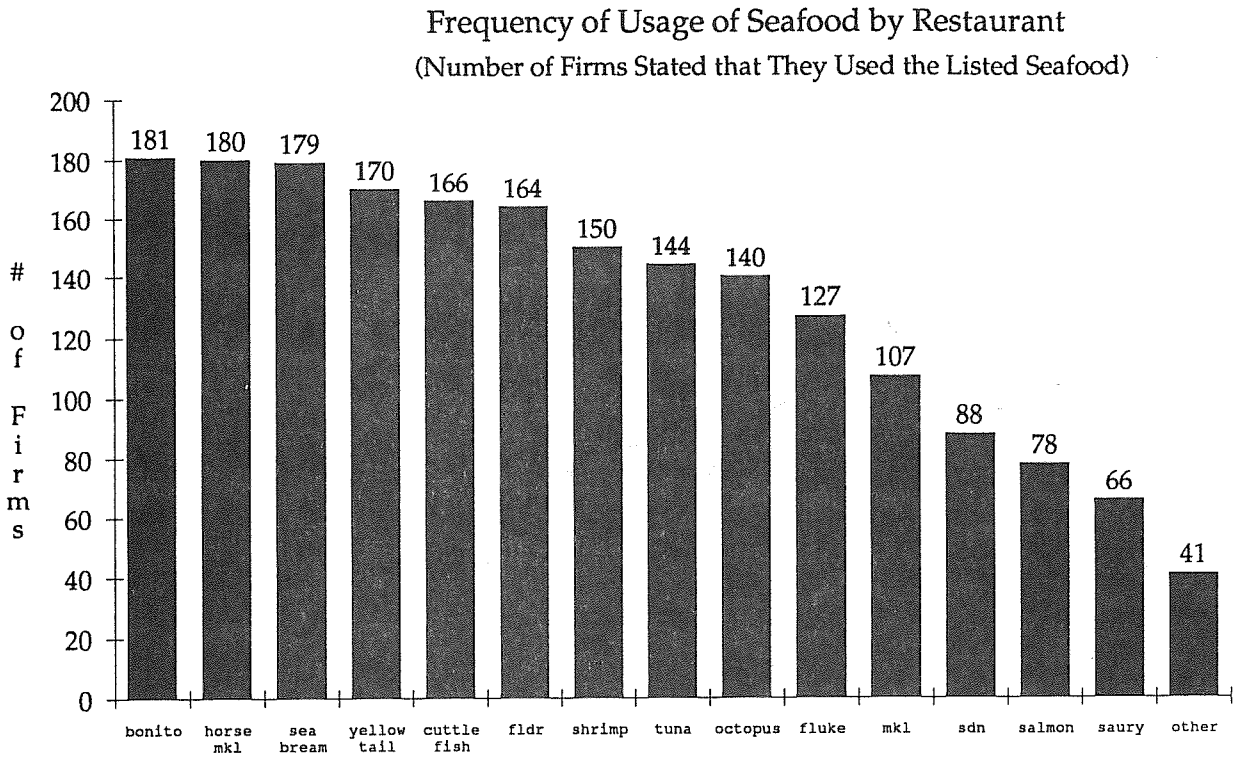


Table 2.3: Yearly Expenditure & Consumption of Major Species of Fish & Shellfish in 1986

	Expenditure (Yen)	% Share (%)	Quantity (g)	% Share (%)
Total Fish and Fish Products	95,825	100.00	60,849	100.00
Fresh Fish	69,094	72.10	46,227	75.97
Tuna	8,316	8.68	3,355	5.51
Shrimp & Lobster	7,437	7.76	2,822	4.64
Cuttlefish	6,520	6.80	5,185	8.52
Yellowtail	4,552	4.75	2,067	3.40
Flounder	3,210	3.35	2,324	3.82
Horse Mackerel	3,017	3.15	2,473	4.06
Salmon	1,956	2.04	1,369	2.25
Salted & Dried Fish	26,731	27.90	14,622	24.03
Salted Salmon	7,146	7.46	3,976	6.53
Salted Cod Roe	3,510	3.66	1,062	1.75

Source: Annual Report on the Family Income and Expenditure Survey
Statistics Bureau Managment and Coordination Agency, Japan

salmon consumed in Japan is in salted form. Approximately 80 percent of salmon consumed at home is salted (Statistics & Information Bureau 1987). Salted salmon is usually sold in portions of fillets weighing about 80-130g. at retail fish stores, supermarkets, and department stores. These stores offer products in several different degrees of saltiness. In addition to salted salmon, salmon is sold marinated in rice wine lees, fermented rice, and bean paste. Contrary to common belief, the practice of eating salmon sushi was not introduced to Japan until recently, and it has not yet gained wide acceptance.

Although the majority of salmon is consumed salted, salmon is also eaten fresh. Consumption of fresh salmon has shown an upward trend in recent years. Although this is mainly attributable to increased coastal chum salmon catch, domestic aquaculture production and imports of aquacultured salmon have also made fresh salmon more readily available.

Smoked salmon products are more of a special gift item. There is a widely practiced gift-giving tradition in Japan which takes place twice a year. Individuals, as well as businesses, give gifts -- often of food or alcohol -- to their relatives and clients. Smoked salmon and whole salted salmon (Aramaki) are popular gifts.

Although salmon is consumed widely at home, it is not particularly popular in the restaurant sector. Most species of salmon are not as commonly served in restaurants as other species of fish, as can be seen in Figure 2.6. Some of the possible reasons were revealed through interviews with buyers for restaurants. Some of the reasons given are listed as follows:

1) Since salmon is so widely consumed at home, it has lost appeal as a restaurant dish.
2) Salmon lacks aesthetic elements appropriate for restaurant entrees.
3) People think of salmon as relatively inexpensive and therefore do not see good value in salmon as an entree.
4) Most people consider salmon easy to prepare. People demand restaurant dishes that require the skills of the experienced chef.

The positive aspects which make home consumption of salmon so popular -- such as relatively low price, convenience, and wide availability -- work against salmon consumption in the restaurant sector. In contrast, Atlantic salmon has found its way into restaurants because buyers for restaurants claim they can emphasize that the Atlantic salmon they serve is truly different from what customers commonly eat at home. Atlantic salmon also has a good reputation among restaurant buyers (discussed in more detail in later sections).

3 SURVEY RESULTS

3.1 Introduction

A total of 102 personal interviews were completed in Tokyo, Japan during spring/summer 1988; 15 interviews were with buyers for trading companies, 12 were with large retail markets, supermarkets and department stores, and 75 were with buyers for restaurants. Among the restaurants sampled, 13 were traditional Japanese restaurants or related restaurants, 16 were sushi restaurants and 46 were western-style restaurants. All interviews were conducted in Japanese or in both Japanese and English. Western-style restaurants were emphasized because the related expenditure share nearly doubled from 1976 to 1986, and this trend is expected to continue. Western-style restaurants were also emphasized since salmon is primarily consumed salted at home, and it is not that highly regarded as restaurant fare in traditional Japanese restaurants. Also, its consumption is a relatively recent phenomenon in sushi restaurants. Western-style restaurants, however, are using salmon in non-traditional preparations, which may represent a potential opportunity for premium salmon products such as troll-caught chinook or aquacultured salmon.

3.2 Profile of Firms Surveyed

Firms were interviewed about the characteristics of the two most important salmon products they handle. The primary salmon product carried by traders surveyed was frozen, head-off sockeye from Bristol Bay, Alaska (see Table 3.1). The average price paid for the dominant product was 1130 yen/kg. CIF Japan (C$4.95/lb.), but ranged from below 700

yen/kg. (C$3.05/lb.) to over 1500 yen/kg. (C$6.55/lb.). The average quantity of this product was 3120 mt/month compared to 1340 mt/month for their secondary salmon product. The majority of the firms (93.3 percent) stated that the dominant product was frozen, and the remainder said it was fresh. The most frequently mentioned product form is dressed, head-off (80 percent), followed by dressed, head-on (13.3 percent) and fillet (6.7 percent).

The species most purchased by buyers for large retail outlets are sockeye (mostly from Bristol Bay, Alaska) and chum salmon (mostly from Japan) (see Table 3.2). The average price paid for the dominant salmon carried by these retail buyers was 1500 yen/kg. (C$6.55/kg.) Prices ranged from under 700 yen/kg. (C$3.05/lb.) to 2000 yen/kg. (C$8.75/lb.). The second most important salmon product averaged 1730 yen/kg (C$7.55/lb), and ranged from under 850 yen/kg. (C$3.70/lb.) to over 4500 yen/kg. (C$19.65/lb.). Two-thirds of buyers for large retail firms said that the dominant salmon product purchased was frozen, while the remaining third purchased salted salmon. Large retail outlets buying frozen salmon usually salt their own. The primary source indicated by the buyers was importers (57.1 percent), followed by the central wholesale market (28.6 percent) and processors (14.3 percent).

Buyers for restaurants indicated a different buying behavior compared to traders and retailers. The dominant species being used at the time of the restaurant survey (Spring 1988) was Atlantic salmon (see Table 3.3). For Japanese-style restaurants, Atlantic and sockeye were both frequently mentioned. Over 60 percent of the western-style restaurants indicated that the primary species used was Atlantic. The primary supplier for the Atlantic

Table 3.1: Characteristics of Dominant and Secondary Salmon Products Purchased: Traders (15)

Species[1]

Dominant		Secondary	
Sockeye	80.0%	Sockeye	57.1%
Chum	6.7%	Chum	21.4%
Coho	6.7%	Chinook	7.1%
Sea Trout	6.7%	Pink	7.1%
		Atlantic	7.1%

Source

Dominant		Secondary	
AK: Bristol Bay	73.3%	Canada	28.6%
AK: Cook Inlet	6.7%	AK: Bristol Bay	21.4%
Alaska	6.7%	AK: Cook Inlet	14.3%
Chile	6.7%	Japan	14.3%
Sweden	6.7%	New Zealand	7.1%
		Norway	7.1%
		West Coast U.S.	7.1%

Table 3.2: Characteristics of Dominant and Secondary Salmon Products Purchased: Large Retail Outlets (12)

Species[1]

Dominant		Secondary	
Sockeye	41.7%	Sockeye	41.1%
Chum	41.7%	Chum	41.7%
Chinook	16.7%	Chinook	16.7%

Source

Dominant		Secondary	
AK: Bristol Bay	41.7%	AK: Cook Inlet	41.7%
AK: Cook Inlet	25.0%	Japan	41.7%
Japan	25.0%	Canada	16.7%
Alaska (general)	8.3%		

[1]Note: Dominant and secondary products may be the same species but from a different source of product form.

Table 3.3: Characteristics of Dominant Salmon Purchased in Spring (1988) and during Other Periods: Restaurants (Percentage of firms indicating category)

Species

Spring		Other Seasons	
Atlantic	55.7%	Coho	26.1%
Sockeye	15.7%	Atlantic	21.7%
Chinook	8.6%	Chum	21.7%
Coho	7.2%	Chinook	8.7%
Chum	7.2%	Sockeye	8.7%
Pink	1.4%	Sea Trout	6.5%
Sea Trout	1.4%	Cherry	6.5%
Cherry	1.4%		
Uncertain	1.4%		

Source

Spring		Other Seasons	
Norway	50.0%	Japan	58.7%
Japan	22.9%	Norway	19.6%
Alaska	7.1%	Canada	10.9%
Uncertain	7.1%	Sweden	4.4%
Canada	5.7%	Alaska	2.2%
Sweden	2.9%	Scotland	2.2%
New Zealand	1.4%	Ireland	2.2%
West Coast U.S.	1.4%		
Ireland	1.4%		

State

Spring		Other Seasons	
Fresh	73.5%	Fresh	77.7%
Frozen	25.9%	Frozen	20.0%
Smoked	2.9%	Smoked	2.2%

Form

Spring		Other Seasons	
Dressed, Head-on	77.9%	Dressed, Head-on	88.4%
Dressed, Head-off	5.9%	Dressed, Head-off	8.9%
Fillet	16.2%	Fillet	6.7%

Source of Supply: Restaurants
(Percentage of firms indicating category)

Wholesale marketplace	61.7%
Retail Fish Store	26.5%
Processor	5.9%
Imports	4.4%
Producer	1.5%

salmon is Norway. For other times of the year, Japanese-raised coho and inshore-caught chum were frequently mentioned. Average prices paid by restaurants for the dominant species purchased was 2480 yen/kg. (C$11.85/lb.) with a range from under 800 yen/kg. (C$3.50) to over 6000 yen/kg. (C$26.20/lb.). The dominant salmon product purchased was fresh (indicated by over 73 percent of firms), dressed, head-on (indicated by over 77 percent of firms). The source of salmon tends to be the wholesale marketplace (such as Tskiji in Tokyo), which was given by 61.7 percent of firms (see Table 3.3). The retail fish store was the second most frequently mentioned source of supply (26.5 percent of firms).

When asked which month was the busiest, 85 percent responded December, corresponding with the holiday season and the increased supply of Japanese chum. Buyers for restaurants said that December sales are about 177 percent over sales in the other months, which all tend to be similar. This was substantiated by the secondary statistics found in Table 3.4.

The average quantity purchased of the dominant species was about 7-10 kg./month. When traders were asked if farmed salmon was a substitute for wild salmon, 50 percent said 'yes' and 50 percent said 'no'. Some traders gave a conditional 'yes' response for the following reasons:

(1) when wild salmon is not available;

(2) if frozen farmed salmon is available at a relatively inexpensive price range;

(3) if price is reasonable;

(4) to compensate for the fluctuation of wild salmon catch in Alaska.

Table 3.4: Monthly Consumption and Expenditure on Salmon (1986)

	Salted Salmon		Fresh Salmon	
1986	Exp.	Quan.	Exp.	Quan.
	(Yen)	(g)	(Yen)	(g)
Jan	332	173	81	52
Feb	402	204	97	63
Mar	484	253	126	82
Apr	503	263	143	92
May	568	299	158	99
June	583	313	174	110
July	620	333	197	118
Aug	659	353	188	121
Sep	571	315	216	173
Oct	577	358	207	168
Nov	552	347	216	175
Dec	1,294	765	155	116

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Statistics Bureau Managment and Coordination Agency Japan

Reasons given for an unconditional 'yes' were:

(1) can be processed into salted fillet;

(2) not much difference in taste if processed;

(3) supply from new source will compensate for the reduction of mother ship operation.

Reasons given for 'no' were:

(1) fat content too high;

(2) price too high;

(3) price varies a lot;

(4) different product in every characteristic (OK for added variety);

(5) limited and different market outlet;

(6) taste different (smell).

Traders were asked if they intended to increase the amount of farmed salmon they handle; 86 percent indicated they probably would for the following reasons:

Reasons given for a conditional 'yes' include:

(1) if price stays reasonably low;

(2) if relatively large size salmon is supplied;

(3) if supply quality and quantity stabilize;

(4) if relatively stable supply of frozen farmed salmon is available;

(5) when wild salmon is not available;

(6) with consignment.

Those who would definitely increase the amount of farmed salmon gave the following reasons:

(1) intend to increase supply to restaurant and smokers;

(2) intend to increase supply to fish market and supermarket;

(3) Sashimi market will increase;

(4) to compensate for the reduction of mothership operations;

(5) to add variety.

Traders saying they did not intend to increase their volume of farmed salmon gave reasons such as:

(1) not set up for landing fresh salmon, and

(2) not much demand for fresh farmed salmon.

3.3 Analysis of Buyer Preferences

Many attributes are combined in any specific salmon product. One of the primary goals of this market research project was to determine the relative importance of attribute categories (i.e. species, region of origin, fat content) and the relative preference of specific

attributes (i.e. species: coho, chinook, sockeye, chum, pink). The following sections compare the results of separating the salmon products by attribute for the four market segments; traders, large retailers, western-style restaurants, and Japanese restaurants.

Overall Attributes

Figure 3.1 (Appendix Table A.1) presents the overall importance ratings for various attribute categories. The rating is defined as the degree of importance the buyer places on the given attribute category when considering the purchase of salmon products. The scale ranges from 0-100; where 100 is most important, and 0 is not important.

Traders felt that price followed by quality, flesh color and species were the most important attributes to consider when buying salmon. Country of origin and method of catch mattered the least. Large retail buyers indicated that the most important attributes were quality, flesh color, price and appearance of the skin and scales. The least important factors were species, country of origin, product form and size.

Buyers for Japanese restaurants rated quality and price the most important factors in the purchase decision. Buyers for Western-style restaurants felt that quality and state (fresh, frozen or salted) were of the greatest importance. For restaurant buyers, country of origin, method of catch and supply were all relatively less important.

Figure 3.1: Ratings of Overall Attributes

Species:

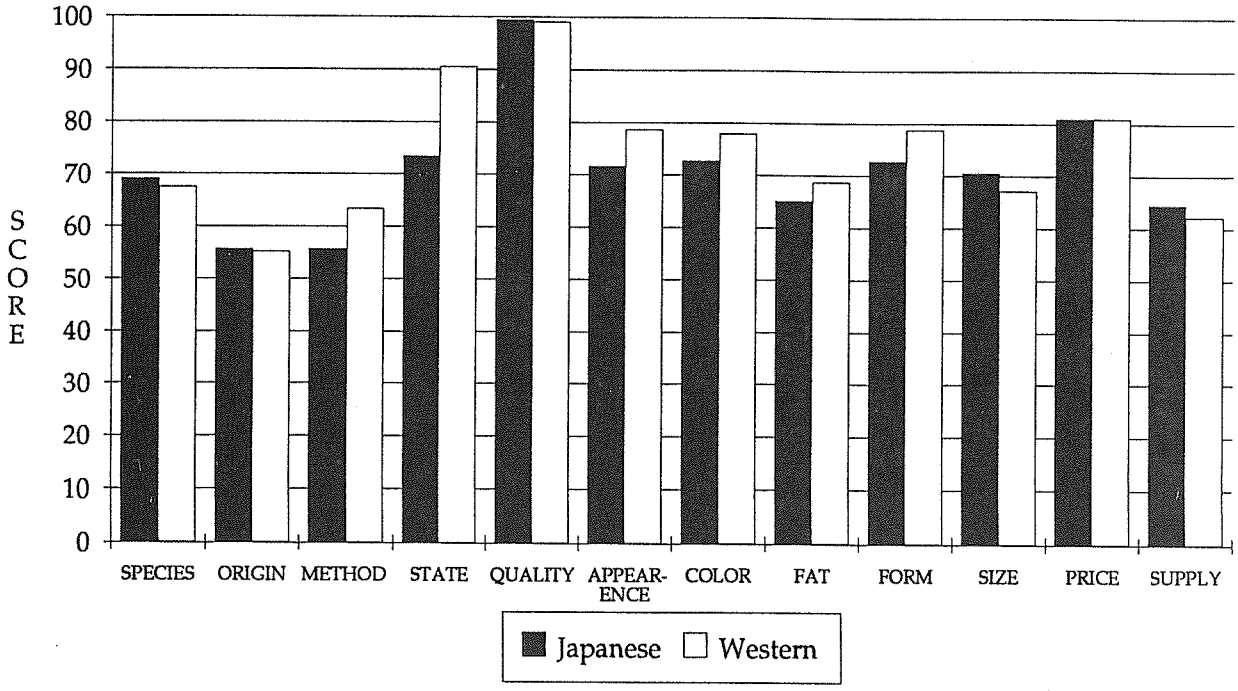
Traders rated the species of salmon as significantly more important than did either large retail or restaurant buyers. Species was the fourth most important factor for traders, the sixth most important factor for restaurants and the least important factor for large retail buyers. Neither Japanese nor Western-style restaurants rated species significantly different in importance (see Figure 3.2).

Origin:

Country (region) of origin was the least important factor for Japanese traders in their purchase decisions. However, it was not significantly different from method of catch.

Buyers for large retail outlets (supermarkets and department stores) ranked this significantly more important than traders did, and marginally more important than restaurateurs did. For large retail buyers, country of origin rated above species but not significantly different from product form or size. The relatively high rating for origin could be due to the fact that retail outlets may use country of origin in labelling, while traders and restaurants do not need to do this. Buyers for restaurants agreed with traders and rated country of origin the least important factor. Both Japanese-style and Western-style restaurant buyers rated the importance of country of origin virtually the same.

Figure 3.2: Ratings of Overall Attribute by Type of Restaurants



Method of catch:

Both traders and restaurant buyers considered method of catch to be the second least important factor. Method of catch was rated significantly higher by large retail outlet buyers. They may rate this category more highly because they can use this information in labelling and promotion more easily than traders and restaurants.

State (fresh, frozen or salted):

The importance of the product's state was in the same rating range (around 80) for traders, buyers for larger retailers and buyers for restaurants. However, it was the sixth most important factor for traders and large retailers, while restaurant buyers ranked it second most important, not significantly different from ratings on price. This is the result of the high rating given to state by buyers for Western-style restaurants who rated state significantly higher than buyers for Japanese-style restaurants. The latter rated state the third most important, insignificantly different from appearance, flesh color, product form and size. Western-style restaurants rated state second only to freshness.

Quality (Freshness):

All buyers in each market segment rated this characteristic above 95 points. However, for traders, freshness was second to price. For large retailers, quality and price rated almost the same importance, while buyers for large retail outlets, Japanese and Western-style restaurants rated quality the most important factor.

Appearance/Flesh Color/Fat Content:

Appearance (color and appearance of skin), flesh color and fat content were rated higher by buyers for large retail outlets than traders or buyers for restaurants. Notably, the ratings of buyers for large retail outlets were significantly higher than those given by buyers for restaurants. This is undoubtably because retailers must display the raw product to the final consumer and traders generally display at least some of the raw product to wholesale buyers, but restaurants only display a prepared product so the consumer rarely sees the raw product. As a group, these attribute categories tend to be of moderately high importance.

Product Form (head-on, head-off, fillet, steak):

Product form was rated slightly higher by restaurants than by buyers for retail outlets or traders.

Size (weight):

The importance of product size (weight) differed insignificantly between the buyers and was in the lower half of attribute categories in importance.

Price:

Traders rated price most important. This was significantly different from the rating

given by buyers for retail outlets and restaurants. This indicates traders are the most price sensitive among the buyer groups. Buyers for large retail outlets rated price second but insignificantly different from appearance and color indicating high price awareness, but also great concern for the products' overall presentation. Price was rated third after state by Western-style restaurants, but second after quality (freshness) by Japanese-style restaurants.

Supply:

Supply was rated significantly higher in importance by buyers for large retail outlets than either traders or restaurants. Large retail outlets want consistent presence of the product on the shelf, while traders can maintain greater inventory and are therefore adapted for seasonality. Restaurants can simply vary menus to take advantage of seasonality.

Specific Attribute Ratings:

Within each attribute category (i.e. species) there are several possible individual attributes (i.e. coho, chinook, Atlantic, chum, and pink). Buyers were asked to rate the relative importance of the attribute categories. They were then asked to evaluate their preference for individual attributes. The rating scale was from 0 to 10: where 10 was defined as the best attribute in terms of the firm's business activity, and 0 was designated as the worst possible attribute. Five was defined as neutral or indifferent.

Species:

There were some marked differences in the preference for salmon species among the buyers (see Figure 3.3). Sockeye was significantly preferred by traders and buyers for large retail outlets as compared to restaurant buyers. Sockeye was the most highly preferred among all species by traders. Buyers for retail outlets rated sockeye significantly above all other species, but chinook or chum salmon were rated only marginally worse.

Buyers for restaurants showed exceptionally different preferences. Among Japanese-style restaurants, sockeye was significantly less preferred than chinook and not judged significantly different than coho or Atlantic salmon (see Figure 3.4).

Among Western-style restaurants, sockeye was significantly less preferred to either Atlantic or chinook salmon. Coho was considered insignificantly different from sockeye in preference. Western-style restaurants evaluated Atlantic salmon significantly higher than Japanese-style restaurants did.

The contrast in preferred species is somewhat surprising given conventional wisdom. However, traders and retailers are primarily selling salted salmon for home consumption, where the price and the redder appearance of sockeye salmon flesh, among other things, are important for raw product displays. The restaurants need to differentiate their product from the home-consumption salmon to attract the restaurant consumer to the 'everyday

Figure 3.3: Ratings of Salmon Species

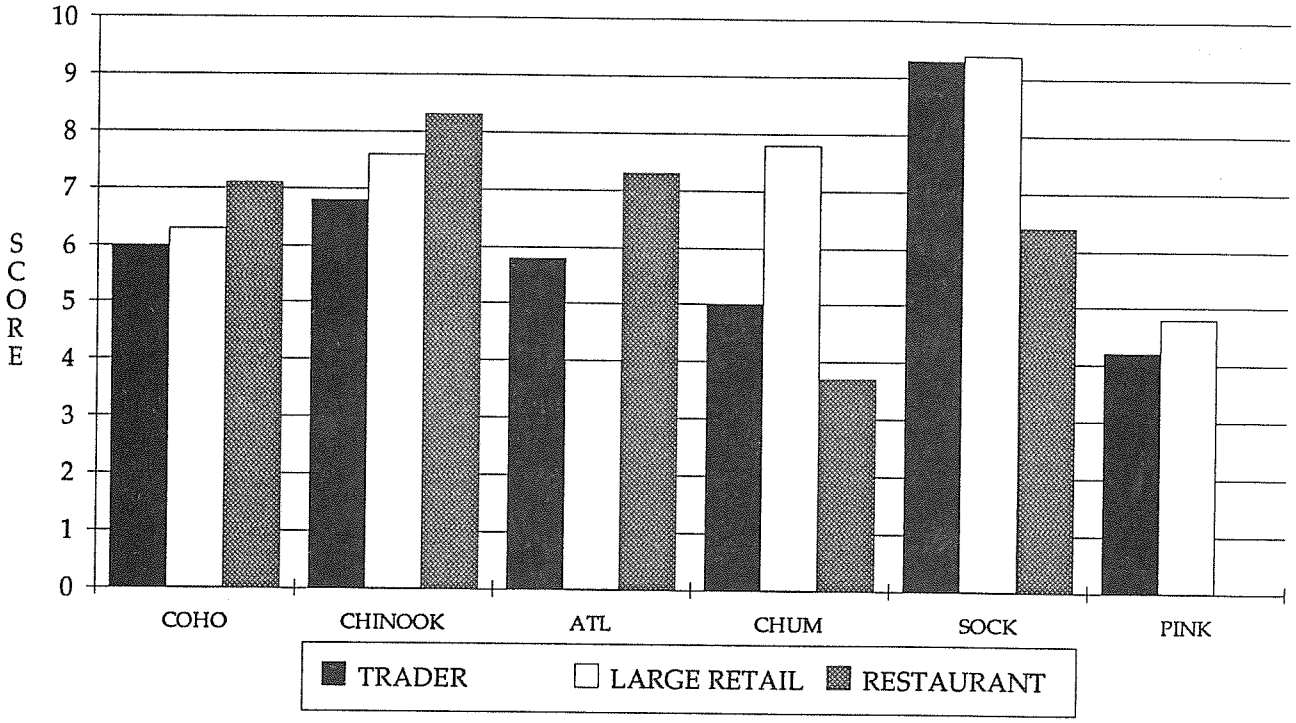
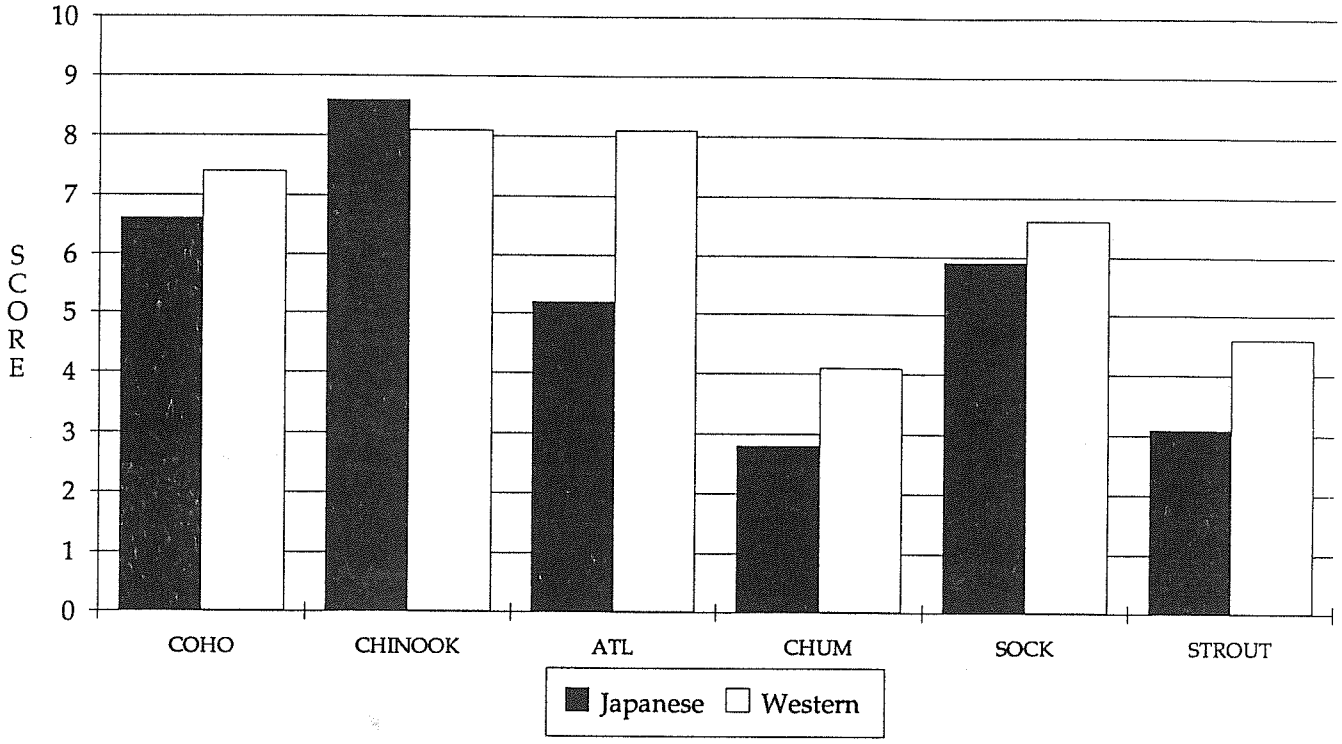


Figure 3.4: Ratings of Species of Salmon by Type of Restaurant



food salmon is generally perceived to be in Japan. Therefore, species such as Atlantic and chinook salmon have greater appeal since they are less common. Also, the redness of the flesh is less important after cooking. The relatively high rating for chum salmon by retail buyers is because high quality chum salmon, with good color and minimal scale loss, enter the retail system from domestically harvested runs.

Country (Region) of Origin (see Figure 3.5):

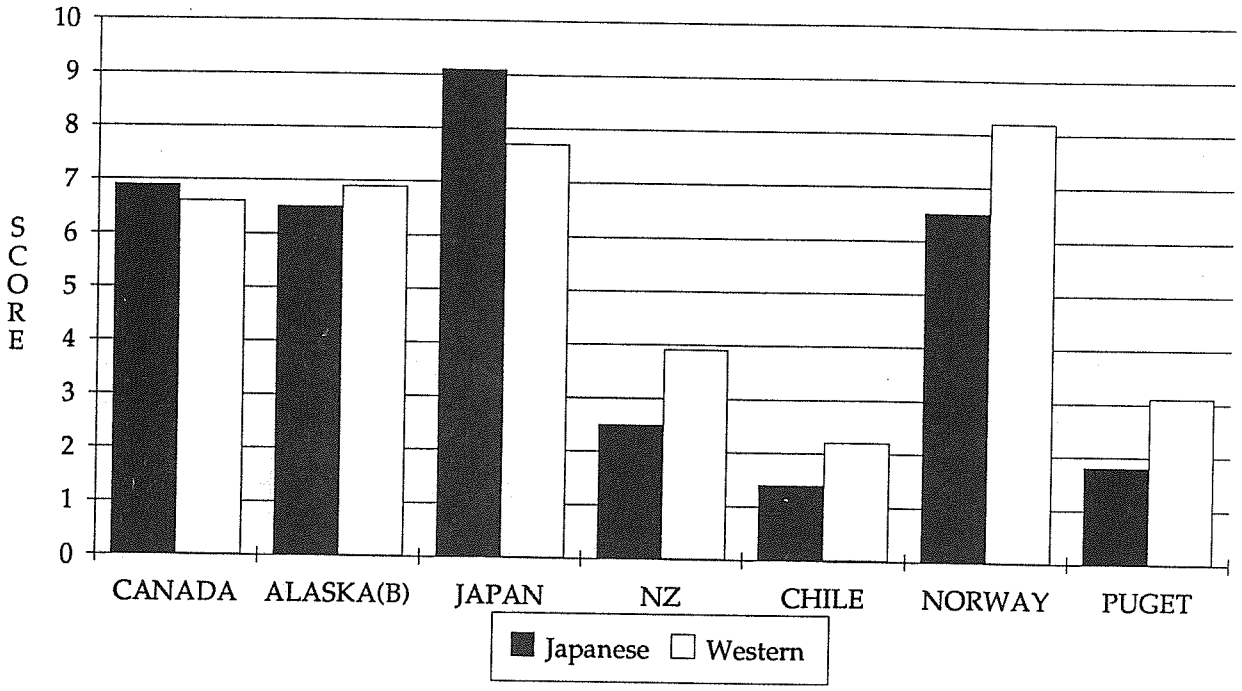
Traders rated salmon from Canada the highest. However, it was insignificantly preferred to salmon from the Alaskan, Cook Inlet region. Salmon from Puget Sound and Norway were also valued highly.

Large retail buyers also rated Canadian salmon first, but insignificantly different from salmon from Japan and Alaska's Puget Sound.

Buyers for restaurants showed some different behavior. Buyers for Japanese-style restaurants rated Japan's salmon significantly better than Canadian salmon, and also rated Alaskan and Norwegian salmon insignificantly different than Canadian salmon (see Figure 3.6). Buyers for Western-style restaurants rated Japanese and Norwegian salmon as insignificantly different from each other, and significantly better than Canadian or Alaskan salmon.

Figure 3.5: Ratings of Country of Origin

Figure 3.6: Ratings of Country of Origin by Types of Restaurants



The results of attribute ratings by species and country of origin strongly indicate that Norway has made significant inroads into the restaurant market in Japan. This trend is likely to continue as Norway rapidly expands exports to Japan.

Method of Catch (see Figure 3.7):

Troll-caught salmon are significantly preferred by traders and buyers for large retail outlets. Farmed salmon is significantly less preferred than all others by buyers for large retail outlets. This is probably a result of the negative image of farmed coho salmon in Japan which was indicated by several respondents. Among buyers for Japanese-style restaurants, farmed salmon is valued as significantly worse than the other methods of catch (see Figure 3.8). Buyers for western-style restaurants rated farmed salmon worse, but insignificantly different from troll-caught or seine-caught salmon.

Greater familiarity with Norwegian farmed salmon versus Japanese farmed coho among buyers for western-style restaurants has apparently improved farmed salmon's image.

State (fresh, frozen, salted):

Among traders, frozen salmon is preferred over fresh, but the difference is only marginal (see Figure 3.9). Although salted salmon is significantly less preferred than frozen salmon, it is insignificantly worse than fresh salmon for traders. Buyers for large retail outlets also significantly prefer frozen salmon over fresh salmon. Salted salmon is also preferred to fresh salmon. For restaurants, the results shift. Fresh salmon is highly

Figure 3.7: Ratings of Method of Catch

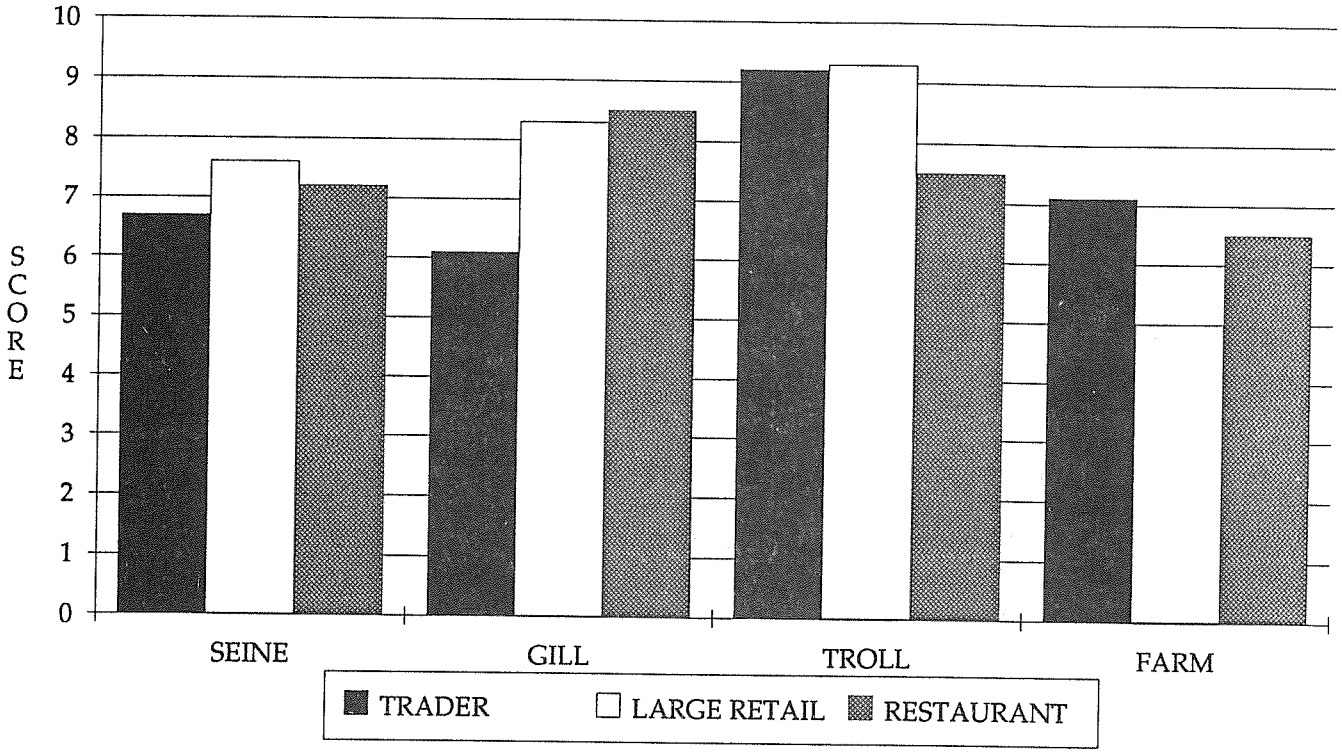


Figure 3.8: Ratings of Method of Catch by Types of Restaurant

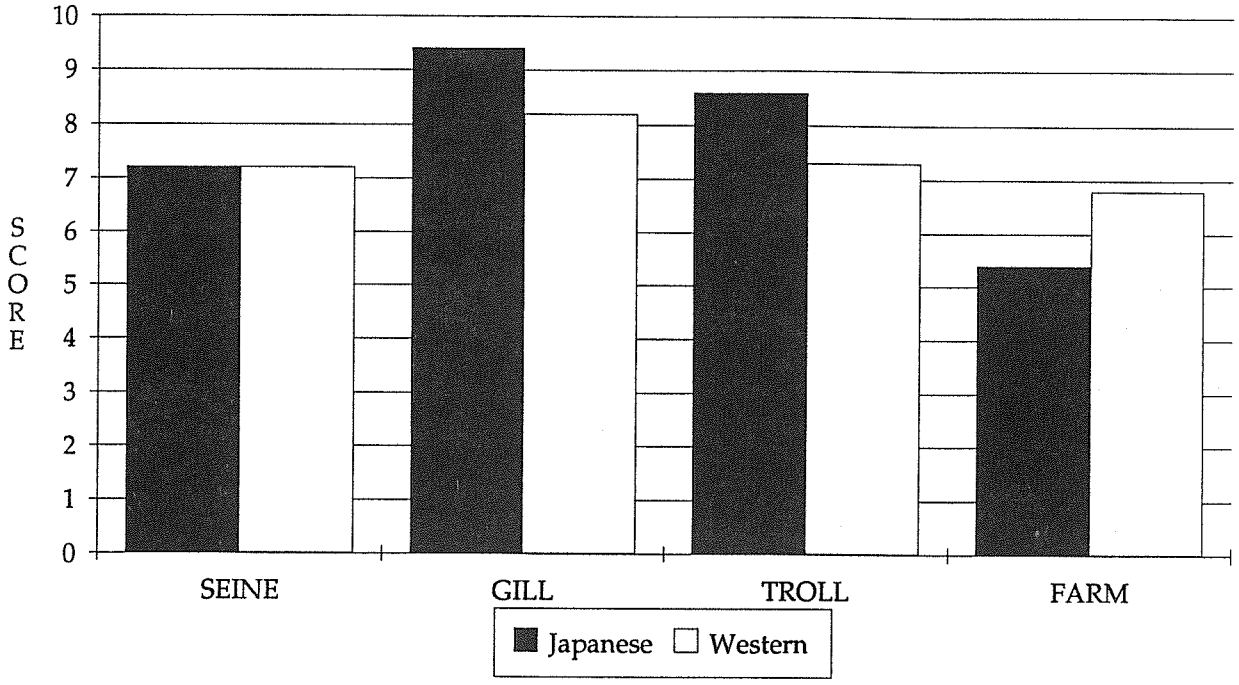
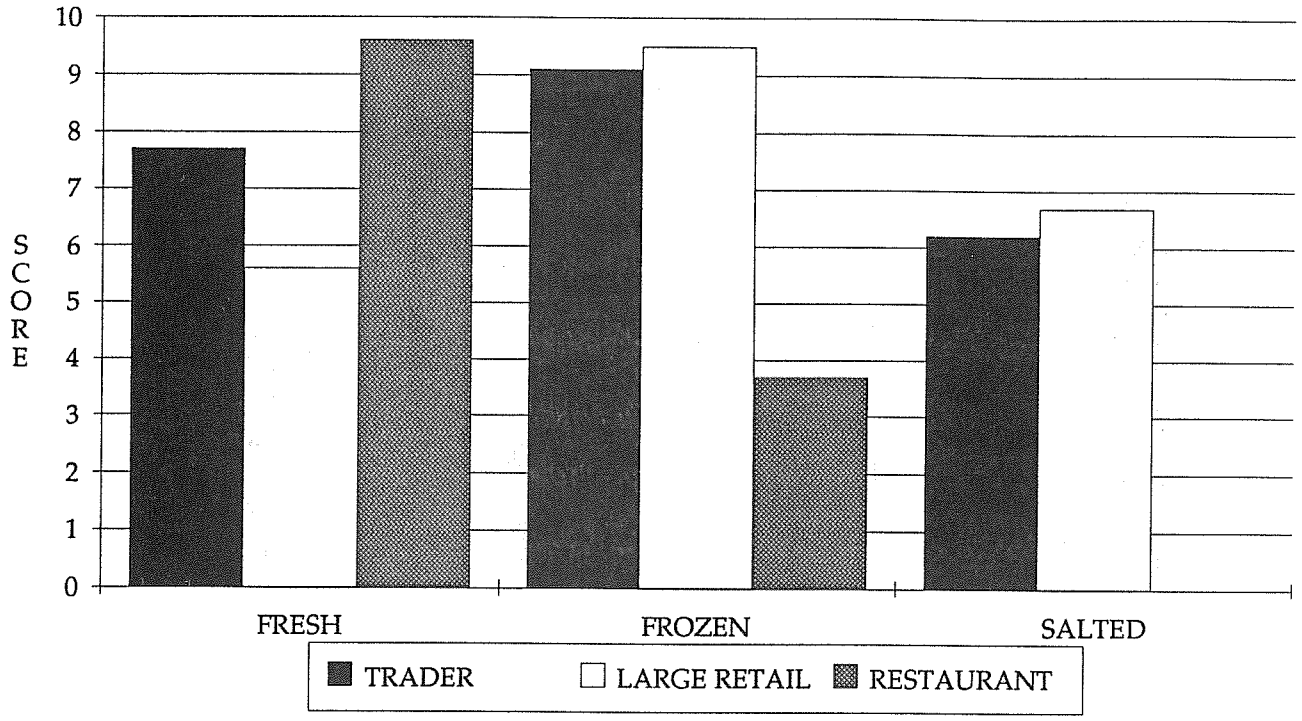


Figure 3.9: Ratings of Product Type



preferred over frozen salmon. This indicates that those selling fresh salmon should consider emphasizing restaurant market sales.

Quality (Freshness):

Quality in this context refers to the freshness/wholesomeness of the salmon product. The category captures all quality related factors not explicitly designated in the other categories. Shelf life for fresh salmon is an index which closely reflects the 'qualities' this category addresses.

All buyers rated the quality (freshness) categories similarly, with high degree of freshness significantly better than medium freshness and medium fresh significantly preferred to low freshness (see Figure 3.10).

Appearance (of skin/scales):

Traders and retail buyers did not rate the individual attributes associated with surface appearance as significantly different (see Figure 3.11). Bright silvery skin with minimum scale loss was significantly preferred to silver skin, and silver skin was significantly preferred to dark skin. Restaurants rated silver skin and dark skin significantly lower than traders.

Figure 3.10: Ratings of Freshness

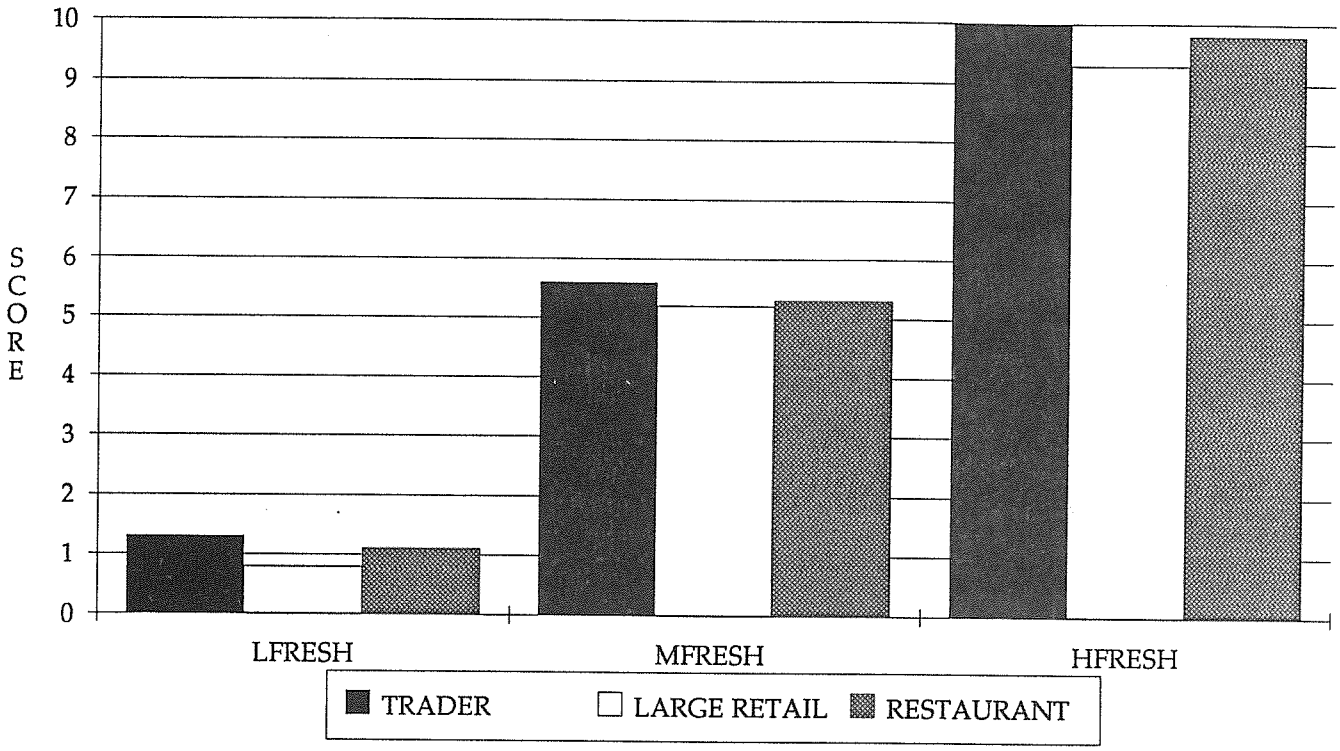
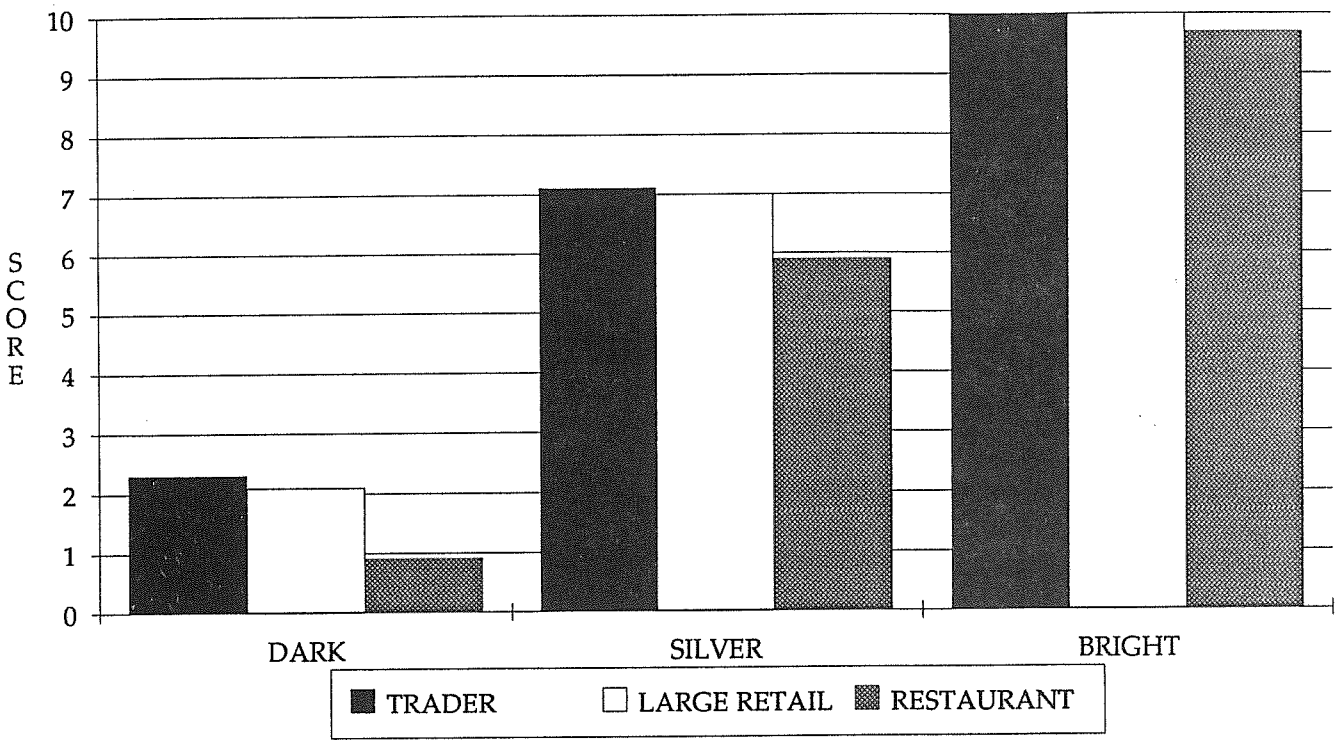


Figure 3.11: Ratings of Appearance



Fat Content (see Figure 3.12):

There were contrasting opinions on fat content. For traders, high fat content was significantly preferred to medium fat content, and medium fat content was significantly preferred to low fat content. Large retailers scored low fat significantly lower than medium fat content; however, high and medium fat content were not rated significantly different. The same holds true for restaurants.

Flesh Color (see Figure 3.13):

The retail-oriented traders and buyers for large retail outlets followed conventional wisdom and rated pale pink flesh significantly worse than pink-red flesh, and pink-red flesh worse than deep red flesh. However, while traders rated pink-red flesh significantly worse than deep red flesh, large retailers rated pink-red flesh lower than deep red, but not significantly lower. Restaurants showed some unexpected behavior. Both Japanese and Western-style restaurants rated pink-red flesh statistically more preferred than deep red flesh. Pink-red flesh was also strongly favored over pale flesh. This is another indication that the restaurant sector has started to accept Atlantic salmon and other salmon that are lighter than sockeye. Also, since restaurants do not necessarily display the raw product, deep red flesh may not be as important.

Product Form (see Figure 3.14):

Traders generally handle frozen product which is shipped great distances. Therefore,

Figure 3.12: Ratings of Fat Content

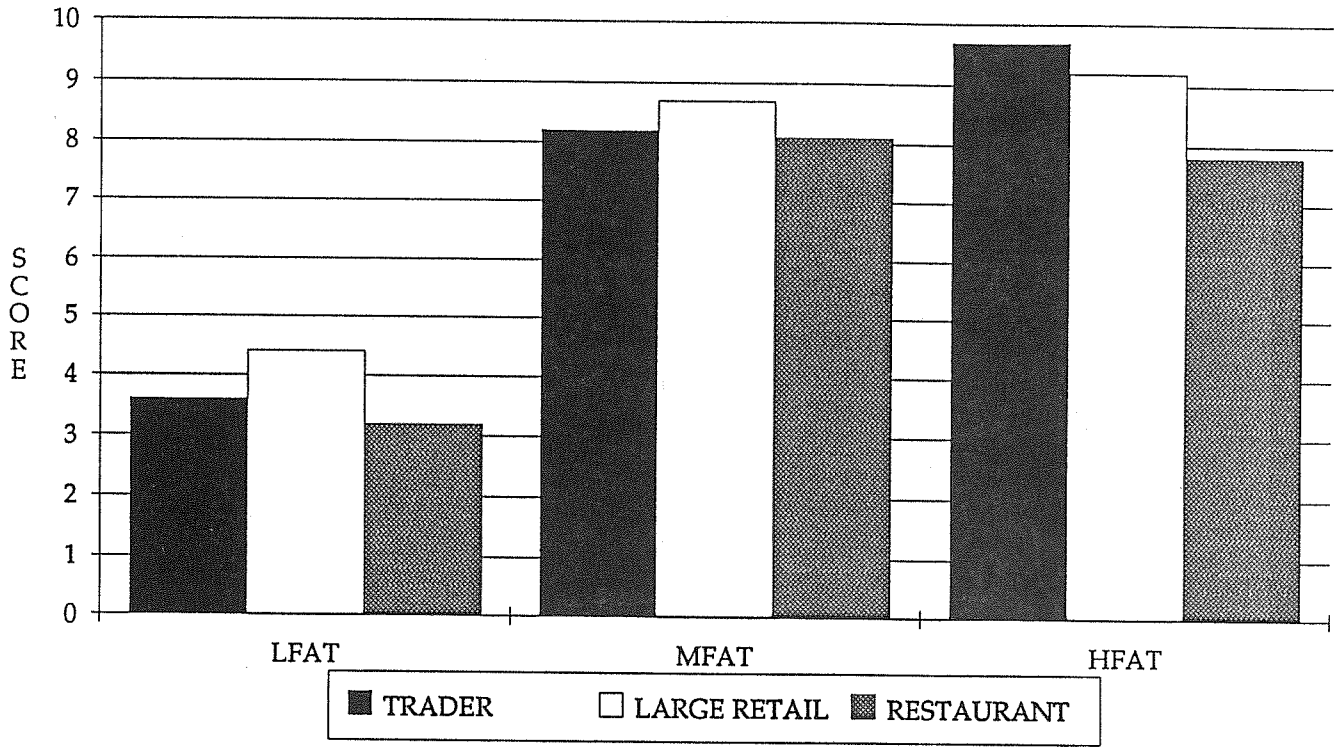


Figure 3.13: Ratings of Color of Flesh

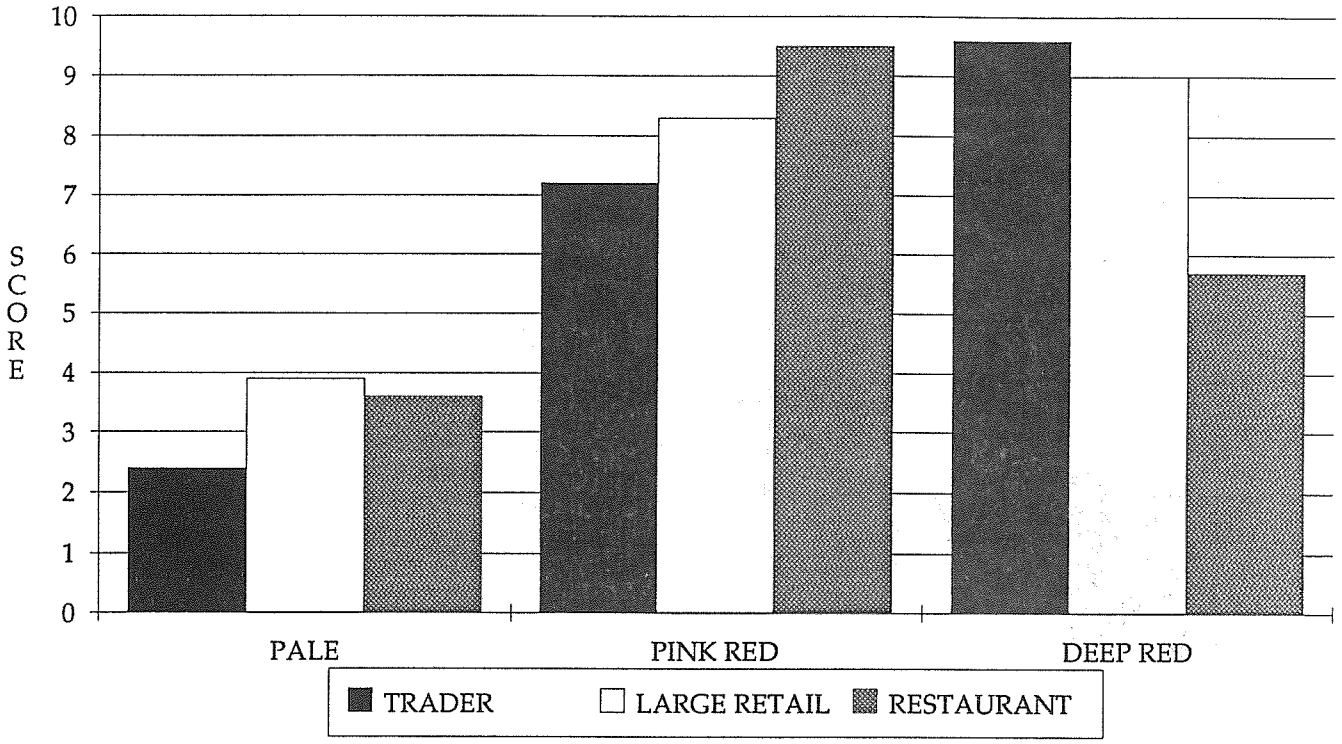
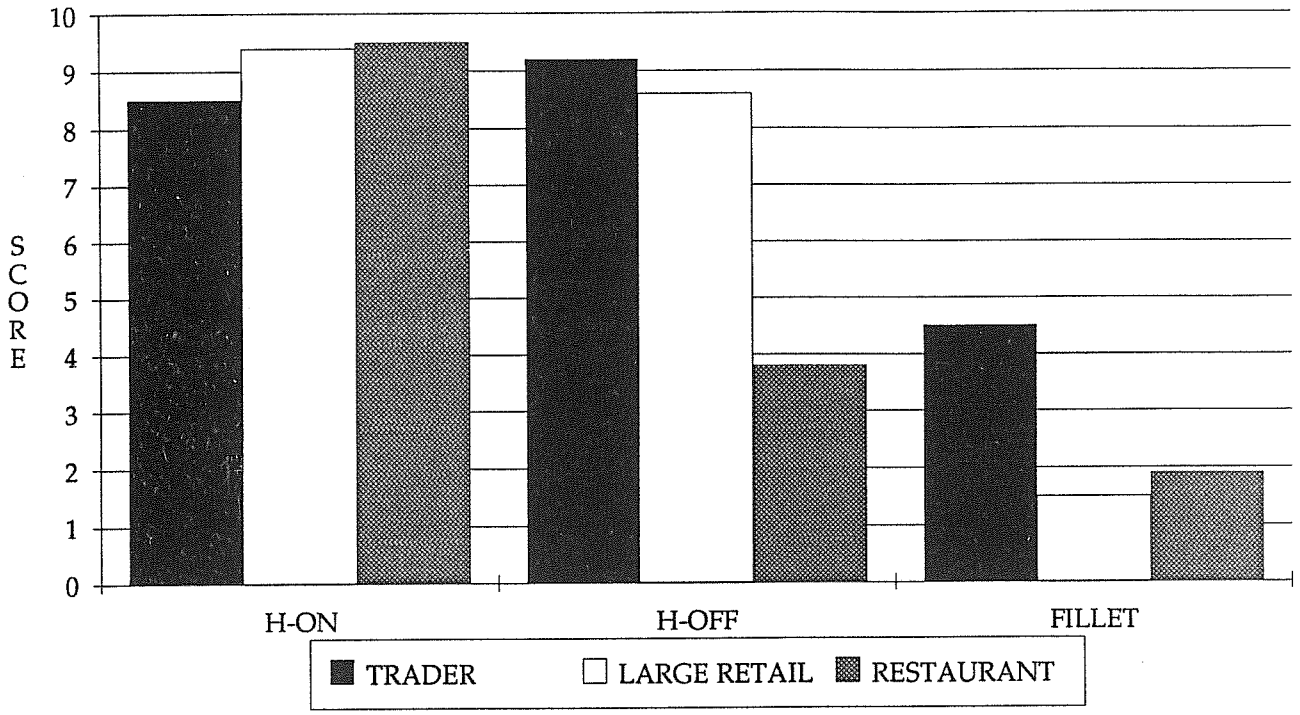


Figure 3.14: Ratings of Product Form



they tend to prefer whole, head-off salmon, although it is only marginally preferred to whole, head-on. Large retailers marginally prefer whole, head-on salmon. Both buyers for Japanese and Western-style restaurants significantly picked whole head-on over head-off. All buyers rated fillets and steaks poorly.

Size (see Figure 3.15):

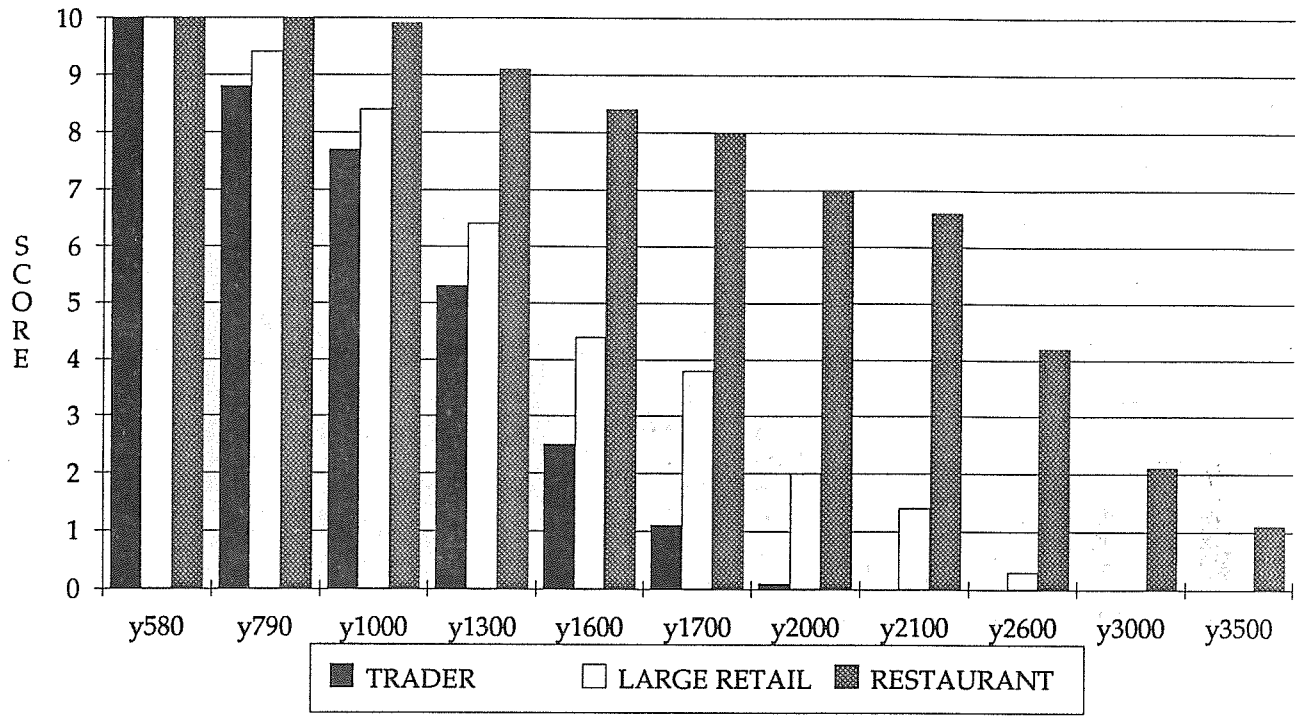
Traders preferred 2-3 kg. salmon. This weight category was considered marginally more desirable than over 3-4 kg. salmon, and significantly better than 1-2 kg. or 4-5 kg. salmon which were rated the same. Buyers for large retail outlets preferred somewhat larger fish; 3-4 kg. were marginally preferred to 2-3 kg. and 4-5 kg. salmon. Buyers for Japanese-style restaurants indicated similar preferences as buyers for large retail outlets. Western-style restaurants rated 3-4 kg. salmon significantly better than the other size categories.

Price (see Figure 3.16):

Buyers for large retail outlets (many import directly) and traders were both more sensitive to price than restaurant buyers. Traders indicated neutrality regarding price of about 1300-1400 yen/kg. (C$5.65-6.10/lb.) during the survey period (Spring/Summer 1988), and rapidly dropping preference scores above these prices. Buyers for large retail outlets were neutral in the 1400-1600 yen/kg. (C$6.10-7.00/lb.) range. Restaurants indicated price neutrality around 2300-2500 yen/kg. (C$10.00-11.00/lb.) during the survey period.

Figure 3.15: Ratings of Size

Figure 3.16: Ratings of Price



Supply (see Figure 3.17):

Buyers for large retail outlets rated year-round supply significantly higher than either traders or buyers for restaurants -- indicating presence of the product in the retail case to be relatively important. Year-round supply was only marginally preferred for Japanese-style restaurants, and seasonality was actually marginally preferred for Western-style restaurants, indicating that among many restaurants, marketing a special seasonal product enhances sales.

3.4 Comparing Salmon Products

Using the results from the previous sections, competing salmon products can be evaluated in terms of total preference. This is done by multiplying the importance rating for a given category by the individual attribute importance level, then summing overall attribute categories and dividing by 100. This was done for 44 realistic salmon products (see Table 3.5). This analysis demonstrates some clear differences between the market segments.

For traders, frozen sockeye from Canada is the most preferred of the 44 products compared (product 1 in Table 3.5 and Figure 3.18). Using moderately priced (1650 yen/kg.) frozen sockeye from Canada as a reference product, the mean preference score for the other salmon products can be statistically tested to determine whether they are significantly different in preference for product (2).

Figure 3.17: Ratings of Supply

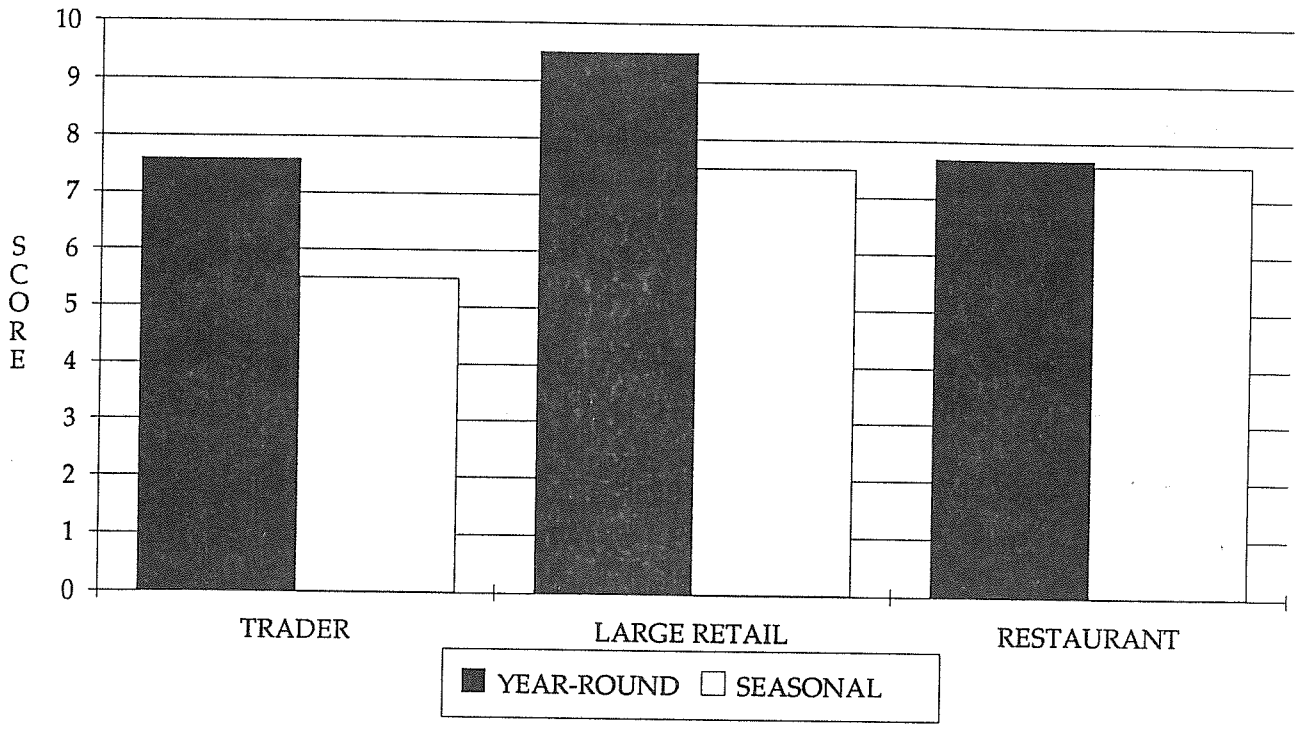
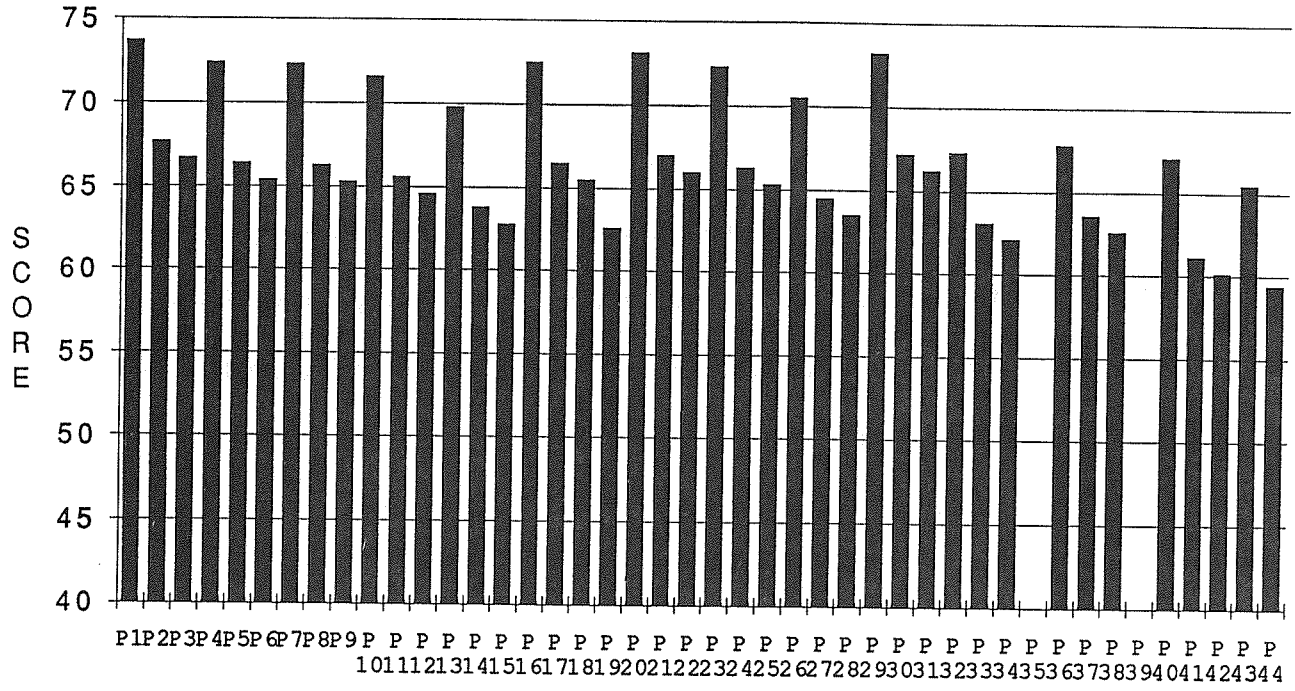


Figure 3.18: Preference Scoring of Competing Products (Trader)



If one considers product priced at 1650 yen/kg., it can be seen that farmed coho products (8, 11, 14), Canadian troll-caught coho and chinook (17, 30), farmed chinook (21, 24, 27), and Norwegian farmed Atlantics are all rated insignificantly different from the reference product. The most poorly rated product among the 44 was frozen chum salmon from Bristol Bay, Alaska (Product 44).

Buyers for large retailers rated the 1000 yen/kg. frozen chinook (30) and coho (16) from Canada the highest (see Table 3.5 and Figure 3.19). The most poorly rated products were high priced Norwegian fresh Atlantic salmon. When the reference product (1650 yen/kg. frozen sockeye from Canada) is compared to other 1650 yen/kg. products, the following are not significantly different in preference: frozen sockeye from Bristol Bay, Alaska (5), 3-4 kg., frozen, farmed coho from Canada (1), frozen troll-caught coho and chinook from Canada (17, 30) and farmed, frozen chinook from Canada (24). Note that many competing products were rated significantly worse than the reference sockeye product (2).

Among restaurant buyers, the behavior is quite different (see Table 3.5 and Figure 3.20-3.21). Fresh farmed Atlantic salmon from Norway and Canada were the highest rated products for both Japanese and Western-style restaurants (products 32 and 36). The most poorly rated products for Japanese-style restaurants were the frozen sockeye and frozen farmed coho products (3, 6, 9, 12). For Western-style restaurants, the poorest rated products were the frozen sockeye and small 2-3 kg. frozen farmed coho (3, 6, 9). Comparing the rating with the reference sockeye product (2) the following were considered insignificantly different by both Japanese-style and Western-style restaurants: frozen

Table 3.5: Preference Scores for Competing Salmon Products

	Species	Origin	Method of Catch	Fresh vs Frozen	Form	Color	Supply	Size	Price (Yen/Kg)	TRADERS: Mean Preference Score	LG. RETAIL Mean Preference Score	REST:JAPAN Mean Preference Score	REST:WESTERN Mean Preference Score
1	Sockeye	Canada	Gillnet	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	1000	73.7 ** +	75.1 ** +	51.9 ** +	59.6 ** +
2	Sockeye	Canada	Gillnet	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	1650	67.7 NA	72.8 NA	50.8 NA	58.5 NA
3	Sockeye	Canada	Gillnet	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	2050	66.7 ** -	71.0 ** -	50.0 ** -	57.3 ** -
4	Sockeye	AK:Bristol	Gillnet	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	1000	72.4 ** +	74.5 ** +	51.7 ** +	59.5 ** +
5	Sockeye	AK:Bristol	Gillnet	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	1650	66.4 ** -	72.2	50.7	58.3
6	Sockeye	AK:Bristol	Gillnet	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	2050	65.4 ** -	70.3 ** -	49.9 ** -	57.1 ** -
7	Coho	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	1000	72.3 ** +	71.3	52.0	59.2
8	Coho	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	1650	66.3	69.0 ** -	50.9	58.3
9	Coho	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	2050	65.3 ** -	67.2 ** -	50.2	56.9 ** -
10	Coho	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	1000	71.6 ** +	72.0	52.5	60.9 ** +
11	Coho	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	1650	65.6	69.8	51.5	59.7 ** +
12	Coho	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	2050	64.6 ** -	67.9 ** -	50.7	58.5
13	Coho	Canada	Farmed	Fresh	Head-on	Dp. Red	Seasonal	3-4 Kg	1000	69.8	69.7 ** -	56.8 ** +	70.5 ** +
14	Coho	Canada	Farmed	Fresh	Head-on	Dp. Red	Seasonal	3-4 Kg	1650	63.8	67.4 ** -	55.8 ** +	69.3 ** +
15	Coho	Canada	Farmed	Fresh	Head-on	Dp. Red	Seasonal	3-4 Kg	2050	62.8 ** -	65.5 ** -	55.0 ** +	68.1 ** +
16	Coho	Canada	Troll	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	1000	72.5 ** +	75.9 ** +	54.9 ** +	65.2 ** +
17	Coho	Canada	Troll	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	1650	66.5	73.6	53.8 ** +	64.0 ** +
18	Coho	Canada	Troll	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	2050	65.5 ** -	71.7	53.0 ** +	62.8 ** +
19	Coho	Japan	Farmed	Fresh	Head-on	Dp. Red	Seasonal	3-4 Kg	1650	62.6 ** -	66.7 ** -	56.2 ** +	69.9 ** +
20	Chinook	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	1000	73.1 ** +	71.8	52.6	59.6
21	Chinook	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	1650	67.0	69.5 ** -	51.6	58.4
22	Chinook	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	2-3 Kg	2050	66.0	67.7 ** -	50.8	57.2 ** -
23	Chinook	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	1000	72.3 ** +	72.6	53.2 ** +	61.2 ** +
24	Chinook	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	1650	66.3	70.3	52.2	60.0 ** +
25	Chinook	Canada	Farmed	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	2050	65.3	68.4 ** -	51.4	58.8
26	Chinook	Canada	Farmed	Fresh	Head-on	Dp. Red	Seasonal	3-4 Kg	1000	70.5	70.2 ** -	57.5 ** +	70.8 ** +
27	Chinook	Canada	Farmed	Fresh	Head-on	Dp. Red	Seasonal	3-4 Kg	1650	64.5	67.9 ** -	56.4 ** +	69.6 ** +
28	Chinook	Canada	Farmed	Fresh	Head-on	Dp. Red	Seasonal	3-4 Kg	2050	63.5	66.0 ** -	55.6 ** +	68.4 ** +
29	Chinook	Canada	Troll	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	1000	73.2 ** +	76.4 ** +	55.5 ** +	65.5 ** +
30	Chinook	Canada	Troll	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	1650	67.2	74.1	54.5 ** +	64.3 ** +
31	Chinook	Canada	Troll	Frozen	Head-off	Dp. Red	Seasonal	3-4 Kg	2050	66.2	72.3	53.7 ** +	63.1 ** +
32	Atlantic	Norway	Farmed	Fresh	Head-on	Pk. Red	Year Rd	3-4 Kg	1000	67.3	65.4 ** -	58.0 ** +	73.8 ** +
33	Atlantic	Norway	Farmed	Fresh	Head-on	Pk. Red	Year Rd	3-4 Kg	1650	63.1	63.1 ** -	57.0 ** +	72.7 ** +
34	Atlantic	Norway	Farmed	Fresh	Head-on	Pk. Red	Year Rd	3-4 Kg	2050	62.1	62.8 ** -	56.9 ** +	71.2 ** +
35	Atlantic	Norway	Farmed	Fresh	Head-on	Pk. Red	Year Rd	3-4 Kg	2600	na	61.7 ** -	56.0 ** +	69.5 ** +
36	Atlantic	Canada	Farmed	Fresh	Head-on	Pk. Red	Year Rd	3-4 Kg	1000	67.8	68.0 ** -	58.2 ** +	73.1 ** +
37	Atlantic	Canada	Farmed	Fresh	Head-on	Pk. Red	Year Rd	3-4 Kg	1650	63.6 ** -	65.8 ** -	57.2 ** +	72.0 ** +
38	Atlantic	Canada	Farmed	Fresh	Head-on	Pk. Red	Year Rd	3-4 Kg	2050	62.6 ** -	65.4 ** -	57.1 ** +	70.5 ** +
39	Atlantic	Canada	Farmed	Fresh	Head-on	Pk. Red	Year Rd	3-4 Kg	2600	na	64.3 ** -	56.2 ** +	68.8 ** +
40	Chum	Japan	Gillnet	Fresh	Head-on	Pk. Red	Seasonal	2-3 Kg	1000	67.1	70.7	56.8 ** +	70.7 ** +
41	Chum	Japan	Gillnet	Fresh	Head-on	Pk. Red	Seasonal	2-3 Kg	1650	61.1 ** -	68.5 ** -	55.8 ** +	69.5 ** +
42	Chum	Japan	Gillnet	Fresh	Head-on	Pk. Red	Seasonal	2-3 Kg	2050	60.1 ** -	66.6 ** -	55.0 ** +	68.3 ** +
43	Chum	AK:Bristol	Gillnet	Frozen	Head-off	Pk. Red	Seasonal	2-3 Kg	1000	65.5	73.1	52.0	60.4 ** +
44	Chum	AK:Bristol	Gillnet	Frozen	Head-off	Pk. Red	Seasonal	2-3 Kg	1650	59.4 ** -	70.7 ** -	51.0	59.2

** Indicates the product is perceived as signifigantly different from the baseline product (2).

+/- Indicates the direction of perference relative to the baseline product (2).

Figure 3.19: Preference Scoring of Competing Products (Large Retail)

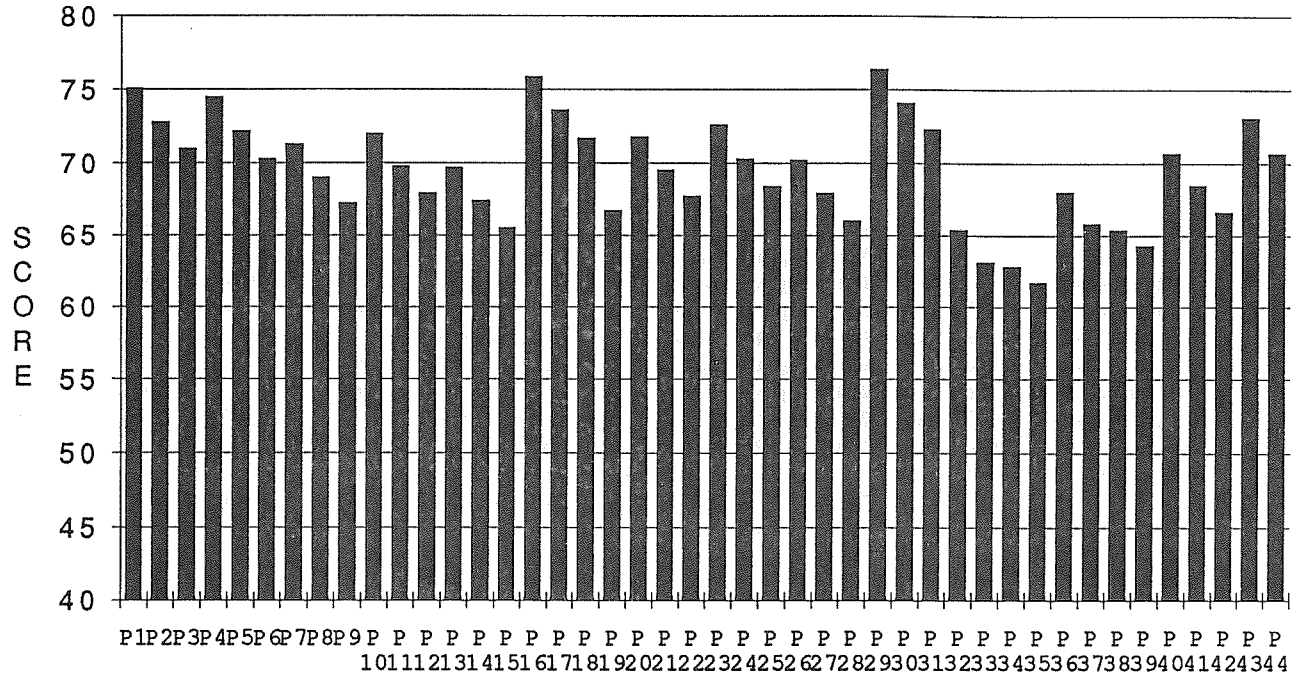


Figure 3.20: Preference Scoring of Competing Products

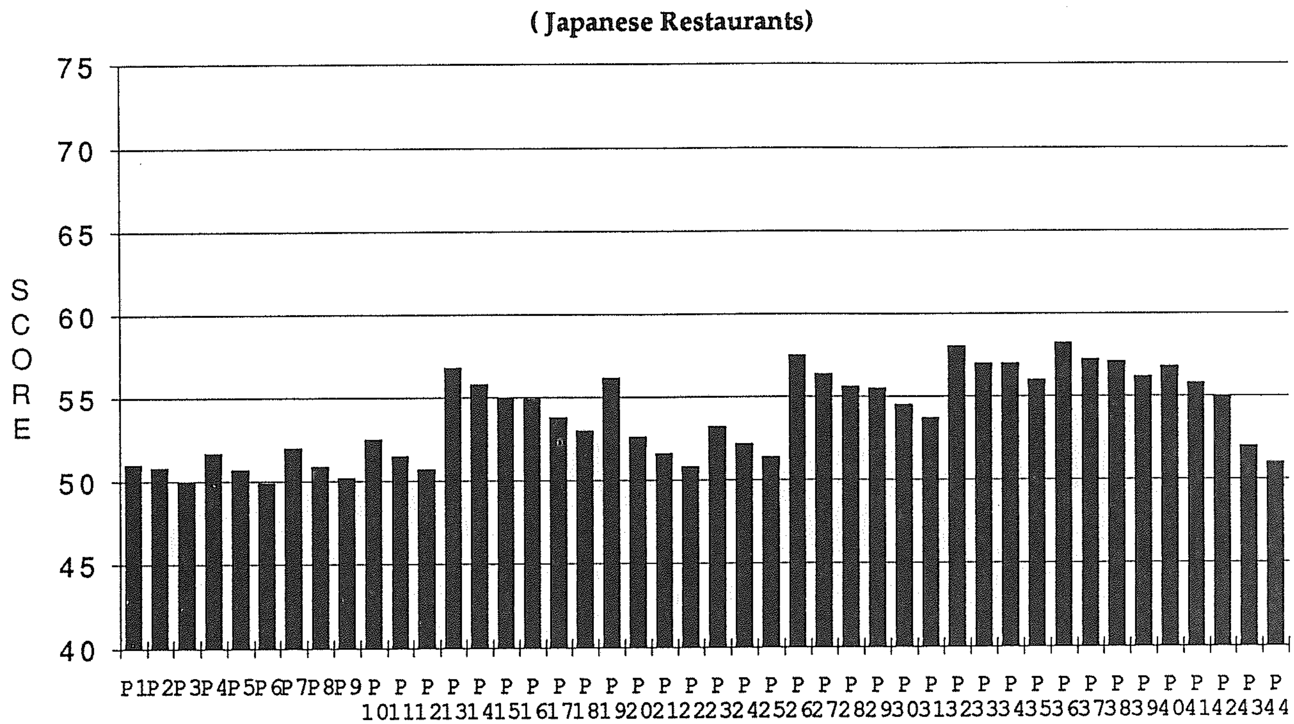
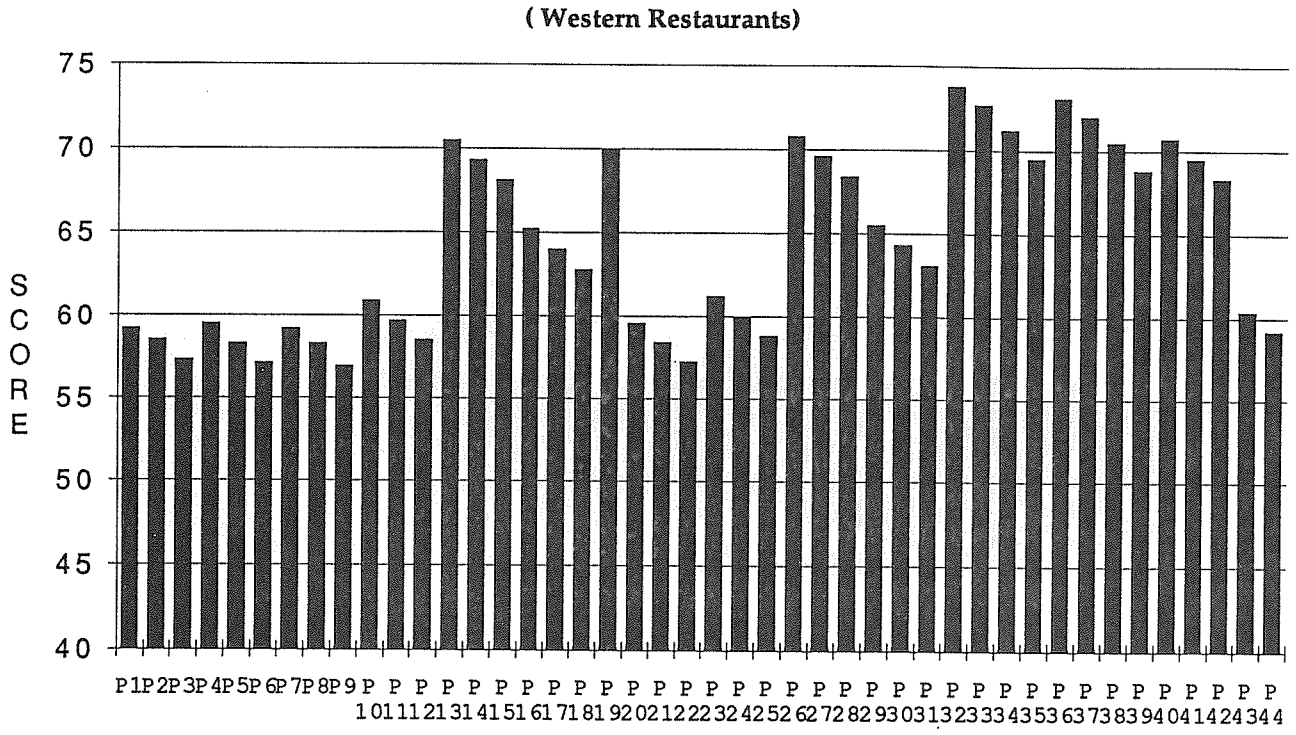


Figure 3.21: Preference Scoring of Competing Products



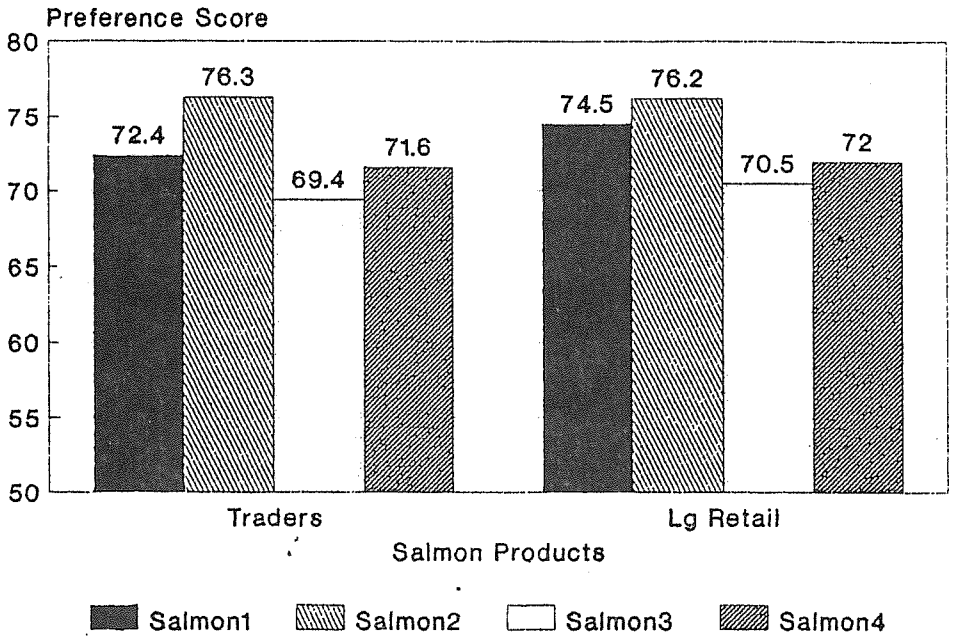
sockeye from Bristol Bay (5), frozen, head-off, farmed, 2-3 kg. coho and chinook (8, 21) and frozen chum from Bristol Bay. Japanese-style restaurant buyers were also indifferent between 3-4 kg., frozen, head-off coho and chinook (9, 24). Notably, fresh salmon, farmed or troll-caught, Norwegian or Japanese salmon, head-on are significantly preferred to the reference frozen, sockeye from Canada (2).

It may be useful to examine four specific salmon products more closely to clearly demonstrate the results which can be derived from this market research. Consider the following seasonal products, (Figure 3.22 and 3.23).

It is useful to note how the products, which are all the same price, compare between the buyer groups. Among traders, the British Columbian sockeye scored significantly higher than the Bristol Bay sockeye or the two farmed products. Among the buyers for large retail outlets, the troll-caught British Columbian salmon is only slightly preferred to the gillnetted, Bristol Bay sockeye. However, the farmed salmon were significantly less preferred. For Japanese-style and Western-style restaurant buyers, sockeye and farmed coho scores were similar. However, the farmed Atlantic salmon scored higher.

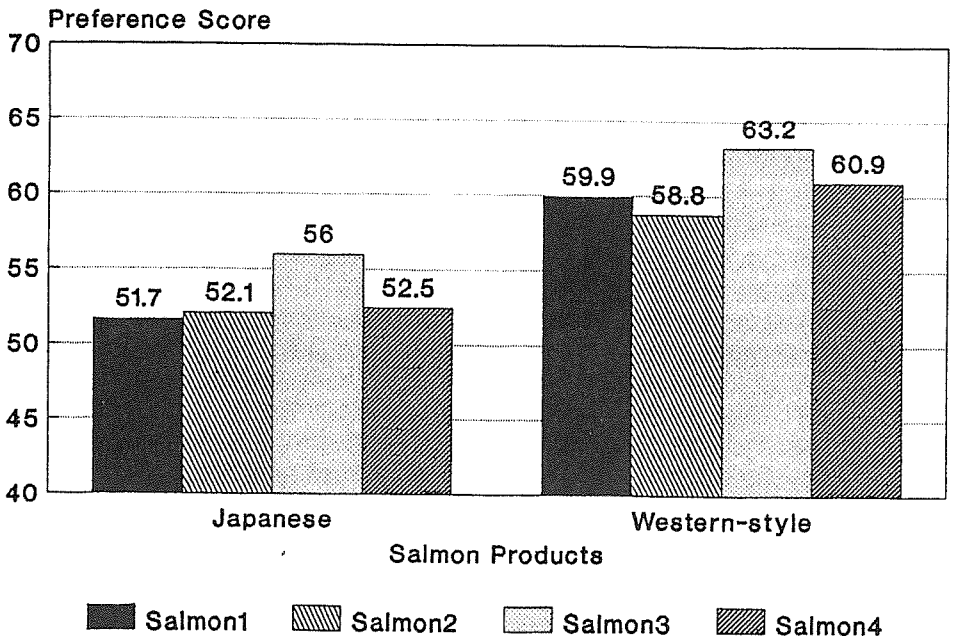
These results imply that greater opportunity is in the restaurant sector for farmed Atlantic salmon if priced comparably to wild salmon. On the other hand, farmed coho appeared to have little comparative advantage over wild-caught sockeye in this sector. Based on this analysis the farmed products considered here would have to be priced below the wild-caught sockeye to be judged comparably.

Figure 3.22: Comparison of Three Salmon Traders and Large Retailers



Salmon 1: Frozen, gillnetted, sockeye from Bristol Bay, Alaska, dressed, head-off, 2-3 kilograms, high quality, medium fat content, deep red, bright, 1000 Yen/kg.
Salmon 2: Frozen, troll-caught, sockeye from British Columbia, dressed, head-off, 2-3 kilograms, high quality, high fat content, deep red, bright, 1000 Yen/kg.
Salmon 3: Frozen, farmed, Atlantic salmon from Canada, dressed, head-off, 3-4 kilograms, high quality, high fat content, pink-red, bright, 1000 Yen/kg.
Salmon 4: Frozen, farmed, coho salmon from British Columbia, head-off, 3-4 kilograms, high quality, high fat content, deep red, bright, 1000 Yen/kg.

Figure 3.23: Comparison of Three Salmon Japanese and Western-style Restaurants



Salmon 1: Frozen, gillnetted, sockeye from Bristol Bay, Alaska, dressed, head-off, 2-3 kilograms, high quality, medium fat content, deep red, bright, 1000 Yen/kg.

Salmon 2: Frozen, troll-caught, sockeye from British Columbia, dressed, head-off, 2-3 kilograms, high quality, high fat content, deep red, bright, 1000 Yen/kg.

Salmon 3: Frozen, farmed, Atlantic salmon from Canada, dressed, head-off, 3-4 kilograms, high quality, high fat content, pink-red, bright, 1000 Yen/kg.

Salmon 4: Frozen, farmed, coho salmon from British Columbia, head-off, 3-4 kilograms, high quality, high fat content, deep red, bright, 1000 Yen/kg.

3.4.1 Most Preferred Products

If one collects the best attributes from each category, a hypothesized best salmon product can be developed for each buyer group (see Table 3.6). Notice that the preferred product for traders closely resembles that for large retailers, but is quite different than that required by the restaurant sector. Remember also that the restaurant sector is increasing relative to the home consumption sector, indicating a growing opportunity for fresh salmon.

Table 3.6: Most Preferred Hypothetical Salmon Products

	Trader	Large Retail	Japanese-style restaurant	Western-style restaurant
Species	Sockeye	Sockeye/chinook/ chum	Chinook	Atlantic/chinook
Origin	Canada/ Cook Inlet	Canada/Japan	Japan	Norway/Japan
Source	Troll	Troll/gillnet	Troll/seine	Troll/seine/farm
State	Frozen	Frozen	Fresh	Fresh
Quality (freshness)	High	High	High	High
Appearance (skin)	Bright silvery/min. scale loss	Bright silvery/min. scale loss	Bright silvery/min. scale loss	Bright silvery/min. scale loss
Flesh	Deep red	Deep red	Deep red/pink-red	Pink-red
Fat Content	High	High/medium	High/medium	High/medium
Form	Head-off/on	Head-on/off	Head-on	Head-on
Size	2-3 kg./3-4 kg.	3-4 kg./2-3 kg.	3-4 kg./2-3 kg.	3-4 kg.
Price	low (neutral 13-1400 yen/kg)	low (neutral 14-1600 yen/kg)	low (neutral 23-2500 yen/kg)	low (neutral 23-2500 yen/kg)
Supply	Year round/ seasonal	Year round	Year round/ seasonal	Seasonal/ year round

4 CONCLUSIONS

Based on information collected from secondary sources and the survey of traders, retail buyers and restaurant buyers, some market conditions and trends can be identified.

General:

- Percentage of family income spent on food is declining from 32.2 percent in 1970 to 25.5 percent in 1986.

- The food expenditure share for all seafood for at-home consumption has been steady at about 14 percent. Annual expenditure on seafood has leveled off.

- After rapid growth since 1970, at-home salted salmon consumption and expenditure have apparently stabilized.

- Although small, the expenditure on fresh salmon for the home is slowly increasing.

- Japanese consumers' real income is increasing and with the strong yen, their buying power in North America has rapidly improved in recent years.

- The bulk of traders supply the at-home market.

- The at-home consumption market is dominated by frozen sockeye and chum which

generally are salted.

- Canadian salmon has a more favorable image among traders and large retailers than Alaskan salmon.

- Restaurants apparently have accepted fresh Atlantic salmon from Norway. Japanese chum is also highly regarded.

- Most important attribute categories (in order):

  Traders: Price, Quality (freshness), Species, Color, Appearance

  Retailers: Quality (freshness), Price, Color, Appearance, Fat content, Supply

  Restaurants: Quality (freshness), State (fresh/frozen/salted), Price, Product Form, Color, Appearance.

- Least important attribute categories (least important is listed first):

  Traders: Origin, Method of Catch, Product Form, Supply, Size

  Retail: Species, Origin, Product Form, Size

  Restaurants: Origin, Method of Catch, Supply.

- A greater portion of income is being spent on eating-out and pre-cooked meals. Food expenditure share for eating-out has increased from 8.9 percent (1970) to 14.8 percent (1988) and for pre-cooked meals from 3.6 percent to 6.7 percent. Young, single men spend over 70 percent of food expenditure on eating-out.

- Within the eating-out category, traditional restaurants (Oriental, sushi and noodles) are declining in food expenditure share. Drinking establishments and Western-style restaurants are increasing in food expenditure share.

- Salted salmon is most popular for at-home consumption. Fresh salmon and non-traditional preparations are mostly found in restaurants, in particular, Western-style restaurants.

- In order to attract consumers to salmon in the restaurants, non-traditional salmon species and preparations appear to be favored.

The results indicate that sockeye from Canada compares favorably with most other frozen salmon among buyers for large retail outlets and traders. It is generally preferred to Alaskan products. However, the rating of products indicates that most farmed products will be considered viable substitutes for sockeye among traders.

Buyers for large retailers did not rate Atlantic Norwegian salmon very highly relative to frozen sockeye from Canada. However, frozen troll-caught coho and chinook and farmed coho and chinook would be considered viable substitutions if priced similarly.

Restaurant buyers generally preferred fresh products to frozen sockeye and have responded positively to Atlantic salmon from Norway. Norway clearly has obtained a significant presence in the restaurant market in Tokyo (at least in spring of 1988). Norway is taking advantage of market segments that ocean-caught salmon from Alaska and Canada

have not penetrated well. This restaurant segment, although not large compared to the retail segment, is growing. It is dominated by younger and above-average income consumers. Therefore, the trend toward increased consumption in the restaurant segment should continue. The restaurant segment may present an opportunity to market specially handled (or raised) salmon products taking advantage of the heterogeneous nature of the restaurant segments. In particular, one might expect the market for differentiated salmon, such as imported salmon from non-traditional places and non-traditional species, to increase.

Although the food expenditure share and the quantity of salted salmon consumed at home is slowly declining, the retail sales of fresh/previously frozen salmon is increasing somewhat. As the Japanese consumer obtains greater purchasing power, this trend may continue, giving an opportunity to purveyors of improved quality salmon and fresh/previously frozen salmon. There is probably a substantial gain to be made in the high end of the retail salmon market through better handling and promotion of high quality frozen product. The recent interest in frozen Chilean coho and frozen Norwegian Atlantic salmon may attest to this opportunity. In the next few years one might expect that poorly handled salmon will start to be driven to lower market niches as the supply of high quality frozen salmon starts to penetrate the retail market.

4.1 Some Suggestions for Marketing Canadian Salmon

Japanese consumers are conscious of food presentation and variety in food consumption especially in restaurants, but also in department stores. In order to expand the

salmon market, new products which differentiate salmon from the "run-of-the-mill" product for home consumption must be considered. New products may be actually new, valued-added products or 'new' in image. Fresh salmon appears to have opportunties in the restaurant sector. Salmon consumption needs to be stimulated among the young Japanese concentrating perhaps on ease of preparation and possibly Western-style preparation of fresh/frozen products.

There will continue to be a large market for salted and traditionally prepared salmon, although this market is not expected to grow substantially, and may decline on a per capita basis as younger consumers age and as diners spend greater proportions of their incomes on dining out. Japan's economy, as well as its seafood consumption, are in a period of relatively rapid change. It would be well advised for Canadians to closely monitor the changes in the Japanese salmon market on a more regular basis and to periodically evaluate changes which occur in a systematic way. Changing consumer preferences, and potentially significant changes in the distribution channels, should be closely watched.

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Appendix

Table A. 1: Ratings of Overall Category Importance

	TRADER		LARGE RETAIL		RESTAURANT	
	Mean	Std. Error	Mean	Std. Error	Mean	Std. Error
SPECIES	85.4	4.7	62.0	6.1	68.0	3.7
ORIGIN	47.5	6.6	71.0	9.9	55.4	4.1
METHOD	50.7	10.0	80.5	6.6	60.8	4.1
STATE	75.7	7.1	81.0	6.6	84.6	3.8
QUALITY	95.0	2.0	97.0	2.1	99.2	0.6
APPEARANCE	82.5	5.3	88.5	3.0	76.2	4.1
COLOR	86.1	2.4	90.5	3.4	76.1	4.0
FAT	78.6	3.8	85.5	2.8	67.5	4.1
FORM	62.9	8.9	71.0	3.8	76.6	4.2
SIZE	65.4	6.6	71.5	3.0	68.3	3.4
PRICE	98.6	1.4	90.0	5.6	80.9	3.1
SUPPLY	65.0	7.6	81.0	7.2	63.0	4.3