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The Structure of Job Satisfaction Among New
England Fishermen

by

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INTRODUCTION The passage of the Fishery Conservation and Management Act (FCMA) of 1976 (PL 94-265) extending US jurisdiction and management over fisheries to 200 miles has the potential of resulting in wide-ranging changes in the New England fishery. These changes can take many forms ranging from minor alterations in species sought and techniques used to drastic shifts in style from inshore to offshore fishing or possible displacement of individuals from the industry under a limited entry plan. The changes wrought by management, no matter how minor, have the potential of affecting the structure of a person's work--an aspect of life that plays an important psychological and social, as well as economic role in the well being of the worker (cf. HEW 1973). Elliot Richardson (then secretary of HEW), in the forward to Work in America, a report of a special task force to the Department of Health Education and Welfare, noted that concern with the quality of work and its role in society and culture is a subject "...vitally important to much of what HEW does" (HEW 1973:1). The interrelationship between potential fisheries management effects on the structure of work, job satisfaction, and the social and psychological well being of the involved fisherman is therefore a timely and important topic. It is not only important for the reasons cited above, but also because PL 94-265 (FCMA) mandates that conservation and management take into account social as well as biological and economic factors.

On the basis of previous research concerning job satisfaction, it can be assumed that the path leading from aspects of a fisherman's job to job satis-

faction and on to social effects is a relatively complex one. For example, a fair amount of research has demonstrated a relationship between various job characteristics and job satisfaction (e.g. Voydanoff 1978; Kalleberg 1977; Locke and Whiting 1974; Kohn and Schooler 1973; Armstrong 1971; Dunnette, et al 1967). Job satisfaction itself, however, is often directly related to outcomes which have potential social impact. Among variables related to job satisfaction which have social impact, perhaps the most important is longevity. Palmore (1969) reports that work satisfaction is more important in predicting longevity than rating by an examining physician of physical function, a measure of tobacco use, or genetic inheritance. The social impact of longevity on both the family and community is so obvious that it need not be elaborated here. Further, heart disease and other illnesses which reduce a person's ability to function in their social roles have also been related to work dissatisfaction (HEW 1973).

Other studies have demonstrated a relationship between job satisfaction and mental health. For example, Kornhauser (1965) found that jobs most conducive to mental health are those in which the workers tend to be the most satisfied. Perhaps most important, he also found that within occupational categories mental health is correlated with job satisfaction, and that workers in lower level jobs that are satisfied differed little in mental health from satisfied workers in higher level jobs. This led him to conclude that "job satisfaction is the link between objective conditions prevailing at different occupation levels and the observed variation in mental health" (Kornhauser 1965:263). HEW (1973), summing up 20 years of research by the Survey Research Center at the University of Michigan notes that the absence of job satisfaction is related to psychosomatic illnesses, anxiety, low self esteem, worry, tension, and impaired interpersonal relationships. There is no doubt that mental health problems such as

these impair one's ability to function normally in society. In addition, Gelles (1974) and Strauss (1979) report a clear relationship between job satisfaction, some of its mental health correlates, and family violence, an increasingly serious social problem. Finally, job satisfaction has been related to absenteeism, turnover (Robinson, et al 1969) and job performance (Inkson 1978; Jacobs and Solomon 1977), three variables with both economic and social impact.

In sum, previous research has shown that job satisfaction is an important variable related both directly and indirectly to various other social and economic variables. The relationships are positive, with high job satisfaction correlated with positive social and economic impacts and low satisfaction with negative impacts. These relationships justify the exploratory investigation of job satisfaction and its social and occupational correlates among New England fishermen which forms the remainder of this paper.

SAMPLE Data for this report were gathered from fishermen who use the facilities at Point Judith, Rhode Island; New Bedford, Massachusetts; and three locations on the Pemaquid Peninsula, Bristol, Maine (Round Pond, New Harbor, and Pemaquid Harbor). A Sample of 43 fishermen were interviewed at New Bedford which is primarily a large offshore dragger, long trip (4 or more days) port. 79 fishermen were interviewed at Point Judith which consists primarily of short trip (less than 4 days), smaller inshore vessels and inshore lobstermen. Finally, 80 fishermen formed the sample interviewed at Bristol, Maine where most of the fishermen are inshore lobstermen. More detailed information concerning the ports and samples can be found in Acheson (1978), Jessen (1978), Pollnac and Poggie (1978), Poggie and Pollnac (1978), and Poggie and Gersuny (1974).

TESTS A 22 item list was used to investigate the structure of job satisfaction.

Many of the items were adapted from Schletzer's (1965) 62 item scale which was designed to measure general job satisfaction on a number of components, not all of which were applicable to fishermen. Redundant and inapplicable items were removed from the list, and 4 items unique to our problem were added. Many of the items used correspond to high frequency responses which were derived from an interview with 108 Southern New England fishermen who were requested to tell what they liked and disliked about fishing (for a description of this sample see Poggie, Pollnac and Gersuny 1976; Pollnac, Gersuny, and Poggie 1975). The resultant scale was administered by asking each respondent to indicate if he were very dissatisfied, dissatisfied, neutral, satisfied, or very satisfied with each of the 22 items representing aspects of his job. Responses were coded from one to five respectively and factor analysed using common factor analysis and orthogonal rotation (varimax). Number of factors was determined using an eigenvalue out-off of 1.0, and factor scores were calculated for each fisherman on each of the three resulting factors. The factor loading matrix is presented in Table 1.

The three factors derived do not clearly correspond to the intrinsic and extrinsic job characteristic classification used so commonly in research related to job satisfaction (e.g. Herzberg 1966; Fox 1971). Other researchers have also noted this lack of correspondence (e.g. Voydanoff 1978). Additionally, Dyer and Parker (1975), noting the lack of agreement in the literature concerning the definition of the terms extrinsic and intrinsic, conducted a survey of psychologists and found little consensus between them concerning the terms.

The dimensions resulting from the analysis presented here seem to be more clearly related to Maslow's (1954) hierarchy of needs, with Factor II representing the basic levels (physiological and safety), Factor I the middle level

Table 1. Rotated factor loadings of job satisfaction items.

ITEM	FACTOR		
	I	II	III
1. Time away from home.	<u>.81</u>	.09	-.21
2. Hours spent working.	<u>.72</u>	.25	-.17
3. Time for recreation and/or family activities.	<u>.71</u>	.06	-.12
4. Ability to come and go as you please.	<u>.61</u>	-.12	-.41
5. Time it takes you to get to grounds.	<u>.47</u>	.21	-.14
6. Doing deckwork on vessel.	<u>.41</u>	.12	-.40
7. Opportunity to be your own boss.	<u>.39</u>	-.21	-.34
8. Community in which you live.	<u>.39</u>	.12	-.21
9. Cleanliness.	-.03	<u>.59</u>	-.02
10. Physical fatigue of job.	-.03	<u>.56</u>	-.02
11. Predictability of earnings.	.11	<u>.49</u>	-.08
12. Mental pressure on job.	.18	<u>.48</u>	-.03
13. Job safety.	.19	<u>.45</u>	-.11
14. Your earnings.	-.19	<u>.36</u>	.15
15. Healthfulness.	.21	<u>.31</u>	-.26
16. Being out on the water.	.14	-.02	<u>-.71</u>
17. Adventure.	.16	.05	<u>-.71</u>
18. Challenge of job.	.18	-.01	<u>-.66</u>
19. Working outdoors.	.23	.08	<u>-.57</u>
20. Feeling you are doing something worthwhile.	.12	.28	<u>-.51</u>
21. Peace of mind.	.28	.24	<u>-.34</u>
22. Performance of State and Federal officials.	.20	-.15	<u>-.22</u>

(Love and belongingness and self esteem), and Factor III the highest level (self actualization). Smith (1977) using a different list of characteristics among Northwest Coast salmon fishermen also rotated a factor which could be labeled self-actualization. His list of characteristics was sufficiently different, however, that this was the only comparable factor. It should be noted that Factor III is reflected (negative loadings) indicating that individuals with the lowest factor scores on Factor III are the most satisfied with their jobs on the dimension represented and vice-versa.

Two measures of overall job satisfaction were also used. Fishermen were asked if they would still go into fishing if they had their life to live over (JSM1) and whether or not they would advise a young man to go into fishing (JSM2). The responses to these questions (no, maybe, yes) were coded 0, 1, and 2 respectively. The question concerning whether or not a person would enter the same occupation if he had his life to live over has been referred to as one of the most informative among the indices of job satisfaction (Robinson et al 1969).

Other social and occupational variables selected because of their potential relationships with job satisfaction are age (years), marital status (married or not), years of formal education, whether or not respondent is both owner and skipper of vessel versus all others (e.g. crewmen), number of years fishing, whether or not respondent began fishing before 20 years of age, whether or not respondent's father was a fisherman, number of relatives who are fishermen, ethnicity (foreign born or not), and fishing type (e.g. offshore dragger, inshore lobsterman, etc.). The values for these variables were obtained from responses to direct questions.

ANALYSIS As a first step in the analysis, the relationship between overall job satisfaction and the structure of job satisfaction as represented by the three job characteristics factors was investigated with the use of multiple regression. As a means of determining whether or not macro variables associated with community or fishing type have any effect on the differential weighting of the various factors, analyses were performed for the total sample and within subgroups of the sample based on port and fishing style. The port subgroupings used are Point Judith, New Bedford, and Maine. Fishing type subgroups are (1) Inshore (e.g., inshore lobstering, inshore dragging, etc.), (2) Middle (pair trawling, purse seining, combination of inshore and offshore), and (3) Offshore (e.g., Offshore dragging, offshore lobstering). The fishermen themselves make a clear distinction between the inshore and offshore fleets. Fishing style, time at sea, and away from home, and other characteristics have resulted in many sociocultural distinctions which are related to these fishing types (cf. Miller and Pollnac 1978; Poggie and Pollnac 1978; Pollnac and Poggie 1978; Poggie and Gersuny 1974). Another subgrouping of fishing type used was to group inshore lobstermen into one group and put all other fishermen in another. The results of these analyses can be found in table 2.

Table 2 indicates that for the total sample, the three factors are significantly related to JSM1. The strongest predictor is Factor III (High Level Needs). The multiple correlation between all three factors and JSM1 is .38 which is statistically significant at better than the .001 level. JSM2 is significantly correlated with only Factor II. The other two factors add very little to the multiple correlation.

Turning to interport differences in the relationship between job satisfaction and the three occupational characteristic factors, Table 2 clearly shows

Table 2. Multiple Regression Analysis of Overall Job Satisfaction and Occupational Characteristics Factors.

OCCUPATIONAL CHARACTERISTICS FACTORS	OVERALL JOB SATISFACTION MEASURES 1 AND 2 (JSM1 and JSM2)*											
	TOTAL SAMPLE				POINT JUDITH				NEW BEDFORD			
	JSM1		JSM2		JSM1		JSM2		JSM1		JSM2	
	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>
1. Factor I (Mid-level Needs)	.19 ^b	.13	.10	.04	.15	.08	.17	.11	.41 ^b	.54	.52 ^b	.33
2. Factor II (Basic Needs)	.17 ^a	.14	.27 ^b	.15	.19	.11	.26 ^a	.10	.03 ^b	.25	.18	.20
3. Factor III (Hi-level Needs)	-.31 ^b	-.25	-.10	-.05	.03	.00	-.13	-.14	-.44 ^b	-.53	-.21	-.18
R	.38 ^c		.29 ^c		.22		.36 ^a		.67 ^c		.65 ^c	
N	201		201		79		79		42		42	
	MAINE				INSHORE				MIDDLE			
	JSM1		JSM2		JSM1		JSM2		JSM1		JSM2	
	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>
1. Factor I (Mid-level Needs)	-.07	-.12	.23 ^a	-.12	.02 ^b	.00	.12	.06	-.24	-.15	.01	-.06
2. Factor II (Basic Needs)	.19	.17	.02	.17	.24 ^a	.18	.22 ^a	.12	.11	.09	.38 ^a	.23
3. Factor III (Hi-level Needs)	-.22 ^a	-.20	.05	-.20	-.21 ^a	-.16	-.06	-.02	.00	.05	-.03	-.08
R	.28		.28		.29 ^a		.24		.30		.40	
N	80		80		113		113		29		29	
	OFFSHORE				INSHORE LOBSTER				NON-INSHORE LOBSTER			
	JSM1		JSM2		JSM1		JSM2		JSM1		JSM2	
	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>	<u>r</u>	<u>beta</u>
1. Factor I (Mid-level Needs)	.44 ^b	.31	.25	.07	-.03	-.06	.11	.07	.31 ^b	.19	.24 ^b	.09
2. Factor II (Basic Needs)	.25	.26	.21	.12	.24 ^a	.19	.10	.04	.16 ^b	.11	.25 ^b	.13
3. Factor III (Hi-level Needs)	-.38 ^b	-.24	-.33 ^b	-.13	-.29 ^a	-.28	-.04	-.03	-.34 ^b	-.23	-.19 ^a	-.08
R	.55 ^c		.41 ^a		.35 ^a		.14		.44 ^c		.36 ^c	
N	54		54		74		74		122		122	

*JSM1 = Attitude toward going into fishing if had life to live over.

JSM2 = Attitude toward advising young man to go into fishing.

a=p < .05 b=p < .01 c=p < .001

that the strongest relationships are in New Bedford. The Middle Level Needs Factor is important in predicting both JSM1 and JSM2, and the High Level Needs Factor is strongly correlated with JSM1. The multiple correlations between the factors and the 2 job satisfaction measures indicates that in New Bedford the three factors account for over 40 percent of the variance in JSM1 and JSM2. Relationships within the other ports are relatively weak.

The analysis also indicates that there are inter-fishing type differences in the relationship between the occupational characteristics factors and the job satisfaction measures. The strongest relationships are found among offshore fishermen for both job satisfaction measures. Among inshore fishermen, the Basic and High Level Needs Factors are related to JSM1, but the rest of the correlations are rather weak. When inshore lobstermen are separated into one group, we find a pattern similar to that among all inshore fishermen--Factors II and III are the most important predictors of JSM1. Fishermen other than inshore lobstermen manifest a pattern similar to the offshore group, but with somewhat weaker correlations.

Summing up the analysis presented in Table 2, we find that, overall, the three factors are most significantly related to JSM1, which as we noted above has been referred to as the best single indicator of job satisfaction (Robinson, et al 1969). An examination of intergroup differences in the relationship between the job satisfaction measures and the three factors indicate that the factors are more strongly related to the measures in New Bedford, among offshore fishermen, and among fishermen who are not inshore lobstermen.

As a next step in the analysis, between group differences in level of satisfaction on each occupational characteristics factor and the two overall job satisfaction measures are examined. The groups used are the same as in the

analysis presented above, and the results of the analysis can be found in Table 3.

Table 3 indicates that across ports all the job satisfaction measures are significantly different. Across fishing types, only JSM2 does not differ significantly. Finally, comparing inshore lobstermen with all other fishermen, neither Factor III (High Level Needs) nor JSM1 vary significantly across the two subgroups.

The mean position of each group is plotted in three dimensional space in figures 1 through 3 as a means of visually displaying the differences between the various subgroupings with respect to their levels of satisfaction on each of the three factors. Figure 1 clearly shows the large separation between New Bedford and Maine, with Point Judith occupying an intermediate position, somewhat nearer to Maine. Figure 2 illustrates the separation between the offshore fishermen and the others with respect to the Higher Level Needs Factor. With respect to the other two factors (Basic and Middle Level Needs), offshore and middle fishermen are relatively close to each other, but rather distant from the inshore fishermen. Figure 3 illustrates the separation between inshore lobstermen and all others. Inshore lobstermen are higher on the Middle and Higher Level Needs Factors and lower on the Basic Level Needs Factor.

In figures 4 through 12 individuals identified as to group membership (using the groups analysed above) are plotted against each pair of factors to illustrate the range of values within each subgroup in the factor space. In figure 4 individuals classified according to port are plotted against the High Level and Basic needs factors. Here we can see the Point Judith fishermen (plotted as 'A') concentrated in the lower half with a tendency to be located toward the right indicating that their level of satisfaction is relatively high both on the High Level and Basic Needs Factors. New Bedford fishermen (plotted

Table 3. Analysis of between group differences in level of job satisfaction on occupational characteristics factors and job satisfaction measures.

	<u>MEAN VALUES</u>			<u>F</u>	<u>DF</u>	<u>P</u>
	<u>POINT JUDITH</u>	<u>NEW BEDFORD</u>	<u>MAINE</u>			
Factor I (Mid-level Needs)	0.02	-0.89	0.45	42.19	2 198	<.001
Factor II (Basic Needs)	0.28	0.16	-0.37	14.36	2 198	<.001
Factor III (Hi-level Needs)	-0.35	0.95	-0.15	44.66	2 198	<.001
JSM1	1.79	1.24	1.52	7.96	2 198	<.001
JSM2	0.77	0.60	.31	20.41	2 198	<.001

	<u>INSHORE</u>	<u>MIDDLE</u>	<u>OFFSHORE</u>			
Factor I (Mid-level Needs)	0.31	-0.26	-0.45	16.66	2 193	<.001
Factor II (Basic Needs)	-0.20	0.23	0.34	9.15	2 193	<.001
Factor III (Hi-level Needs)	-0.13	-0.59	0.60	24.30	2 193	<.001
JSM1	1.61	1.79	1.35	17.57	2 193	<.05
JSM2	0.50	0.62	0.63	1.58	2 193	>.05

	<u>INSHORE LOBSTERMEN</u>	<u>ALL OTHERS</u>			
Factor I (Mid-level Needs)	0.40	-0.25	26.12	1 194	<.001
Factor II (Basic Needs)	-0.38	0.25	30.28	1 194	<.001
Factor III (Hi-level Needs)	-0.14	0.09	2.26	1 194	>.05
JSM1	1.56	1.57	0.02	1 194	>.05
JSM2	0.39	0.66	14.27	1 194	<.001

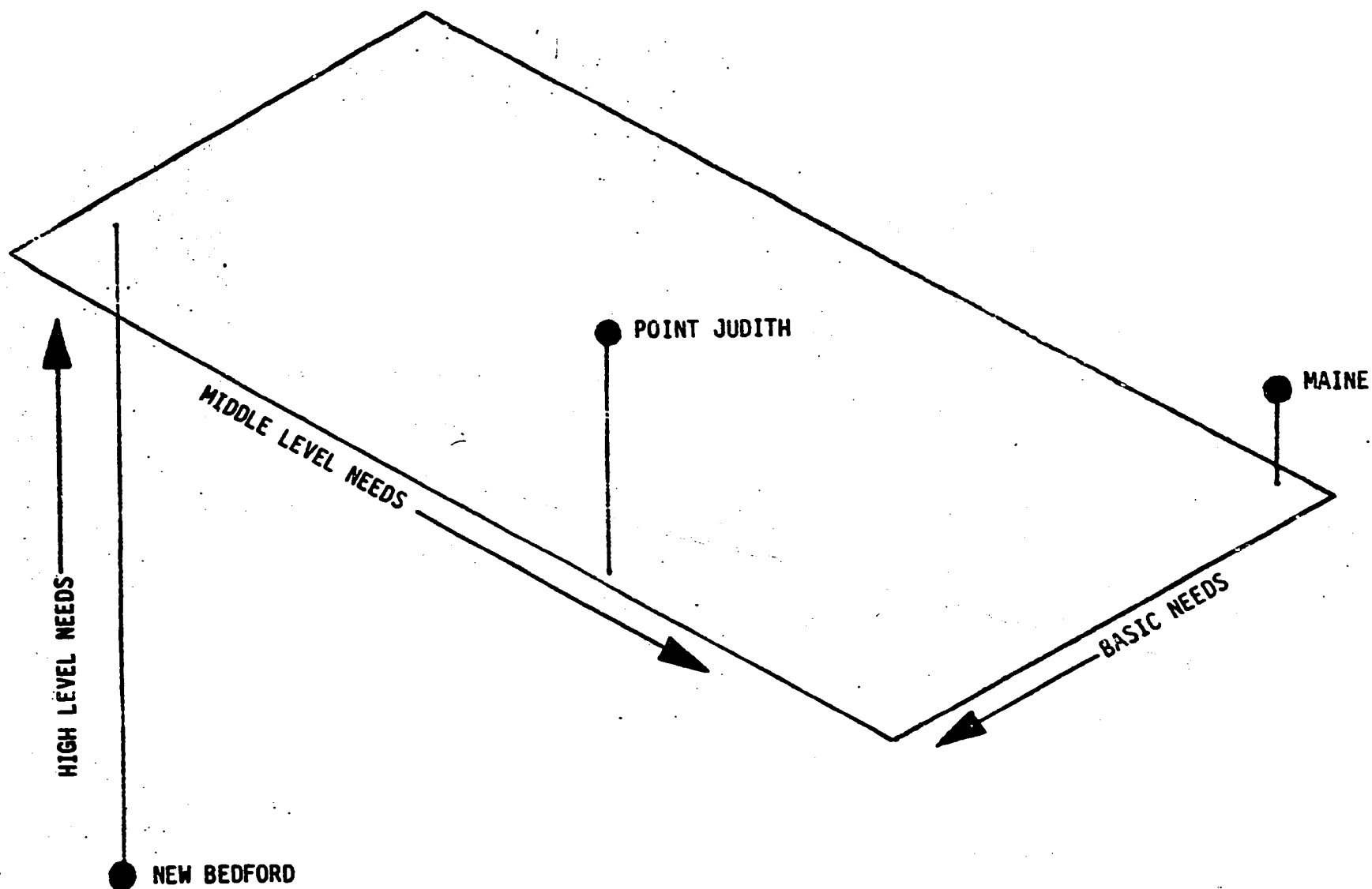


Figure 1. Mean Factor Scores for Fishing Ports Plotted in Three Dimensional Occupational Characteristic Space.

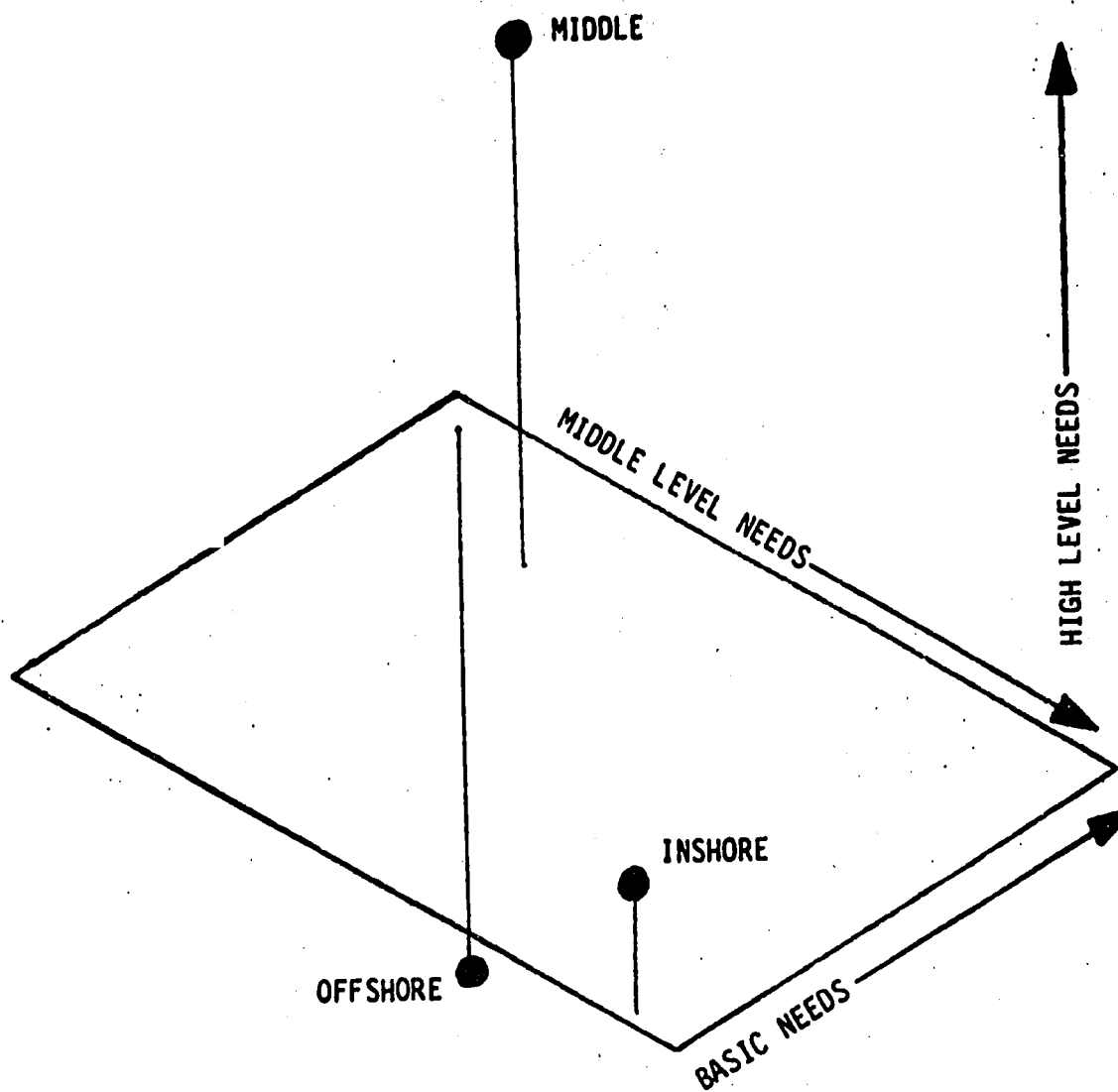


Figure 2. Mean Factor Scores for Fishing Types Plotted in Three Dimensional Occupational Characteristic Space.

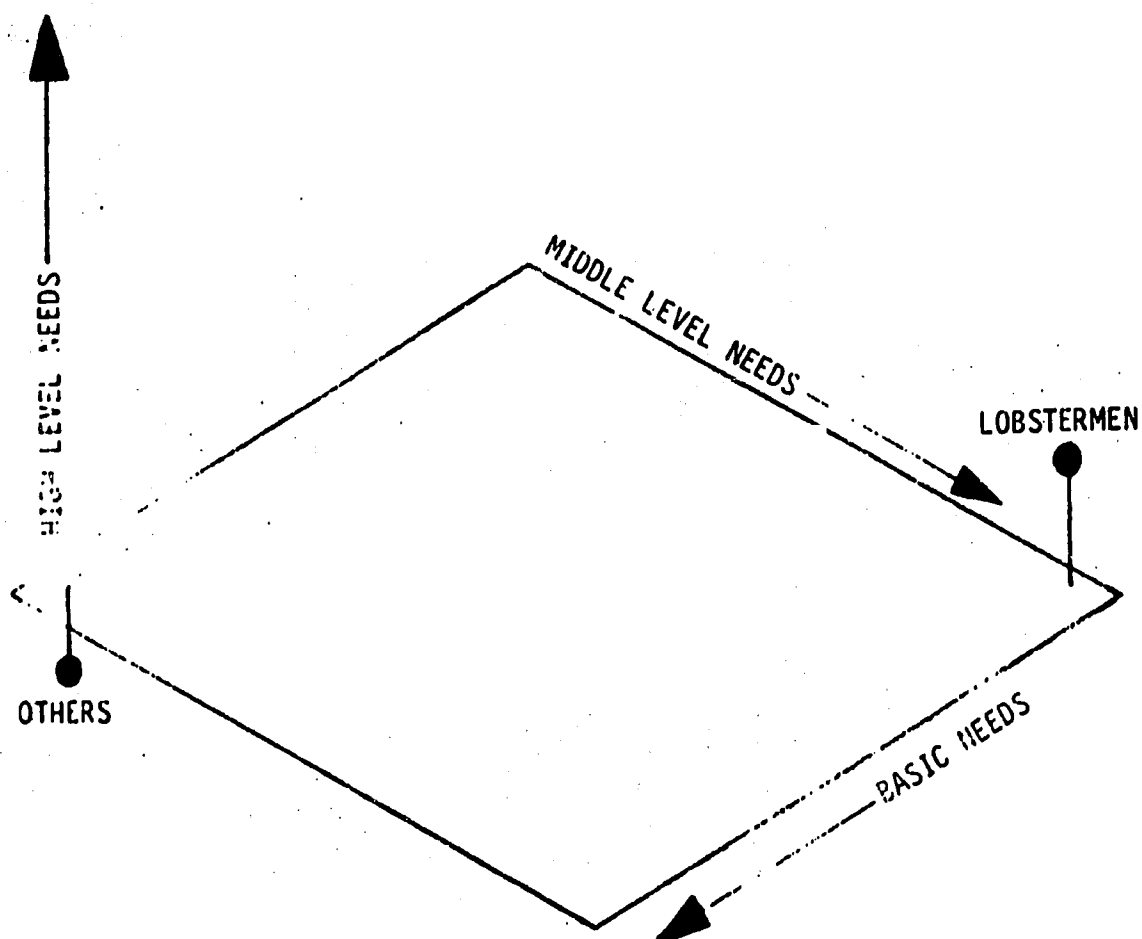


Figure 3. Lobstermen versus all others plotted in three dimensional occupational characteristic space.

as 'B') are concentrated in the upper center indicating that they are not as satisfied as the other fishermen with respect to the High Level Needs Factor and Intermediate with respect to the Basic Needs Factor. The other figures (5 through 12) can be interpreted in a similar manner. Overall, they provide a visual demonstration of the differences between the various subgroups with respect to the three occupational characteristics factors.

The degree of the differences between the three ports with respect to the three occupational characteristics factors is underscored by a multiple-discriminant analysis. The Mahalanobis' distance (Rao 1952) of each fisherman from the means of each port as defined by the three occupational characteristics factors was calculated. This distance coefficient is not a simple linear compound of the differences between the group mean values and the case values. It is a weighted combination, which in this case gives more weight to the factors that are most important in distinguishing between the ports. The resultant distances were used to reclassify each fisherman into the group with which he had the smallest Mahalanobis' distance. A summary of the reclassifications is presented in Table 4.

Table 4. Reclassification of Fishermen from Home Ports on the Basis of Mahalanobis D^2 from Port Means on Occupational Characteristics Factors.

<u>PORT</u>	<u>CASES CLASSIFIED INTO</u>		
	<u>POINT JUDITH</u>	<u>New BEDFORD</u>	<u>MAINE</u>
POINT JUDITH	52	9	18
NEW BEDFORD	7	32	3
MAINE	20	4	56

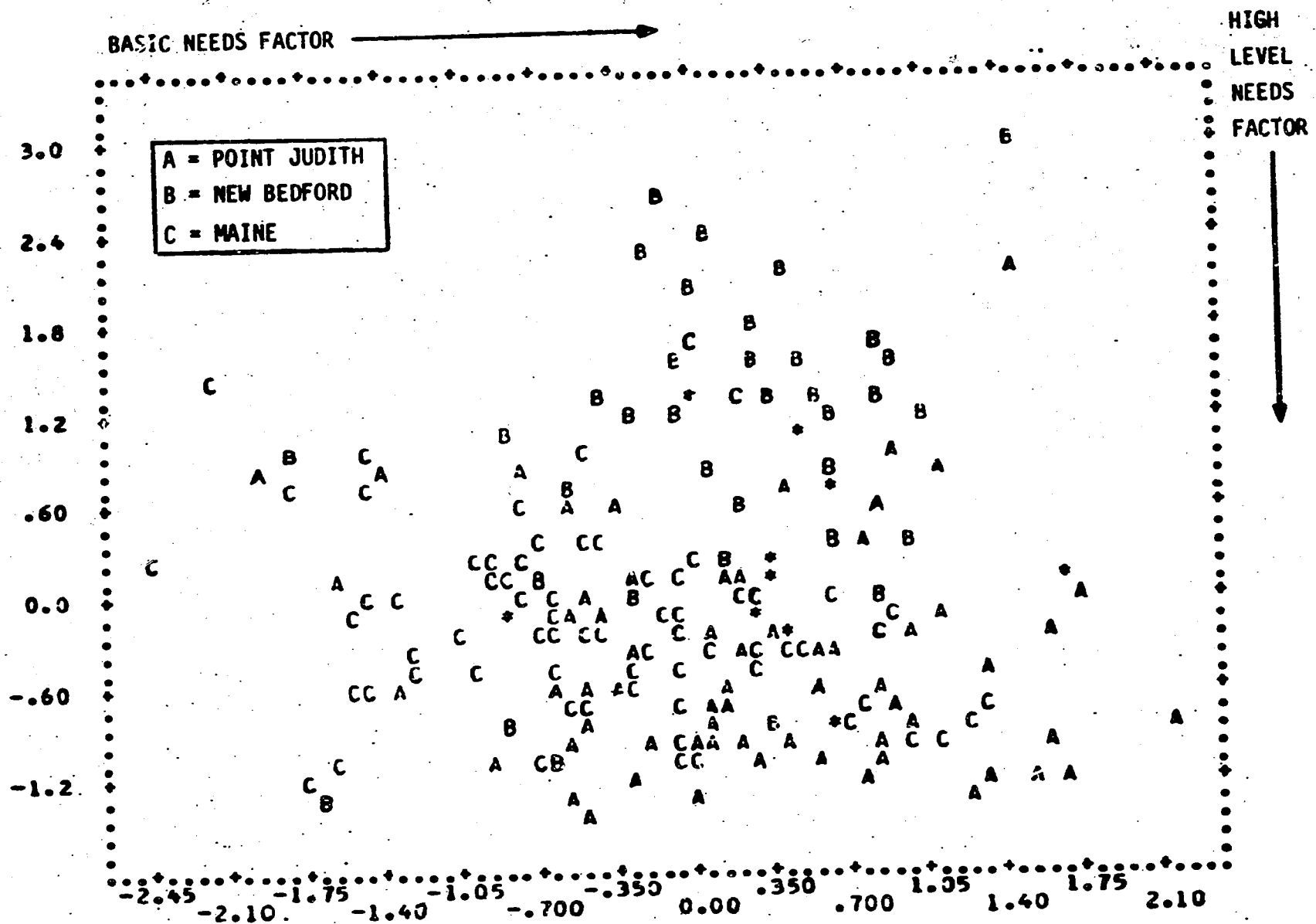


Figure 4. Fishing Ports Plotted Against High Level and Basic Needs Factors.

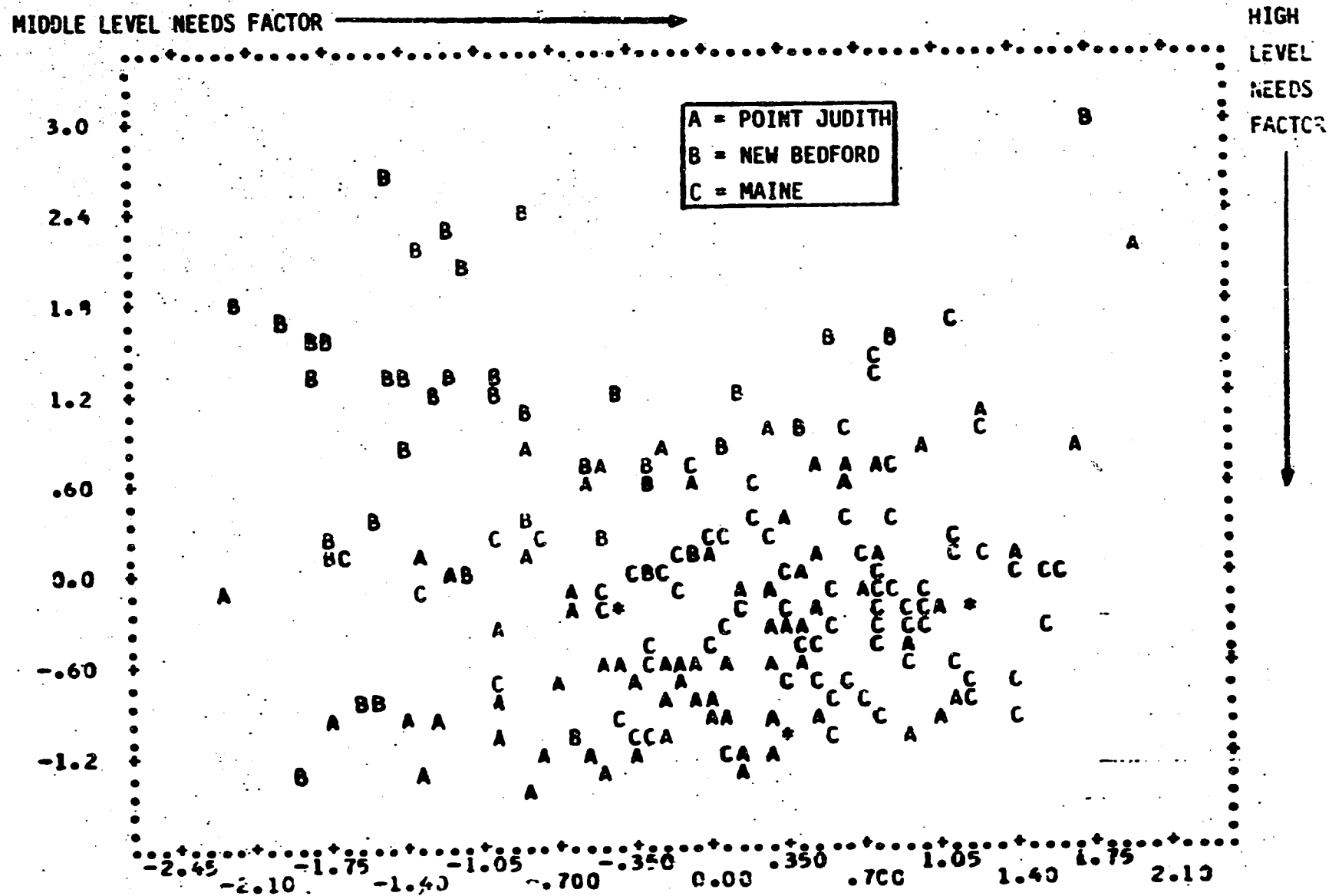


Figure 5. Fishing Ports Plotted Against High and Middle Level Needs Factors.

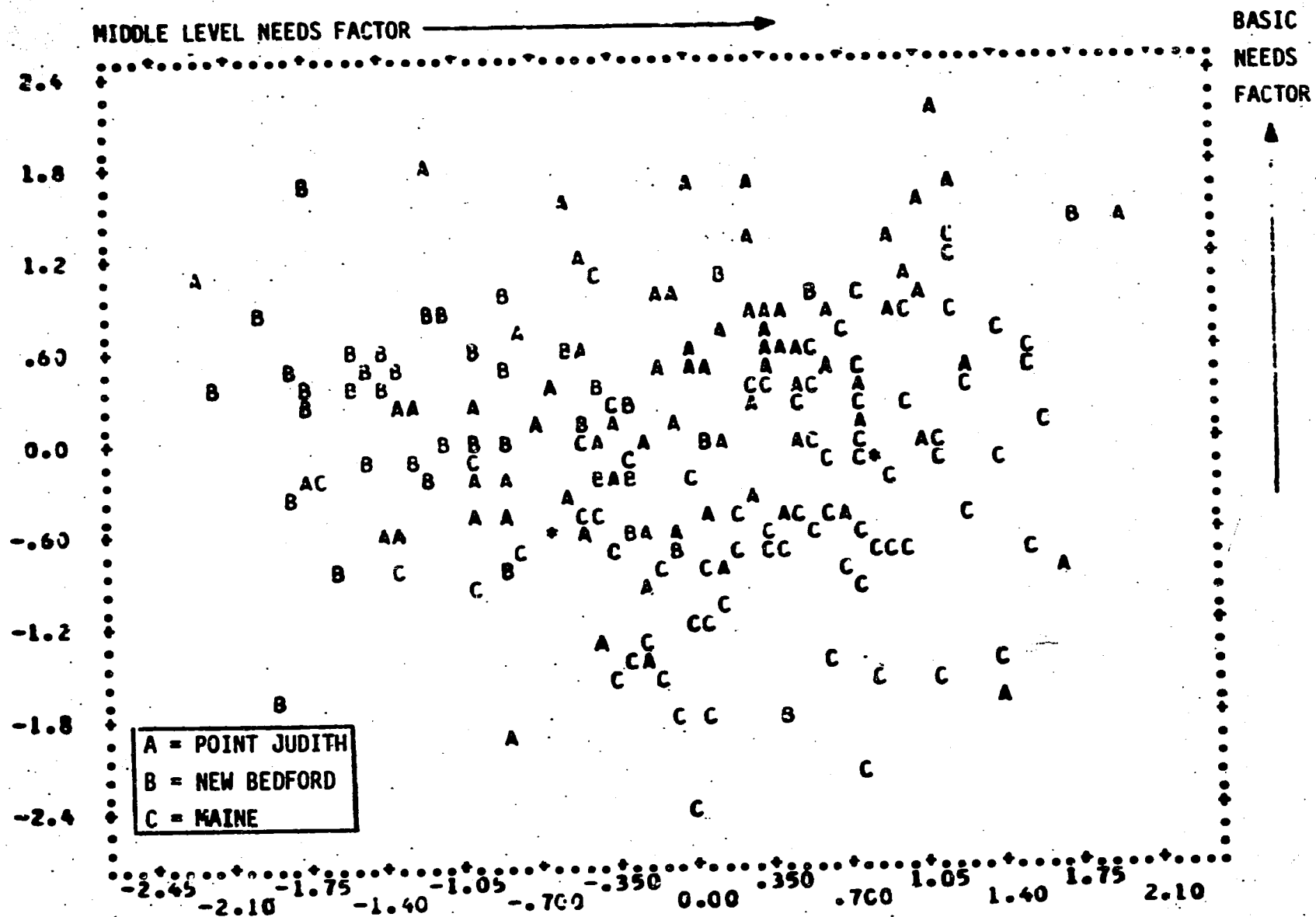


Figure 6. Fishing Ports Plotted Against Middle Level and Basic Needs Factors.

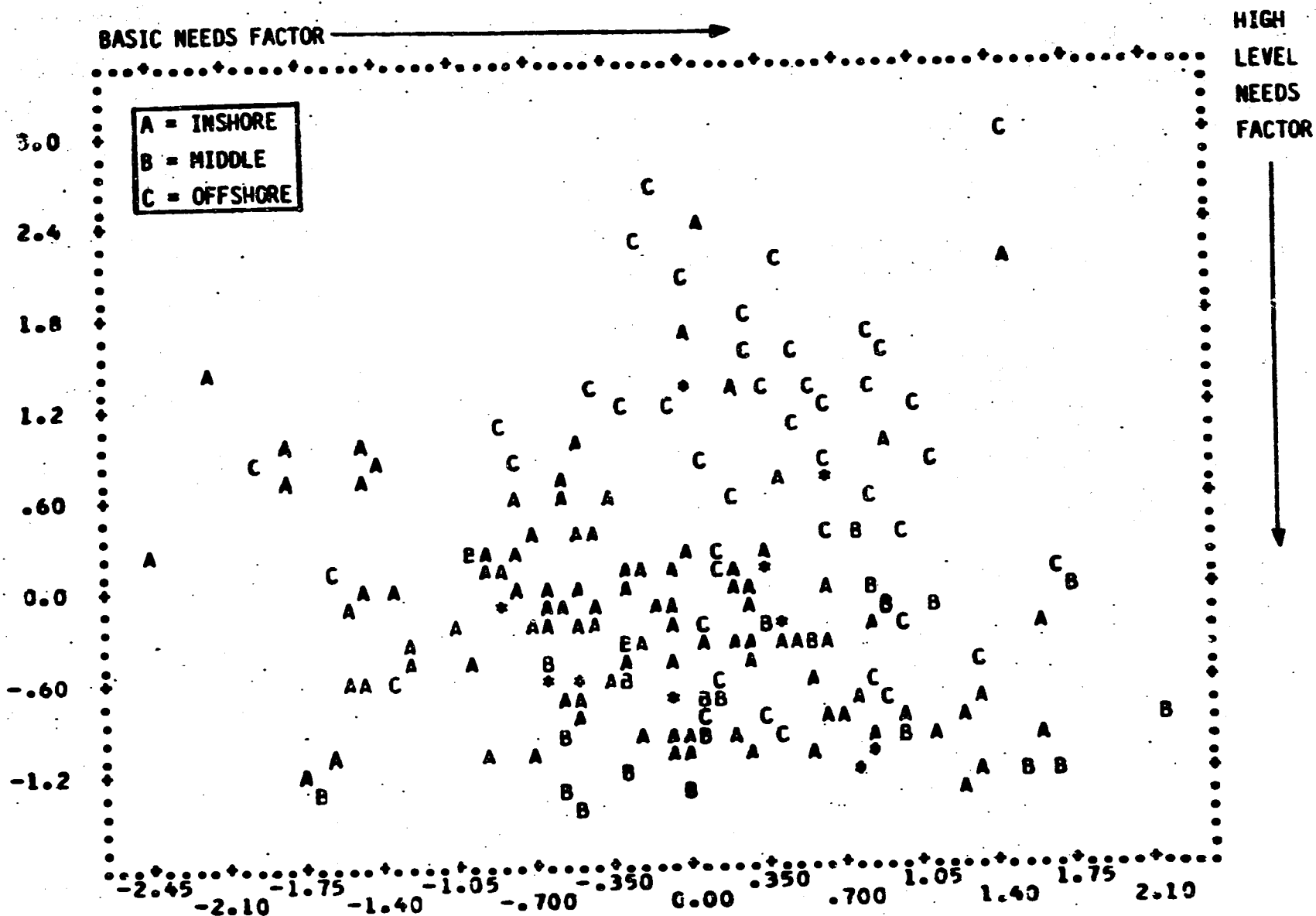


Figure 7. Fishing Type Plotted Against High Level and Basic Needs Factors.

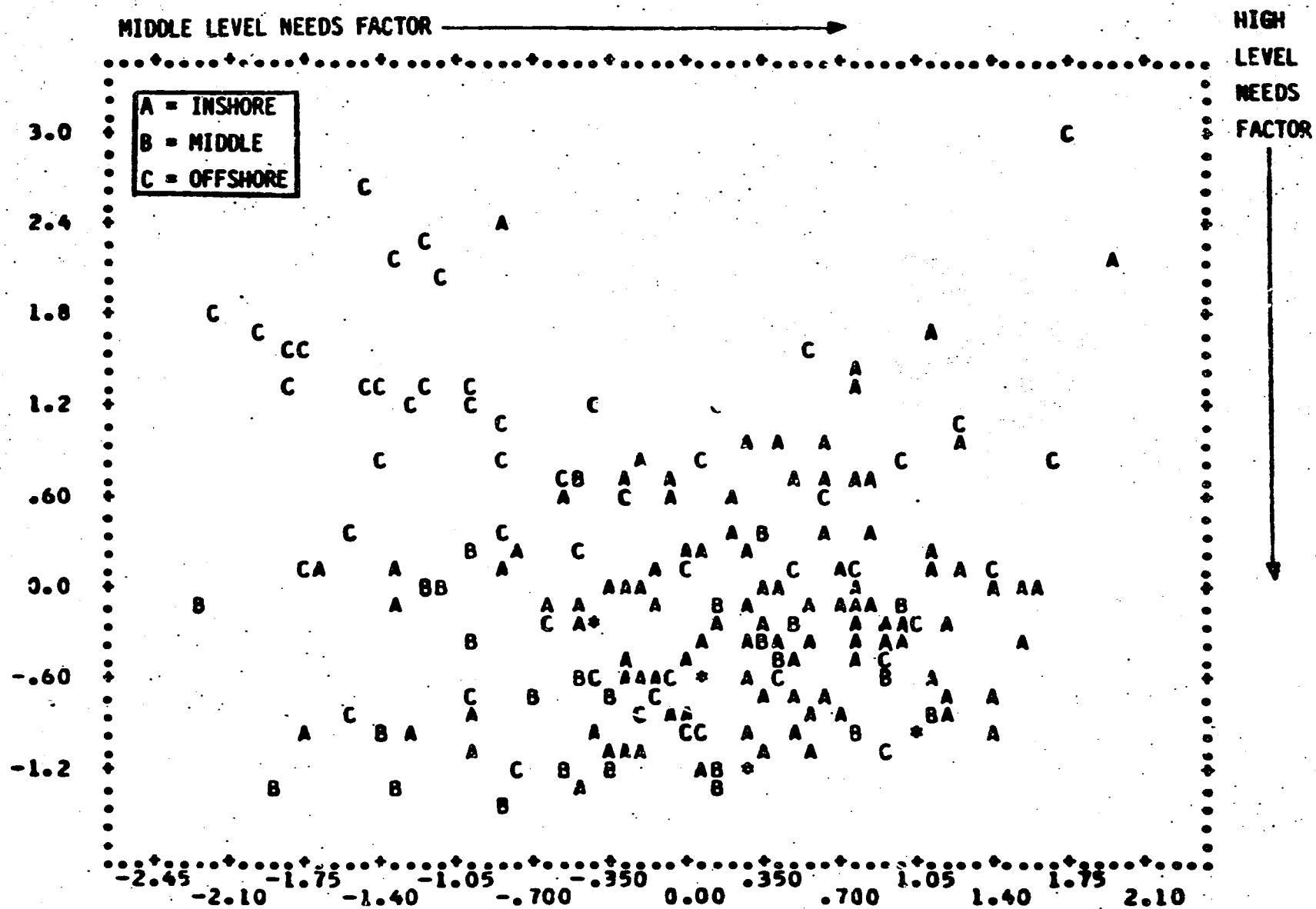


Figure 8. Fishing Type Plotted Against High and Middle Level Needs Factors.

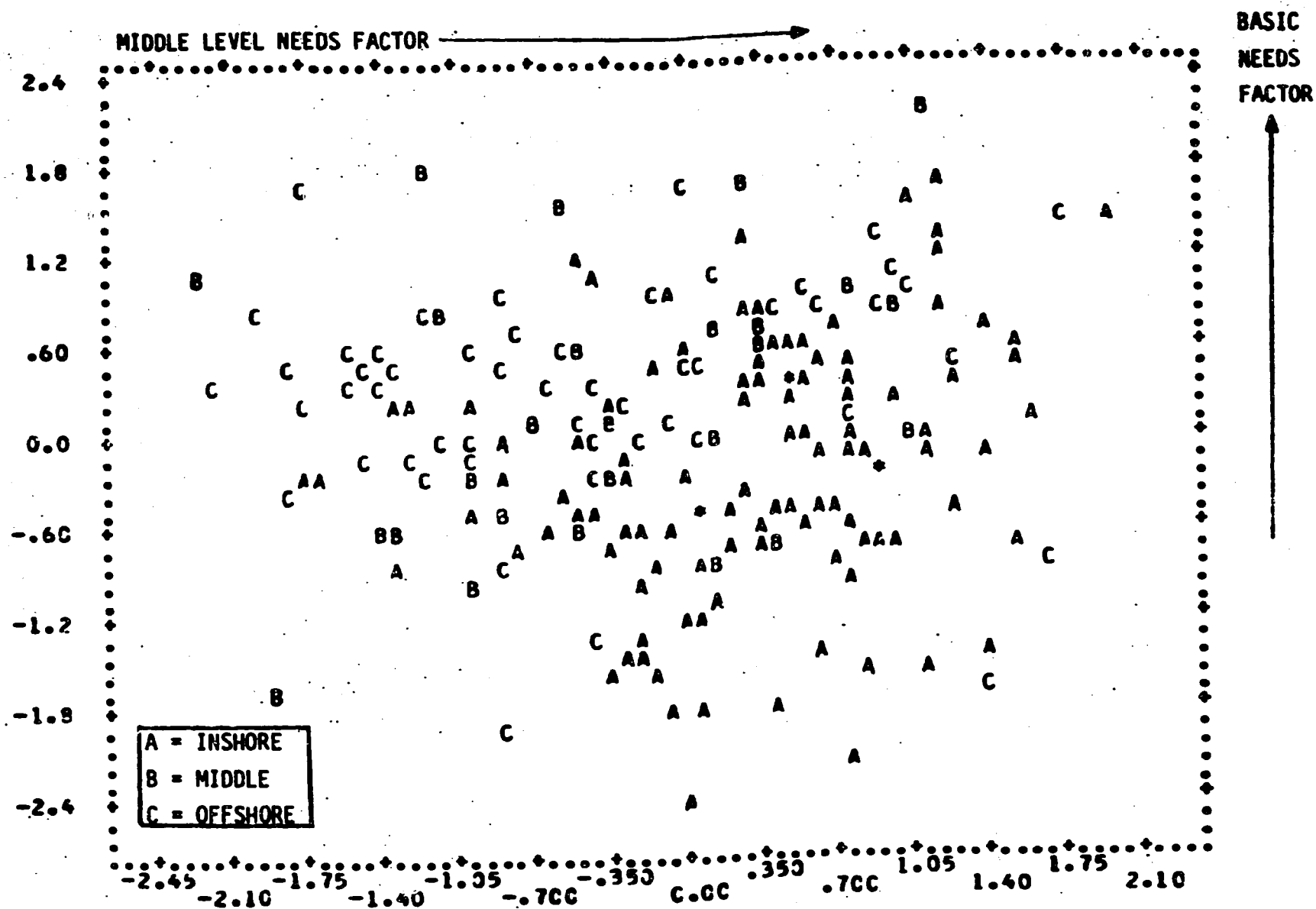


Figure 9. Fishing Type Plotted Against Middle Level and Basic Needs Factors.

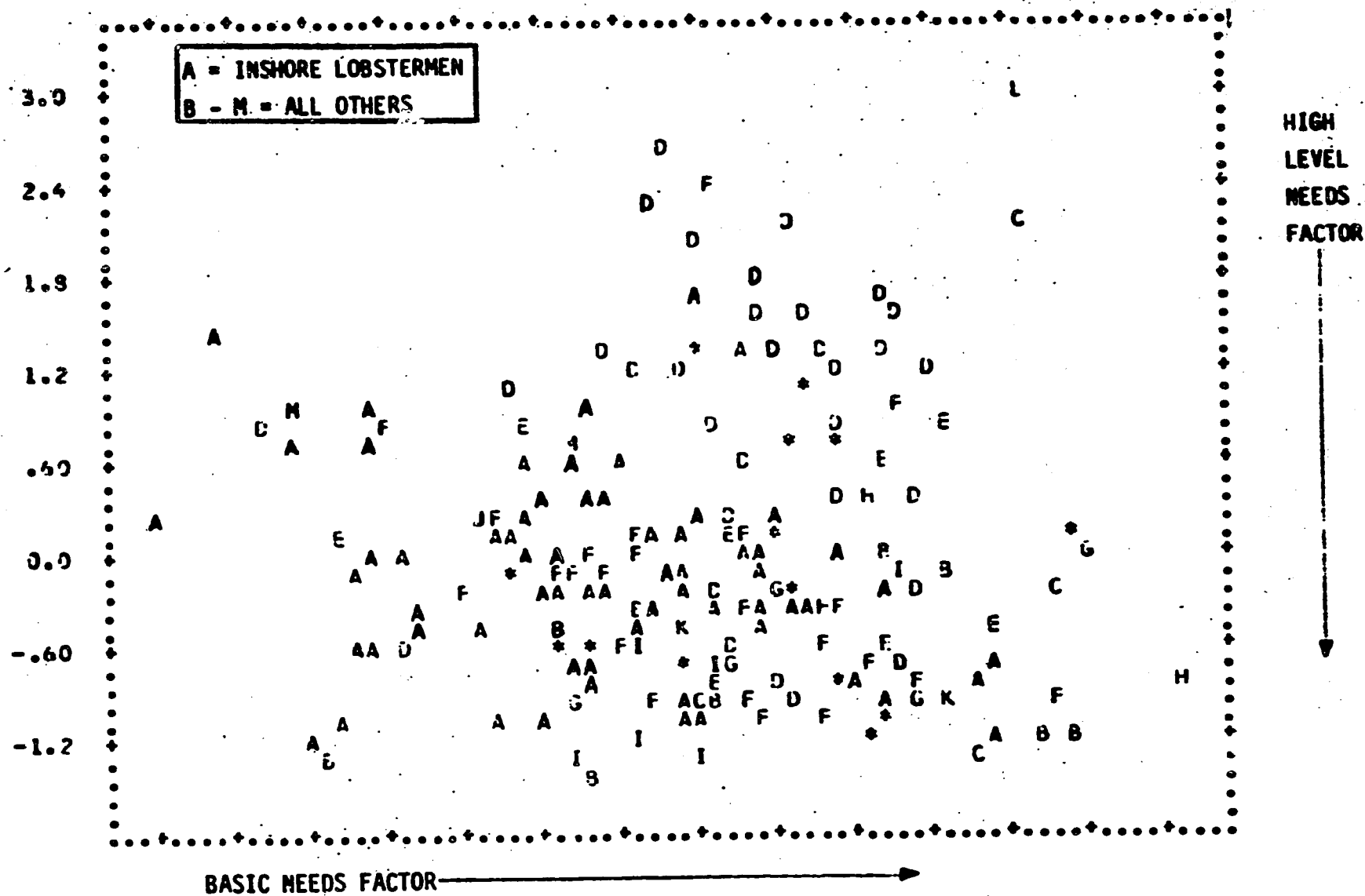


Figure 10. Inshore Lobstermen Plotted Against High Level and Basic Needs Factors.

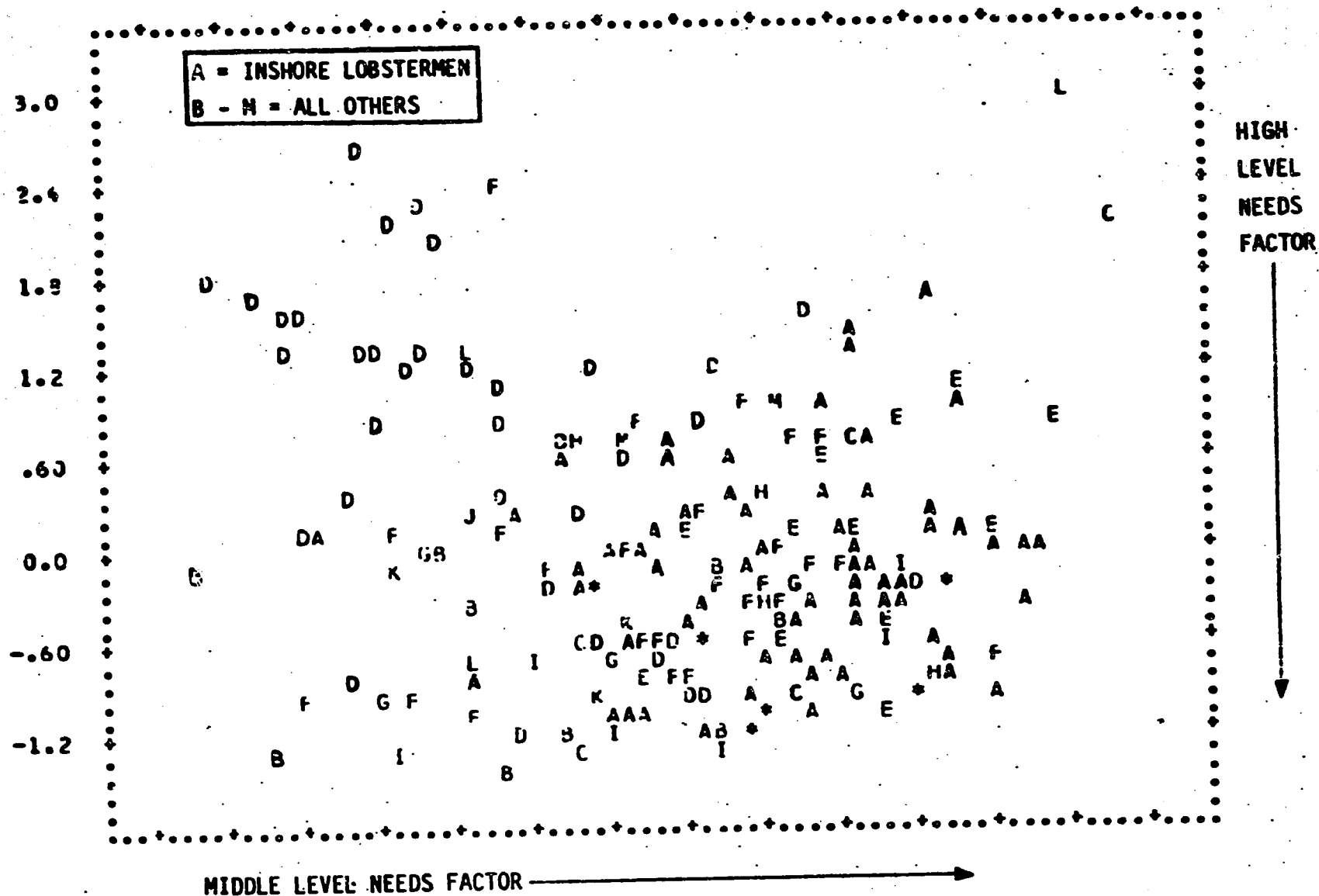
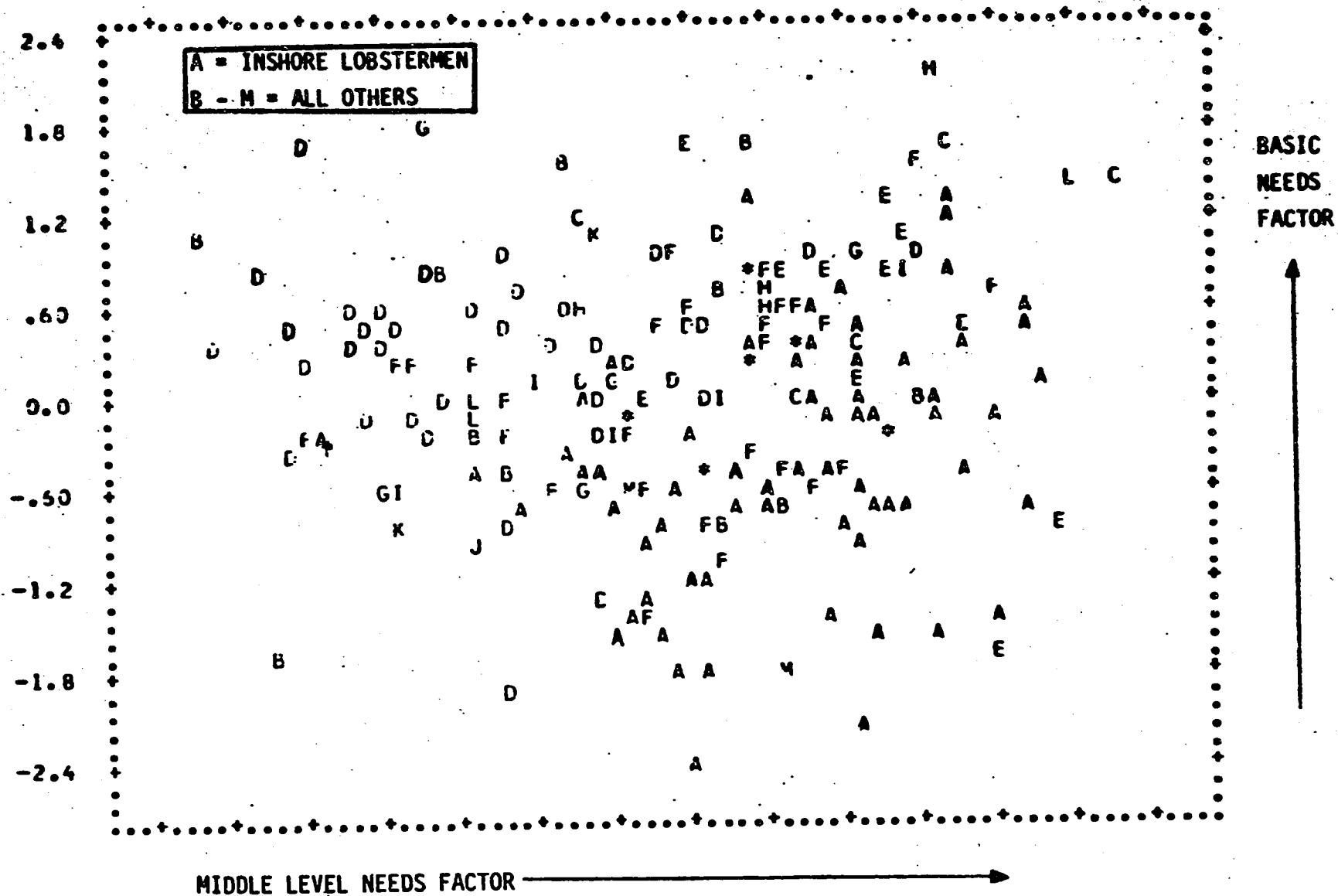


Figure 11. Inshore Lobstermen Plotted Against High and Middle Level Needs Factors.



-2.45 -2.10 -1.75 -1.40 -1.05 -0.700 -0.350 0.00 0.350 0.700 1.05 1.40 1.75 2.10

Figure 12. Inshore Lobstermen Plotted Against Middle Level and Basic Needs Factors

Table 4 is most easily read from left to right. For example, Point Judith originally had 79 fishermen. 52 of these were reclassified back into Point Judith, 9 into New Bedford, and 18 into Maine. Overall, we find that 140 of the 201 fishermen are correctly reclassified back into their own port. This is more than two times as many as we would expect on the basis of chance alone.

A similar analysis of between fishing type differences was not as successful (see Table 5). In Table 5, we find that only 61 percent of the fishermen are correctly classified.

Table 5. Reclassification of Fishermen from Fishing Type on the Basis of Mahalanobis' D^2 from Type Means on Occupational Characteristics Factors.

<u>TYPE</u>	<u>CASES CLASSIFIED INTO</u>		
	<u>INSHORE</u>	<u>MIDDLE</u>	<u>OFFSHORE</u>
INSHORE	71	27	15
MIDDLE	8	16	5
OFFSHORE	7	14	33

These findings reinforce the significance of the differences between the ports with respect to the occupational characteristics factors. Nevertheless, Figure 4 through 6 and the 30 percent of the fishermen who were incorrectly classified according to port indicate that there is a fair amount of overlap between the ports with respect to the three factors. Perhaps some of this overlap can be explained by an examination of the interrelationships between other occupational and sociocultural variables and the job satisfaction variables examined here.

As a means of increasing our understanding of the correlates of job satisfaction among New England fishermen, the interrelationships between various

aspects of job satisfaction and a select group of sociocultural variables are examined. The interrelationships between the sociocultural variables (independent variables) can be found in Table 6. Stepwise multiple regression was used to determine the patterning of combined relationships between the independent variables and levels of satisfaction on each of the three job characteristics factors and the two job satisfaction measures (JSM1 and JSM2). In this procedure, all independent variables are intercorrelated with the dependent (each job satisfaction measure), and the variable which explains the most variance in the dependent is entered into the equation first. The next variable entered is the one which explains the most variance with the first controlled. This procedure is continued until all variables are entered or until a previously set criterion is reached. In the analysis presented here, entry into the equation was restricted to variables whose F Ratio to enter was at least 2.0 or the increase in variance explained (R^2) at least one percent. When either of these criterion were violated, the procedure was halted. The results of this analysis for the total sample and for each port separately can be found in Tables 7 through 10.

In tables 7 through 10 the signs of the correlations with the High Level Needs Factors have been changed to simplify interpretation. As noted above, this factor was reflected (high negative loadings), thus a high positive factor score indicates dissatisfaction in contrast to the other factors where a high score indicates satisfaction. Changing the signs for Factor Three permits similar interpretation for all measures and simplifies the discussion.

In Table 7 it can be seen that for the total sample, being born in a foreign country (ethnicity), practicing a fishing type other than inshore lobstering, and early entry into the occupation are recurrent and important pre-

Table 6. Zero-order Correlations between Independent Sociocultural Variables

	1	2	3	4	5	6	7	8	9	10
1. Ethnicity										
2. Age	-.08									
3. Marital status	.13	.41								
4. Number of dependents	.10	.16	.55							
5. Formal education	-.69	-.19	-.26	-.11						
6. Father fisherman	.28	.07	.11	.15	-.31					
7. Early entry	-.11	-.02	-.10	-.10	.08	.27				
8. Number of relatives fishing	.34	.03	.16	.09	-.34	.43	.15			
9. Owner-skipper status	-.29	.30	.09	.00	.13	.05	.17	.05		
10. Years fishing	-.01	.78	.35	.14	-.29	.22	.24	.13	.23	
11. Other than inshore lobsterman	.27	-.17	.11	.20	-.16	.00	-.06	.10	-.54	.01

Table 7. Stepwise-Multiple Regression Relating Independent Sociocultural Variables to Job Satisfaction Variables within Total Sample.

DEPENDENT VARIABLE	VARIABLE ENTERED AND CONTROLLED	PARTIAL* TO ENTER	F RATIO TO ENTER	R
MID-LEVEL NEEDS	Ethnicity	-.42	42.15	.42
	Other than inshore lobsterman	-.26	14.28	.48
	Age	.21	9.49	.52
	Early entry	.18	6.85	.54
	Years Fishing	-.15	4.72	.55

BASIC-LEVEL NEEDS	Other than inshore lobsterman	.36	30.28	.36
	Early entry	.16	5.25	.39
	Owner-skipper status	-.13	3.15	.41
	Marital Status	.13	3.59	.43

HI-LEVEL NEEDS	Ethnicity	-.56	91.18	.56
	Early Entry	.18	6.72	.58
	Father Fisherman	-.14	3.80	.59

JSM1	Ethnicity	-.23	11.60	.23
	Early Entry	.14	3.78	.27
	Marital Status	.12	3.00	.29

JSM2	Other than inshore lobsterman	.26	14.27	.26
	Father fisherman	-.16	5.13	.30
	Marital status	.11	2.52	.32
	Early entry	.12	2.90	.34

N = 201

*Zero-order for first variable entered

Table 8. Stepwise-Multiple Regression Relating Independent Sociocultural Variables to Job Satisfaction Variables at Point Judith.

<u>DEPENDENT VARIABLE</u>	<u>VARIABLE ENTERED AND CONTROLLED</u>	<u>PARTIAL* TO ENTER</u>	<u>F RATIO TO ENTER</u>	<u>R</u>
MID-LEVEL ¹ NEEDS	-	-	-	-

BASIC-LEVEL NEEDS	Number of Dependents	.30	7.89	.30
	Owner-skipper Status	-.33	9.28	.44
	Early entry	.26	5.33	.50

HI-LEVEL NEEDS	Early entry	.25	4.93	.25

JSM1	Marital Status	.24	4.76	.24
	Early entry	.17	2.29	.29

JSM2 ¹	-	-	-	-

N = 79

*Zero-order for first variable entered

¹No entering variables with $p < .05$

Table 9. Stepwise-Multiple Regression Relating Independent Sociocultural Variables at New Bedford.

DEPENDENT VARIABLE	VARIABLE ENTERED AND CONTROLLED	PARTIAL* TO ENTER	F RATIO TO ENTER	R
MID-LEVEL ¹ NEEDS				

BASIC NEEDS	Father Fisherman	.42	8.57	.42
	Formal Education	-.23	2.26	.47

HI-LEVEL NEEDS	Father Fisherman	-.58	19.04	.58
	Years Fishing	.30	6.93	.66
	Other than inshore lobsterman	-.30	6.97	.72
	Number of dependents	-.34	4.80	.76
	Marital Status	.31	3.94	.79
	Owner-skipper status	.30	3.44	.81

JSM1	Years Fishing	.38	6.68	.38
	Number of dependents	-.30	3.92	.47
	Ethnicity	-.22	1.80	.51
	Owner-skipper status	.23	2.06	.55

JSM2	Early entry	.35	5.66	.35
	Owner-skipper status	.34	5.27	.48
	Formal education	.20	1.56	.51
	Number of relatives fishing	.25	2.50	.55

N = 42

*Zero-order for first variable entered.

¹No entering variables with $p < .05$.

Table 10. Stepwise-Multiple Regression Relating Independent Sociocultural Variables to Job Satisfaction Variables in Maine.

DEPENDENT VARIABLE	VARIABLE ENTERED AND CONTROLLED	PARTIAL* TO ENTER	F RATIO TO ENTER	R
MID-LEVEL NEEDS	Age	.29	7.26	.29
	Other than inshore lobsterman	-.23	4.46	.37

BASIC ¹ NEEDS		-	-	-

HI-LEVEL NEEDS	Years Fishing	-.23	4.28	.23
	Other than inshore lobsterman	.19	2.80	.29
	Early entry	.20	3.34	.35

JSM1 ¹		-	-	-

JSM2 ¹		-	-	-

N = 80

*Zero-order for first variable entered

¹No entering variables with $p < .05$

dictors of the various aspects of job satisfaction. Marital status is entered into three of the equations, but only relatively late and with relatively low partial correlations. The directions of the correlations tells us that foreign born fishermen are less likely to have high scores on the Middle and High Level Needs Factors (therefore be less satisfied). Foreign born fishermen are also less likely to say that they would become fishermen if they had their life to live over (JSM1). Being a fisherman other than an inshore lobsterman is positively related to the Basic Needs Factor, negatively to the Middle Level Needs Factor, and positively with advising a young man to enter the occupation (JSM2). Finally, early entry is positively associated with satisfaction on the job characteristics dimensions represented by all three factors and with both JSM1 and JSM2.

Turning to the within port analyses we can see that there are a fair amount of differences. With respect to the Middle Level Needs Factor, it was not significantly correlated with any of the sociocultural variables in either Point Judith or New Bedford. In Maine, satisfaction on this factor was positively related with age and negatively with other than inshore lobster fishing. The Basic Needs Factor was related to quite different independent variables in Point Judith and New Bedford. In Point Judith, number of dependents and early entry was positively correlated and owner-skipper status negatively correlated with Factor Two. This tells us that in Point Judith, owner-skipper are less likely to be satisfied with the items on the Basic Needs Factor while those with more dependents and those who entered the occupation early are more likely to be satisfied. In New Bedford, having a father who was also a fisherman is positively correlated with this factor and years of formal education negatively. In Maine, none of the independent variables are significantly correlated with

the Basic Needs factor.

In both Point Judith and Maine, early entry is positively correlated with satisfaction on the High Level Needs Factor. In Maine and New Bedford years fishing experience and other than inshore lobster fishing manifest contrasting correlations with this factor. In Maine, those with fewer years fishing experience and fishermen other than inshore lobstermen are more likely to be satisfied with regard to the items on the High Level Needs Factor. The opposite holds true in New Bedford. Additionally, a large number of other independent variables contribute significantly to variance in satisfaction on the High Level Needs Factor in New Bedford. In this port, 6 independent variables account for over 66 percent of the variance in Factor Three factor scores.

With regard to JSM1, we once again find differential patterning between the ports. In Point Judith, marital status (being married) and early entry are positively correlated with JSM1 while in New Bedford, years fishing experience and owner-skipper status are positively correlated and number of dependents and ethnicity (foreign born) are negatively correlated with JSM1. Finally, the independent variables are significantly related to JSM2 only in New Bedford where 4 account for 30 percent of the variance. Overall, we have seen a great deal of between port variation with respect to the correlates of the various job satisfaction measures.

As a means of determining the overall relationship between the independent variable set (the sociocultural variables) and the dependent variable set (the job satisfaction measures) a canonical correlation analysis was conducted between the two sets of variables. The results of this analysis can be found in Table 11.

Table 11: Canonical Correlation Analysis between Job Satisfaction Variables and Sociocultural Variables.

VARIABLES	CANONICAL VARIATES*	
	I	II
JSM1	.27	.35
JSM2	.12	.64
Mid-level Needs Factor	.68	-.14
Basic Needs Factor	.31	.62
Hi-level Needs Factor	.70	-.60
Percent of trace	.23	.26
Redundancy Coefficient	.14	.06
Ethnicity	.89	-.25
Age	-.22	-.23
Marital Status	.13	.20
Number of Dependents	.24	.15
Years Formal Education	-.59	.11
Father Fisherman	.20	-.28
Early Entry	-.29	.31
Number of Relatives Fishing	.21	-.03
Owner-skipper Status	-.54	-.35
Years Fishing Experience	-.07	-.07
Other than Inshore Lobsterman	.59	.68
Percent of Trace	.19	.09
Rc	0.77	0.48
χ^2	251.4	82.2
D.F.	55	40
P	<.001	<.001

*Only significant variates presented ($p < .01$)

N=201

In Table 11, only the canonical variates which account for a significant proportion of the variance are presented. The analysis presented in Table 11 indicates that there is a statistically significant relationship between the two variable sets. The canonical correlation between the two sets of variables weighted by the first canonical variate is 0.77, and by the second canonical variate, 0.48. Both of these canonical correlations are statistically significant at better than the 0.001 level.

The canonical variable loadings in Table 11 can be interpreted as correlations with the canonical variate (Levine 1977). For example, among the dependent variable set on the first canonical variate, the High and Middle Level Needs Factors manifest the highest absolute values in their correlations with the first canonical variate. Since the High Level Needs factor was negative (e.g., a high positive score reflects dissatisfaction), these loadings indicate that satisfaction with the job characteristic items associated with the two factors is negatively related to the first canonical variate. In the independent variable set, ethnicity and other than inshore lobsterman manifest high positive loadings while years of formal education and owner-skipper status manifest high negative loadings. Concentrating only on the highest loading variables, the first canonical variate can be interpreted as indicating that foreign born and other than lobster fishermen are more likely to be dissatisfied with respect to a weighted combination of the Middle and High Level Needs Factors. Conversely owner-skipper and those with more formal education are more likely to be satisfied with these same factors.

Turning to the second canonical variate, JSM2 and the Basic and High Level Needs Factors load highest in the dependent variable set. In the independent variable set, other than inshore lobsterman loads highest, with early entry and

owner-skipper status coming in second and rather low. Keeping in mind the rather low loadings with respect to early entry and owner-skipper status, as well as the reflected nature of the High Level Needs Factor, this canonical variate can be interpreted as indicating that early entrants and other than inshore lobstermen are more likely to be satisfied on a weighted combination of JSM2 and the Basic and High Level Needs Factors than owner-skippers.

Percent of trace for a given variable set is the sum of the squared elements of a column of canonical variable loadings divided by the number of variables in the set, and is therefore the proportion of a set's variance associated with each canonical variate (Levine 1977). Thus, 49 percent of the dependent variable set's variance is associated with the first two canonical variates. The redundancy coefficient is not symmetrical and can only be interpreted as the amount of variance in the dependent variable set trace accounted for by the independent variable set canonical variate (Levine 1977). Thus 20 percent of the variance in the two dependent variable set traces can be accounted for by the independent variable canonical variates. This indicates a relatively strong, as well as a statistically significant, relationship between the job satisfaction measures and the sociocultural variable set.

DISCUSSION AND CONCLUSIONS

The factor analysis of levels of satisfaction on a list of occupational characteristics resulted in three factors more clearly related to Maslow's (1954) hierarchy of needs than the 'intrinsic' and 'extrinsic' job characteristic classification so frequently used in research related to job satisfaction. The factors were characterized as Basic Needs (physical and safety), Middle Level Needs (Love and belongingness and self esteem), and High Level Needs (self-actualization). All three factors are significantly

related to whether or not the respondent said he would go back into fishing if he had his life to live over (JSM1), a measure cited as the best single indicator of job satisfaction (Robinson et al 1963). Interestingly enough, for the total sample the High Level Needs Factor is the strongest predictor of this satisfaction measure, indicating that self-actualization is an important facet of job satisfaction among New England fishermen. This finding contradicts Yadov and Kissel (1977) who claim that USSR workers, in contrast to US workers, obtain job satisfaction from higher level motives. They write that motivations such as job security and wages are more important for US workers (part of the content of our Basic Needs Factor). Among Northeast Coast fishermen, the Basic Needs Factor is the weakest predictor of JSM1. Nevertheless, the Basic Needs Factor is the strongest predictor of whether or not one would advise a young man to go into fishing (JSM2). This can probably be explained by the fact that the first criteria to be considered when setting a young man off on his career would be satisfaction of basic needs--the higher level needs can be satisfied later (cf. Maslow 1954).

The within port analysis of the relationships between the three factors and the two other job satisfaction measures (JSM1 and JSM2) indicates that the strongest relationships are found in New Bedford. This finding can probably be attributed to the fact that most New Bedford fishermen are offshore fishermen who fish extended amounts of time in relatively rough water. The conditions are so difficult, especially in winter, that one has to be satisfied with the various occupational characteristics in order to rationally state that he would go back into fishing if he had his life to live over (JSM1) or to advise a young man to enter the occupation. This suggestion is supported by the fact that a within fishing type analysis demonstrated that the strongest relation-

ships between the factors and JSM1 and JSM2, with a pattern similar to that of New Bedford, was found among offshore fishermen. This leads us to conclude that the occupational characteristics investigated are much more salient in determining overall job satisfaction among offshore fishermen.

An analysis of the inter-group differences with respect to the various satisfaction measures demonstrated that, overall, the strongest differences are across the ports. The patterning of the differences on each measure reflects the relative frequency of different types of fishing in each port (e.g., Maine primarily inshore, New Bedford offshore, and Point Judith, a mixture). Nevertheless, the strength of the across port differences leads one to suggest that some additional factors associated with the ports account for some of the variance in satisfaction levels. The multiple discriminate analysis provides further support for the contention that interport differences are more clearly defined than inter-fishing type differences.

An examination of the directions of the inter-group differences shows that New Bedford, as well as the offshore fishermen, manifest mean scores indicating that they are the least satisfied with respect to the Middle and High Level Needs Factors and JSM1. Dissatisfaction on the Middle Level Needs Factor can probably be explained by the fact that these fishermen spend long periods of time at sea, and many of the items on the Middle Level Needs Factor are related to time away. Additionally, many of the fishermen in New Bedford are workers on large vessels that do not belong to them; thus, they do not have the freedom to come and go as they please or perceive much of an opportunity to be their own boss in such a highly capitalized fleet (also related to items on Factor I).

New Bedford and the offshore fishermen's relatively low level of satisfac-

tion with respect to the High Level Needs Factor is quite striking. Perhaps these fishermen have too much exposure to the items associated with this factor. Perhaps they are out on the water and outdoors too much in the cold, rough North Atlantic. Perhaps the challenge and adventure become a little too much to bear when one's life is at stake (cf. Poggie, Pollnac and Gersuny 1976). Additionally, since the crew to captain ratio on the large vessels is greater, the preponderance of crew members who are not in control of the situation, thus less likely to feel self-actualizing in the face of the elements, would have a tendency to lower the mean score on these items. This suggestion is supported by the fact that owner-skipper status is positively related to satisfaction on the High Level Needs Factor in New Bedford (see Table 9).

The Maine fishermen as well as the inshore fishermen are by far the least satisfied on the Basic Needs Factor. When all inshore lobstermen are separated out, they manifest an even lower level of satisfaction on this factor. Most of these lobstermen are from Maine where both the predictability and level of earnings, on the average, does not match that of fishermen closer to urban markets (two items on the Basic Needs Factor). Additionally, the smallness of their vessels which are mostly open to the weather in combination with the cold, turbulent Maine coastline and less mechanized nature of their job probably leads them to be less satisfied with the physical fatigue, safety, and healthfulness occupational characteristics, which are also on this factor.

Finally with respect to inter-group differences, we find that New Bedford fishermen are less likely to say that they would become fishermen if they had their life to live over (JSM1) and Maine fishermen are less likely to advise a young man to become a fisherman (JSM2). The relatively low score for New Bedford on JSM1 can probably be attributed to their relatively low level

of satisfaction on the Middle and High Level Needs Factors as described above. The Low score of the Maine fishermen on JSM2 is probably due to the fact that the Maine Lobstermen perceive the Lobster grounds as a limited good and have a tendency to try to control access through the institution of harbor gangs which sometimes use violent means to restrict access to specific lobster grounds (cf. Acheson 1975).

The overlap between the ports as seen in the plots in Figures 4 through 12 and the multiple discriminant analysis indicate that factors other than those used in subgrouping also affect job satisfaction as measured in this paper. Stepwise Multiple regression was used to determine the relative influence that a range of sociocultural variables have on job satisfaction. With respect to the total sample, being foreign born (ethnicity), beginning to fish before 21 year of age (early entry), and being other than an inshore lobsterman are the strongest predictors of the various job satisfaction measures.

Foreign born fishermen are less likely to be satisfied with respect to items on the Middle and High Level Needs Factors and less likely to say that they would become fishermen if they had their lives to live over again. Fishermen who entered the occupation early, however, tend to be relatively satisfied with items on all three factors and to respond that they would become fishermen if they had their lives to live over and that they would advise a young man to enter the occupation. Fishermen other than inshore lobstermen are less likely to be satisfied on the Middle Level Needs Factor and more likely to be satisfied on the Basic Needs Factor and to advise a young man to enter the occupation.

There are several possible explanations for the relatively low level of job satisfaction among foreign born fishermen. First, most of the foreign born fishermen in New Bedford are Portuguese immigrants who come to the United

States with relatively high expectations? Although their income is relatively high, becoming a crewman on a long trip vessel in the North Atlantic is probably a rude shock for many. Interviews indicate a great deal of dissatisfaction with respect to the effects of long trip fishing on family life among these immigrants. One even stated that this type of fishing "...is not a job for a man". Thus, the immigrant comes with high expectations which are not fulfilled and reports dissatisfaction with his job--the higher the expectations, the lower the chances of achieving satisfaction (cf. Kulpinska 1977). It is also possible that since most of the foreign born fishermen in the sample are offshore fishermen, the results parallel what we would expect on the basis of offshore fishermen's attitudes toward their occupation. The crewmen aboard the large New Bedford vessels are more like workers in a factory than are fishermen in smaller vessels who are either independent entrepreneurs or are individuals who have some hope of owning the means of production themselves someday. From this perspective, the New Bedford immigrant fisherman can be grouped with other workers who do not own the means of production and have little control over their own labor (Stokes 1978). The fact that there is an active union in New Bedford reinforces this view. Kalleberg and Griffen (1978) suggest that workers who have less control over the product and process of their labor obtain fewer job rewards than others; thus, providing a possible alternative explanation for the finding of low job satisfaction among immigrant fishermen. Nevertheless, the relatively high correlations with ethnicity suggest that some factor associated with being foreign born also influences relative job satisfaction.

The general finding that fishermen who enter the occupation early are more likely to express satisfaction on all measures, suggests that early socialization

into the occupation of fishing results in greater overall satisfaction. This finding may also be due to the possibility that early entrants have had little opportunity to compare fishing with other occupations. The positive relationship between age and satisfaction with respect to the Middle Level Needs Factor is in keeping with other research which reports a positive correlation between age and job satisfaction (cf. Robinson, et al 1969; Glenn, et al 1977). Finally, the finding that fishermen other than inshore lobstermen are more likely to be satisfied on the Middle Level Needs Factor and dissatisfied on the Basic Needs Factor can probably be explained by the fact that the Middle Level Needs Factor is composed primarily of items associated with separation from loved ones, and offshore fishermen feel this separation more acutely. Further, their relative satisfaction with the Basic Needs Factor is probably the result of the dissatisfaction of Maine Lobstermen on this factor as discussed above. The Maine lobstermen comprise most of the inshore lobstermen in the sample; thus, resulting in the reported relationship.

The intraport analysis of the sociocultural correlates of job satisfaction resulted in findings suggesting that situational variables play a large role in these relationships. In some ports none of the sociocultural variables were related to specific job satisfaction measures, in other ports many were, and in one instance opposing relationships were found in different ports.

With respect to the Basic Needs Factor, number of dependents is the strongest predictor in Point Judith. We have no explanation for this relationship at the present time. After the effects of number of dependents is controlled, however, owner-skipper status manifests a strong negative correlation with this factor. There are a number of possible explanations for this finding. First, owner-skipper are probably more critical with respect to their

income since they have so much capital invested in productive equipment. Further, owner-skipper are responsible for many of the basic needs of the crew (e.g. safety, healthfulness, etc.); thus, these items on the Basic Needs Factor would be more salient to them. Perhaps the more important a given aspect of job satisfaction is to an individual, the more likely they will express dissatisfaction with it. This finding is paralleled by Kalleberg and Griffen (1978) who report that the more highly one values intrinsic job rewards, the less likely they are satisfied with the level of such rewards. The Basic Level Needs Factor is composed primarily of items one would classify as "extrinsic", but perhaps the same principle applies. Early entry is also entered into the equation for Point Judith, and the explanation for this relationship is similar to that offered above--those who are socialized into the occupation at an earlier age are probably better adapted and have not had the opportunity to contrast fishing with other occupations.

In New Bedford the strongest correlate of satisfaction on the Basic Needs Factor is having a father who was also a fisherman. This finding suggests that in New Bedford, where the conditions are overall harshest with respect to exposure to the rough, open ocean and physical separation from land, having a father who was a fisherman probably preadapts a fisherman to the difficult nature of the job (e.g., through having a supportive family context and early socialization by a significant other, cf. Poggie, Pollnac, and Gersuny 1976); thus, resulting in greater overall satisfaction with the items on the Basic Needs Factor. The negative partial correlation with years of formal education suggests that those with more education tend to be more critical with respect to items on the Basic Needs Factor. Perhaps formal education leads one to have higher expectations with respect to these items; hence lessening the chances for

satisfaction. Finally, none of the sociocultural variables are significantly related to the Basic Needs Factor in Maine.

Turning to the Middle Level Needs Factor, we find significant relationships only in Maine. There, age is positively correlated with satisfaction on this factor suggesting that as one becomes older the high expectations of youth are abandoned; thus increasing the likelihood of satisfaction. The relationship between level of expectations and job satisfaction is discussed above. Finally, fishermen other than inshore lobstermen tend to be dissatisfied on this factor just as we found for the total sample, and the explanation is similar--most items on the factor deal with separation from land based society, and offshore fishermen are separated more.

The High Level Needs Factor manifests the largest number of statistically significant relationships with the sociocultural variables in the intra-port analyses. Among Point Judith fishermen, only early entry into the occupation is significantly related to level of satisfaction on this factor. In Maine we also find early entry as a correlate of satisfaction on the High Level Needs Factor. In both cases early socialization and reduced chances for comparison with other jobs probably play a significant role in enhancing satisfaction with respect to the items on this factor. Years fishing experience is negatively related to satisfaction on the High Level Needs Factor in Maine. Here we might argue that facing the turbulent Maine coastline with a small lobster boat becomes too exciting, challenging, and adventurous as the fisherman becomes exposed to it more and more over the years and the initial attraction to the items on the High Level Needs Factor wear off. It is interesting to note that the exact opposite relationship holds in New Bedford. It can be argued that in New Bedford after an initial dissatisfaction with the High Level Needs Factor

because of high expectations that do not match reality, as discussed above, the fisherman becomes more realistic, and we consequently find an increase in job satisfaction with increasing time in the occupation. The strongest predictor of satisfaction with the High Level Needs Factor in New Bedford is having a father who was not a fisherman. This is probably due to the fact that individuals from fishing families are taking the path of least resistance to obtain a job through their father's contacts or on their father's boat. They are probably not entering the occupation because they are attracted to it; thus, it would be perceived more as a job fulfilling basic need --an interpretation supported by the significant correlation between the Basic Needs Factor and father fisherman.

Turning to the question concerning whether or not a fisherman would advise a young man to enter the occupation, we find significant relationships only among the New Bedford Fishermen. There we find that early entry into the occupation, owner-skipper status, years of formal education, and number of relatives fishing are all positively related to a positive response to this question. With respect to JSM1 (whether or not an individual would become a fisherman again if he had his life to live over), married fishermen and those who entered the occupation early are the ones most likely to respond positively in Point Judith. In New Bedford, years fishing experience and owner-skipper status are positively related to positive responses to this question, while number of dependents and being foreign born are negatively related. The positive relationship between years fishing and job satisfaction in New Bedford has been discussed above. Owner-skipper status is more likely to be related to job satisfaction in New Bedford because on the larger vessels, which predominate there, owner-skippers have more control over their labor, a factor positively

related to job satisfaction (cf. Kalleberg and Griffen 1978). The negative relationship between ethnicity and job satisfaction in New Bedford is probably related to their higher expectations upon coming to the United States, as discussed above. Finally, number of dependents is negatively related to job satisfaction in New Bedford due to the fact that the more dependents one has, the more difficult it is to be at sea for the long periods of time which characterize this port. The wife is probably less satisfied due to the fact that she must manage a larger household; thus the departures and returns are probably more stressful. As one New Bedford long trip fisherman said "I've eleven children, I go home and I confuse their names--some father I am."

In sum, we have seen that the structure of job satisfaction among New England Fishermen is related to a number of items potentially affected by management such as fishing style, time at sea, freedom to come and go as one pleases, etc. Fisheries management schemes which impact these facets of the occupation would also affect job satisfaction which in turn is related to a large number of variables impacting on society ranging from longevity to family violence and worker productivity. We have also seen that the relationships between job satisfaction and relative satisfaction regarding various facets of the structure of the occupation is complexly related to other sociocultural variables. Further, many of these relationships are conditioned by situational variables which vary from port to port. Hence, fisheries management plans can differentially affect job satisfaction among different categories of people and in different ports. The complexity of the relationships between these numerous variables suggest that extreme caution be taken if the goal of minimizing the negative social impact of fishery management schemes is to be realized.

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