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**THE CONSUMER'S OPINIONS OF THE
FOOD SERVICE SYSTEM:
THE 1973 FORT LEE SURVEY**

by

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May 1974

UNITED STATES ARMY
NATICK LABORATORIES
Natick, Massachusetts 01760



Pioneering Research Laboratory

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INTRODUCTION

The United States Army Natick Laboratories experimented with a centralized garrison feeding system at Fort Lewis, Washington, in 1970–1972. Based on this experiment, United States Army Troop Support Agency, Fort Lee, Virginia, was given the responsibility to select, design, and implement a concept of central preparation and warewashing initially at Fort Lee, Virginia, and eventually, at other Army bases as well. Part of the Natick Laboratories support for this project is a consumer evaluation of the food service system at Fort Lee both before and after implementation of central preparation. Two surveys administered prior to implementation evaluated food preferences and general consumer opinions of the food service system for use in central preparation system planning. This report presents results of the consumer opinion survey.

METHOD

A copy of the Consumer's Opinions Survey is contained in Appendix I. This questionnaire was developed by the Pioneering Research Laboratory on the basis of previous responses to military food service systems and on the basis of informal interviews with Army and Air Force consumers. The questionnaire deals with such areas as food quantity, quality, and variety, dining facility environment and personnel, food service regulations and procedures, and other aspects of the food service system. The format shown was used to permit automated scoring by mark sense technique.

The survey was administered at Fort Lee, Virginia, between 26 February 1973 and 2 March 1973 in nine sessions to groups ranging in size from 50–140 respondents. The respondents were seated at tables in a large, temporarily unused, dining facility and were told the background of the study by one of the 2–4 supervisors present. Each respondent was asked to complete two surveys – first, the Consumer's Opinions Survey, which took about 40 minutes, and after that, a Food Preference Survey, which took about 60 minutes.¹

Approximately 436 personnel in student status and 600 permanent party personnel, chosen to represent the various units at Fort Lee were requested to attend one of the nine testing sessions, yielding a total requested sample size of approximately 1036. Due to transfers, leaves, temporary duty, and other such factors, 695 respondents reported. The Consumer's Opinions sample, then, was 695 minus the 76 who completed the Food Preference Survey only, minus an additional 61 who were not able (i.e. some had never been inside a Fort Lee food service facility) or were not willing to correctly complete the forms, for a total sample size of 558. For further details of sample selection please refer to Appendix III.

The 558 respondents are treated as two sample groups, one containing 307 rations-in-kind (RIK) personnel and the other including 251 personnel receiving a basic-allowance-for-subsistence (BAS). Any discrepancies from these numbers in a particular table reflect those respondents who left the specific item unanswered.

Appendix II contains Tables 41 to 50, which present detailed descriptive information on the demographic background characteristics of the samples. The background profile of the "typical" RIK and BAS respondent was:

¹The second session began late, so the 75 respondents were asked to complete only the Consumer's Opinions Survey; the 76 respondents of the ninth session then only had to complete the Food Preference Survey.

	RIK	BAS
Sex	Male	Male
Race	Caucasian	Caucasian
Age	20.5 years	31.1 years
Educational Level	High School Graduate	High School Graduate
Time in Service	1 1/3 years	10 2/3 years
Reenlistment Plans	Probably will not	Undecided to probably will
Reaction to Military Service	Neutral to disliking a little	Liking a little to liking moderately
Pay Grade	E-2 to E-3	E-5 to E-6
Urban/Rural Background	From a small community	From a rural to a small community
Home State	New York	Virginia

In general the BAS sample was much older than the RIK sample, had been in the service for over half a career, had more members desiring to reenlist, generally had a more favorable attitude toward the military, had considerably higher pay grade, was from a smaller community than his RIK counterpart, and was more likely to be from Virginia. The samples represented a proportional cross-section of the population, with the exception that Virginia and the immediately adjacent states were over-represented in the BAS sample. The information on both samples will be presented, but because the primary concern is for the RIK group, the results focus on the opinions of this group.

RESULTS

Meal Patterns. Table 1 presents the reported meal patterns of the Fort Lee samples. It is important to recognize that these figures are the attendance reported by the customers, not taken from attendance headcount records. These stated meal patterns of the older BAS group are in accordance with the stated meal patterns of their Air Force peers (Branch and Meiselman, 1973; Branch, Symington, and Meiselman, 1973). That is, the BAS group generally reported eating three meals a day before entering Service, with some men eating in the evening. Once receiving the subsistence allowance in service, however, (refer to the current meal patterns of Table 1), one of every four men claimed to have stopped eating breakfast. Of those who did still eat breakfast, only 10% did so in the dining facilities. In fact, very few BAS men reported eating in the dining facilities at all, as indicated in part three of Table 1. The meal patterns of the younger RIK group present quite a different picture. This RIK group had variable meal patterns before entering the service (as do most others of their age group — Branch and Meiselman, 1973; Branch, Symington, and Meiselman, 1973), but once in the service followed the more traditional pattern of 3 meals a day, with most meals reportedly obtained from the dining facilities. These data might reflect the fact that most RIK respondents were participating in one of Fort Lee's school programs, and hence their daily schedules were quite ordered.

Tables 2, 3, and 4 present the reported meal patterns of the samples in terms of the number of meals per individual rather than the percent eating the meals. In Table 2 notice that both samples approach a reported mean of nearly 21 meals a week before entering the military, but the RIK's indicated a much more variable pattern. Nearly 20% reported four meals a day; another fifth, three to four meals a day; another fifth, the traditional three meals a day; and yet another fifth, two to three meals a day. At the time of the survey, however, only 13% reported 21 meals a week as their normal pattern. These results suggest that the majority of the RIK sample do not eat according to a 21 meal a week schedule. Even the older BAS group indicated a variable eating pattern before entering the military, and at the time of the survey reported eating only about 17 meals a week on the average.

Food Preferences. Table 5 provides information concerning the type of food on which the respondents reported being raised (around 40% on general American style and approximately 33% on Soul/Southern combined). This finding reflects a change from previous data collected at Air Force Bases (Branch and Meiselman, 1973; Branch, Symington, and Meiselman, 1973), in which slightly over half the sample reported being raised on general American style and slightly under a quarter on Soul/Southern combined. This difference might reflect a more Southern identification by the Army personnel at Fort Lee as compared to Air Force personnel at Travis, California, or Minot, North Dakota.

Table 5 also presents information on the kinds of specialty foods that are desired. Previous work indicated that Italian, Seafood, and Mexican food were the three most desired specialty foods (in that specific order with Fort Lewis personnel — Kiess, *et. al.*, 1972; closely clustered together with Travis AFB personnel — Branch and Meiselman, 1973 and with Minot AFB personnel — Branch, *et. al.*, 1973). Therefore, the slightly lowered preference for Mexican food, and the slightly elevated preference for both Soul and Southern, represents a considerable change. More detailed food preference information will be forthcoming in a report by Meiselman, *et. al.*, 1974.

Evaluation and Importance of Fourteen Food Service Factors. Table 6 presents information related to the question of what factors were reported as involved in the non-utilization of the dining facilities. The 14 factors are listed in decreasing magnitude according to the mean scores of the RIK sample.

Notice that, excluding speed of service, food related problems (quality, variety, and quantity in that order) are reported as more significant¹ factors in the non-utilization of the dining facilities than are facilities or management problems. The speed of service, though, is the single most serious reason for non-utilization. The hours of operation, the service by the dining facility personnel, and the effects of the monotony of the same facility also seem to contribute to the disuse of the Fort Lee food service system. The degree of military atmosphere present and the general dining facility environments are reported as contributing to non-utilization to a lesser degree; whereas companions, convenience of location, and expense seem to contribute only minimally to non-utilization.

The consumers were also asked to rate whether each of the same 14 factors was a major attraction, a minor attraction, neutral, a minor problem, or a major problem. The alternate format was used because querying the consumers about the degree to which each of the factors influences nonattendance does not allow the consumer to compliment the food service system ("not related to nonattendance" is hardly the highest accolade), and because some of the factors might be viewed as "problems" of the food service system but not serious enough to influence utilization. Table 7 presents the consumers evaluations with the 14 factors listed in the same order as Table 6. Notice that only two factors (expense and convenience of location) had a mean rating to the positive side of the neutral point, and these by the BAS sample; the rest are viewed as problems of varying degrees. Notice that monotony of the same facility is a serious problem area according to the end results in Table 7, but nevertheless is not reported as greatly contributing to non-utilization (Table 6). It should be noted further that the RIK group rated each factor, with the exception of the final three (desirable eating companions, convenience of location

¹A note concerning statistical significance in the context of this report is in order at this point; please refer to Appendix III.

and expense), as a more serious problem than did the BAS group. A similar pattern with respect to the influence of these factors on utilization is evident in Table 6. These attitudinal differences between groups could be attributable to any one, or a combination, of the group differences cited earlier, e.g., the greater age of the BAS group, their greater longevity in the service, their less frequent attendance in the dining hall, or their more favorable opinion toward the military in general. Because these variables were confounded in the present survey, however, a more precise determination of the relevant variables is not possible at this time.

The information provided in Table 7, and in the tables to follow might be dismissed by some on the assumption that only those who dislike military service complain about the food, and if food service were improved they would find something else about which to complain. This assumption was specifically addressed by examining (Table 8) the correlations between how much the individual dislikes or likes military service (see Table 48) and how much of a problem or attraction he views each of the 14 factors to be; and the correlations between reenlistment plans (see Table 47) and each of the 14 factors. Notice that most correlations are between 0.1 and 0.2 (range: -0.09 to 0.28), which means that between 1% and 4% of the reasons for complaining about food service can be attributed to the man's general attitudes toward the service.

The following discussion will expand on the consumers opinions for each of the 14 factors, detailing which aspects of each factor the consumer likes and which he dislikes.

Part I: Speed of Service. The reason for the consumers feeling that speed of service is the single most serious problem and the greatest reason for non-utilization in the Fort Lee food service system seems to be readily apparent from the data in Tables 9, 10, and 11. The RIK group maintained that there is typically almost a 13 minute delay at the headcount station, and an additional 8 minutes in the serving line. The self-bussing procedure did not appear to contribute to the slow speed of service. Although the BAS group also reported speed of service as the most serious problem area, these individuals maintained that the combined delay at headcount and in the serving line was about ten minutes instead of 21 minutes. The discrepancy between the RIK estimates and the BAS estimates probably reflects the aforementioned phenomenon that the RIK group tends to be more critical than the BAS group of the food system in general, also they might be more frustrated by the delays because they eat in the facilities more frequently.

Part II: Quality of Food. The single most important food problem reported in Fort Lee food service was the basic food quality itself. Table 12 presents the consumers' opinions of the raw food products procured by Fort Lee, and the data indicates that the consumers' perceptions of the raw foods were not excessively negative. "Sometimes" there was excess fat, damaged or bruised products, old looking foods, but not "often" or "always".

Table 13 indicates, however, that sometimes too often the food was perceived as greasy, tough, tasteless, or undercooked. Underseasoning and undercooking were greater problems than over-seasoning and overcooking. Taken together the data in Tables 12 and 13 suggest that the problem of food quality lies largely in food preparation.

Part III: Variety of Weekday Food. As shown in Table 6, the RIK group felt that the variety of weekday foods was the third most serious problem area of the 14 listed. Further questioning on this matter revealed that the consumers were most concerned with increasing their weekday variety of meats, generally desiring a few more offerings at each meal (see Table 14). Whenever variety has been a consumer problem area, meats have consistently been rated as the food type requiring the greatest increase in offerings (Branch and Meiselman, 1973; Branch, *et al.*, 1973). It appears, therefore, that the variety of food in military food service systems is being judged primarily on the basis of the variety of meat offerings. However, since none of the food types in Table 14 even approach the "choices now enough" or the "fewer choices acceptable" categories, a desire for more variety across the board is indicated.

Table 15 presents the consumers' opinions of the variety over an extended period, not just the variety for a particular meal. It is evident that the variety over a cycle is a more serious problem than the variety of a particular meal as evidenced by the higher mean values. Nevertheless, nearly the same pattern across food types exists, except that salads and starches are interchanged.

Part IV: Variety of Short Order Food. As indicated in Table 16, the consumers were in general agreement that at least a few more choices are desirable for the short order service over the period of a menu cycle, during the week, and on weekends. It should again be emphasized at this point that the food service system planners may have a difficult task in interpreting this information. For example, the consumers definitely wanted more choices of short order foods (Table 16) than of weekday foods (Table 14), but nevertheless it appears that an increase of weekday variety would yield greater attendance than an increase in short order variety (Table 6).

Part V: Quantity of Food. Table 17 indicates that a large percentage (over 75% of RIK's and 60% of BAS's) at least sometimes left the dining facilities without enough to eat. Table 18 provides more specific information on portion sizes of menu components. For both sample groups, the portion size of meat items was viewed as insufficient. Not one food type was viewed as served in excess by either group, although the portion size of starches was just "about right" sized for both groups. The consumers would also apparently like the quantity of desserts and vegetables to be increased slightly. Table 19 supplements this information by identifying which menu items are reported to have second helpings available. The discrepancies between the reports of the RIK's and BAS's may possibly be attributed to the RIK's higher exposure to the food service system. The

problem of insufficient quantity is obviated, of course, if either the initial portion is large enough (Table 18 indicates they are not) or if seconds are available. As Table 19 indicates, seconds appear to have been more available for food items which the consumers served themselves than for food items served by others (unless runouts occurred). It is not surprising that seconds of meat are reported as least available, since, as shown in Table 17, the consumers felt that initial quantity of meat servings was least sufficient.

Part VI: Variety of Weekend Food. Table 20 indicates that the problem of weekend variety was generally the same as the problem of weekday variety, again indicating a desire for more variety across the board.

Part VII: Hours of Operation. The data presented in Table 21 indicates a curious pattern; most of the dissatisfaction with the hours reflects a minority opinion (albeit, a fairly large minority opinion) desiring very much extended hours, and principally an extension to a later closing time. Even adjusting the hours by 30 minutes each way to exceed the mean response apparently will not satisfy the largest dissatisfied groups, which reported wanting the facilities open an hour or more earlier or later.

Part VIII: Service by Dining Facility Personnel. Table 22 presents the consumers' image of the cooks' abilities and the workers' attitudes, both of which were viewed as somewhat poor. Table 23 indicates how often the consumers reported being subjected to inferior personnel practices (i.e., not putting out enough silverware and condiments; ordering too little food; ordering too much food and hence serving leftovers). Greater attention should also be addressed to providing appropriate condiments and silverware.

Table 24 indicates that the self-bussing of trays at Fort Lee is not an irritant to the consumers, as evidenced by the fact that the mean of both groups is slightly to the favorable side of neutral.

Part IX: Monotony of the Same Facility. Although this factor does influence attendance to a certain degree, no further information was asked of the respondents because this would have required too great an addition to the survey length.

Part X: Military Atmosphere. Table 25 demonstrates that over 60% of the RIK group and over 50% of the BAS group would like to have less military atmosphere in their dining facilities. Table 26 supplements this information by indicating just which rules they want enforced or instituted and which they do not. When asked whether the various rules existed in their dining facilities or not, the only uniform agreement was that smoking was permitted and dress regulations exist. For the other rules, however, there was considerable disagreement whether the rule existed or not (a breakdown of the consumer responses by facilities did not indicate that specific facilities had some of the rules and others did not, but rather that the men in each facility were divided). In

most cases, more of the BAS group thought the particular rule existed than the RIK group. Concerning whether the rules should exist or not, the RIK group included only a small minority who wanted the specific rules enforced or instituted. The BAS group did not want calling "at ease" when an officer enters; did want the dress regulations enforced; but was divided on the disposition of the remaining rules.

Returning to the disagreement over the existence of the rules for a moment, it should be understood that the ambiguous situation is one of the more difficult settings in which to foster behavioral compliance (acting correctly). The dining facilities appear to present just such an ambiguous situation for the men, and this is damaging for military discipline. The expectations of the command should be understood explicitly and in detail by the men.

Part XI: General Dining Facility Environment: This section is considerably more detailed than the preceding sections because the concept of "environment" has so many dimensions. Furthermore, because of differences in environmental features among dining halls the tables presented in this section report the consumers' opinions for each facility, in addition to the ration status of the respondents.

For Tables 27 through 33, the codes for the dining facilities are as follows:

Dining Facility #1: Bldg #9304; HHC, QMC (includes M Company also)
Dining Facility #2: Bldg #3118; the HHC, QMC, building
Dining Facility #3: Bldg #3700; B Company
Dining Facility #4: Bldg #8402; C Company
Dining Facility #5: Bldg #3206; S Company (Specialty House)
Dining Facility #6: Bldg #3108; U Company
Dining Facility #7: Bldg #8400; V Company (includes T Company also)
Dining Facility #8: Bldg #9302; 240th

(D Company utilized Bldg #3701 and R Company utilizes Bldg #3024, but the sample sizes of both the RIK and BAS men from these two facilities were insufficient to provide stable data and hence are omitted from these tables; likewise the BAS data from dining facilities #3, #4, and #5 as listed above are omitted because of insufficient sample sizes.)

The format of Tables 27 through 32 also deserves an explanatory note before proceeding to the data. Although the survey questionnaires required the consumers to respond on a scale marked 1 to 5 with the items balanced (the positive descriptor on the left half the time and on the right half the time), the table format has the positive dimension always on the left and the scale marked from +2 to -2. Therefore, a value of -0.4, for example, indicates that the mean score for the specific group in the specific facility was nearly half way between neutral and moderately negative.

Table 27 presents the consumer evaluation of various facility-personnel factors (i.e. do the personnel keep the serving counters clean or are the counters left dirty) for each dining facility. The data in this table demonstrate three significant factors. (1) The consumers in general felt their dining facilities were clean, (2) the RIK's are generally more critical than their BAS counterpart, and (3) there is considerable variability across the dining facilities, which is not surprising because each facility is managed at the operational level by a separate command group. Dining facility #4 received the lowest mean rating, but even this was on the positive side of the neutral point. Dining facility #3 had the two highest single ratings in the whole table (clean kitchen area and clean dishes and glasses). Dining facility #2 had the lowest single rating for dirty silverware. The silverware item received the lowest rating across all the facilities. These data should be valuable to the individual dining facility managers in gauging how their consumers rate these specific factors as compared to the other facilities at Fort Lee.

Table 28 presents the consumer view of the general condition of each facility. The major problems, in order of severity, were crowding, noise, unpleasantness of view, space (too cramped), and unpleasantness of exterior appearance. Crowding and noise were reported as problems in every facility. Conversely, the most positive features were, in order, absence of rodents, absence of insects, low number of safety hazards, and lighting. Dining facility #4 had the lowest mean rating; #2 had the highest. Dining facility #5 was reported to be lacking in sunlight.

Table 29 presents the consumer view of the convenience factors of features of the dining facilities, indicating that washrooms were generally viewed as inconvenient (especially for dining facilities #2 and #5), the table size was inadequate for the trays (particularly in #5 and #4), and the space between tables was insufficient (#4, #5, and #6 specifically). In general, the "conveniences" within the dining facilities appear to have been non-existent.

Table 30 indicates that a good deal of variability existed among dining halls with respect to the consumers' opinions of the appearance and atmosphere of the facilities. Again, however, crowding stood out as a major problem. Facility #4 has the lowest mean score again, but the high degree of crowdedness again influenced this outcome; #4 was also viewed as particularly drab, dreary, ugly, tense, and unsociable. Special attention certainly should be paid to this facility.

Table 31 provides information about the environmental/engineering features of the facilities. These features, in order of their reported frequency of occurrence, were stuffiness, unpleasantness of food odors, heat, smokiness, cold, and steam.

Table 32 gives the consumers' opinion of the current tables, pointing out that the tables were viewed as sturdy, although somewhat on the ugly side and limited in variety. Facility #4 again has many more negative ratings than the other facilities. Table 33 shows

that the majority still want 4-man (72%), square (71%) tables. Approximately 1/6 would like 6-man tables, and the larger tables should be round. Facility #5 seems to have a particularly close knit group, with larger percentages desiring the larger-sized tables. The variability of the size preferences across facilities (from 52% to 86% desiring 4-man tables and from 4% to 26% desiring 6-man tables) indicates that no simple, all-encompassing guidelines can be offered; although the best solution may be to offer both size types within each facility.

The data indicated that some of the facilities had music systems, while others did not. The consumer preferences for music are presented in Table 34, demonstrating that the RIK's and BAS's have different preferences. For the RIK's, apparently a variety of Soul, hard rock, and popular might be desirable; whereas for the BAS's, a combination of instrumental, country western, and classical might be desirable. This phenomenon is a potential difficulty for the food service planner.

Part XII: Dining Companions. As indicated in Table 35, the RIK's reported often sitting with their friends for meals, and often having the opportunity to line up with their friends before the meal, which explains why the category of "dining companions" was not reported as strongly related to non-attendance. The BAS's reported "sometimes" to "often" sitting with their friends at meals also.

Part XIII: Convenience of Location. Table 36 indicates that the majority of RIK personnel reported walking within Fort Lee, while Table 37 demonstrates that the walk can be accomplished very quickly between living area and dining facilities and somewhat less quickly to or from the job sites. Overall, these data support the stated opinions of the RIK's that convenience of locations is generally unrelated to attendance. The BAS group on the other hand appears to generally drive within Fort Lee because their living area is too far distant to walk in a reasonable time.

Part XIV: Expense. Although expense was reported as having no substantive effect on attendance (Table 6), the survey was used to gauge consumer opinions concerning the separate rations system. Table 38 presents consumer reaction to the policies governing the current system, indicating that the RIK group was slightly favorable, while the BAS group was beyond mildly favorable. In summary, Fort Lee personnel appeared to be favorably disposed to the current policies. Table 39 presents the consumers' reactions to three alternative separate ration proposals. The current system (proposal #3) was the most favorably received by both groups; a system of putting everyone on separate rations and paying the existing prices for each meal (proposal #1) appeared to be somewhat favorable to the BAS group and somewhat unfavorable to the RIK group; and a system of putting everyone on separate rations and paying for each item taken (proposal #3) appeared to be least preferred for both groups. It should be noted, however, that favorability towards each system was highly variable. For example, although proposal

#2 was least favored and received a mean rating below neutral, it was rated favorably by nearly 40% of the BAS group and nearly 20% of the RIK group. Further surveys of opinions towards ration law proposals are currently underway.

Commercial Food Service Attractions. Whenever food service system planners consider improvements and alternatives for military food service, frequent references are made to the successes of specific institutional or industrial food service systems, with the tacit assumption that the military should model these systems. For the purpose of knowing exactly what the military consumer, if he were a civilian, would desire for an inexpensive noon meal or for an evening dinner, he was asked to rank order 10 factors in importance in choosing a facility for a noon meal (Table 40). Some respondents encountered problems in carrying out this ranking task and, therefore, the method needs validation. Notice that the quality of food was reported as the most important factor for both groups, music and the pleasantness of personnel the least important. In previous samples (Travis — Branch and Meiselman 1973; Minot — Branch, *et al.*, 1973) the agreement between the two groups in ordering these ten factors was considerably closer. For the Fort Lee samples, prices were of considerable importance for the BAS group, but only minimally important for the RIK group. Cleanliness was also of lesser importance to these groups than it was to the other samples.

Table 41 indicates the rank ordering of the same ten factors for an evening meal. It demonstrates much the same pattern as discussed with respect to Table 40 except that now convenience of location is of lesser importance, which probably reflects the feeling that more time to travel was available for an evening meal.

CONCLUSIONS AND RECOMMENDATIONS

The reader should bear in mind that the following statements are made solely to reflect the consumers' preferences. Words like "must" and "should" are reflections of the consumers' attitudes. It is fully realized that other considerations must be attended to before final decisions can be made and implemented.

1. Data does not support the contention that only those who dislike the military give lower ratings to the individual factors involved in food service.

2. The current method of obtaining attendance rates in Army dining facilities is based on a three meal a day/21 meals a week assumption. This assumption is untenable because the reports of Army personnel indicate that a majority do not eat 21 meals a week, and that the older BAS group in fact eats considerably less. Breakfast is the meal most often reportedly missed and it also accounts for the most change reported in meal patterns after entering the military (more RIK's eat weekday breakfast in training at Fort Lee; less BAS's eat breakfast as permanent party at Fort Lee).

3. RIK attendance in the dining facilities can be increased slightly at the regular meal periods, and perhaps more with a late evening meal. BAS attendance can also be expected to increase at the noon meal.

4. Although attendance might not change appreciably, this is not to imply that the consumers do not find fault with their existing food service system. Attention should be given to the most serious fault, the speed of service, which was composed of waiting at the headcount station and waiting in the serving line, with the former accounting for more of the waiting time.

5. The quality of the food must be improved as this remains the most serious food problem in the Army and Air Force food service systems already studied. Although the methods by which this goal can be achieved are many and the specific choice of method is best deferred to food service personnel, the problem to the consumer appears to be more one of preparation rather than raw food quality.

6. The variety of foods must be increased. Results of a technical report on Food Preferences by this Laboratory will inform the Army menu planners which items are desired more or less frequently.

7. Food quantity is also a problem, and main course meat items are of particular concern to the consumers. Meat items are served in insufficient quantity and without acceptable variety. Increased portion size, self-service, and/or unlimited second helpings would all address the quantity problem.

8. The image of the cooks and dining facility personnel is poor, but self-bussing is not a source of problems.

9. Make the rules of the dining facilities concerning dress regulations and the like explicit so that the consumer knows what standards of behavior are expected of him; reduce the military atmosphere.

10. This opinion survey of Army food service at Fort Lee during 1973 reconfirms the specifically Army food service problems uncovered at Fort Lewis in 1971. The relative importance of speed of service and food quantity are again reported by the consumers; food quality remains the most significant food problem.

11. The dining facility in building 8402, which is used by C Company, was quite negatively rated by its consumers. The data do not establish exactly what was causing this negativism in the men, but at the time of the survey something was seriously affecting their attitude toward the facility.

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CONSUMER'S OPINIONS OF FOOD SERVICE SYSTEMS

APPENDIX I

U. S. ARMY NATICK LABORATORIES

NOVEMBER 1972

Booklet Serial Number

In the grid to your right, please fill in the ovals corresponding with the Booklet Serial Number that is stamped directly above the numeric grid.

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Instructions for all questions: For each question completely darken the circle around the number of your answer. Certain questions have specific instructions associated with them. Please read these instructions carefully.

INSTALLATION CODE (To be supplied by testers.)

①①②③④⑤⑥⑦⑧⑨

DINING FACILITY CODE (To be supplied by testers.)

①①②③④⑤⑥⑦⑧⑨

Darken the appropriate circles which indicate your AGE at last birthday.

1st digit ①①②③④⑤⑥⑦⑧⑨

2nd digit ①①②③④⑤⑥⑦⑧⑨

Darken the circle which indicates your RACE.

- ☐ Caucasian
- ☐ Negro
- ☐ Oriental
- ☐ Other (specify _____)

Darken the circle which indicates your SEX.

- ☐ Male
- ☐ Female

Darken the circle which indicates your HIGHEST LEVEL OF EDUCATION.

- ☐ Some Grade School
- ☐ Finished Grade School
- ☐ Some High School
- ☐ High School Graduate (includes GED)
- ☐ Skilled Job Training
- ☐ Some College
- ☐ College Graduate
- ☐ Beyond College

How long have you been IN MILITARY SERVICE? Darken one circle in each line.

years 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
○○○○○○○○○○○○○○○○○○○○○○○○○○○○○○

and months 0 1 2 3 4 5 6 7 8 9 10 11
○○○○○○○○○○○○○○○○○○○○

Do you plan to REENLIST when your present enlistment ends? Darken the appropriate circle.

- ① Definitely yes
- ② Probably yes
- ③ Undecided
- ④ Probably no
- ⑤ Definitely no

How much do you LIKE MILITARY SERVICE? Darken the appropriate circle.

Dislike very much ①	Dislike moderately ②	Dislike a little ③	Neutral ④	Like a little ⑤	Like moderately ⑥	Like very much ⑦
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Where were you raised? Darken the appropriate circle.

- ☐ ① In the country
- ☐ ② In a town with less than 2,500 people
- ☐ ③ In a town or small city with more than 2,500, but less than 25,000 people
- ☐ ④ In a city with more than 25,000, but less than 100,000 people
- ☐ ⑤ In a large city with more than 100,000, but less than one million people
- ☐ ⑥ In a very large city with over one million people
- ☐ ⑦ In a suburb of a large or very large city

In what STATE were you raised? Darken the appropriate circle.

- | | |
|--|--|
| <input type="radio"/> 01 Alabama | <input type="radio"/> 28 Nevada |
| <input type="radio"/> 02 Alaska | <input type="radio"/> 29 New Hampshire |
| <input type="radio"/> 03 Arizona | <input type="radio"/> 30 New Jersey |
| <input type="radio"/> 04 Arkansas | <input type="radio"/> 31 New Mexico |
| <input type="radio"/> 05 California | <input type="radio"/> 32 New York |
| <input type="radio"/> 06 Colorado | <input type="radio"/> 33 North Carolina |
| <input type="radio"/> 07 Connecticut | <input type="radio"/> 34 North Dakota |
| <input type="radio"/> 08 Delaware | <input type="radio"/> 35 Ohio |
| <input type="radio"/> 09 Florida | <input type="radio"/> 36 Oklahoma |
| <input type="radio"/> 10 Georgia | <input type="radio"/> 37 Oregon |
| <input type="radio"/> 11 Hawaii | <input type="radio"/> 38 Pennsylvania |
| <input type="radio"/> 12 Idaho | <input type="radio"/> 39 Rhode Island |
| <input type="radio"/> 13 Illinois | <input type="radio"/> 40 South Carolina |
| <input type="radio"/> 14 Indiana | <input type="radio"/> 41 South Dakota |
| <input type="radio"/> 15 Iowa | <input type="radio"/> 42 Tennessee |
| <input type="radio"/> 16 Kansas | <input type="radio"/> 43 Texas |
| <input type="radio"/> 17 Kentucky | <input type="radio"/> 44 Utah |
| <input type="radio"/> 18 Louisiana | <input type="radio"/> 45 Vermont |
| <input type="radio"/> 19 Maine | <input type="radio"/> 46 Virginia |
| <input type="radio"/> 20 Maryland | <input type="radio"/> 47 Washington |
| <input type="radio"/> 21 Massachusetts | <input type="radio"/> 48 West Virginia |
| <input type="radio"/> 22 Michigan | <input type="radio"/> 49 Wisconsin |
| <input type="radio"/> 23 Minnesota | <input type="radio"/> 50 Wyoming |
| <input type="radio"/> 24 Mississippi | <input type="radio"/> 51 Other U.S. territories or possessions (For example, Puerto Rico or Virgin Islands.) |
| <input type="radio"/> 25 Missouri | <input type="radio"/> 52 Outside the U.S. or U.S. Territories or possessions. |
| <input type="radio"/> 26 Montana | |
| <input type="radio"/> 27 Nebraska | |

Darken the circle which indicates your PRESENT GRADE.

- ☐ ① E-1
- ☐ ② E-2
- ☐ ③ E-3
- ☐ ④ E-4
- ☐ ⑤ E-5
- ☐ ⑥ E-6
- ☐ ⑦ E-7
- ☐ ⑧ E-8
- ☐ ⑨ E-9

Do you receive a SEPARATE RATIONS ALLOWANCE (money instead of free meals)?

Darken the appropriate circle.

- ☐ ① Yes
- ☐ ② No

What ONE TYPE OF COOKING were you raised on? Darken the appropriate circle.

- | | |
|---|---|
| <input type="radio"/> 01 Chinese | <input type="radio"/> 09 Jewish |
| <input type="radio"/> 02 English | <input type="radio"/> 10 Mexican |
| <input type="radio"/> 03 French | <input type="radio"/> 11 New England |
| <input type="radio"/> 04 General American Style | <input type="radio"/> 12 Polish (& Eastern Europe) |
| <input type="radio"/> 05 German | <input type="radio"/> 13 Soul |
| <input type="radio"/> 06 Greek | <input type="radio"/> 14 Southern |
| <input type="radio"/> 07 Italian | <input type="radio"/> 15 Spanish (not Mexican) |
| <input type="radio"/> 08 Japanese | <input type="radio"/> 16 Other (please specify _____) |

What TYPE OF COOKING OR SPECIALTY FOODS do you like best? Please darken the circles of your TOP THREE CHOICES.

- | | |
|---|---|
| <input type="radio"/> 01 Chinese | <input type="radio"/> 09 Jewish |
| <input type="radio"/> 02 English | <input type="radio"/> 10 Mexican |
| <input type="radio"/> 03 French | <input type="radio"/> 11 New England |
| <input type="radio"/> 04 General American Style | <input type="radio"/> 12 Polish (& Eastern Europe) |
| <input type="radio"/> 05 German | <input type="radio"/> 13 Soul |
| <input type="radio"/> 06 Greek | <input type="radio"/> 14 Southern |
| <input type="radio"/> 07 Italian | <input type="radio"/> 15 Spanish (not Mexican) |
| <input type="radio"/> 08 Japanese | <input type="radio"/> 16 Seafood |
| | <input type="radio"/> 17 Other (please specify _____) |

WHICH MEALS DO YOU EAT DURING A TYPICAL WEEK, REGARDLESS OF WHERE YOU EAT THEM? If you have "brunch" on Saturdays or Sundays, consider it to be a mid-day meal. Be sure to mark each block.

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Breakfast	①	②	①	②	①	②	①	②	①	②	①	②	①	②
Mid-day Meal	①	②	①	②	①	②	①	②	①	②	①	②	①	②
Evening Meal	①	②	①	②	①	②	①	②	①	②	①	②	①	②
After Evening	①	②	①	②	①	②	①	②	①	②	①	②	①	②

WHICH MEALS DO YOU EAT DURING A TYPICAL WEEK AT YOUR DINING FACILITY?

If you have "brunch" on Saturdays or Sundays, consider it to be a mid-day meal. Be sure to mark each block.

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Breakfast	①	②	①	②	①	②	①	②	①	②	①	②	①	②
Mid-day Meal	①	②	①	②	①	②	①	②	①	②	①	②	①	②
Evening Meal	①	②	①	②	①	②	①	②	①	②	①	②	①	②
After Evening	①	②	①	②	①	②	①	②	①	②	①	②	①	②

BEFORE YOU ENTERED THE MILITARY, WHICH MEALS DID YOU USUALLY EAT?

If you ate "brunch" on Saturdays or Sundays, consider it to be a mid-day meal. Be sure to mark each block.

	Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.		Sun.	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mid-day Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Evening Meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After Evening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WHERE DO YOU EAT when you do not eat in the military dining facility? Indicate how often by filling in one circle in each line.

	Never	Less than once a week	1-3 times a week	4-7 times a week	8-14 times a week	15 or more times a week
a. Private residence (girlfriend's house, friend's or relative's house, your home, your barracks, bringing your food, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. An installation snack facility (the bowling alley, the exchange, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. An installation NCO club, EM or Airmen Club, or service club	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Diner, snack bar, pizza parlor, or drive-in off the installation (or having it delivered)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Quality restaurant off the installation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Bar or tavern (with alcoholic beverages) off the installation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. From vending machines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. From mobile snack or lunch trucks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Other (write it below and indicate how often)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Listed below are 14 GENERAL AREAS OF CONCERN. For each topic or area, indicate whether it is a significant problem, a minor problem, neither a problem nor an attraction, a minor attraction, or a significant attraction for your dining facility in your opinion.

	Area or topic	Signifi- cant Problem ①	Minor Problem ②	Neither Problem Nor Attrac- tion ③	Minor Attrac- tion ④	Signifi- cant Attrac- tion ⑤
a.	Convenience of location	①	②	③	④	⑤
b.	General dining facility environment	①	②	③	④	⑤
c.	Degree of military atmosphere present	①	②	③	④	⑤
d.	Desirable eating companions	①	②	③	④	⑤
e.	Expense	①	②	③	④	⑤
f.	Hours of operation	①	②	③	④	⑤
g.	Monotony of same facility	①	②	③	④	⑤
h.	Quality of food	①	②	③	④	⑤
i.	Quantity of food	①	②	③	④	⑤
j.	Service by dining facility personnel	①	②	③	④	⑤
k.	Variety of the regular meal food (weekday only)	①	②	③	④	⑤
l.	Variety of the regular meal food (weekend only)	①	②	③	④	⑤
m.	Variety of the short order food	①	②	③	④	⑤
n.	Speed of service or lines	①	②	③	④	⑤

For each of the same 14 general areas, indicate whether it is a major reason for your degree of NON-ATTENDANCE at the dining facility, a minor reason for your degree of non-attendance, or not related to your degree of non-attendance.

Area or topic	Major reason for non- attendance	Minor reason for non- attendance	Not related to non- attendance
a. Convenience of location	①	②	③
b. General dining facility environment	①	②	③
c. Degree of military atmosphere present	①	②	③
d. Desirable eating companions	①	②	③
e. Expense	①	②	③
f. Hours of operation	①	②	③
g. Monotony of same facility	①	②	③
h. Quality of food	①	②	③
i. Quantity of food	①	②	③
j. Service by dining facility personnel	①	②	③
k. Variety of the regular meal food (weekday only)	①	②	③
l. Variety of the regular meal food (weekend only)	①	②	③
m. Variety of the short order food	①	②	③
n. Speed of service or lines	①	②	③

If you have a REGULARLY SCHEDULED ACTIVITY which keeps you from attending the dining facility at certain times, indicate how many meals per week you do not attend because of this activity. (Indicate "zero meals not attended" if you have no such activity.)

Meals not attended:	0	1	2-4	5	6-7	8-10	More than 10
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Concerning the degree of MILITARY ATMOSPHERE which you feel exists in your dining facility at the present time, indicate whether you feel there should be MORE or LESS military atmosphere in the future.

A Lot More ①	A Little More ②	About the Same ③	A Little Less ④	A Lot Less ⑤
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Indicate how you usually travel between each of the following locations:

	Walk	Drive	Ride	Bus	Other (specify)
a. Living area to your job site	①	②	③	④	⑤ _____
b. Job site to dining facility	①	②	③	④	⑤ _____
c. Living area to dining facility	①	②	③	④	⑤ _____

Indicate approximately how many minutes it takes you to travel by the means you indicated in the previous questions from your:

	1-5 min	6-10 min	11-15 min	16-20 min	21-25 min	26-30 min	Over 30 min
a. Living area to your job site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Job site to dining facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Living area to dining facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate approximately how many MINUTES it would take to WALK from your:

	1-5 min	6-10 min	11-15 min	16-20 min	21-25 min	26-30 min	Over 30 min
a. Living area to your job site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Job site to dining facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Living area to dining facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Is your dining facility ever:

	Never	Sometimes	Often	Always
a. Too cold	①	②	③	④
b. Too warm	①	②	③	④
c. Stuffy	①	②	③	④
d. Smoky	①	②	③	④
e. Full of steam	①	②	③	④
f. Full of unpleasant food odors	①	②	③	④

How often do you find:

	Never	Sometimes	Often	Always
a. Inappropriate or missing silverware	①	②	③	④
b. Not enough condiments (ketchup, etc.)	①	②	③	④
c. Left-overs being served day after day	①	②	③	④
d. Serving line has run out of items	①	②	③	④

For each pair of items below, please indicate your opinion of THE GENERAL CONDITION OF YOUR DINING FACILITY by darkening the circle which comes closest to describing your feelings.

		Extremely	Moderately	Neutral	Moderately	Extremely	
		①	②	③	④	⑤	
a.	Clean kitchen area	①	②	③	④	⑤	Dirty kitchen area
b.	Insect infested	①	②	③	④	⑤	Insect free
c.	Rodent infested	①	②	③	④	⑤	Rodent free
d.	Clean serving counters	①	②	③	④	⑤	Dirty serving counters
e.	Dirty dispensing devices	①	②	③	④	⑤	Clean dispensing devices
f.	Dirty silverware	①	②	③	④	⑤	Clean silverware
g.	Clean trays	①	②	③	④	⑤	Dirty trays
h.	Clean dishes and glasses	①	②	③	④	⑤	Dirty dishes and glasses
i.	Dirty floors	①	②	③	④	⑤	Clean floors
j.	Dirty tables and chairs	①	②	③	④	⑤	Clean tables and chairs
k.	Brightly lighted	①	②	③	④	⑤	Dimly lighted
l.	Sunny	①	②	③	④	⑤	Lacking in sunlight
m.	Quiet	①	②	③	④	⑤	Noisy
n.	Crowded	①	②	③	④	⑤	Uncrowded
o.	Roomy	①	②	③	④	⑤	Cramped
p.	Poorly designed	①	②	③	④	⑤	Well designed
q.	Pleasant view	①	②	③	④	⑤	Unpleasant view
r.	Low number of safety hazards	①	②	③	④	⑤	High number of safety hazards
s.	Unpleasant exterior appearance	①	②	③	④	⑤	Pleasant exterior appearance
t.	Unpleasant interior appearance	①	②	③	④	⑤	Pleasant interior appearance

Indicate your opinions about CONVENIENCES WITHIN YOUR DINING FACILITY.

- | | | ① | ② | ③ | ④ | ⑤ | |
|----|---|-----------|------------|---------|------------|-----------|--|
| | | Extremely | Moderately | Neutral | Moderately | Extremely | |
| a. | Convenient to enter & leave | ① | ② | ③ | ④ | ⑤ | Inconvenient to enter & leave |
| b. | Far from washroom | ① | ② | ③ | ④ | ⑤ | Close to washroom |
| c. | Large space between tables
allows easy passage | ① | ② | ③ | ④ | ⑤ | Small space between tables
forbids easy passage |
| d. | Inadequate table size for
size of trays | ① | ② | ③ | ④ | ⑤ | Adequate table size for
trays |

Is the overall APPEARANCE OR ATMOSPHERE of your dining facility:

- | | | | | | | | |
|----|-----------|---|---|---|---|---|-------------|
| a. | Colorful | ① | ② | ③ | ④ | ⑤ | Drab |
| b. | Cheerful | ① | ② | ③ | ④ | ⑤ | Dreary |
| c. | Cluttered | ① | ② | ③ | ④ | ⑤ | Uncluttered |
| d. | Beautiful | ① | ② | ③ | ④ | ⑤ | Ugly |
| e. | Relaxed | ① | ② | ③ | ④ | ⑤ | Tense |
| f. | Sociable | ① | ② | ③ | ④ | ⑤ | Unsociable |
| g. | Crowded | ① | ② | ③ | ④ | ⑤ | Uncrowded |

Are the TABLES in your dining facility:

- | | | | | | | | |
|----|--------------|---|---|---|---|---|-----------------|
| a. | Colorful | ① | ② | ③ | ④ | ⑤ | Drab |
| b. | Beautiful | ① | ② | ③ | ④ | ⑤ | Ugly |
| c. | Wide variety | ① | ② | ③ | ④ | ⑤ | Limited variety |
| d. | Sturdy | ① | ② | ③ | ④ | ⑤ | Easy to damage |
| e. | Roomy | ① | ② | ③ | ④ | ⑤ | Cramped |

Indicate the TABLE SIZE you prefer:

2 persons	4 persons	6 persons	8 persons	More than 8 persons
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate the TABLE SHAPE you prefer:

- ☐ Round
☐ Square or Rectangular

Indicate how often each of the following statements about SOCIAL aspects of your dining facility applies to you.

	Never	Sometimes	Often	Always
I line up with my friends for the meal	①	②	③	④
I always sit with my friends at a dining table	①	②	③	④
I always try to claim a certain table as my area	①	②	③	④
The feeling of privacy is quite good in this dining hall	①	②	③	④
I talk to people at other tables during the meal	①	②	③	④
Room conditions are acceptable for relaxed conversation	①	②	③	④
There is a friendly social atmosphere in this dining hall	①	②	③	④
Do you have MUSIC in your dining facility now?		Yes ①	No ②	

What is your reaction to having MUSIC in the dining facilities:

Very Acceptable ①	Mildly Acceptable ②	Neutral ③	Mildly Unacceptable ④	Very Unacceptable ⑤
----------------------	------------------------	--------------	--------------------------	------------------------

Indicate the one type of music you would most prefer in the dining facilities:

- ☐ Any type is fine
- ☐ Hard rock
- ☐ Soul
- ☐ Popular
- ☐ Rock and roll
- ☐ Jazz
- ☐ Instrumental
- ☐ Classical
- ☐ Country western
- ☐ A variety of the above
- ☐ Other (write it here) _____
- ☐ Do not want music

Does your dining facility use a SELF BUSSING system in which each person carries his own tray to the dishwashing area?

Yes

No

①

②

Indicate how you do or would feel about having SELF BUSSING in the dining facilities:

Very
Acceptable

①

Mildly
Acceptable

②

Neutral

③

Mildly
Unacceptable

④

Very
Unacceptable

⑤

Indicate your opinion about the policies concerning the SEPARATE RATIONS SYSTEMS:

Very
Acceptable

①

Mildly
Acceptable

②

Neutral

③

Mildly
Unacceptable

④

Very
Unacceptable

⑤

Indicate your opinion of the following proposals:

a. In CONUS, everyone should receive the separate rations allowance. Each individual should then pay for the meals he eats in a military dining facility (breakfast: 35 cents; mid-day meal: 80 cents; evening meal: 60 cents).

Extremely
Unfavorable

①

Mildly
Unfavorable

②

Neutral

③

Mildly
Favorable

④

Extremely
Favorable

⑤

b. In CONUS, everyone should receive the separate rations allowance. Each individual should then pay for the specific items he takes from the serving line (2 eggs: 15 cents; hamburger: 20 cents; french fries: 10 cents; chicken: 45 cents).

Extremely
Unfavorable

①

Mildly
Unfavorable

②

Neutral

③

Mildly
Favorable

④

Extremely
Favorable

⑤

c. The current system gives some people a separate rations allowance and requires them to pay for each meal they eat in the dining facility. The others who do not receive that allowance are authorized to eat in the dining facilities without charge. This system should be retained.

Extremely
Unfavorable

①

Mildly
Unfavorable

②

Neutral

③

Mildly
Favorable

④

Extremely
Favorable

⑤

What hours would you like the dining facility to be open for your convenience?

Weekdays: Monday to Friday

	Breakfast	Mid-Day Meal	Evening Meal
From:			
1 hr or more earlier	①	①	①
30 min earlier	②	②	②
15 min earlier	③	③	③
Sufficient as it is	④	④	④
To:			
1 hr or more later	①	①	①
30 min later	②	②	②
15 min later	③	③	③
Sufficient as it is	④	④	④

Weekends: Saturday and Sunday

	Breakfast	Mid-Day Meal	Evening Meal
From:			
1 hr or more earlier	①	①	①
30 min earlier	②	②	②
15 min earlier	③	③	③
Sufficient as it is	④	④	④
To:			
1 hr or more later	①	①	①
30 min later	②	②	②
15 min later	③	③	③
Sufficient as it is	④	④	④

Is the food in your mess hall ever:

	Never	Sometimes	Often	Always
a. Overcooked	①	②	③	④
b. Undercooked	①	②	③	④
c. Cold	①	②	③	④
d. Tasteless or bland	①	②	③	④
e. Burned	①	②	③	④
f. Dried out	①	②	③	④
g. Greasy	①	②	③	④
h. Tough	①	②	③	④
i. Too spicy	①	②	③	④
j. Raw	①	②	③	④
k. Still frozen	①	②	③	④
l. Too salty	①	②	③	④

Do you ever find that the food in your dining facility is, or has:

	Never	Sometimes	Often	Always
a. Gristle or tendon	①	②	③	④
b. Excess fat	①	②	③	④
c. Stringy	①	②	③	④
d. Damaged or bruised (e.g., fruit or vegetables)	①	②	③	④
e. Over-ripe fruit	①	②	③	④
f. Under-ripe fruit	①	②	③	④
g. Stale	①	②	③	④
h. Old looking	①	②	③	④
i. Sour (e.g., milk)	①	②	③	④
j. Spoiled	①	②	③	④
k. Off-flavor or odor	①	②	③	④

Other than times of dieting, do you ever LEAVE your dining facility WITHOUT ENOUGH TO EAT?

NEVER	SOMETIMES	OFTEN	ALWAYS
①	②	③	④

Do you serve yourself or do the dining facility personnel serve you the following items:

	SELF-SERVICE	SERVED BY OTHERS
a. Short order items	①	②
b. Meat items	①	②
c. Starches (i.e. potatoes)	①	②
d. Vegetables	①	②
e. Salads	①	②
f. Beverages	①	②
g. Desserts	①	②

Are SECOND HELPINGS PERMITTED for the following items?

	Always	Sometimes	Never
a. Short order items	①	②	③
b. Meat items	①	②	③
c. Starches (i.e. potatoes)	①	②	③
d. Vegetables	①	②	③
e. Salads	①	②	③
f. Beverages	①	②	③
g. Desserts	①	②	③

Answer the following questions for the regular meal only. Exclude the short order meal.
Indicate "Not Appropriate" (8) if you have self-service and/or second helpings permitted.

a. What is your opinion about the amount of meat per serving:

Too Little			About Right			Too Much	NA
①	②	③	④	⑤	⑥	⑦	⑧

b. What is your opinion about the amount of starches per serving:

Too Little			About Right			Too Much	NA
①	②	③	④	⑤	⑥	⑦	⑧

c. What is your opinion about the amount of vegetables per serving:

Too Little			About Right			Too Much	NA
①	②	③	④	⑤	⑥	⑦	⑧

d. What is your opinion about the amount of dessert per serving:

Too Little			About Right			Too Much	NA
①	②	③	④	⑤	⑥	⑦	⑧

Indicate your opinion about the ABILITY of the COOKS to prepare high quality meals in your dining facilities.

Very Poor			Average			Excellent
①	②	③	④	⑤	⑥	⑦

Indicate your opinion about the ATTITUDES of the dining facility WORKERS to make your meal as pleasant as possible.

Very Poor			Average			Excellent
①	②	③	④	⑤	⑥	⑦

Indicate your opinion of the VARIETY of offerings at any particular WEEKDAY meal.

	We need:	Many More Choices	A Few More Choices	Choices Now Enough	Fewer Choices Acceptable
a.	For short order foods:	①	②	③	④
b.	For meats:	①	②	③	④
c.	For starches:	①	②	③	④
d.	For vegetables:	①	②	③	④
e.	For salads:	①	②	③	④
f.	For beverages:	①	②	③	④
g.	For desserts:	①	②	③	④

Indicate your opinion of the VARIETY of offerings at any particular WEEKEND meal.

	We need:	Many More Choices	A Few More Choices	Choices Now Enough	Fewer Choices Acceptable
a.	For short order foods:	①	②	③	④
b.	For meats:	①	②	③	④
c.	For starches:	①	②	③	④
d.	For vegetables:	①	②	③	④
e.	For salads:	①	②	③	④
f.	For beverages:	①	②	③	④
g.	For desserts:	①	②	③	④

Indicate your opinion of the VARIETY of foods offered in the menu during the course of a month or so.

	We need:	Many More Items	A Few More Items	Items Now Enough	Fewer Items Acceptable
a.	For short order:	①	②	③	④
b.	For meats:	①	②	③	④
c.	For starches:	①	②	③	④
d.	For vegetables:	①	②	③	④
e.	For salads:	①	②	③	④
f.	For beverages:	①	②	③	④
g.	For desserts:	①	②	③	④

Is CARRY OUT SERVICE available in your dining facility? (Disregard any flight feeding programs in this and the following two questions.)

Yes
① No
②

Indicate how you do or would feel about CARRY OUT SERVICE being available from the dining facilities.

Extremely
opposed ① ② ③ ④ ⑤ ⑥ ⑦ Extremely
Enthusiastic

If such a CARRY OUT SERVICE were available, how do you feel it would influence your attendance in the military dining facilities?

- ① No influence.
- ② I would eat a FEW MORE meals per week.
- ③ I would eat MANY MORE meals per week.

How long do you USUALLY have to WAIT in line at the headcount station TO GET ADMITTED for a meal:

- ① I never have to wait in line.
- ② I wait between one and five minutes.
- ③ I wait between five and ten minutes.
- ④ I wait between ten and fifteen minutes.
- ⑤ I wait longer than fifteen minutes.

How long do you USUALLY have to WAIT IN THE SERVING LINE after the headcount before you get your food?

- ① I never have to wait in line.
- ② I wait between one and five minutes.
- ③ I wait between five and ten minutes.
- ④ I wait between ten and fifteen minutes.
- ⑤ I wait longer than fifteen minutes.

How long do you USUALLY have to WAIT AT THE DISH WASHING AREA when self-bussing?

- ① I never have to wait in line.
- ② I wait between one and five minutes.
- ③ I wait between five and ten minutes.
- ④ I wait between ten and fifteen minutes.
- ⑤ I wait longer than fifteen minutes.
- ⑥ Not applicable; no self-bussing.

For each of the following RULES FOR BEHAVIOR, first indicate whether or not the rules exist in your dining facility and then indicate whether you feel it should be ENFORCED OR INSTITUTED, whether you feel it should be ABOLISHED OR NOT INSTITUTED, or whether you have NO OPINION about it.

	Does Rule Exist?		Enforce or Institute	Abolish or not Institute	No Opinion
	Yes	No			
a. Dress regulations	①	②	①	②	③
b. Not allowing non-military guests	①	②	①	②	③
c. Calling "at ease" when officer enters	①	②	①	②	③
d. No smoking	①	②	①	②	③
e. Officers and NCO's permitted to cut in line	①	②	①	②	③
f. Separation of officers and NCO's from enlisted men	①	②	①	②	③

Now we would like to have your opinions of food service systems in general. Therefore, answer the following questions as if your circumstances were different and you held a civilian job instead of being in military service.

Suppose you regularly went out to eat your NOON MEAL and had many places to choose from. Indicate the order of IMPORTANCE of each of the following 10 factors in making your CHOICE OF WHERE TO EAT by darkening the circle under "1st" for the most important factor, darkening the circle under "2nd" for the second most important factor, and so on. Each factor then should have one ranking.

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
a. Convenience of location	○	○	○	○	○	○	○	○	○	○
b. General appearance	○	○	○	○	○	○	○	○	○	○
c. Price	○	○	○	○	○	○	○	○	○	○
d. Quality of food	○	○	○	○	○	○	○	○	○	○
e. Quantity of food	○	○	○	○	○	○	○	○	○	○
f. Variety of food	○	○	○	○	○	○	○	○	○	○
g. Speed of service	○	○	○	○	○	○	○	○	○	○
h. Availability of music	○	○	○	○	○	○	○	○	○	○
i. Pleasantness of service personnel	○	○	○	○	○	○	○	○	○	○
j. Cleanliness	○	○	○	○	○	○	○	○	○	○

Suppose you regularly went out to eat your **EVENING MEAL** and had many places to choose from. Indicate the order of **IMPORTANCE** of each of the following 10 factors in making your **CHOICE OF WHERE TO EAT** by darkening the one for the most important factor, darkening the two for the second most important factor, and so on. Each factor then should have one ranking.

		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
a.	Convenience of location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b.	General appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c.	Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d.	Quality of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e.	Quantity of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f.	Variety of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g.	Speed of service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h.	Availability of music	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i.	Pleasantness of service personnel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j.	Cleanliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Suppose you have decided to have an **INEXPENSIVE NOON** or **EVENING MEAL**. Would you prefer a cafeteria, self-service system or a waitress-service system?

	①	Definitely	②	Probably	③	Neutral	④	Probably	⑤	Definitely	
Self-service											Waitress service

APPENDIX II

TABLES 1–51

TABLE 1

Reported Meal Patterns

Meal Patterns Before Entering Military

		Mon	Tues	Wed	Thur	Fri	Sat	Sun	Weekday mean	Weekend mean
Breakfast:	RIK	59%	58%	58%	59%	59%	57%	60%	58.6%	58.5%
	BAS	71%	70%	71%	71%	69%	72%	73%	70.4%	72.5%
Mid-Day:	RIK	84%	85%	85%	86%	85%	81%	83%	85.0%	82.0%
	BAS	87%	87%	86%	85%	86%	84%	83%	86.2%	83.5%
Evening:	RIK	91%	90%	92%	92%	89%	84%	85%	90.8%	84.5%
	BAS	92%	92%	92%	92%	90%	90%	88%	91.6%	89.0%
After-Evening:	RIK	60%	60%	62%	62%	67%	70%	68%	62.2%	69.0%
	BAS	29%	28%	29%	28%	30%	37%	36%	28.8%	36.5%

Current Meal Patterns

		Mon	Tues	Wed	Thur	Fri	Sat	Sun	Weekday mean	Weekend mean
Breakfast:	RIK	74%	74%	75%	74%	75%	46%	48%	74.4%	47.0%
	BAS	45%	45%	44%	44%	44%	63%	66%	44.4%	64.5%
Mid-Day:	RIK	90%	89%	89%	91%	90%	78%	77%	89.8%	77.5%
	BAS	79%	79%	79%	78%	79%	71%	70%	78.8%	70.5%
Evening:	RIK	89%	88%	91%	88%	85%	77%	76%	88.2%	76.5%
	BAS	90%	89%	88%	89%	87%	86%	85%	88.6%	85.5%
After-Evening:	RIK	37%	37%	37%	37%	40%	46%	44%	37.6%	45.0%
	BAS	26%	28%	29%	27%	31%	35%	34%	28.2%	34.5%

Meals Obtained from Dining Facilities

		Mon	Tues	Wed	Thur	Fri	Sat	Sun	Weekday mean	Weekend mean
Breakfast:	RIK	68%	66%	67%	68%	68%	38%	37%	67.4%	37.5%
	BAS	9%	8%	8%	10%	10%	7%	7%	9.0%	7.0%
Mid-Day:	RIK	82%	82%	83%	84%	81%	62%	61%	82.4%	61.5%
	BAS	18%	20%	19%	21%	18%	13%	12%	19.2%	12.5%
Evening:	RIK	78%	78%	81%	78%	75%	62%	60%	78.0%	61.0%
	BAS	16%	16%	17%	16%	15%	12%	10%	16.0%	11.0%
After-Evening:	RIK	18%	19%	19%	18%	19%	23%	22%	18.6%	22.5%
	BAS	3%	4%	3%	4%	4%	5%	4%	3.6%	4.5%

Note: Numbers in the cells indicate the percent reporting usually eating the meal

Table 2

Number of Meals per Week Reportedly Consumed Before Entering Military

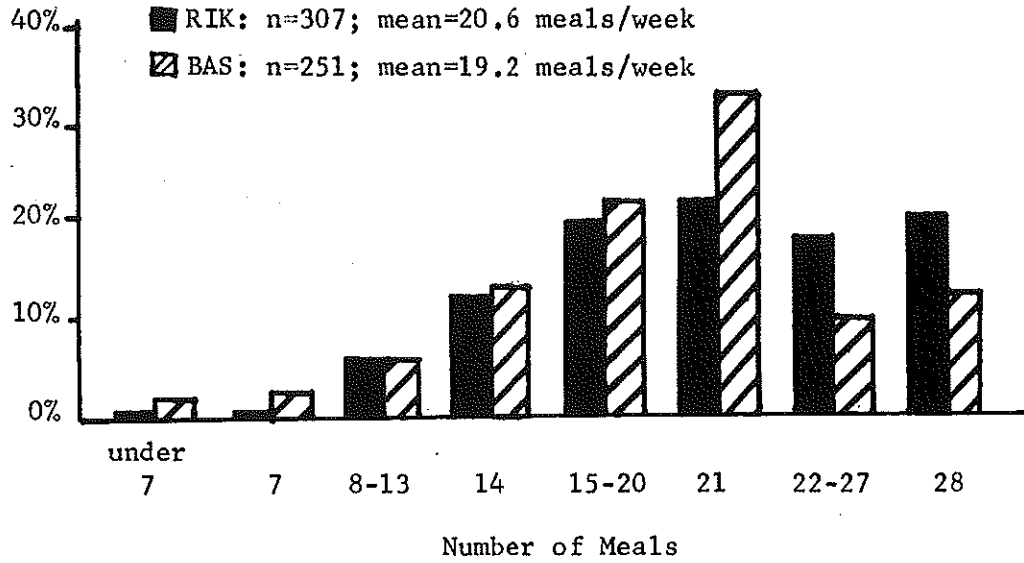


Table 3

Number of Meals per Week Reportedly Consumed Currently

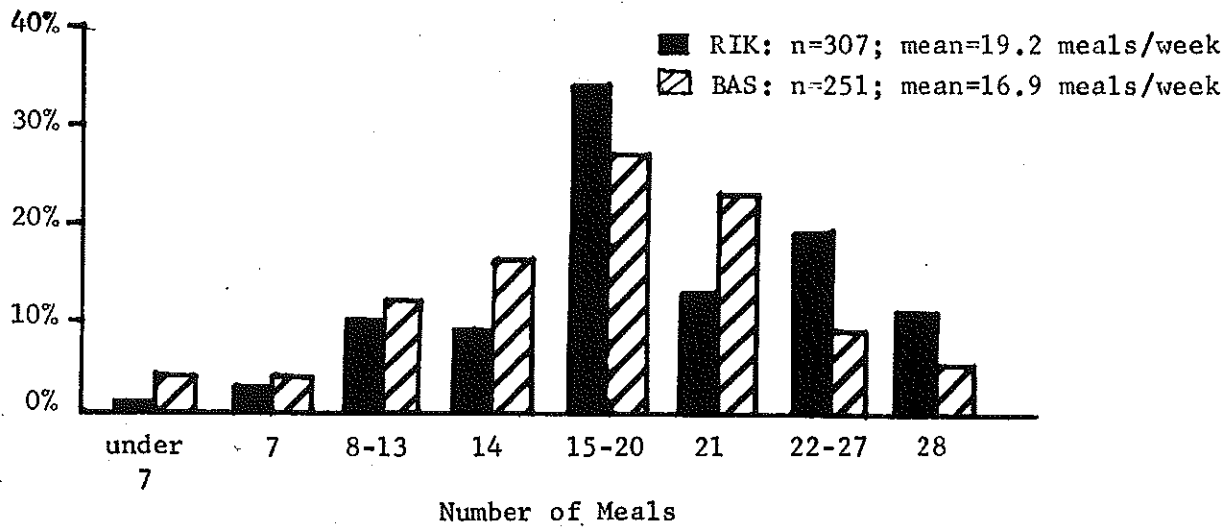
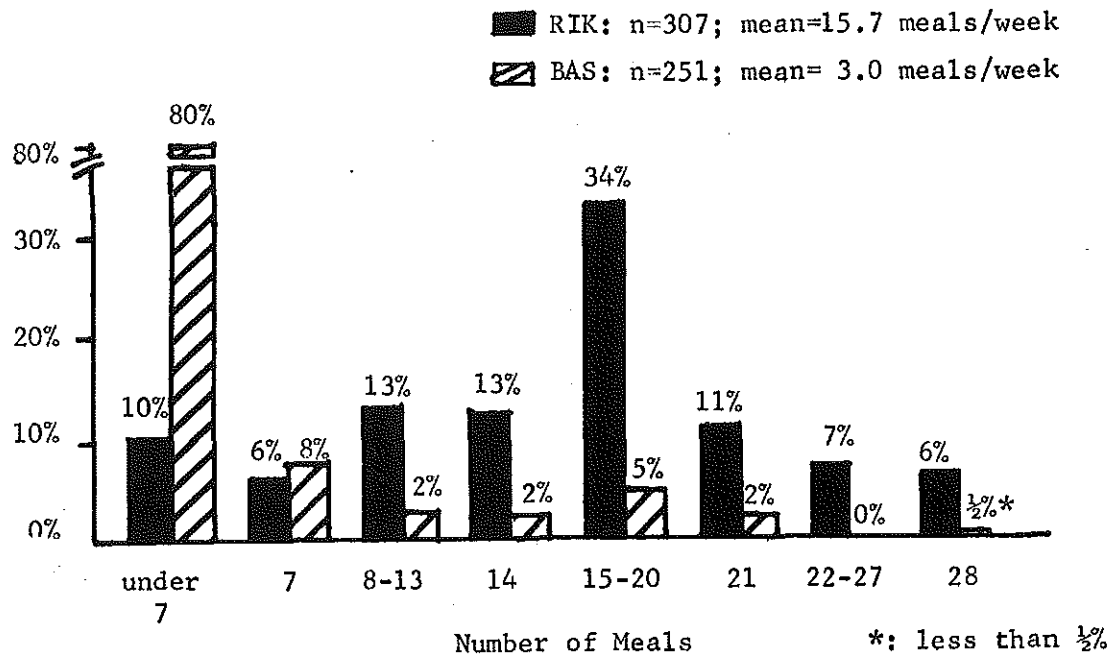


Table 4

Number of Meals per Week Reportedly Consumed in Dining Facilities



Note: The category of "under 7 meals per week" includes 4% of RIK's and 65% of BAS's who indicated 0 meals per week.

Table 5

Preferred Foods

TYPE OF COOKING INDIVIDUALS
WERE RAISED ONDESIRED TYPE OF COOKING
ONE SPECIALTY FOOD

<u>RIK</u>	<u>BAS</u>	<u>Cuisine</u>	<u>RIK</u>	<u>BAS</u>
43%	38%	General American	17%	15%
20%	18%	Soul	10%	9%
10%	18%	Southern	9%	13%
5%	5%	English	4%	3%
4%	4%	Italian	14%	10%
4%	2%	Mexican	8%	7%
3%	3%	Spanish	2%	2%
2%	0%	New England	1%	2%
1%	2%	German	4%	9%
1%	0%	Japanese	2%	3%
1%	0%	Jewish	1%	$\frac{1}{2}\%$ *
1%	0%	Polish (& Eastern European)	1%	1%
$\frac{1}{2}\%$ *	$\frac{1}{2}\%$ *	Chinese	7%	8%
$\frac{1}{2}\%$ *	$\frac{1}{2}\%$ *	French	4%	3%
$\frac{1}{2}\%$ *	0%	Greek	1%	1%
a.	a.	Seafood	12%	13%
6%	4%	Other	3%	1%

*: Less than $\frac{1}{2}\%$

a: Not listed as response alternative.

Table 6

Importance of Fourteen Food Service Factors on Attendance

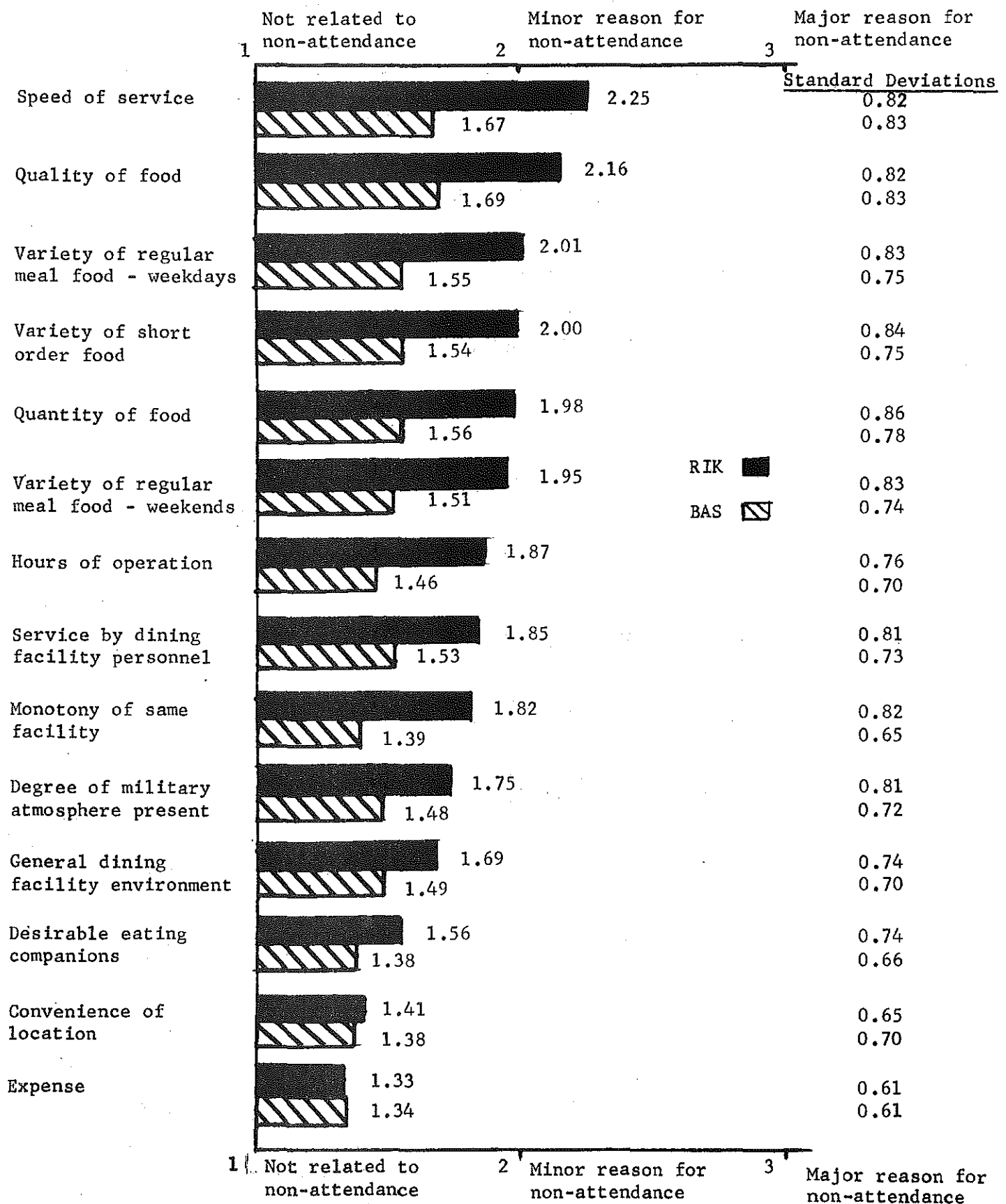
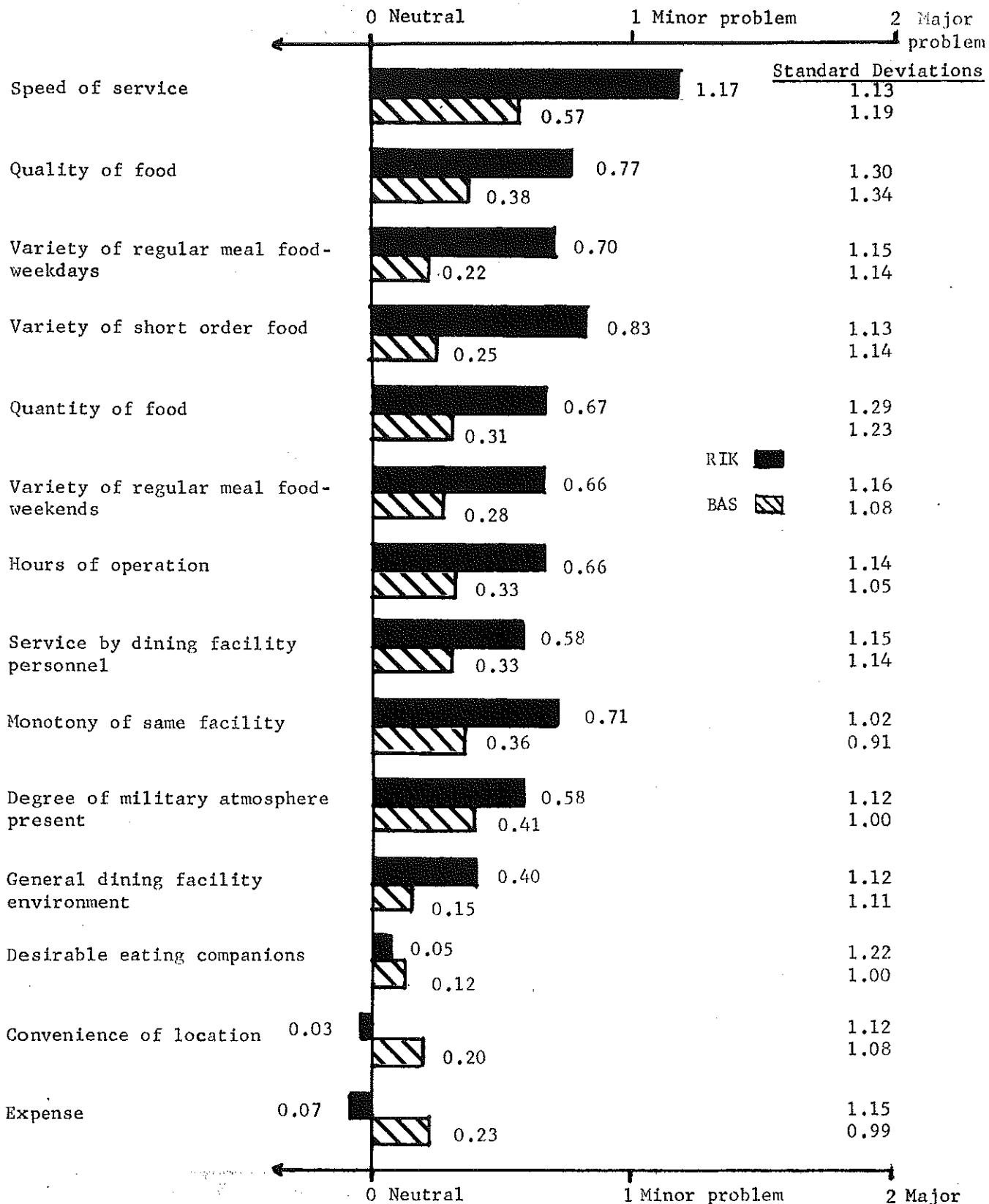


Table 7

Current Evaluation of Fourteen Food Service Factors



Note: The scale had equal units to the left of neutral in the positive direction; it is truncated here.

Table 8

Correlation Between Attitudes Toward
Army and the Fourteen Food Service Factors

	RIK <u>Dislike/Like of Army</u>	<u>Desire to Reenlist</u>	BAS <u>Dislike/Like of Army</u>	<u>Desire to Reenlist</u>
Concern with Speed of Service	0.09	0.03	0.25	0.15
Concern with Quality of Food	0.16	0.10	0.31	0.22
Concern with Variety of Regular Meal Food - Weekdays	0.20	0.12	0.29	0.27
Concern with Variety of Short Order	0.19	0.16	0.22	0.15
Concern with Quantity of Food	0.13	0.13	0.29	0.22
Concern with Variety of Regular Meal Food - Weekends	0.21	0.11	0.24	0.23
Concern with Hours of Operation	0.14	0.08	0.17	0.17
Concern with Service by Dining Facility Personnel	0.21	0.17	0.23	0.16
Concern with Monotony of Same Facility	0.12	0.12	0.24	0.20
Concern with Degree of Military Atmos- phere Present	0.23	0.20	0.30	0.18
Concern with General Dining Facility Environment	0.19	0.12	0.23	0.16
Concern with Desirable Eating Companions	0.20	0.08	0.14	0.03
Concern with Convenience of Location	0.12	0.03	0.21	0.18
Concern with Expense	-0.06	-0.07	0.18	0.18

Table 9

Perceived Delay at Headcount Station

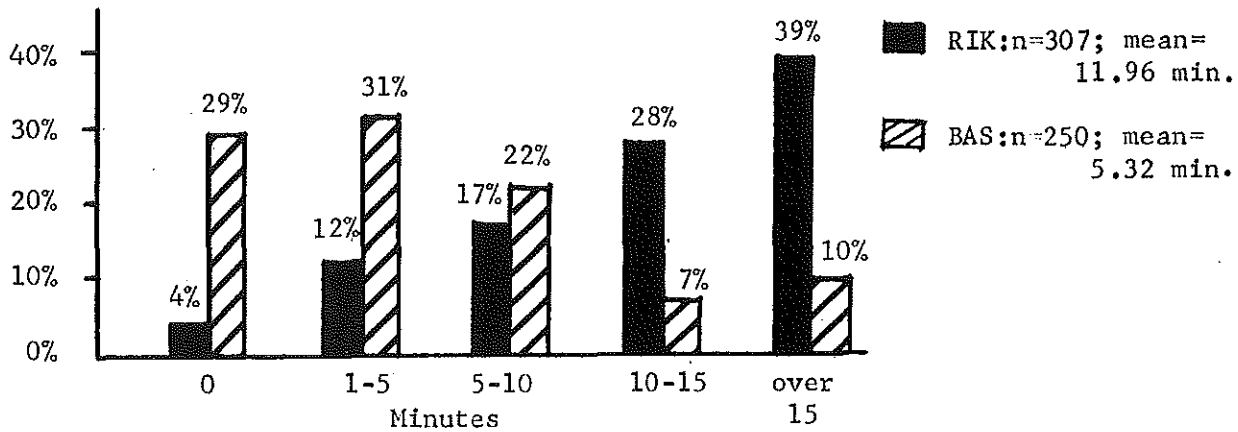


Table 10

Perceived Delay in Serving Line

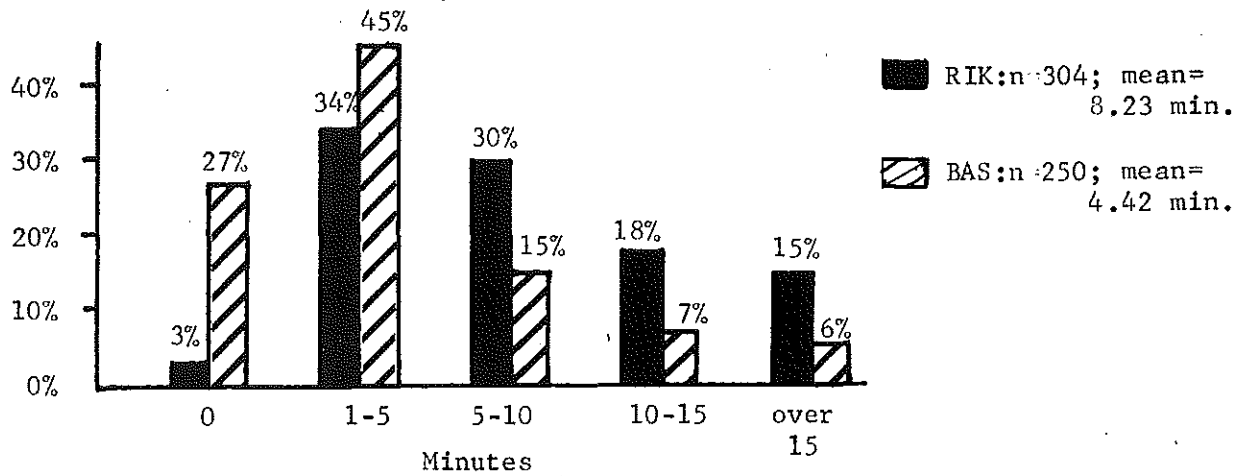


Table 11

Perceived Delay at Dishwashing Area

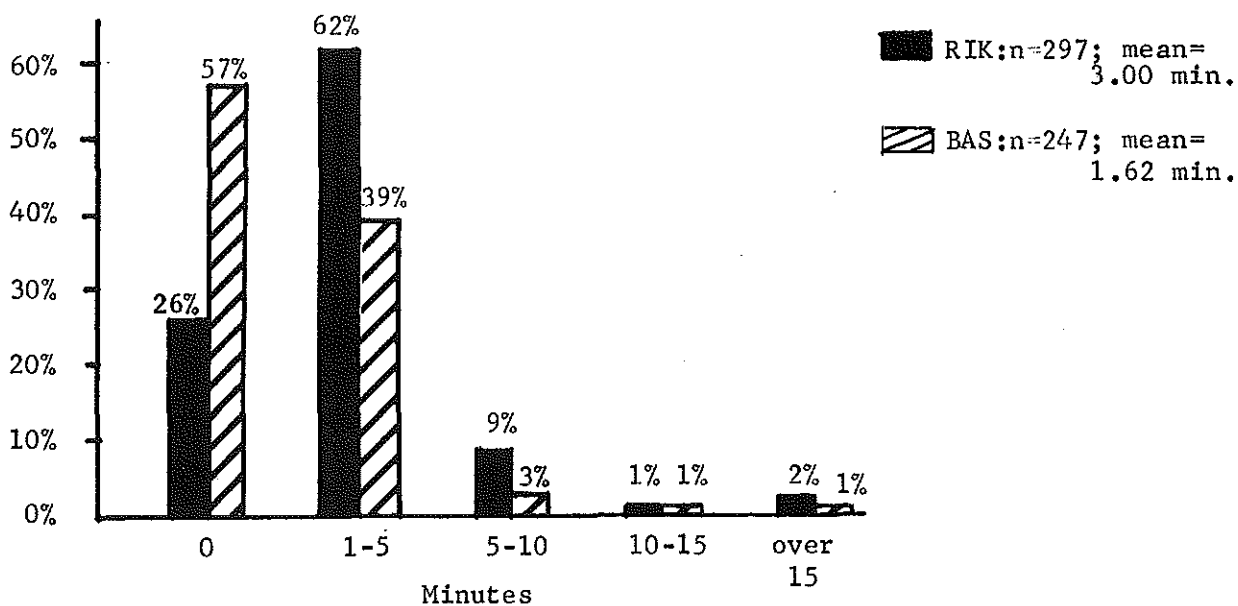


Table 12

Quality of Raw Food Product

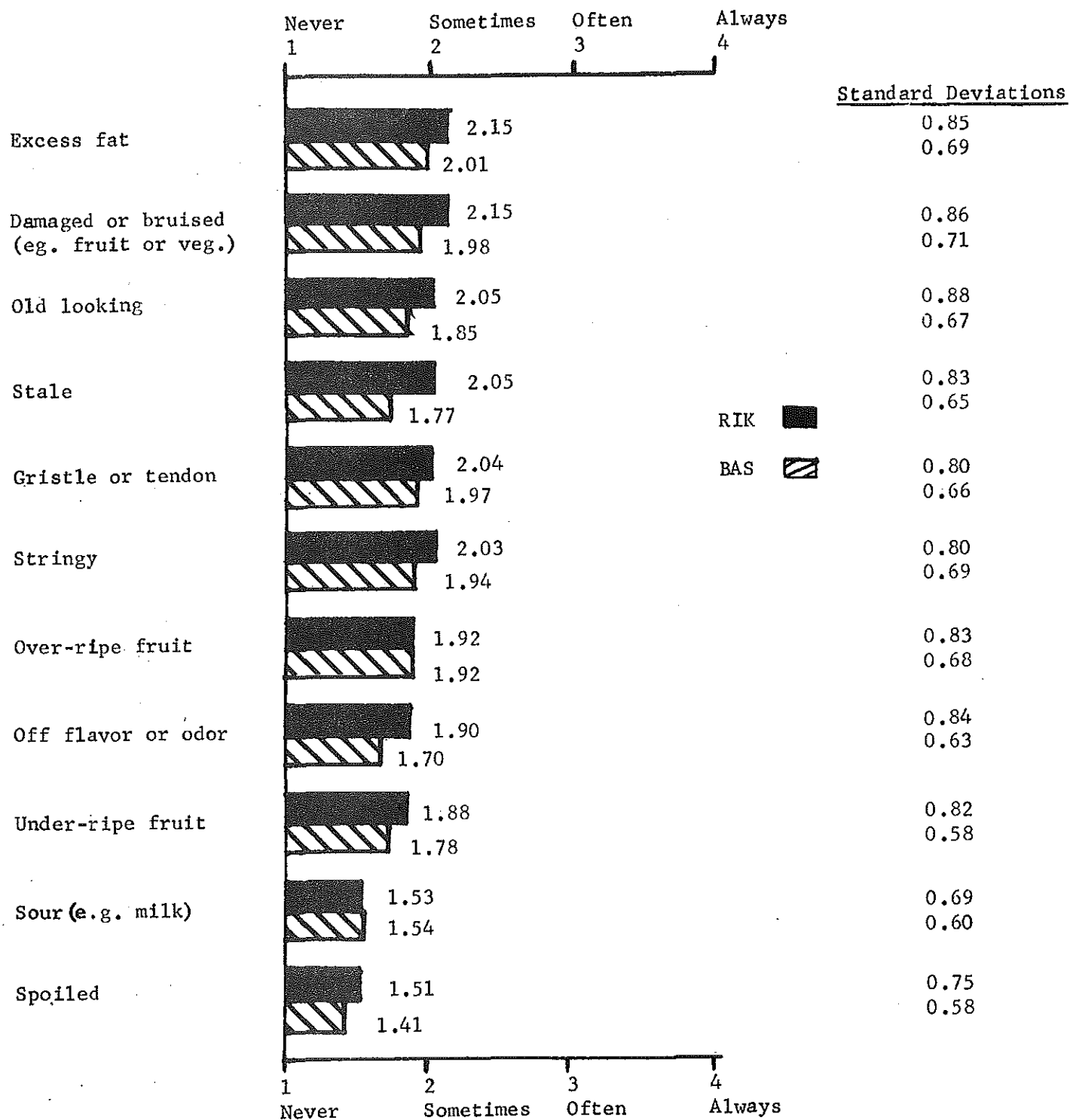


Table 13

Quality of Food Preparation

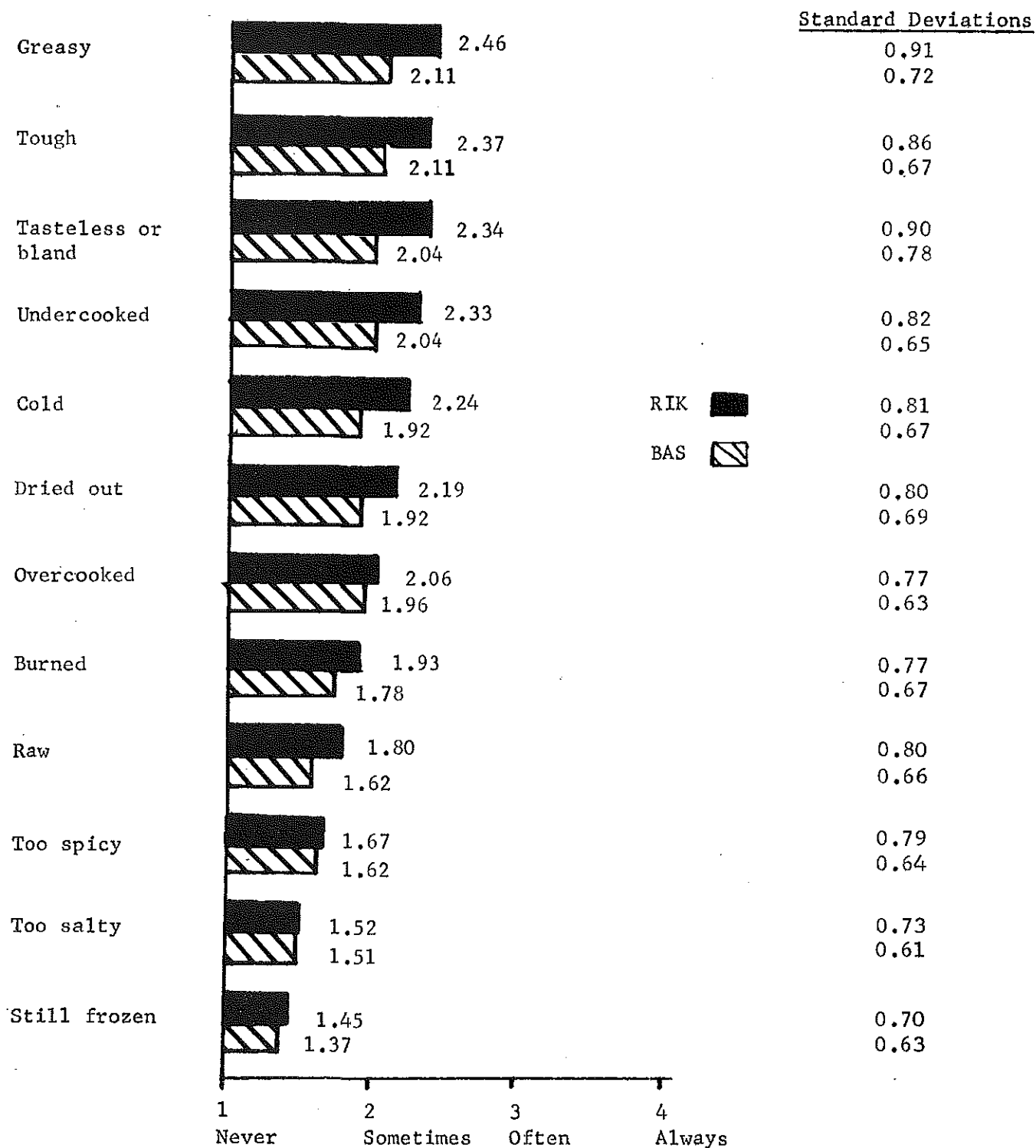


Table 14

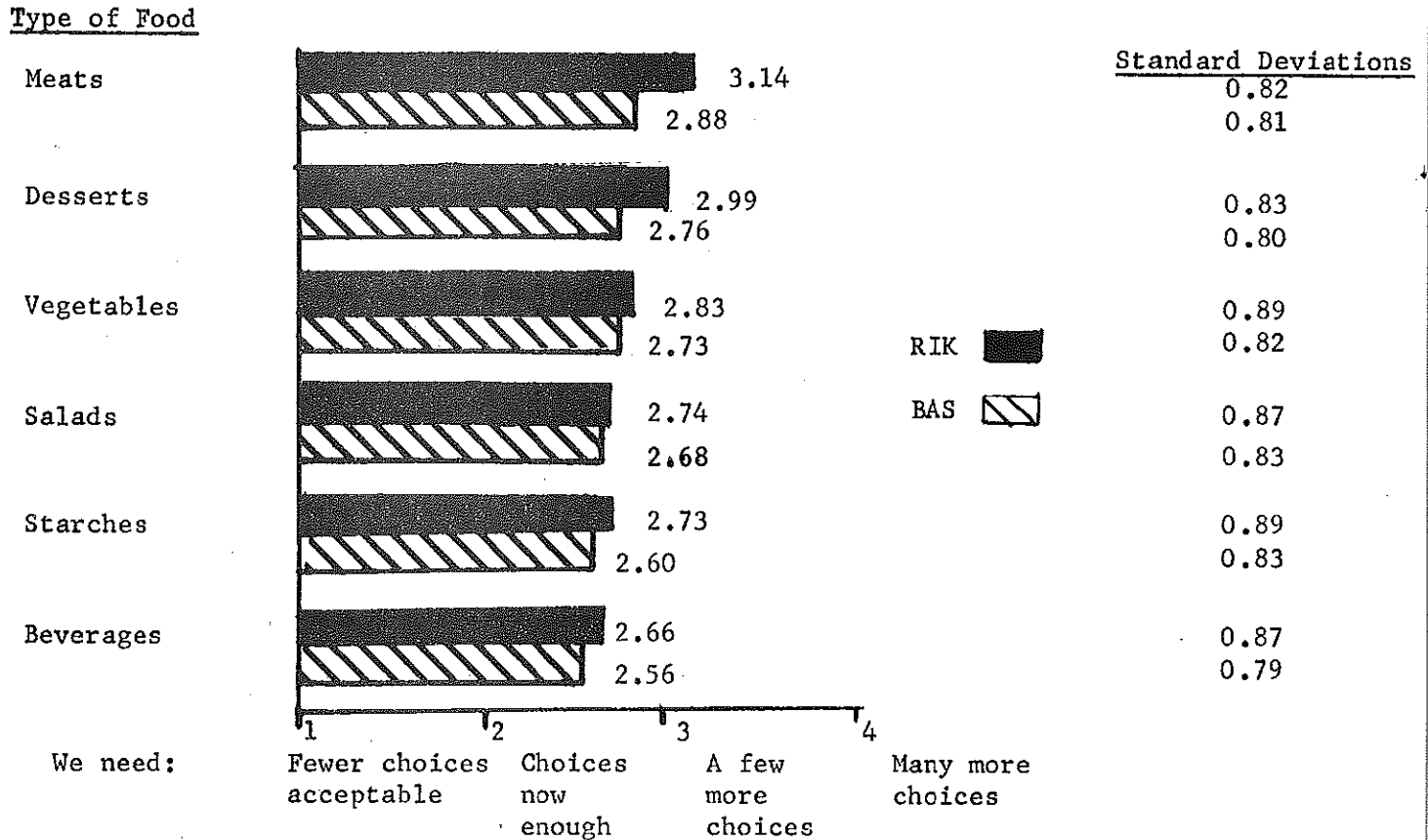
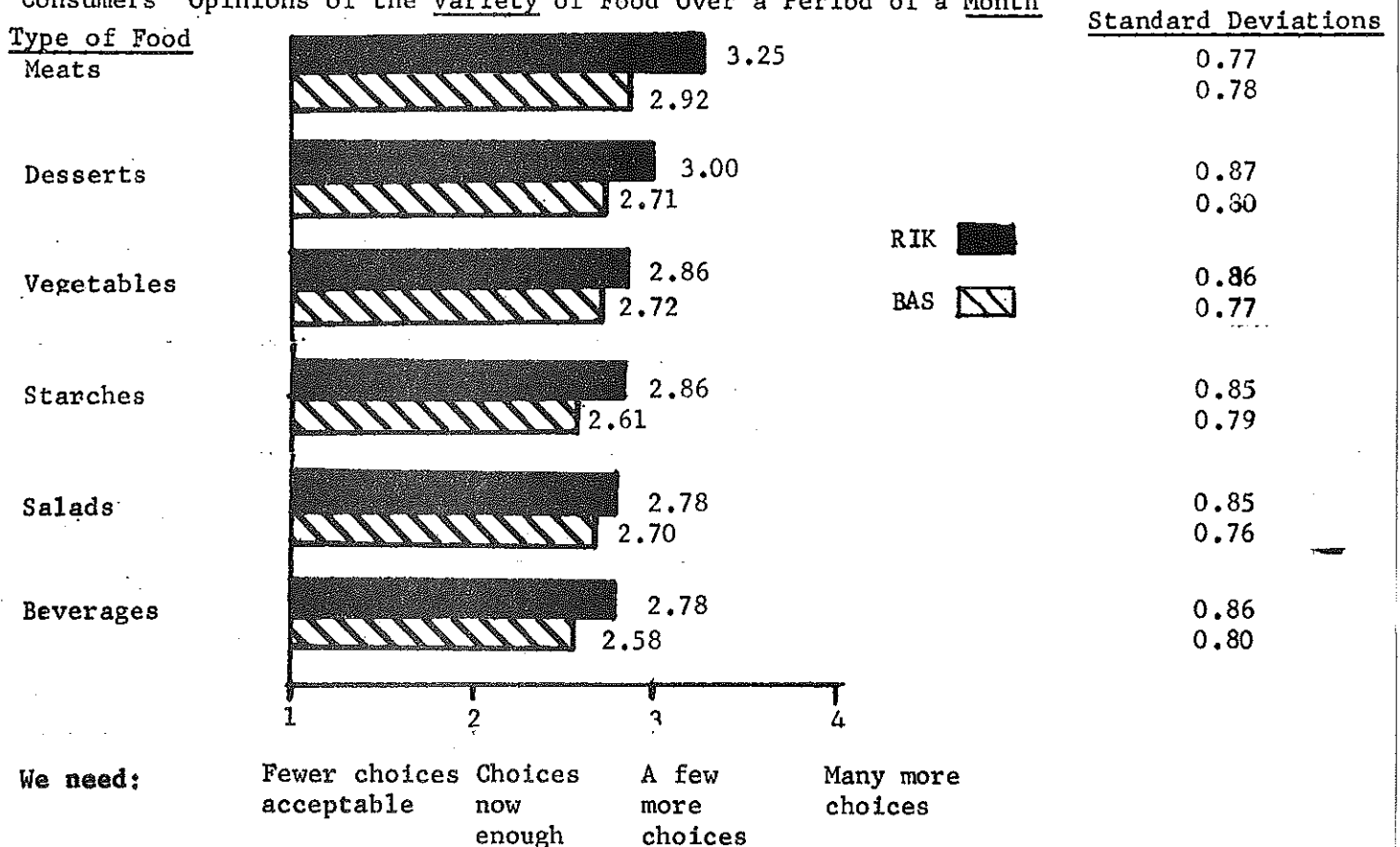
Consumers' Opinions of the Variety of Weekday FoodTable 15
Consumers' Opinions of the Variety of Food Over a Period of a Month

Table 16

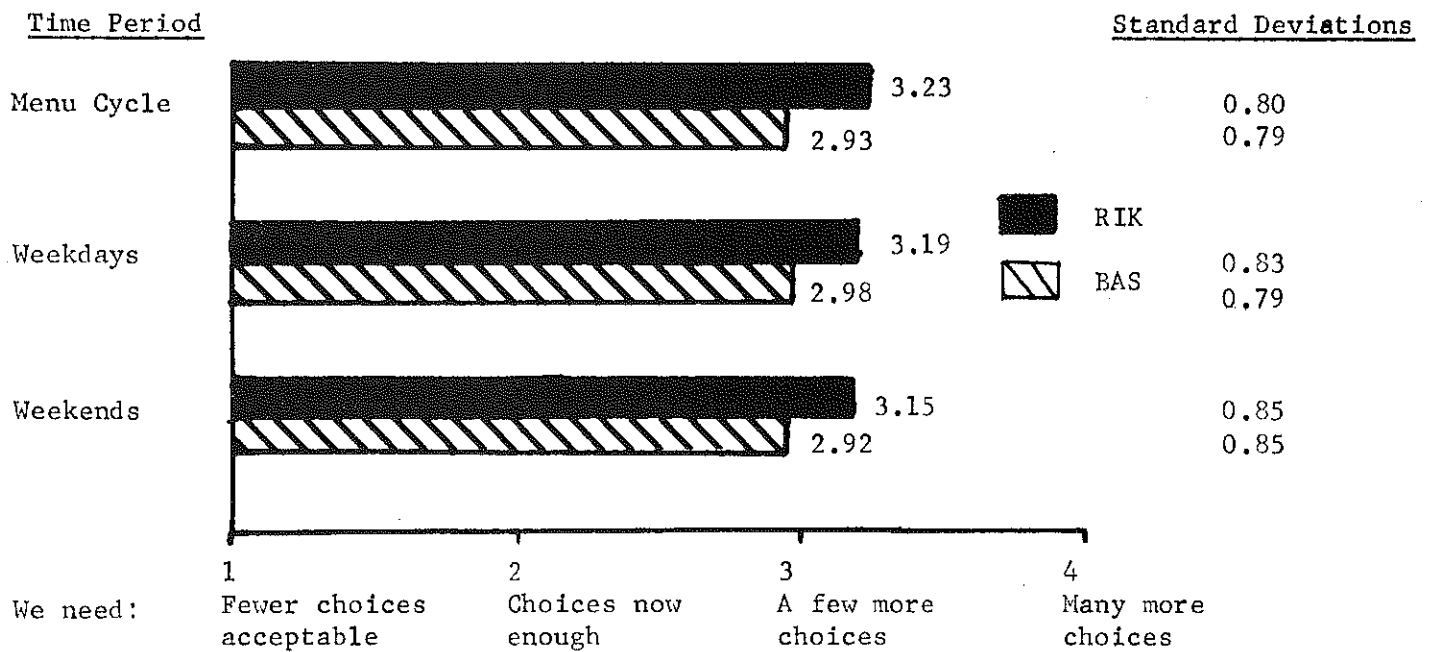
Consumers' Opinions of the Variety of Short Order Foods

Table 17

Consumers' Responses to the Question; Other than times of dieting, do you ever leave your dining facility without enough to eat?

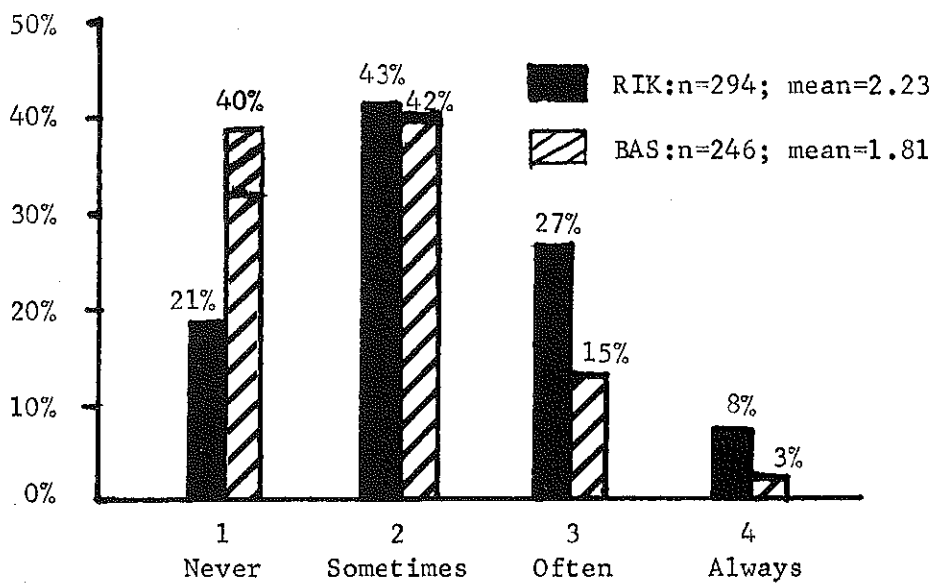


Table 18
Consumers' Opinions of Amounts per Serving

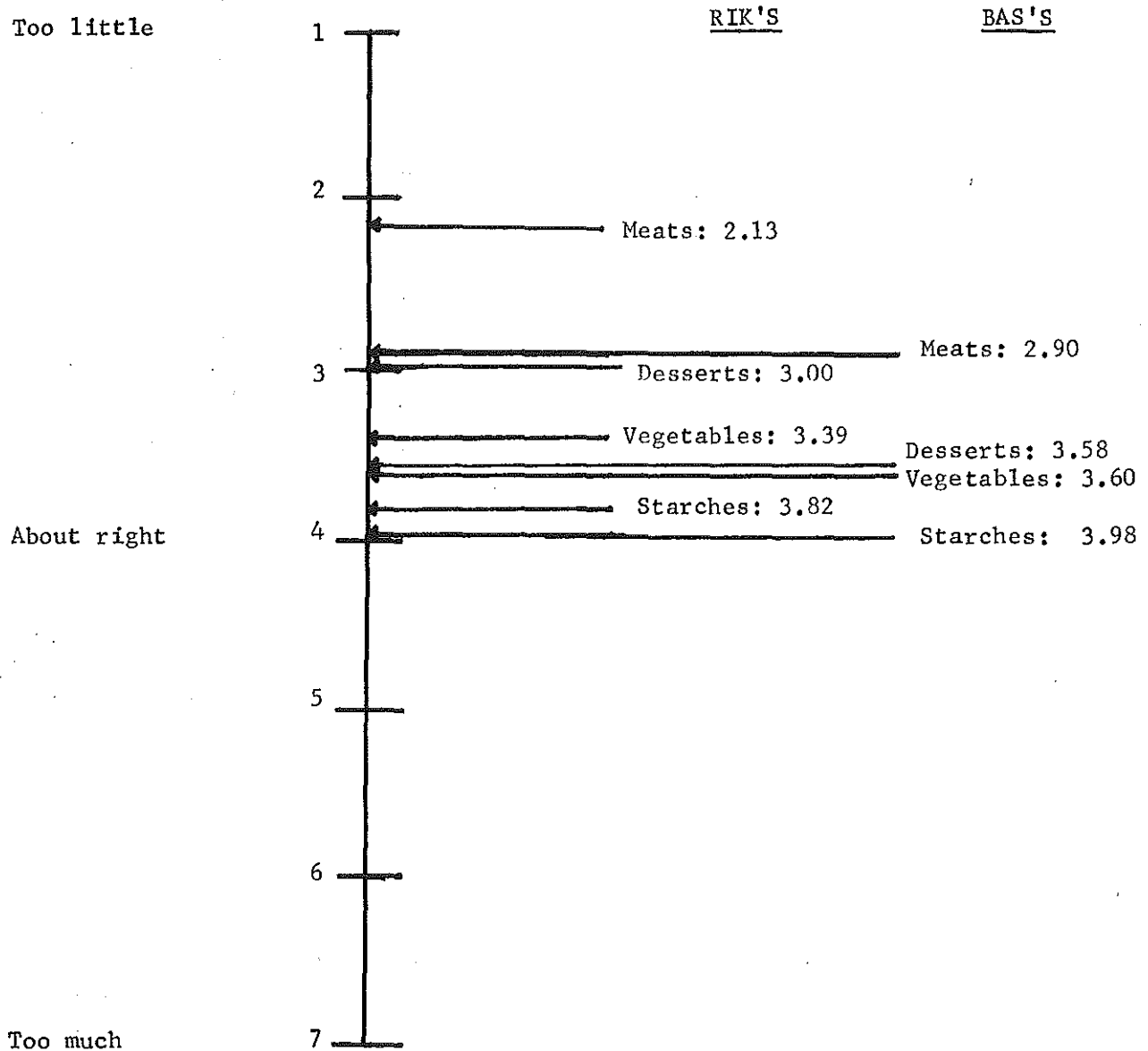


Table 19

Are Second Helpings Permitted?

<u>SERVED BY OTHERS</u>	<u>Never</u>	<u>Sometimes</u>	<u>Always</u>
	RIK BAS	RIK BAS	RIK BAS
Short order items	61% 32%	33% 56%	6% 12%
Meat items	71% 39%	25% 53%	4% 7%
Starches	66% 33%	28% 54%	5% 12%
Vegetables	61% 31%	28% 53%	11% 16%

<u>SELF-SERVICE</u>	<u>Never</u>	<u>Sometimes</u>	<u>Always</u>
	RIK BAS	RIK BAS	RIK BAS
Salads	42% 17%	26% 45%	31% 38%
Beverages	13% 10%	13% 31%	43% 59%
Desserts	22% 38%	54% 39%	24% 23%

Table 20

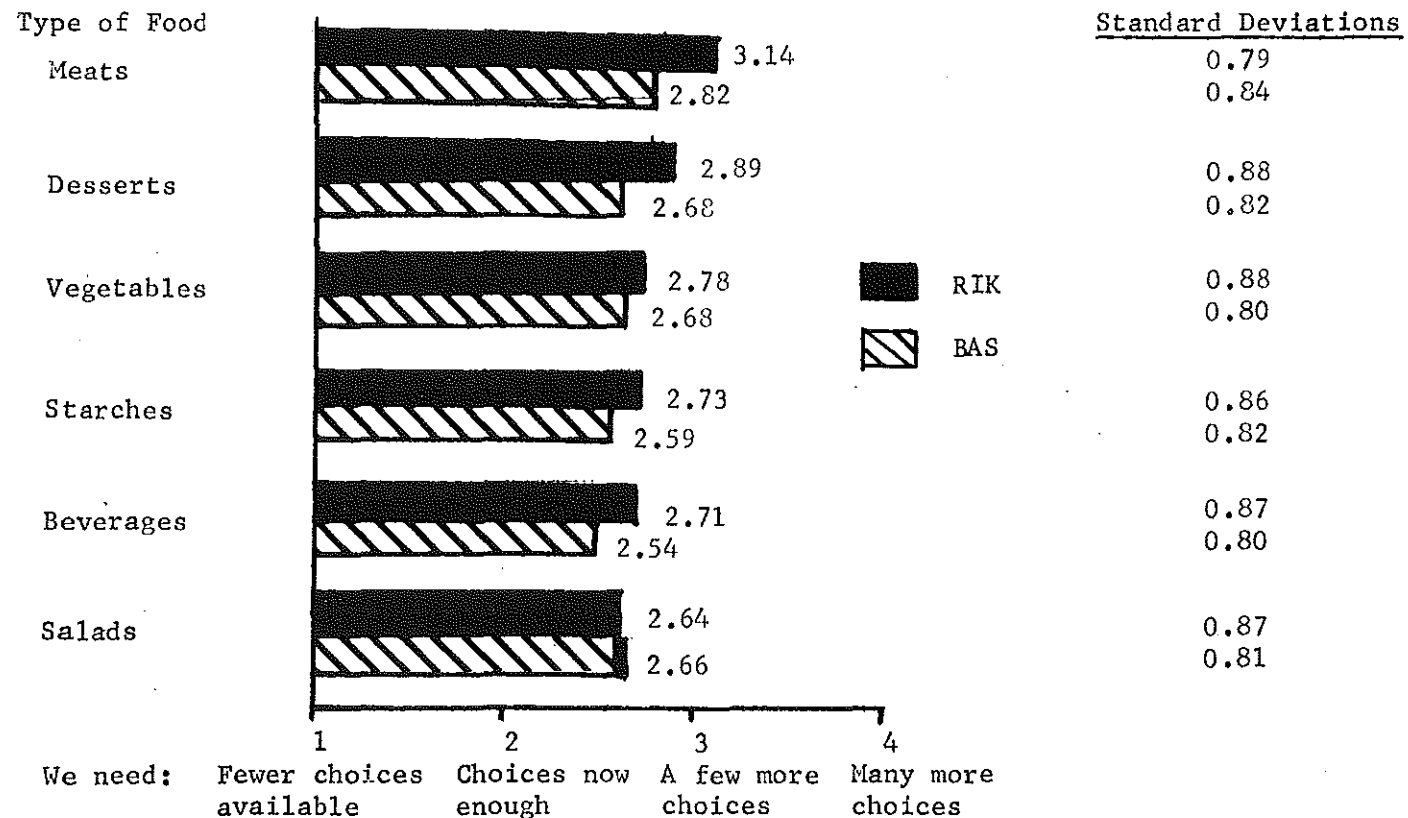
Consumers' Opinions of the Variety of Weekend Food

Table 21

Consumers' Opinions of the HOURS OF OPERATION

Weekdays: Monday to Friday

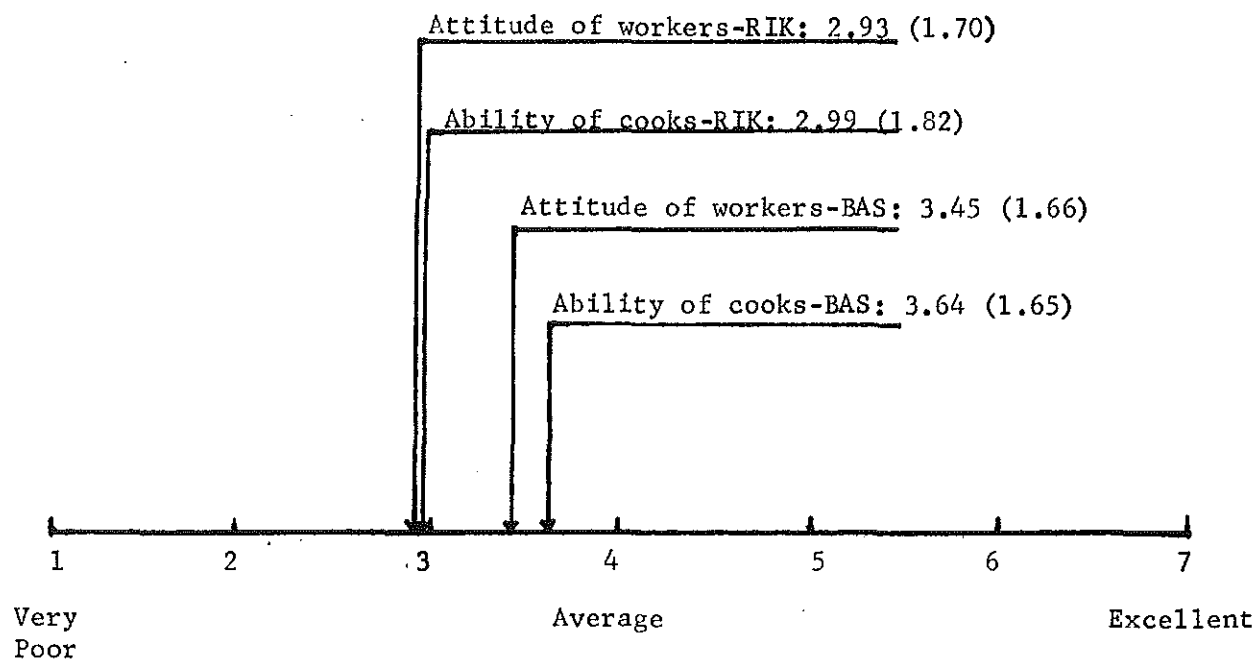
	Breakfast		Mid-Day Meal		Evening Meal	
	<u>RIK</u>	<u>BAS</u>	<u>RIK</u>	<u>BAS</u>	<u>RIK</u>	<u>BAS</u>
From:						
1 hr or more earlier	12%	15%	10%	12%	18%	14%
30 min earlier	12%	9%	19%	14%	15%	9%
15 min earlier	10%	4%	13%	7%	7%	6%
Sufficient as it is	66%	71%	58%	66%	59%	71%
MEAN IN MINUTES:	12	13	14	13	16	12
To:						
1 hr or more later	19%	15%	10%	12%	27%	19%
30 min later	18%	11%	20%	13%	15%	9%
15 min later	6%	6%	9%	7%	6%	4%
Sufficient as it is	57%	68%	60%	68%	51%	67%
MEAN IN MINUTES:	18	13	14	12	22	15

Weekends: Saturday and Sunday

	Breakfast		Mid-Day Meal		Evening Meal	
	<u>RIK</u>	<u>BAS</u>	<u>RIK</u>	<u>BAS</u>	<u>RIK</u>	<u>BAS</u>
From:						
1 hr or more earlier	21%	18%	20%	14%	20%	15%
30 min earlier	8%	6%	12%	8%	8%	6%
15 min earlier	5%	2%	5%	2%	5%	3%
Sufficient as it is	66%	75%	62%	75%	66%	76%
MEAN IN MINUTES:	16	13	17	11	15	11
To:						
1 hr or more later	30%	19%	24%	16%	29%	18%
30 min later	10%	7%	14%	6%	14%	6%
15 min later	3%	2%	6%	3%	3%	4%
Sufficient as it is	56%	72%	56%	75%	54%	73%
MEAN IN MINUTES:	22	14	20	12	22	13

Table 22

Dining Facility Personnel



Note: Standard deviations are indicated in parentheses.

Table 23

Food Service Personnel Functions

How often do you find:

	<u>1</u> <u>Never</u>		<u>2</u> <u>Sometimes</u>		<u>3</u> <u>Often</u>		<u>4</u> <u>Always</u>		<u>MEAN</u>	
	RIK	BAS	RIK	BAS	RIK	BAS	RIK	BAS	RIK	BAS
Left-overs being served day after day	26%	43%	39%	42%	20%	9%	15%	6%	2.24	1.77
Inappropriate or missing silverware	21%	26%	44%	49%	25%	17%	10%	8%	2.25	2.06
Not enough condiments (ketchup, etc.)	19%	32%	32%	42%	33%	17%	16%	8%	2.46	2.00
Serving line has run out of items	14%	22%	34%	42%	28%	22%	24%	3%	2.63	2.27

Table 24

Opinions Concerning Self Bussing

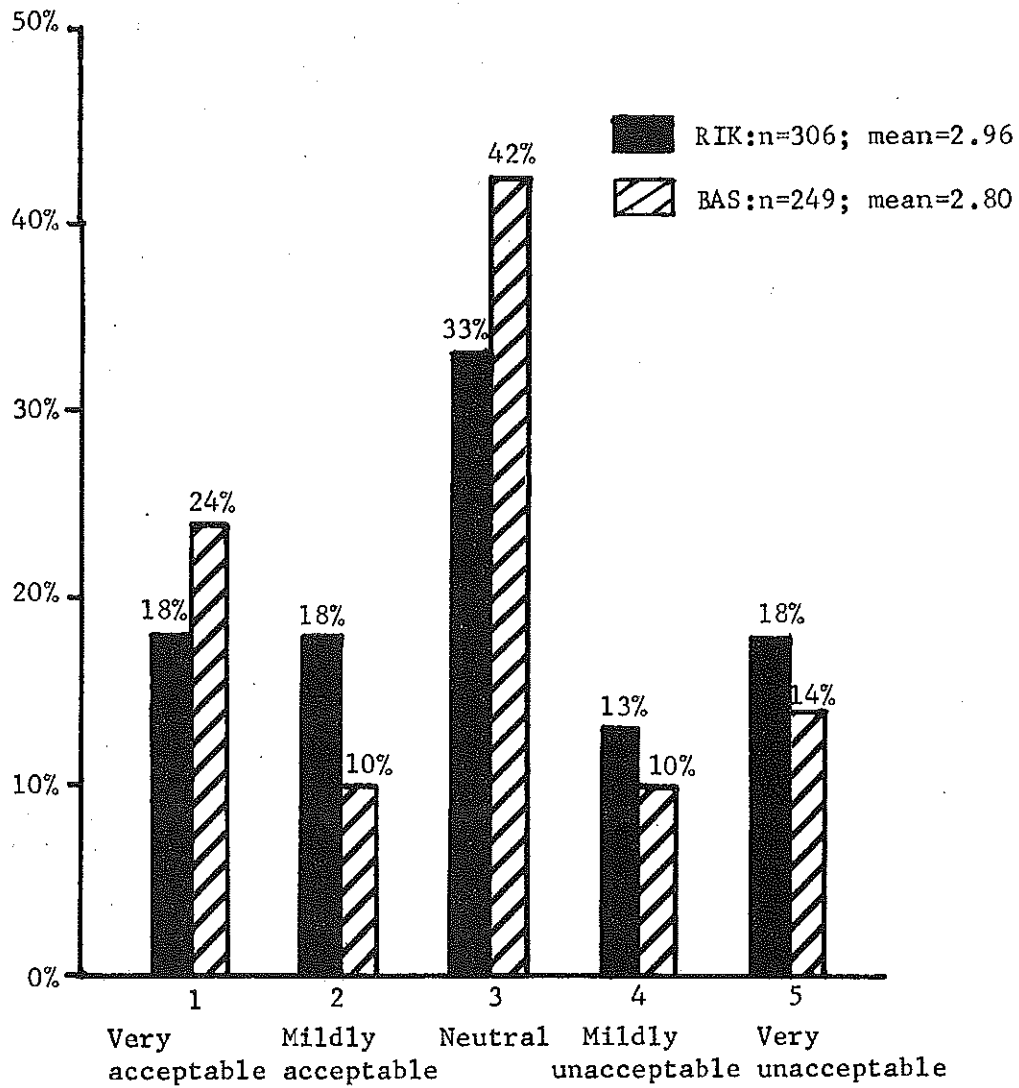


Table 25
Military Atmosphere

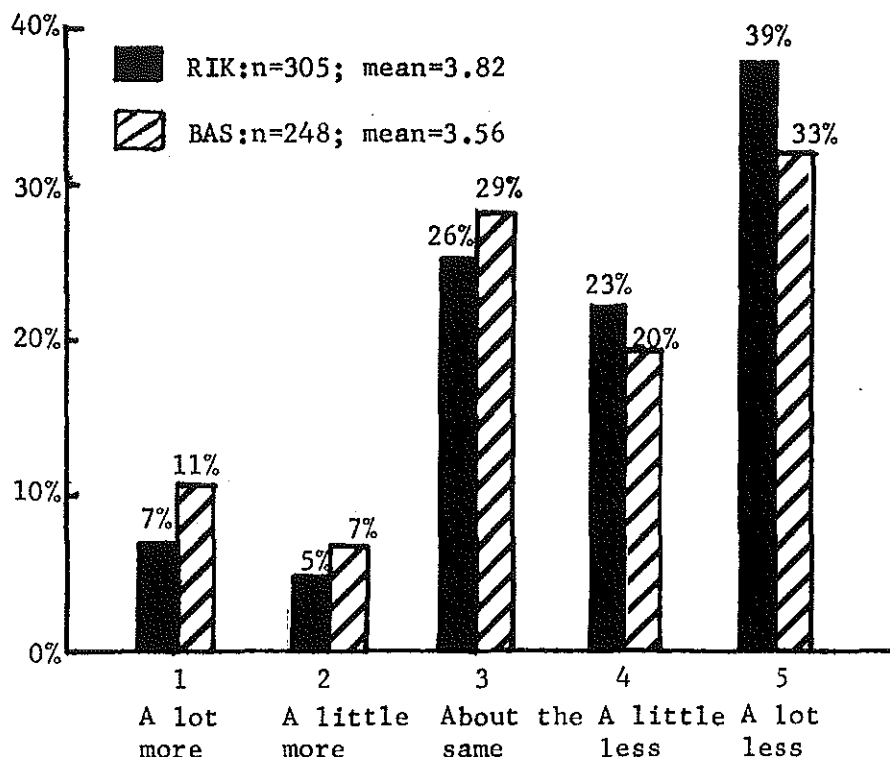


Table 26

Opinions Concerning Specific Policies

	Does Rule Exist				Feeling About Rules							
	Yes		No		Enforce or Institute		Abolish or Not Institute		No Opinion			
	RIK	BAS	RIK	BAS	RIK	BAS	RIK	BAS	RIK	BAS		
Dress regulations	70%	88%	30%	12%	18%	57%	44%	21%	38%	22%		
Not allowing civilian guests	53%	57%	47%	43%	15%	27%	43%	32%	42%	41%		
Calling "at ease" when officer enters	49%	74%	51%	26%	15%	27%	50%	51%	34%	22%		
No smoking	14%	17%	86%	83%	19%	19%	36%	34%	45%	47%		
Officers and NCO's permitted to cut in	64%	54%	36%	46%	16%	31%	55%	39%	29%	30%		
Separation of officers and NCO's from enlisted men	35%	56%	65%	44%	17%	37%	36%	34%	47%	29%		

Table 27

Facility-Personnel Factors															
<u>CLEAN</u>	<u>Extremely</u> +2		<u>Moderately</u> +1		<u>Neutral</u> 0		<u>Moderately</u> -1		<u>Extremely</u> -2		<u>DIRTY</u>				
	#1		#2		#3	Dining Facilities #4 #5		#6	#7		#8				
	RIK	BAS	RIK	BAS	RIK	RIK	RIK	BAS	RIK	BAS	RIK	BAS			
Clean kitchen area	0.5	0.7	0.8	0.9	1.3	0.2	0.8	0.5	0.7	0.9	0.7	0.7	0.5	Dirty kitchen area	
Clean serving counters	0.5	0.7	0.5	0.7	0.9	0.3	0.6	0.5	0.8	0.5	0.8	0.6	0.4	Dirty serving counters	
Clean dispensing devices	0.1	0.6	0.1	1.0	0.2	0.8	-0.2	0.3	0.5	0.3	0.2	0.2	0.2	Dirty dispensing device	
☞ Clean silverware	-0.2	0.5	-0.7	0.5	0.1	-0.3	-0.1	0.1	0.3	0.0	0.0	0.3	0.0	Dirty silverware	
Clean trays	0.2	0.3	0.7	0.4	0.9	0.1	0.5	0.3	0.4	-0.1	0.6	0.6	0.2	Dirty trays	
Clean dishes and glasses	0.4	0.2	0.4	0.6	1.1	0.0	0.6	0.3	0.6	0.0	0.6	0.7	0.3	Dirty dishes and glasses	
Clean floors	0.1	0.4	0.4	0.6	0.4	0.1	0.4	0.4	0.1	0.4	0.2	0.3	0.0	Dirty floors	
Clean tables and chairs	0.1	0.3	0.5	0.5	0.0	-0.1	0.3	0.4	0.2	0.4	0.1	0.4	0.0	Dirty tables and chairs	
MEAN	0.2	0.5	0.3	0.6	0.6	0.1	0.4	0.4	0.4	0.3	0.4	0.5	0.2		
NUMBER PER CELL ^a	34	29	17	21	26	86	23	30	17	30	22	42	43		

a. These represent the maximum numbers per cell for this and the following tables in this format; the number of cases for any specific mean might be diminished by the small percentage who inadvertently left the item blank.

Table 28

General Condition of Each Dining Facility

<u>POSITIVE</u>		<u>Extremely</u> +2		<u>Moderately</u> +1		<u>Neutral</u> 0		<u>Moderately</u> -1		<u>Extremely</u> -2		<u>NEGATIVE</u>		
Dining Facilities														
	#1		#2		#3	#4	#5	#6		#7		#8		
	RIK	BAS	RIK	BAS	RIK	RIK	RIK	RIK	BAS	RIK	BAS	RIK	BAS	
Insect free	0.3	0.7	0.7	0.9	0.6	0.3	0.7	0.8	0.3	0.9	0.3	0.6	0.2	Insect infested
Rodent free	0.3	0.8	0.7	1.0	0.6	0.5	0.8	0.9	0.4	1.0	0.6	0.8	0.3	Rodent infested
Brightly lighted	0.6	0.4	0.5	0.5	0.0	0.8	-0.1	0.0	0.3	0.3	0.5	0.4	0.2	Dimly lighted
Sunny	0.1	0.1	0.4	0.4	0.0	0.0	-0.6	0.0	0.1	0.0	0.5	0.2	0.4	Lacking in sunlight
Q Quiet	-0.5	-0.6	-0.2	-0.6	-0.5	-0.8	-0.5	-0.5	-0.4	-0.5	-0.3	-0.4	-0.6	Noisy
Uncrowded	-0.8	-0.3	-0.9	-0.7	-0.6	-1.5	-0.4	-0.6	-0.8	-0.5	-0.6	-0.9	-0.5	Crowded
Roomy	-0.5	-0.1	-0.5	-0.2	0.2	-1.2	0.0	-0.6	-0.4	-0.5	0.1	-0.3	-0.1	Cramped
Well designed	0.0	0.0	0.1	0.2	-0.2	-0.7	-0.5	0.2	-0.4	0.2	-0.4	-0.2	-0.2	Poorly designed
Pleasant view	-0.3	0.0	-0.2	0.2	-0.3	-0.8	-1.0	-0.7	-0.2	-0.4	-0.1	-0.3	-0.2	Unpleasant view
Low number of safety hazards	0.6	0.1	0.6	0.7	0.8	0.2	0.4	0.4	0.2	0.3	0.8	0.5	0.3	High number of safety hazards
Pleasant exterior appearance	-0.3	0.0	-0.2	-0.2	-0.2	-0.6	-0.4	-0.2	0.0	-0.4	0.0	0.0	-0.2	Unpleasant exterior appearance
Pleasant interior appearance	0.1	0.3	0.2	0.1	0.2	-0.5	0.0	0.1	0.1	0.2	0.2	-0.3	-0.1	Unpleasant interior appearance
MEAN	0.0	0.1	0.1	0.2	0.0	-0.4	-0.1	0.0	-0.1	0.0	0.1	0.0	0.0	

Table 29

Convenience Within Dining Facilities

<u>POSITIVE</u>		<u>Extremely</u>		<u>Moderately</u>		<u>Neutral</u>		<u>Moderately</u>		<u>Extremely</u>		<u>NEGATIVE</u>					
		+2		+1		0		-1		-2							
Dining Facilities																	
		#1		#2		#3		#4		#5		#6		#7		#8	
		RIK	BAS	RIK	BAS	RIK	RIK	RIK	RIK	BAS	RIK	BAS	RIK	BAS	RIK	BAS	
5	Convenient to enter and leave	-0.1	0.0	-0.2	0.0	0.1	-0.2	0.4	-0.3	-0.2	0.2	0.1	0.1	0.4	Inconvenient to enter and leave		
	Close to washroom	-0.2	0.0	-1.1	-0.4	-0.5	-0.8	-1.0	-0.2	0.1	-0.6	-0.5	0.4	-0.4	Far from washroom		
	Large space between tables	-0.7	0.1	-0.4	-0.3	0.2	-1.3	-0.7	-0.7	-0.2	-0.2	-0.2	-0.7	0.1	Small space between tables		
	Adequate table size for trays	-0.5	-0.1	-0.8	-0.2	0.2	-0.8	-1.2	-0.5	0.4	-0.3	0.0	-0.2	-0.4	Inadequate table size for trays		
	MEAN	-0.4	0.0	-0.6	-0.2	0.0	-0.8	-0.6	-0.4	0.0	0.2	0.2	-0.1	-0.1			

Table 30

Appearance and Atmosphere of Dining Facilities

<u>POSITIVE</u>		<u>Extremely</u> +2		<u>Moderately</u> +1		<u>Neutral</u> 0		<u>Moderately</u> -1		<u>Extremely</u> -2		<u>NEGATIVE</u>			
Dining Facilities															
56		#1	#2	#3	#4	#5	#6	#7	#8						
		RIK	BAS	RIK	BAS	RIK	RIK	RIK	RIK	BAS	RIK	BAS	RIK	BAS	
	Colorful	0.4	0.0	0.4	0.4	0.3	-0.6	-0.1	0.0	0.2	0.1	0.6	-0.3	-0.1	Drab
	Cheerful	0.1	0.2	0.2	0.2	-0.1	-0.6	-0.1	-0.3	0.1	0.1	0.3	-0.1	-0.3	Dreary
	Uncluttered	-0.4	0.1	-0.1	0.2	0.2	-0.6	-0.7	0.0	0.2	-0.2	0.5	-0.1	-0.1	Cluttered
	Beautiful	-0.1	-0.2	-0.1	-0.1	0.0	-0.7	-0.2	-0.3	0.0	0.0	0.2	-0.4	-0.2	Ugly
	Relaxed	-0.3	0.1	0.4	0.1	0.5	-0.6	0.2	-0.3	0.0	0.0	0.4	0.0	-0.2	Tense
	Sociable	0.4	0.0	0.6	0.2	0.5	-0.4	0.3	-0.2	0.3	0.2	0.3	0.2	0.0	Unsociable
	Uncrowded	-0.9	-0.4	-0.8	-0.5	-0.2	-1.4	-0.3	-0.3	-0.4	-0.6	-0.2	-0.9	-0.3	Crowded
MEAN	-0.1	0.0	0.1	0.1	0.2	-0.7	-0.1	-0.2	0.1	-0.1	0.3	-0.2	-0.2		

Table 31

Environmental/Engineering Factors

1 2 3 4
Never Sometimes Often Always

Dining Facilities

Is your dining
facility ever:

	#1		#2		#3		#4		#5		#6		#7		#8	
	RIK	BAS	RIK	BAS	RIK	RIK	RIK	RIK	RIK	BAS	RIK	BAS	RIK	BAS	RIK	BAS
Too cold	1.5	1.7	1.5	1.5	1.5	1.7	1.4	1.4	1.3	1.6	1.3	1.4	1.8			
Too warm	1.7	1.9	1.8	1.8	1.6	2.0	1.5	1.6	1.8	1.4	1.7	1.7	1.8			
Stuffy	1.6	1.7	2.0	1.7	1.5	2.3	2.0	1.8	1.8	1.6	1.7	1.9	1.9			
Smoky	1.6	1.7	1.6	1.3	1.3	1.8	1.7	1.9	1.3	1.3	1.6	1.8	1.7			
Full of steam	1.5	1.5	1.4	1.4	1.2	1.7	1.5	1.6	1.4	1.3	1.2	1.3	1.5			
Full of unpleasant food odors	1.5	1.7	1.8	1.6	1.8	2.2	2.0	2.0	1.5	1.7	1.7	1.8	1.9			

Table 32

Tables in the Dining Facilities

<u>POSITIVE</u>		<u>Extremely</u> +2		<u>Moderately</u> +1		<u>Neutral</u> 0		<u>Moderately</u> -1		<u>Extremely</u> -2		<u>NEGATIVE</u>		
Dining Facilities														
Q _∞	#1		#2		#3	#4	#5	#6		#7		#8		
	RIK	BAS	RIK	BAS	RIK	RIK	RIK	RIK	BAS	RIK	BAS	RIK	BAS	
Colorful	0.0	0.0	-0.2	-0.5	0.2	-0.5	-0.2	0.0	0.1	0.1	-0.2	-0.3	-0.1	Drab
Beautiful	-0.3	-0.2	-0.5	-0.4	-0.2	-0.7	-0.6	-0.3	0.2	-0.2	-0.2	-0.4	-0.1	Ugly
Wide Variety	-0.6	-0.2	-0.7	-0.5	-0.5	-1.1	-0.7	-0.7	-0.2	-0.8	-0.5	-0.6	-0.4	Limited Variety
Sturdy	-0.1	0.6	0.0	0.3	0.6	-0.2	-0.1	0.1	0.1	0.4	0.7	0.5	0.3	Easy to Damage
Roomy	-0.7	0.0	-0.7	-0.5	0.2	-1.2	-0.6	-0.7	0.1	-0.5	0.0	-0.3	-0.3	Cramped
MEAN	-0.3	0.0	-0.4	-0.3	0.1	-0.7	-0.4	-0.3	0.1	-0.2	0.0	-0.2	-0.1	

Table 33

Table Preference

Dining Facilities Size	#1		#2		#3	#4	#5	#6		#7		#8		MEAN %
	RIK	BAS	RIK	BAS	RIK	RIK	RIK	RIK	BAS	RIK	BAS	RIK	BAS	
2 Person	6%	14%	-	10%	4%	6%	4%	10%	12%	7%	4%	5%	5%	6%
4 Person	76%	79%	71%	76%	69%	68%	52%	70%	82%	67%	86%	71%	74%	72%
6 Person	15%	7%	18%	14%	12%	20%	26%	17%	6%	23%	4%	14%	14%	16%
8 Person	-	-	6%	-	8%	2%	13%	3%	-	3%	4%	7%	5%	4%
More Than 8 Person	3%	-	6%	-	8%	4%	4%	-	-	-	-	2%	2%	2%
SHAPE														
Round	21%	24%	53%	24%	35%	30%	22%	37%	41%	30%	36%	24%	23%	29%
Square or Rectangular	79%	76%	47%	76%	65%	70%	78%	63%	59%	70%	64%	76%	77%	71%

Table 34

Music Preferences

<u>TYPE</u>	<u>RIK</u>	<u>BAS</u>
A variety of the following	22%	28%
Soul	22%	7%
Hard Rock	15%	4%
Popular	9%	3%
Rock and Roll	8%	1%
Any type is fine	6%	10%
Instrumental	6%	16%
Country Western	5%	12%
Classical	4%	8%
Jazz	1%	6%
Other	1%	2%
Do not want music	1%	3%

Table 35
Social Aspects of Dining Facilities

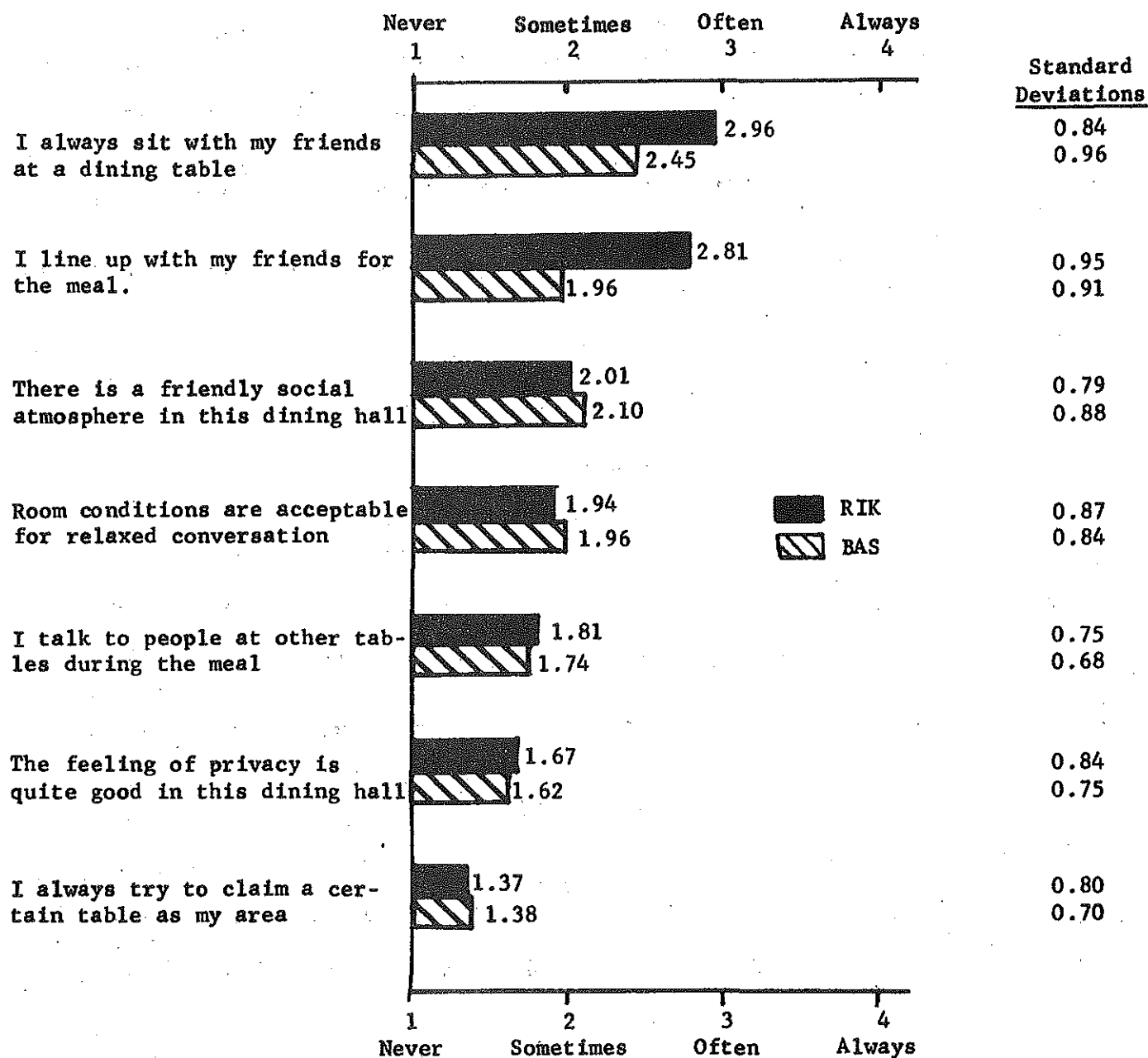


Table 36

Usual Means of Travel

	RIK					BAS				
	Walk	Drive	Ride	Bus	Other	Walk	Drive	Ride	Bus	Other
Between living area and dining facility	90%	6%	1%	1%	2%	20%	64%	4%	1%*	11%
Between job site and dining facility	69%	11%	4%	13%	2%	19%	67%	6%	1%	7%
Between living area and job site	68%	14%	3%	13%	2%	6%	87%	5%	1%	1%*

*Less than 1/2%

Table 37

Walking Time

Minutes:	RIK							
	1-5	6-10	11-15	16-20	21-25	26-30	Over 30	
Between living area and dining facility	81%	5%	4%	2%	1%	1%	6%	
Between job site and dining facility	31%	16%	16%	13%	8%	8%	8%	
Between living area and job site	32%	14%	14%	14%	7%	7%	12%	

Minutes:	BAS							
	1-5	6-10	11-15	16-20	21-25	26-30	Over 30	
Between living area and dining facility	18%	7%	8%	11%	8%	9%	39%	
Between job site and dining facility	22%	13%	11%	14%	8%	10%	21%	
Between living area and job site	4%	6%	10%	14%	6%	11%	49%	

Table 38

Opinions Concerning Current Separate Rations System

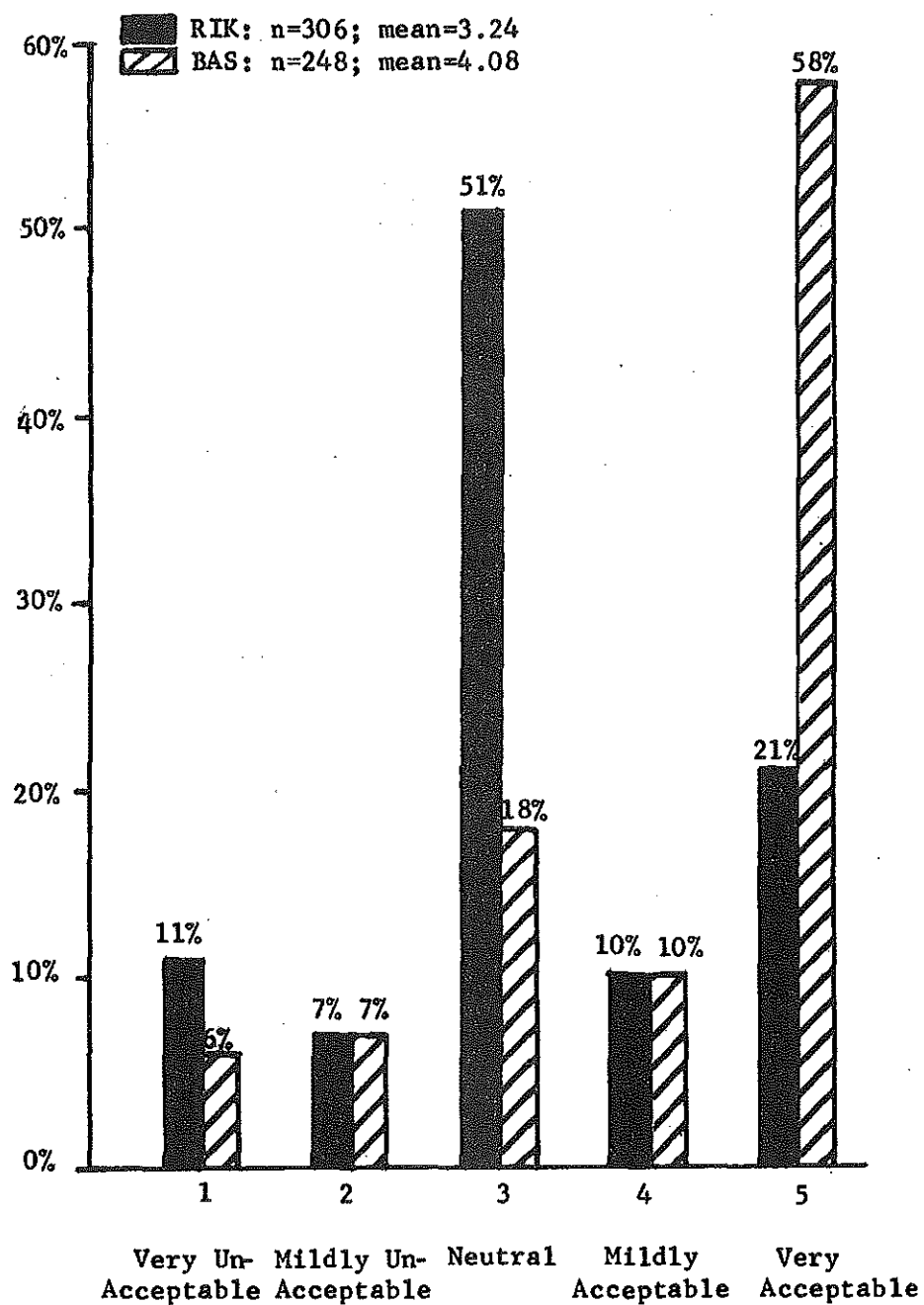
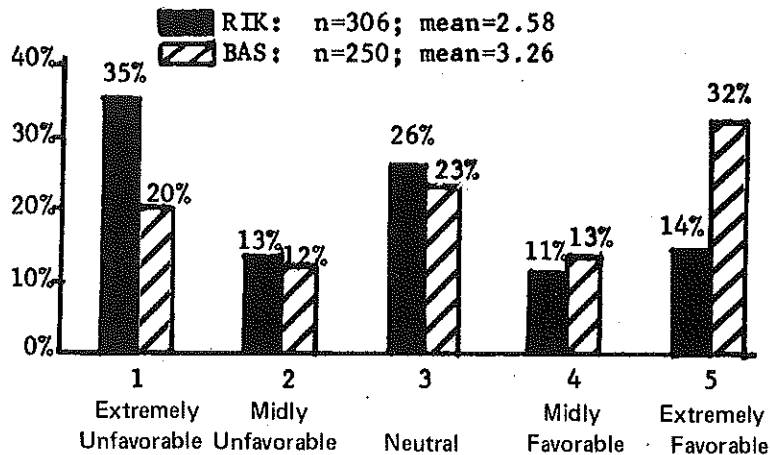
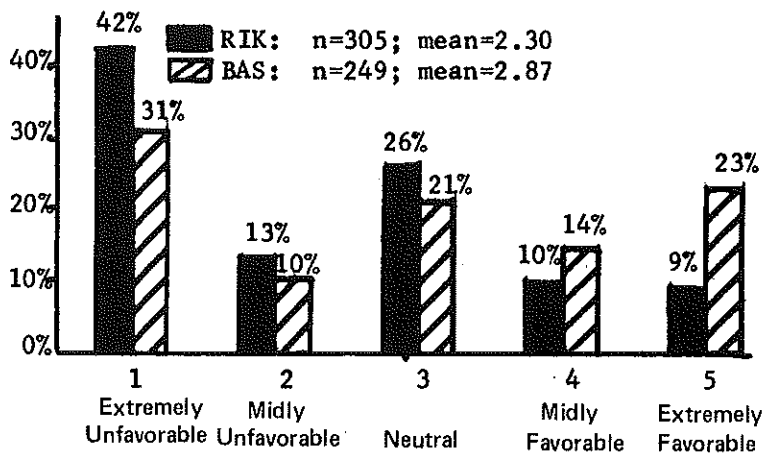


Table 39

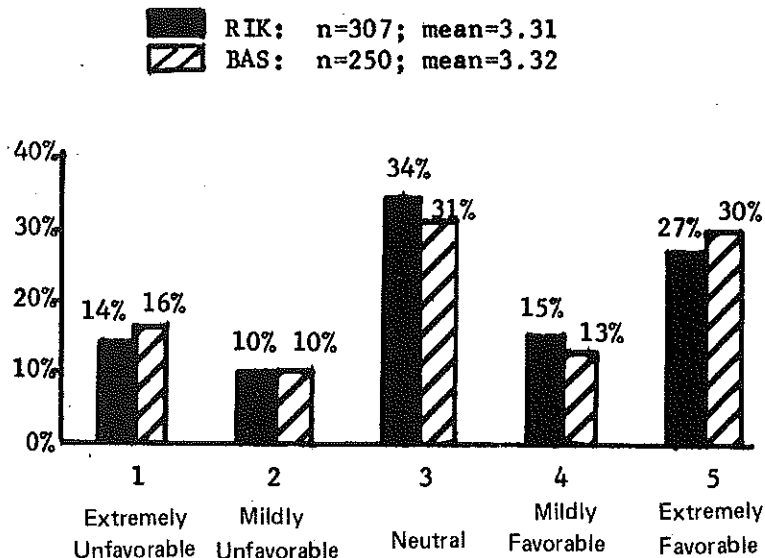
Alternative Separate Ration Proposals



Proposal 1: In CONUS, everyone should receive the separate rations allowance. Each individual should then pay for the meals he eats in a military dining facility (breakfast: 35¢; mid-day meal: 80¢; evening meal: 60¢).



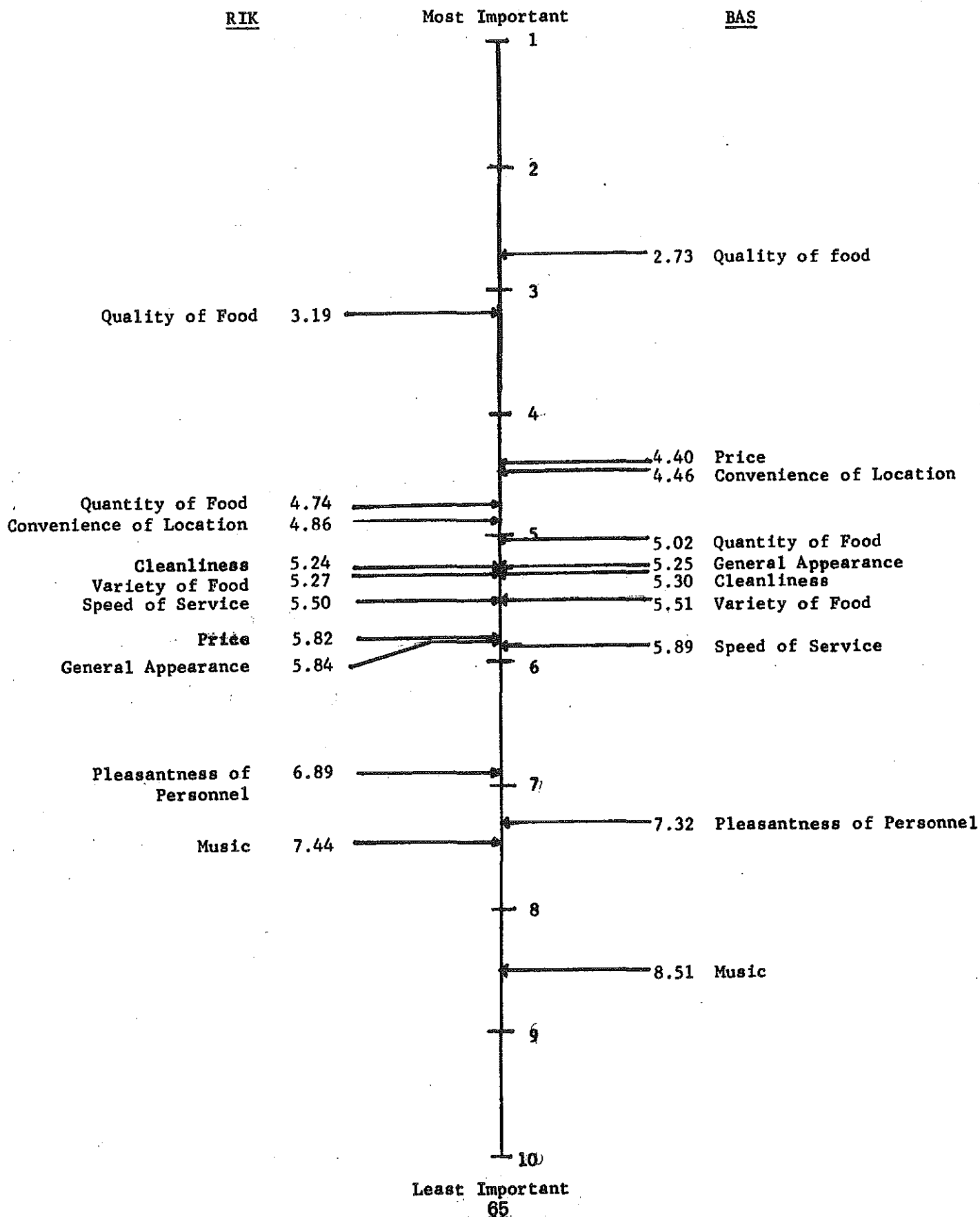
Proposal 2: In CONUS, everyone should receive the separate rations allowance. Each individual should then pay for the specific items he takes from the serving line (2 eggs: 15¢; hamburger: 20¢; french fries: 10¢; chicken: 45¢).



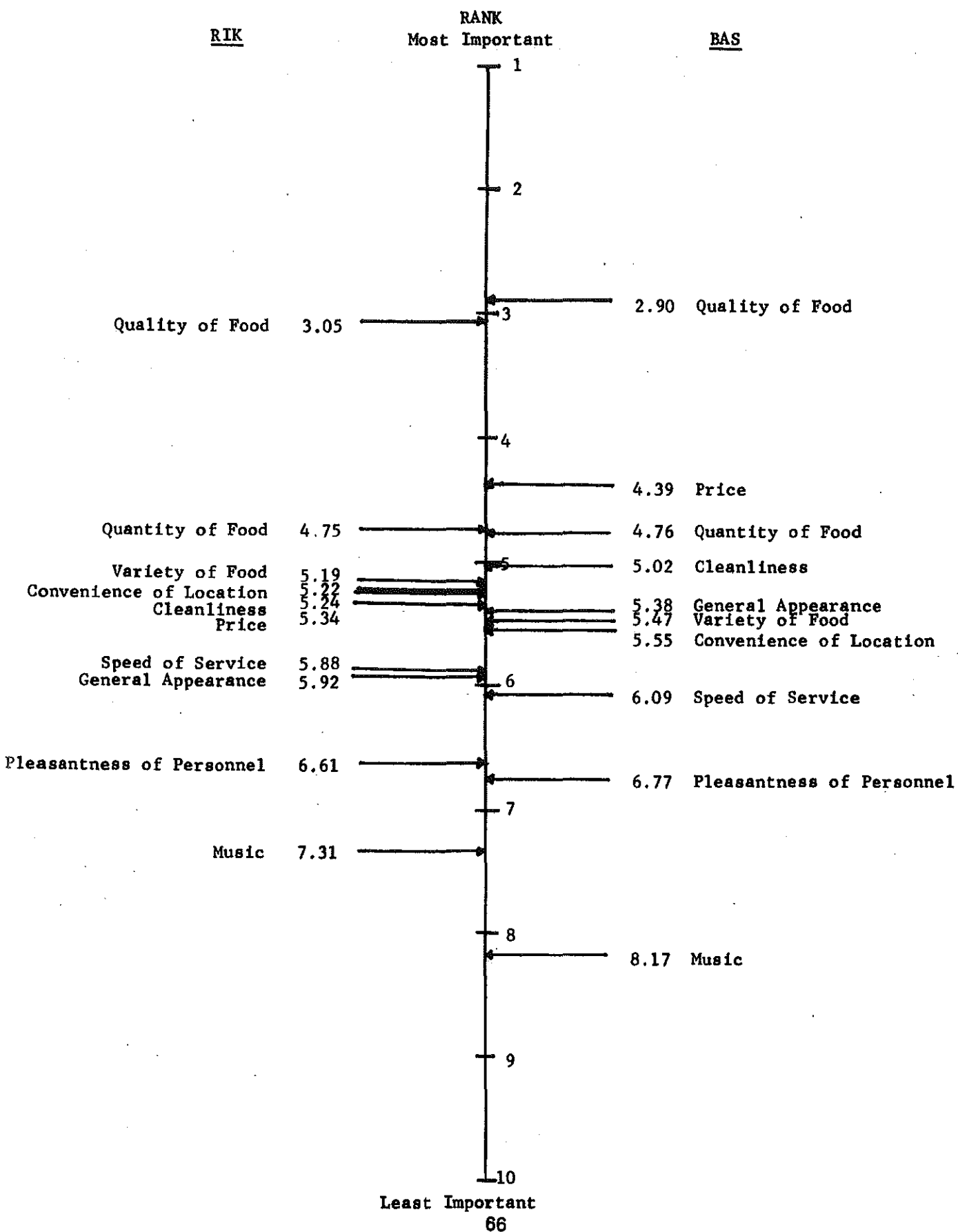
Proposal 3: The current system gives some people a separate rations allowance and requires them to pay for each meal they eat in a dining facility. The others who do not receive that allowance are authorized to eat in dining facilities without charge. This system should be retained.

Table 40
The Importance of 10 Factors in Choosing a Noon Meal from a Civilian Facility

RANK



The Importance of 10 Factors in Choosing an Evening Meal from a Civilian Facility



APPENDIX II

Table 42

Sex of Sample

	Male	Female	Totals
RIK:	98% (302)	2% (5)	100% (307)
BAS:	100% (251)	0% (0)	100% (251)

Note: The actual numbers are indicated in the parenthesis in this and the following tables.

Table 43

Race of Sample

	Caucasian	Negro	Oriental	Other	Totals
RIK:	67% (205)	25% (77)	2% (5)	6% (20)	100% (307)
BAS:	70% (176)	28% (70)	1/2%* (1)	2% (4)	100% (251)

*less than 1/2%

Age in
Years

Table 44

Age of Sample

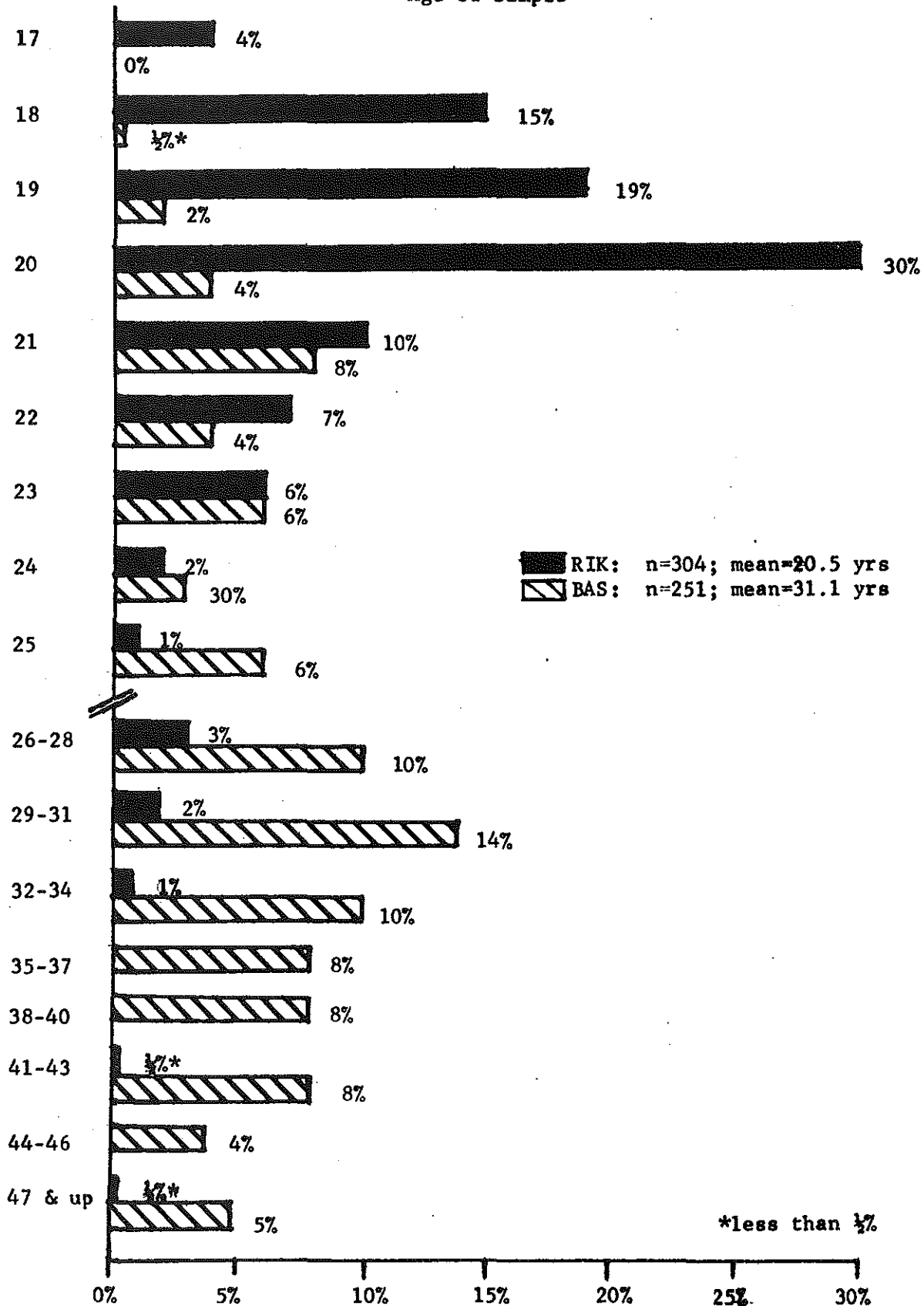
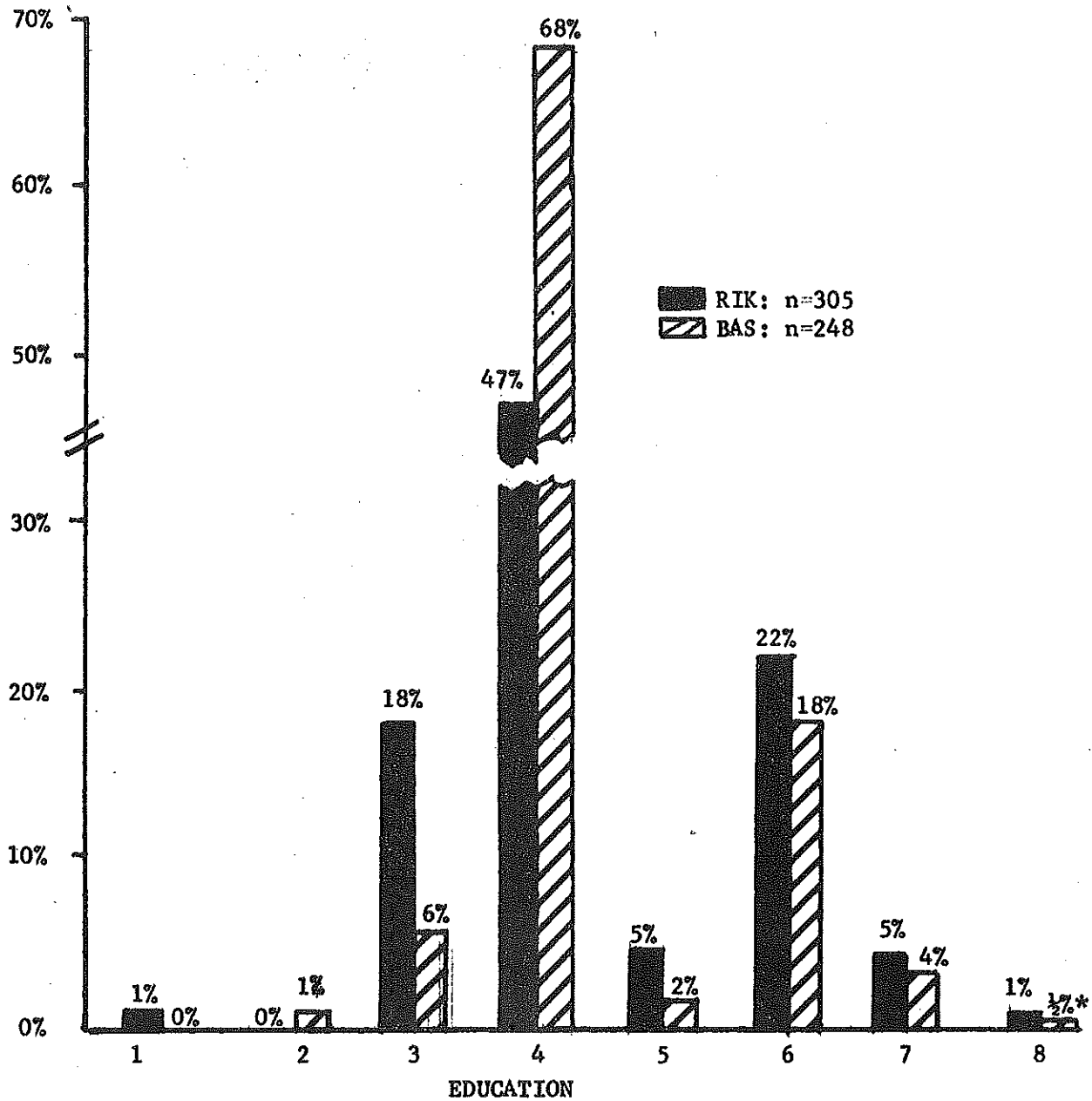


Table 45

Educational Level of the Sample



Legend: 1. Some grade school
2. Finished grade school
3. Some high school
4. Finished high school (includes GED)

5. Skilled job training
6. Some college
7. College graduate
8. Beyond college

*: Less than 1/2%

Table 46

Time in Service

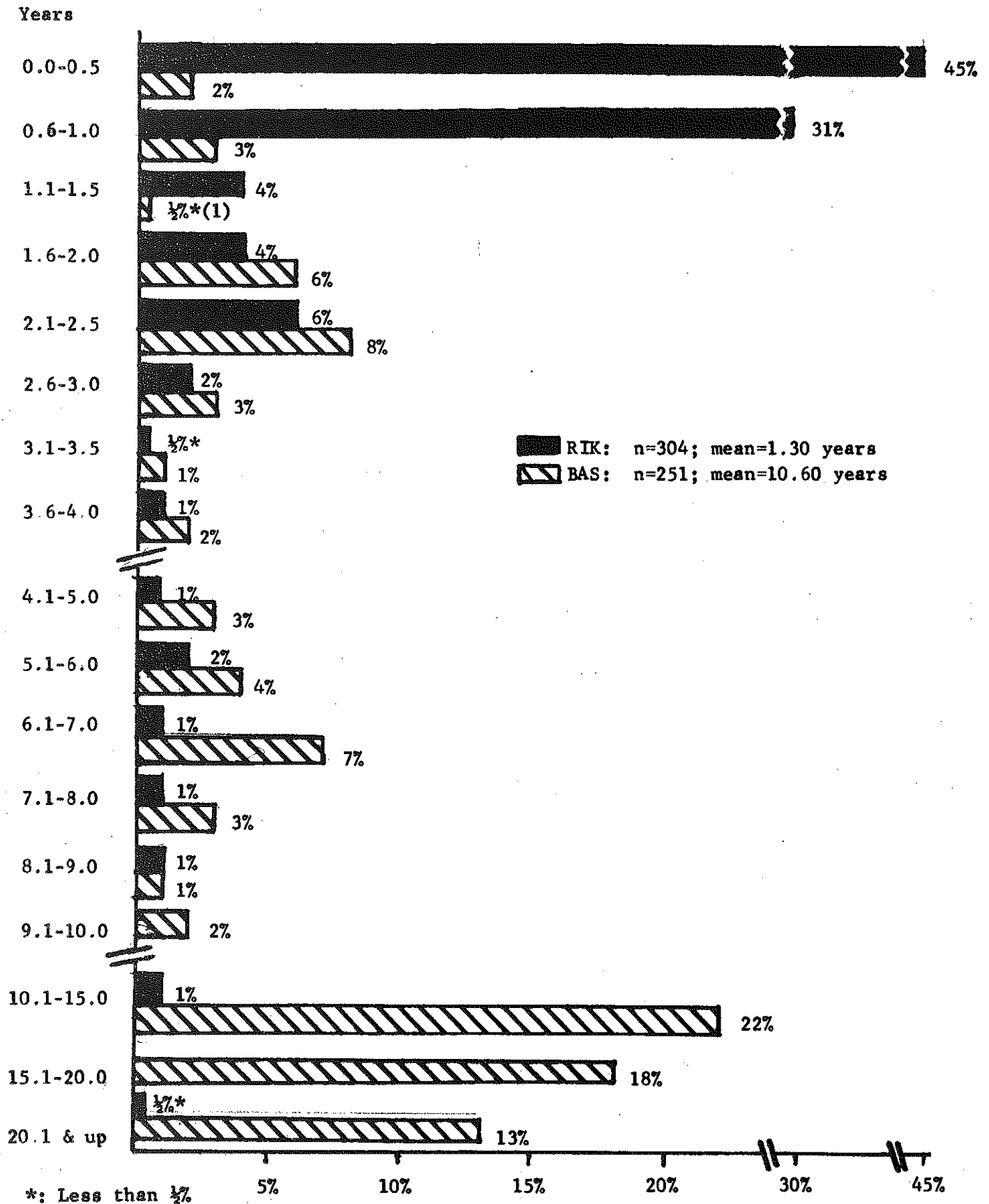


Table 47

Reenlistment Plans

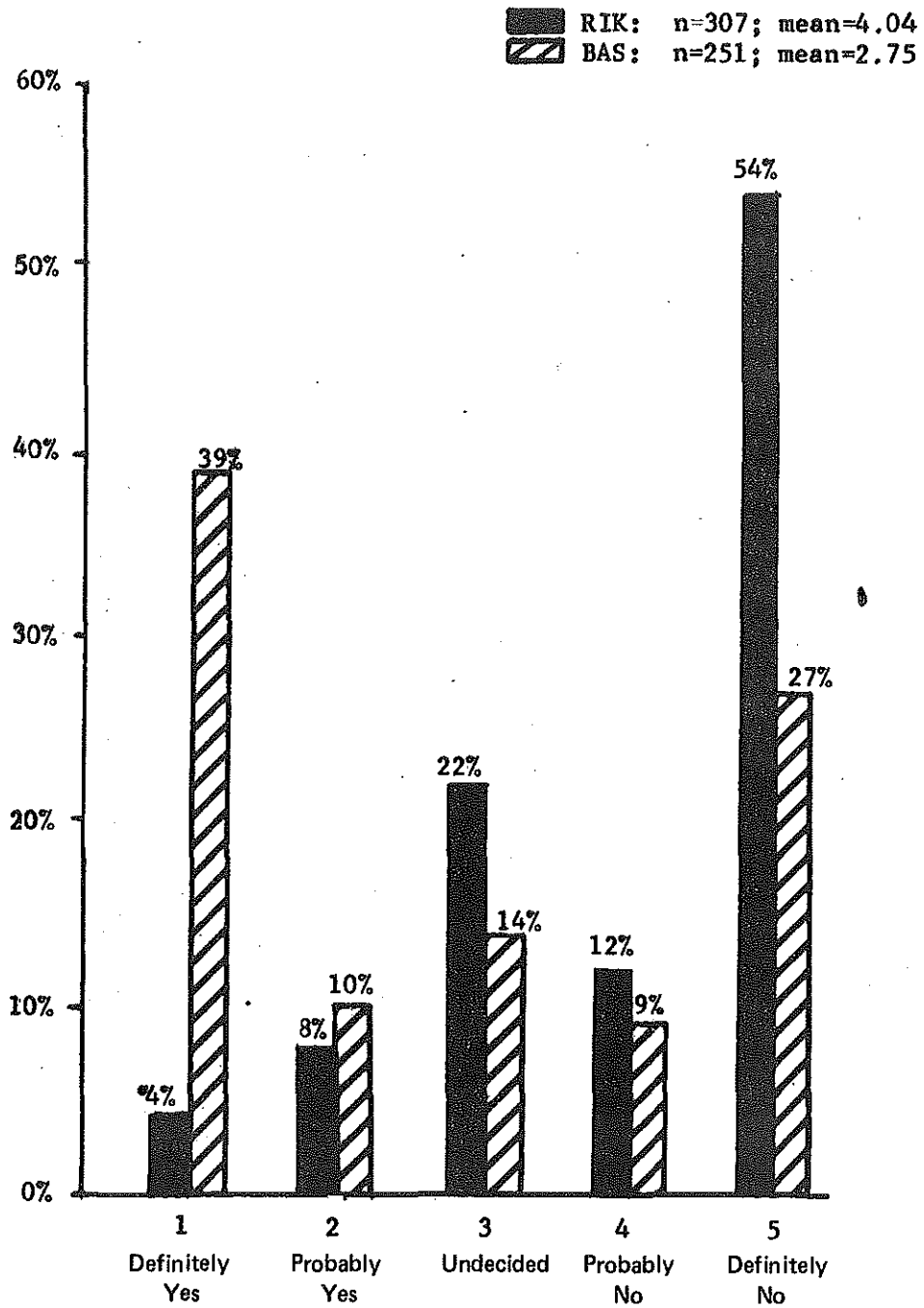


Table 48

Reaction to Military Service

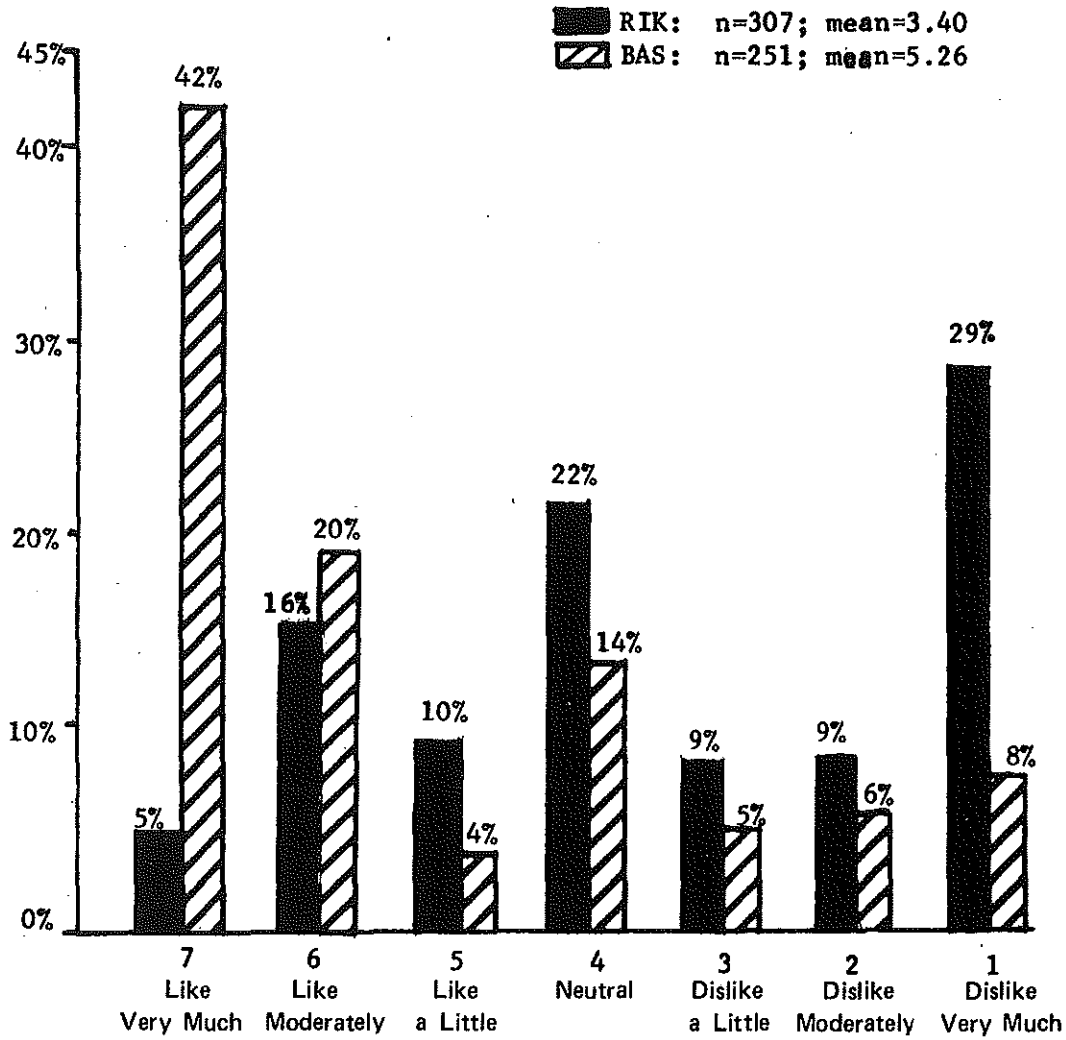


Table 49

Pay Grade of Sample

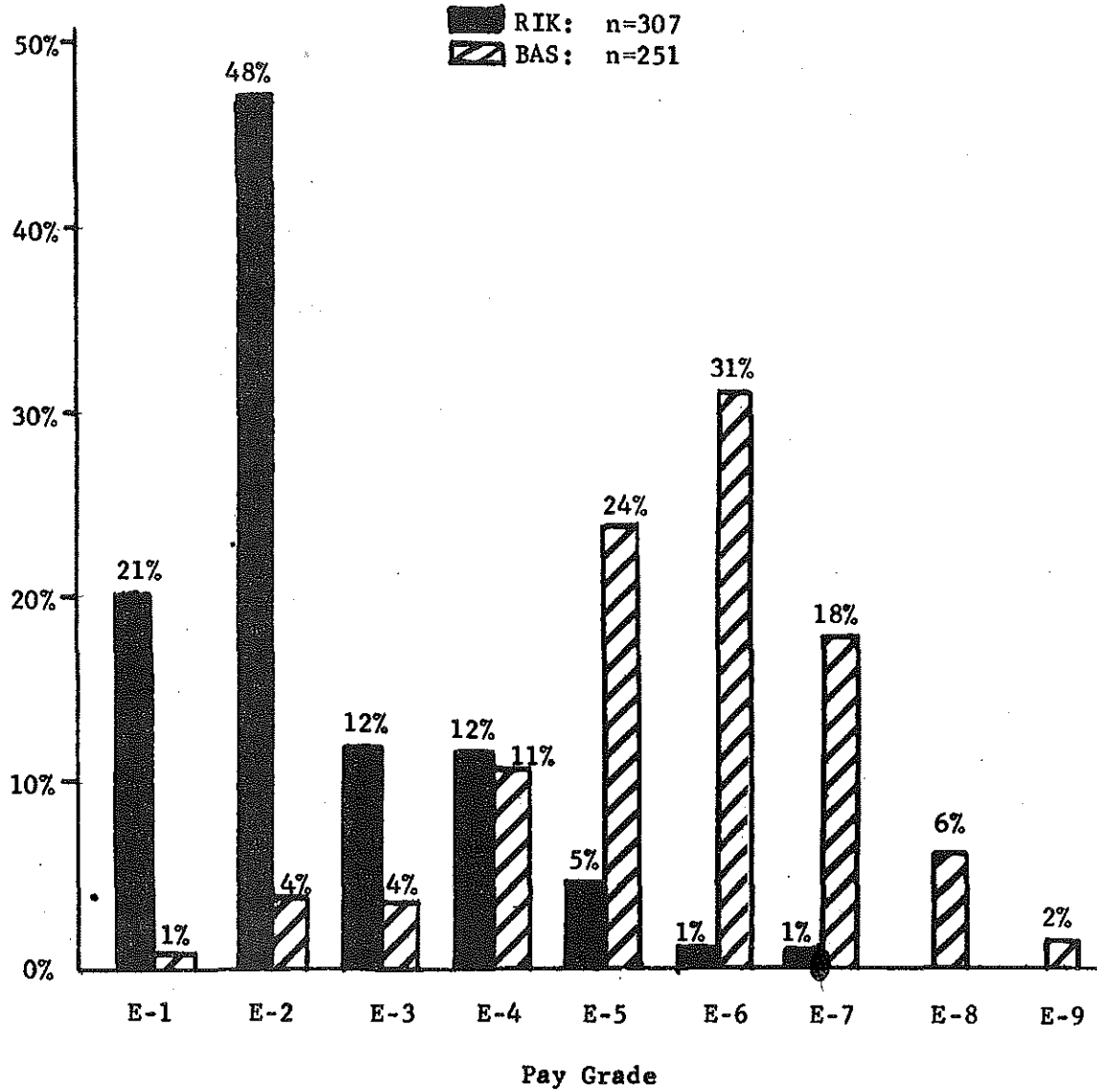
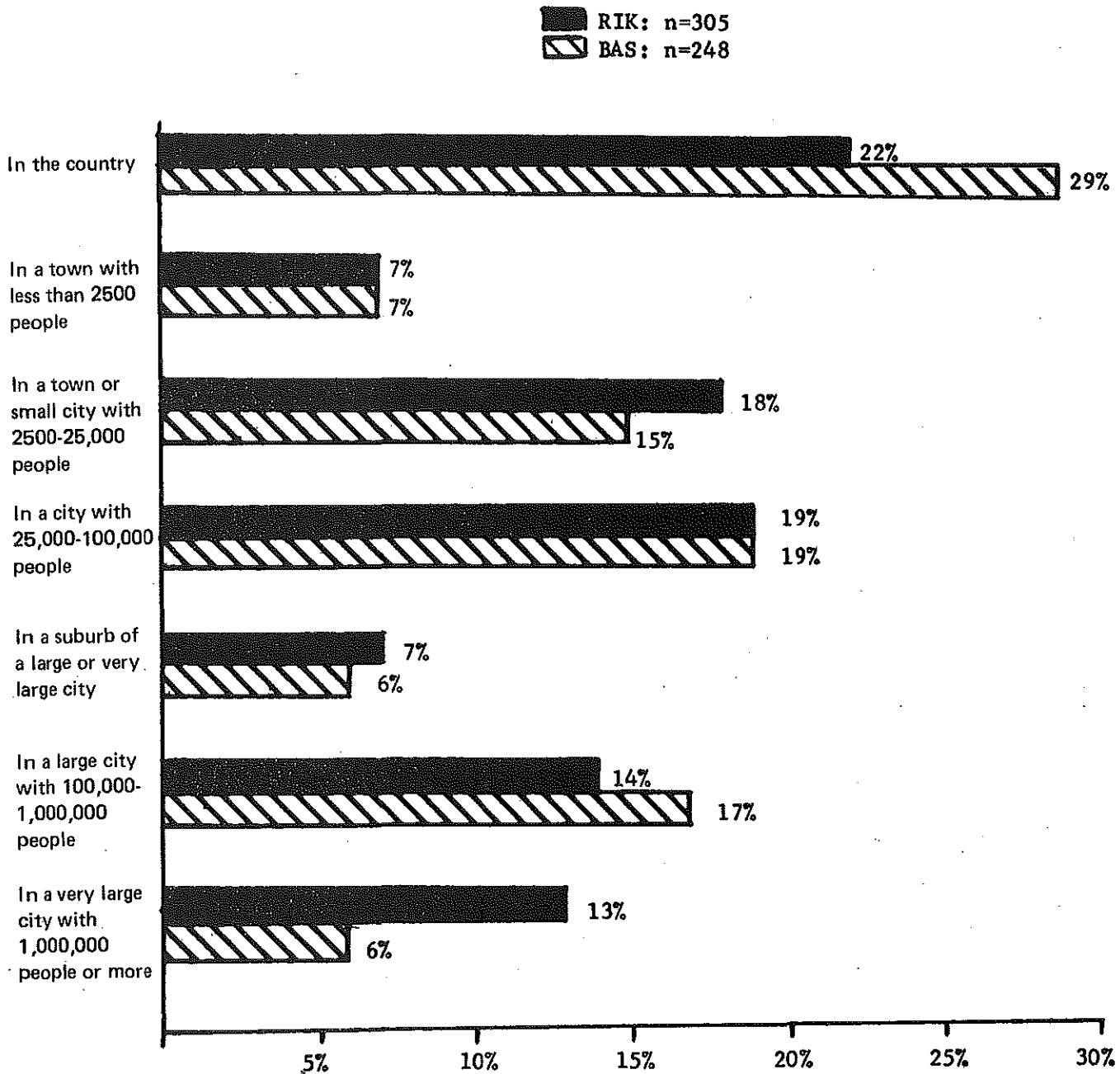


Table 50

Rural/Urban Background of Sample



APPENDIX III

Survey research typically utilizes probability sampling, from which estimates of error can be derived and confidence in precision achieved. Despite the fact that the sampling frames (the lists or records) upon which to draw a probability sample are woefully inaccurate (the survey team found many instances of individuals listed as receiving rations in kind (RIK) who in fact had been receiving the basic allowance for subsistence for 10 years and more), we could have proceeded in a straight forward manner. Theoretically we could correct the frames, draw the sample, and collect individual data. However, the time, effort, and cost of data collection by this method can be drastically reduced by group administration which presents other problems. If Private First Class John Doe is selected by probability from cleaned frames, the experimenter has no guarantee that the selected PFC John Doe will be present. If the experimenter emphasizes the participation of the selected individuals, the experienced experimenter finds substitutions. If the experimenter emphasizes no substitutions, absenteeism is so large that the sample is usually biased. Therefore, we accept a group administered, non-probability sample, and increase our sample size considerably to insure the stability of our data. Hence our data is reliable, but the large sample sizes make tests of statistical significance practically meaningless. For example, consider the group means presented in Table 6. Because of the large sample sizes and the typically small standard deviations of the scores, a mean difference of 0.06 to 0.09 is statistically significant (even without the correction term for large samples, which produces statistical significance for yet smaller mean differences). Therefore, the mean response of the RIK group to the variety of regular meal foods during the week (2.01) is statistically a more significant ($p < .05$) reason for non-attendance than the hours of operation (1.87). Clearly this type of argument is not necessary for the development of improvements in the existing food service system. Inclusion of measurements of statistical significance will be inserted only where it will serve to clarify an issue.

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