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Staff Paper

THE PROPENSITY TO ENTER AND EXIT EXPORT MARKETS

A Mail Survey of Smaller Agri-Food Firms in Michigan

James A. Sterns and H. Christopher Peterson

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Department of Agricultural Economics
MICHIGAN STATE UNIVERSITY
East Lansing, Michigan 48824

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James A. Sterns and H. Christopher Peterson
email: sternsja@pilot.msu.edu and peters17@pilot.msu.edu

EXECUTIVE SUMMARY

In the Fall of 1994, researchers in the Department of Agricultural Economics at Michigan State University identified the following two questions:

1. To what degree (if any) are smaller agribusiness and food industry firms involved in international markets?
2. To what degree (if any) are international markets a potential opportunity for smaller agribusiness and food industry firms?

In an effort to address these two questions, researchers contacted 543 Michigan-based, small- to medium-sized agri-food firms to solicit their participation in a mail survey. Firms willing to participate in the study returned a postcard with a limited amount of information on it about the company's current marketing and sales activities. An additional 88 firms agreed to participate in the survey when they were contacted by telephone. Of the 242 firms that were sent a mail survey, 46% returned a completed questionnaire (n=112). Sixty-seven of the returned surveys were from non-exporting firms, 37 were current exporters and 12 were firms that had once been exporters but were now re-focused on U.S. markets.

Statistical analysis of the returned survey data consisted of cross-tabulations, a base-line logistic regression using variables taken from the mail survey, and a second logistic regression using a six factor model generated during factor analysis of the data base. The predictive accuracy of the two logistic regression models were 88.46 and 87.76%, respectively.

The statistical analysis identified a set of explanatory variables that influenced the probability a given firm would be an exporter. The implications of these findings are that decisions about exporting are influenced by the following:

- * a decision maker's perceptions about transaction costs in international markets (e.g., the costs of writing and negotiating contracts, collecting payments, enforcing protection from bankruptcy defaults)
- * a decision maker's perceptions about demand in international markets (e.g., growth of markets, sales opportunities, global supply relative to demand)
- * the ability to establish and sustain relationships with international customers
- * key environmental stimuli that increase the decision maker's exposure to an international frame of reference (e.g., receiving unsolicited orders from customers outside the U.S., having customers who are exporters)
- * firm size correlates positively with the probability to export. However, size is neither a necessary nor sufficient condition to be an exporter. The study identified both very small firms (as few as 2 employees) that were exporters and larger firms (over 100 employees) that were non-exporters.

29 pages

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THE PROPENSITY TO ENTER AND EXIT EXPORT MARKETS

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James A. Sterns and H. Christopher Peterson¹

Introduction

In 1994, the Michigan Agricultural Experiment Station initiated the SAPMA Project, which was to be a comprehensive study of the status and potential of the state's agricultural sector. Through funding and support from SAPMA, researchers in the Department of Agricultural Economics at Michigan State University began investigating the status and potential of international markets for Michigan's agricultural products. More specifically, these researchers identified the following two questions:

1. To what degree (if any) are smaller agribusiness and food industry firms involved in international markets?
2. To what degree (if any) are international markets a potential opportunity for smaller agribusiness and food industry firms?

This report summarizes a mail survey conducted as part of the Department's on-going efforts to answer these two questions. Preceding this mail survey was a comprehensive literature review of published research on the "internationalization of firms." As a way of synthesizing this literature review and as a way of focusing the subject matter of the pending mail survey, SAPMA researchers proposed a general model of the internationalization process. A full development of this model is available elsewhere (Sterns, 1996), but a brief synopsis of the model is provided here as background.

The model proposes that there are three general driving forces behind the internationalization process: (1) a firm's competitive advantages in transforming, producing and/or processing their products; (2) a firm's competitive advantages in transacting in the market place (e.g., its ability to negotiate contracts and/or navigate government regulations, and its internal governance structures); and, (3) market demand for the product (both locally and abroad). These forces do not exist in a vacuum but are a product of their environment, are not static but dynamic, and can only influence a firm's behavior if they are perceived and processed in a manner that motivates the decision maker to act.

¹The authors are, respectively, Associate Professor and Doctoral Candidate, Department of Agricultural Economics, Michigan State University.

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With this model as a guide, the study examines how and why some, but not all, agri-food firms are active in export markets.

Identifying and Surveying Decision Makers of Agri-Food Firms

Definitions: The study began by establishing operative definitions for the various components of the two research questions. This was a critical first step since the definition of the terms "smaller firms," "agribusiness and food industries" and "international markets" would directly influence how the research would proceed.

"Smaller firms" was first defined to mean "not larger firms." In today's global context, most larger firms have already evolved into multi-national corporations with highly developed networks of international investments, subsidiaries and joint ventures. It was assumed that an analysis of larger firms would provide few insights about either the internationalization process itself or the potential of international markets for the vast majority of Michigan's agribusiness and food firms.

Published research literature was consulted to identify specific measures to classify firms by size. Unfortunately, no common standard was found in the published literature since government organizations and other researchers have used an array of measures. These include number of employees, gross annual sales, company assets and/or net worth, or some combination of these measures. This lack of consensus permeates even further. Many researchers use number of employees as their measure of firm size, but they differ widely on the exact number used in their data screening (e.g., 100, 200, 500 employees). Similar scale problems exist for other measures of size.

For this study, a composite of past definitions was used for classifying small- and medium-sized firms. Any firm with more than 150 employees (full-time equivalents) or more than \$150 million in annual gross sales was deemed too large to be considered a "smaller firm."

The study defined "agribusiness and food industries" broadly to include firms from nearly all aspects of agricultural production and food processing. This systemic definition is based on the concept of subsectors/vertical chains within the economy (as compared to industries/horizontal slices of the economy). Conceptually, the agri-food subsector stretches from the production of farm inputs (e.g., seed, agricultural chemicals and equipment) to end-use consumption of food and finished goods. Within the subsector, the study sought respondents who sold at least one "good" that was of their own "creation." For example, a food retailer would be excluded from the study, but a food retailer who packaged and sold its own brand of prepared sausage roll as a side business would be included.

The common conceptualization of "international markets" equates "international" to "exporting," implicitly making "internationalization of firms" synonymous with "firms learning to export." Although this may be a pragmatic way of thinking about how firms internationalize and it is the basis of this study's definition of the process, internationalization is much more than simply learning to export. Competing against imports in one's home market is also a form of internationalization. Similarly, sourcing production inputs, parts, and/or investment capital from foreign markets are ways for firms to internationalize. Joint ventures with foreign-based companies and/or direct investments in other countries are yet more ways to internationalize scope.

The challenge in reaching a comprehensive understanding of the internationalization process is that it requires a complex and taxing research scope. However, this level of complexity may be unnecessary. If there are positive correlations between the various dimensions of the process (e.g., a firm that sources parts internationally is more likely to export), then reducing the study's focus to only one dimension of the process may still capture much of the dynamics of how firms internationalize. Assuming these correlations do exist, the study chose "exporting" as its proxy for studying the internationalization process as a whole, and defined "international markets" as "export markets."

Target & Sample Populations: Firms considered for this study matched the following profile:

- (1) Michigan-based
- (2) Independently owned and operated
- (3) Not more than \$150 million gross annual sales
- (4) Not more than 150 employees (full time equivalents)
- (5) Participant within the agri-food subsector, specified by select Standard Industry Classifications
- (6) Producer/processor of a firm-specific "good"

Given that the underlying objective of this study was part of a larger project to assess the status and potential of Michigan's agricultural sector, limiting the target population to Michigan-based firms was self-evident (Item 1). The study also had a specific objective of examining the internationalization process at the firm-level. Individuals and their perceptions, not "black boxes," were to be the focus of the study. For this reason, only independently owned and operated firms were surveyed. Subsidiaries were eliminated from the target population because it was assumed that the decision processes within them are not self-contained (Item 2). The size and "creator of a good" criteria are defined above (Items 3, 4 & 6). A list of fifty-five industries, as grouped by the Standard Industry Classification system of the Office of Management and Budget, was used to screen available data sets for agri-food firms (Item 5). Selected industries ranged from farm labor contractors (SIC 0761) to wholesale farm supply stores (SIC 5191). Tables A1a and A1b in the appendix provide a complete list of industries.

Available data sets and directories were reviewed for their scope and depth of detail. Of these, Dun & Bradstreet's list of Michigan companies was by far the most comprehensive. At the initial screening level, a search for all firms on this list that met the size and SIC criteria yielded a list of over 4,000 mailing addresses. To reduce the potential target population to a more manageable number, the 55 SICs were cross-referenced with two state-published directories of Michigan exporters (Michigan Department of Commerce; 1988, 1994). The objective was to identify SICs with at least some exporting firms in them, and preferably with a robust mix of exporters and non-exporters. This reduced the list of target SICs to 18 and when this subset of targeted SICs was used to screen the D & B data base, 712 addresses were selected.

Post Cards: Researchers in management, marketing and (only recently) agribusiness have generated a sizable body of published work on the internationalization process. Most of this literature has focused on either how firms evolve as they internationalize (Johanson and Vahlne; Bilkey and Tesar; Cavusgil; Reid, 1981) or how multi-national corporations plan and set priorities to choose foreign direct investments (Dunning). The former clearly is the more relevant for this study.

"Internationalization" literature has generally followed a protocol of examining (by survey and/or interview) exporters in hopes of identifying common traits and/or key "success" factors. Although some research has compared exporters to non-exporters, the vast majority of published work has focused on current exporters and their degree of involvement in and commitment to export markets. Guiding this research are theoretic models which purport that firms evolve through a series of "stages" of export activity (e.g., not committed, not involved; involved but not yet committed; involved and committed) or levels of export intensity (e.g., moderately involved, highly involved).

Published critiques of these models have highlighted their short-comings, and much of the criticism focuses on the arbitrary nature of the demarcations between stages and/or levels of intensity (Reid, 1983; Turnbull; Andersen). Noting this criticism, the study reported in this document implemented an alternative way of classifying firms.

Four general classes of firms with clear, quantifiable demarcations were purposed: firms that do not and have never exported ("domestic firms"), firms that within the last three years have exported their products for the first time ("new entrants"), firms that have been exporting for more than three years ("experienced exporters"), and firms that were once exporters but have since withdrawn from those markets ("former exporters"). One of the advantages of these classifications is that they readily facilitate two sets of comparative analysis: domestic firms vis-a-vis new entrants, and experienced exporters vis-a-vis former exporters.

To gather preliminary information about this study's target population, letters of introduction were mailed to 700 of the firms identified in the Dun & Bradstreet data search². A postage-paid return postcard was included with the letter, asking the respondent to mark the one choice on the postcard that most accurately described their company's sales experience. Their choices were:

- Domestic U.S. markets and sales have always been our sole focus
- Curious about exporting, even though we haven't exported anything yet
- New to exporting; began exporting within the past 3 years
- Experienced, active exporter; exports are **less** than 10% of total sales
- Experienced, active exporter; exports are **more** than 10% of total sales
- Withdrawing from exports; may still export but refocused to U.S. sales
- Former exporter; we have completely abandoned export sales.

These choices were an extension of the four classification approach. Although the seven choices readily collapse into the four proposed classifications, the seven choices incorporate the idea of incremental degrees of commitment and involvement. If sufficient numbers of responses were generated per choice, the option to proceed using seven, instead of four, classifications would be available.

²Although the data search generated 712 company names and addresses, 10 of them had already been interviewed about their export practices in an earlier study. Preliminary results from that study were used to help design this study's survey instrument. The other 2 companies excluded from the postcard mailing had non-Michigan addresses, indicating a flaw in the Dun & Bradstreet data search procedure.

Respondents were also asked to list the name and position of the individual in their company who was "primarily responsible for sales and marketing." The hope was that the information from the returned postcards could be used to mail surveys (differentiated by class of firm) directly, by name, to individual decision makers.

Several issues became apparent as the postcard mailing was being implemented, and they all indicated that the "true" target population was considerably less than 710. For example, many of the companies listed in the Dun & Bradstreet data base had multiple mailing addresses (e.g., a street address and a P.O. Box address in the same town; multiple street addresses within the same community; addresses in more than one city), and it was impossible to determine a priori which address was for the head office and which were for branch facilities. Also, the search procedure for the Dun & Bradstreet data base proved to be less than optimal since (1) it did not screen out corporate subsidiaries, (2) data on gross sales and/or number of employees were missing from many of the files, and the decision rule for the search included all files with missing data, and (3) Michigan mailing addresses (which were available in the data base) did not correlate perfectly with Michigan-based firms (which were the intended target population).

In the end, the decision was made to "let the data sort itself." As returned postcards were received, they were screened for the appropriate criteria. A similar approach was used during the next two stages of the data collection process: telephone call backs to non-respondents and the actual mail survey. Further details of these two stages are discussed below. With the postcards, 177 of the original 700 mailed were returned. Of these, 154 were viable candidates for the mail survey's sample population. The other 23 postcards were rejected because the companies were either now out-of-business (n=3), not based in Michigan (n=5), did not want to participate in the study (n=7), were intermediate processors and, in their opinion, they "did no sales" (n=4), due to multiple mailings, the same company mailed back more than one card (n=3), or the postcard was returned too late to be included in the mail survey (n=1). An additional 57 letters were sent back unopened and marked "return to sender."

Though approximately two-thirds of the companies that sent in usable postcards indicated that they had never exported, 38 of these 106 "domestic" firms marked the option, "curious about exporting." Seven percent of the respondents (11 firms) indicated that they were "new to exporting" while 21% indicated that they were "experienced exporters." Of these experienced exporters, 19 indicated that exports were less than 10% of total sales while the other 13 indicated that exports were more than 10% of total sales. Five firms indicated that they were currently withdrawing from export markets to refocus on U.S. markets. No firm marked the option, "former exporter."

A review of these responses raised two principle concerns. First, given that only 177 postcards were returned, was there any kind of non-response bias in the data set? Second, the sample population of 154 firms was not large enough nor robust enough to support an analysis using the four proposed classifications (non-exporter, new entrant, experienced and former exporters). The original target for the data collection had been 40 returned surveys per classification. Clearly, a larger sample population was needed to meet this objective.

Non-respondent call-backs: Ten percent of the non-responding firms were selected randomly and attempts were made to contact them by telephone (n=47). By interviewing a random sample of firms that did not respond to the postcard mailing, a crude comparison of postcard respondents and non-respondents is possible. The comparison provides some indication about the similarities of the two

populations and if the sample population of 177 firms is "representative" of the target population as a whole. Table 1 summarizes the profiles of the two populations.

Although the data are insufficient for statistical analysis, the two populations appear to be similar in their composition of the different classifications of firms. Of particular note is that both subsets of the target population have a small core number of exporting firms (approximately 20% of all firms), but are dominated by domestically-oriented firms. Also, both subsets have a large number of invalid or otherwise unusable mailing addresses. And, these unusable addresses (the "other" category for the two subsets) were similarly matched. Of the firms that were telephoned, 7 were branch facilities, production sites or franchises, 5 did not want to participate in the study, 1 was an intermediate processors so in his mind, he "did no sales," and 2 were duplicate addresses.

Table 1. Comparison of Postcard Respondents & Ten Percent of Non-respondents Interviewed by Telephone, SAPMA Internationalization Study, January-February, 1996

Responses:	Returned Postcards		Telephone Interviews	
	"n"	% (n/174)	"n"	% (n/38)
Only Domestic	68	39	13	34
Curious about Xpt	38	22	1	3
New Exporter	11	6	0	0
Xpts < 10% sales	19	11	4	11
Xpts > 10% sales	13	7.5	3	8
Withdrawing	5	3	0	0
Former Exporter	0	0	2	5
Other	20	11.5	15	39
Totals:	174	100	38	100
Invalid Addresses:	60 ¹		9 ²	

¹Includes 57 returned letters from original mailing (marked "return to sender") and 3 firms that stated on the returned postcards that they were no longer in business.

²Includes addresses for which there were no listings in the yellow pages or with directory assistance. The assumption is that either the addresses are out of date (firms have moved) or the firms are now out of business.

Although the telephone interviews were only intended to gather enough data to compare respondents to non-respondents, the interviews, by the very nature of personal contact, provided additional information about the target population. For example, how a given firm self-identifies and how this study would classify the firm are not always the same. One of the "former exporters" listed in Table 1 self-identified as an "exclusively domestic" firm even though he had exported product to Japan over an extended period of time. Because the firm had done this "years ago" and that the product "never really took off," the respondent did not consider this relevant. Although little could be done to correct for this in analyzing the returned postcards, it is an indication that the sample population of 154 returned postcards might be more robust than the responses indicated.

Another insight from the call-backs was that if contact could be made with the appropriate decision makers within the firms, they were generally cooperative and interested in this study. Of the 28 "non-respondent" firms that were viable addresses for the target population, twelve of them stated that they would complete a mail survey about their marketing and sales practices, if they were to receive one.³ With this insight, the decision was made to telephone an additional 150 firms in hopes of raising the net sample population (those firms to receive a mail survey) to 250.

Soliciting Respondents by Telephone: At this point in the project, 419 of the original 712 mailing addresses from the Dun & Bradstreet database were still potential candidates for the telephone campaign. However, not all of these addresses were included in the next stage of the data screening.

First, it was noted that within SIC 2051, bakery products, not one exporter had been identified. This was despite the fact that "bakery products" was by far the largest industry group within the original mailing of 700 firms (n=150; 21% of total) and that 14 of the 47 call backs (30%) had been to bakery- products firms. Out of 19 returned postcards from bakery product firms, only three indicated that they were even curious about exporting. Even though it is still believed that there are exporters in this SIC, limited time and financial resources necessitated some optimizing of the telephone campaign. For these reasons, the remaining 117 firms in the bakery products industry group were excluded from consideration during the telephone solicitations.

Second, when the original data base of 712 addresses was downloaded from Dun & Bradstreet, telephone numbers were not requested. Consequently, a CD-Rom file containing all Yellow Page listings in the U.S. had to be referenced in order to find telephone numbers for the remaining 302 firms (419 minus 117). Not all of these firms were listed and telephone numbers could not be found for 97 firms. Due to time and financial constraints, no further efforts (e.g., consulting directory assistance) were made to find telephone listings for these 97 firms. A random sample of 150 was then taken from the set of 205 firms for which there were Yellow Pages listings and attempts were made to contact these firms by telephone over a 3 week period.

An additional 76 decision makers agreed to fill out a survey as a result of these telephone calls. The other firms contacted by telephone were excluded from the sample and/or target population for a variety of

³Of the 47 call backs, 9 addresses were completely invalid since they had no phone listing, while 10 were invalid for "other" reasons (e.g., branch office, duplicate address). The net number of addresses in the call backs that represented firms in the actual target population was 28.

reasons. Many of the firms were excluded from the sample population because contact could not be made with the appropriate decision maker, despite repeated call backs and/or because the decision maker was not willing to participate in the study. Other firms were excluded from the target population because they were subsidiaries (e.g., branch facilities, production sites or franchises), or they violated location and/or size criteria. A few addresses were not valid because the firm had gone out of business.

Target and Sample Populations -- Final Counts: As noted above, the original data base containing 712 addresses was not an accurate representation of this study's actual target population. As the data base "sorted itself out," 169 invalid addresses were eliminated from the list. The remaining 543 addresses are a much better estimate of the target population. To have a definitive count, all 543 of these addresses would have to be cross referenced and contacted to confirm their validity -- an unnecessary exercise given the scope of this study. Given that 280 of the 543 addresses were validated in some way, this study is confident that most of the invalid addresses have been removed from the list. For this reason, the study uses 543 as its best estimate of the target population, with the caveat that this number probably overstates the actual population count and thus, under-states survey response rates.

The returned postcards and telephone interviews yielded preliminary data about the sales and marketing efforts of over 250 firms. Of these, 242 firms met all of the target population criteria. Due to concerns about low counts in some of the four classifications of firms, two decisions were made. First, surveys would be sent to every available address, implying a sample population of 242 firms. Second, the original classification scheme would have to be abandoned. Even assuming a generous 50% survey return rate, the study would need 80 firms per classification. Counts were well below this minimum for 3 of the 4 proposed classifications. The proposed analysis had to be reduced to comparisons between firms that market only in the U.S. and firms that export a portion of their products to markets outside the U.S. However, "former exporters" were still considered qualitatively different from firms that had never exported. Even though there was an insufficient number of former exporters for statistical analysis, this classification was preserved, and the study continued to track these firms separately. Table 2 summarizes the sample population's frequencies across industry groups and classifications of firms.

Survey Instruments: The sample population was pre-sorted by classifications, and then each of these sets of firms were mailed a questionnaire about their marketing and sales practices. The questionnaires across classifications were very similar in content and differed mostly by verb tense and temporal references (e.g., "would/are/were international markets more risky than U.S. markets?"). The other major difference between the questionnaires was that the questionnaire sent to current exporters asked a few additional questions about the importance of export markets in terms of overall sales and marketing, and about the motivations behind the decision to internationalize. The questionnaire to former exporters asked about these firms' reasons for exiting the export market.

The drafting of these questionnaires was an extensive, iterative process that involved several stages. As mentioned above, the first step was a comprehensive literature review of published research on "internationalization" in three major research fields: management, marketing and agribusiness. Second, insights gained from the literature review were used to draft a theoretic model of the internationalization process. To test the model and to gain further understanding of how and why firms internationalize, the study conducted a series of nine in-depth interviews with managers of small agri-food companies in Michigan. The interviews gave some preliminary confirmation of the theoretical model and helped identify quantifiable constructs for testing the model on a larger scale. Next, a questionnaire was drafted and pre-tested on five decision makers within the agri-food industry (three of the decision makers from the in-depth interviews and two others from outside of Michigan but with personal ties to Michigan State University).

After incorporating suggested changes from the pre-test, a final draft of the questionnaire was completed and mailed to the sample population. An introductory letter and a postage-paid return envelope accompanied the questionnaire. After two weeks, a reminder postcard was sent to all non-respondents. One week later a follow-up letter and second copy of the questionnaire were mailed to all of the firms that still had not responded.

The questionnaire asked domestic, exporting and formerly exporting firms 22, 26 and 27 questions, respectively (although many of the questions had multiple components within them). The number of questions were divided about evenly across five categories: (1) basic demographics of the firm (e.g., number of employees, product type, ownership structure), (2) the respondent's perceptions of market demand, (3) the respondent's perceptions about his/her company's competitive advantages in those markets in terms of transaction costs, (4) the respondent's perceptions about his/her company's competitive advantages in those markets in terms of transformation costs, and (5) the motivating factors behind the firm's decisions about its involvement in export markets.

Preliminary Analysis of Survey Responses

Of the 138 questionnaires that were returned, 112 could be used for statistical analysis. However, eight of these respondents were former exporters. Although these 8 cases provide some anecdotal evidence about this classification of firms, they were excluded from the statistical analysis. The assumption is that former exporters are, in some way, qualitatively different from firms that have never exported. By excluding the 8 cases, the analysis focused exclusively on the differences between firms that have never exported and firms that currently are active in export markets.

The remaining 104 cases imply a 43% returned survey response rate, which suggests a possibility of non-response bias in the data. However, a simple review of the frequencies shows no indication of skewness in response rates towards a particular classification or industry group. Table 2 summarizes these frequencies. Response rates also did not differ significantly between firms that completed and returned a postcard verses those contacted by telephone. Since all of the sample population had already been contacted at least once prior to the mail survey, no effort was made to call back survey non-respondents.

Table 2. Sample Population and Returned Survey Response Rates by Industry Group and Classification of Firms, SAPMA Internationalization Study, January-February, 1996

SIC	Surveys Sent per Classification of Firms				Surveys Returned by Classification of Firms			
	Domestic	Exporter	Former	Totals ¹	Domestic	Exporter	Former	Totals
2011	13	5	2	20	5	4	1	10
2013	22	4	0	26	10	3	0	13
2022	7	1	0	8	1	1	0	2
2032	1	0	0	1	0	0	0	0
2033	15	5	1	21	8	4	2 ²	14
2034	1	1	0	2	0	0	0	0
2035	9	5	4	18	1	3	0	4
2037	2	6	1	9	1	4	0	5
2038	5	3	0	8	4	1	0	5
2043	1	0	0	1	0	0	0	0
2045	2	4	0	6	1	2	0	3
2051	18	0	0	18	6	0	0	6
2052	3	1	0	4	3	0	0	3
2053	2	0	0	2	2	0	0	2
2084	11	2	0	13	7	0	1 ²	8
2099	27	8	2	37	12	4	1	17
3523	17	20	1	38	6	8	2 ²	16
3556	0	10	0	10	0	3	1 ²	4
Totals	156	75	11	242	67	37	8	112

Returned Survey Response Rate: $112/242 = 46\%$
 Percent of Target Population Surveyed: $112/543 = 21\%$

¹Totals by SIC are somewhat arbitrary since those firms active in more than one industry were randomly assigned to only one SIC during data collection.

²Some firms were misclassified at the pre-survey stage. As a result, some totals of returned surveys exceed the total number of surveys sent for a given classification of firms. Corrections for these misclassifications were made during the statistical analysis.

Cross-Tabulations: A zero-one dependent variable (0 = non-exporter, 1 = exporter) was created for the 104 cases of 67 non-exporters and 37 exporters. Cross-tabulations and the Chi-squared test statistic were then applied to test the null hypothesis that non-exporters and exporters respond to a given question in the same way (i.e., the proportion of non-exporters selecting each response for a given question is the same as the proportion of exporters selecting among the same options for the same question).

At a .05 probability level, the null hypothesis was rejected for the following mail survey questions:

- * Proportion of products sold under a brand name (all, most, some or none)?
- * Opinion about growth in markets outside the U.S. (from high to low on a 5 point horizontal numerical scale)?
- * Opinion about sales opportunities in markets outside the U.S. (from attractive to unattractive on a 5 point horizontal numerical scale)?
- * Opinion about their firm's potential to capture substantial market share in international markets (from unlimited to none on a 5 point horizontal numerical scale)?
- * Receive unsolicited sales inquires from companies outside the U.S. (never, occasionally, often)?
- * For markets outside the U.S., specifying terms of payment and writing contracts *would be/are* major constraints to achieving more sales (5 point Likert scale⁴)?
- * For markets outside the U.S., collecting payment *would be/is* a problem with our sales (5 point Likert scale)?
- * For markets outside the U.S., the customer going bankrupt and/or defaulting on payments *would be/is* a common problem in our business (5 point Likert scale)?
- * Percentage of U.S. sales made on credit (zero, 1 to 33%, 34 to 66%,..., 100%)?
- * Describe your company's current U.S. market coverage in terms of geographic range (local, state-wide, regional/inter-state, national)?

Other questions appeared to have significant differences in the response rates between non-exporters and exporters but they had low expected cell frequencies (fewer than 5 cases) in more than 20% of the cross-tab cells. For some of these questions, this was remedied by collapsing the responses into fewer categories. After the responses were combined, the Chi-test was significant at the .05 probability level for three other independent variables:

- * The question, "What percentage of your customers are exporting their products/services (selecting from pre-set ranges of zero, 1 to 33%, 34 to 66%,..., 100%)? was converted to "Does at least one of your customers export his/her product/service (dichotomous yes/no selection)?"
- * A question about average gross annual sales (selecting from pre-set ranges of less than \$10 million, \$10 to 49 million, \$50 to 149 million, \$150 to 500 million, and over \$500

⁴A 5-point Likert scale asks the respondent to indicate their level of agreement (strongly agree, agree, ..., strongly disagree) with a given statement.

million) was converted to "Are your gross annual sales less than \$10 million, or \$10 million or more?"

- * Similarly, a question about average number of full time employees (selecting from pre-set ranges of less than 25, 25 to 49, 50 to 149, 150 to 500, more than 500) was converted to "Do you employ fewer than 25 employees, or 25 or more?"

For other questions, an attempt to correct for low cell counts was made by constructing indices out of several related questions. For example, indices were created that gauged the decision maker's perceptions about transaction costs in international markets and about the product mix of the firm. With the former, a series of 10 questions (all Likert 5 point scales) were combined by summing the numerical values of the responses. For the latter, the 19 SICs were collapsed into three general categories -- perishable products, non-durable goods with some shelf-life (e.g., canned food), and durable goods (e.g., manufacturing equipment). Firms involved in only one of these types of products were classified as such, while firms that marketed a mix of these three were classified in a fourth group.⁵ However, neither of these indices tested significant at the .05 probability level.

A review of the cross-tabulations gives some indication as to what may be important to the internationalization process for at least the firms in this sample population. A quick synopsis is:

- (1) A limited product mix and/or a high degree of product differentiation are not pre-requisites for exporting. The proportion of products that were sold by brand name was inversely related to the probability of being an exporter.
- (2) Perceptions about export markets and their potential demand matter. Those firms that gave more positive ratings on the potential of these markets were more likely to export themselves.
- (3) Perceptions about the ease of transacting in international markets matter. Those firms that were more optimistic about their abilities to handle transaction costs in an international setting were more likely to be exporters.
- (4) Decision makers are motivated by their environment. Those decision makers that had received unsolicited orders and/or had customers that were exporting, tended to be involved in export markets themselves. Similarly, those firms that were exposed to and active in a broader geographic range of U.S. markets also tended to be involved in international markets.
- (5) Size matters. Larger firms -- whether measured by number of employees or gross annual sales -- tended to be exporters.

⁵Seven respondents listed "fresh fruits and/or vegetables" as one of their firm's products. This industry group was then added to the list of the original 18 SICs and included in the overall analysis.

Econometric Analysis of Survey Responses

Logit Models and Logistic Regression Analysis: Cross-tabulations are simply a measure of association between two variables. Regression analysis is employed to more fully understand how two variables are related, and, when data permits, to impute causality. When the dependent variable is qualitative, specific types of regression analysis are in order. When the qualitative dependent variable is dichotomous (i.e., a zero-one dummy variable), either a logit or probit model should be employed (Kennedy). For this study, the dichotomous dependent variable takes on the value of 1 when the firm is an exporter and a value of zero when the firm is a non-exporter.

Numerous "naive" logit models were tested and compared. These models regressed the dependent variable on various combinations of explanatory variables that initially were questions taken directly from the mail survey.⁶

To simplify the model, some of these questions were combined to form new independent variables. For example, a new independent variable was created by combining the two questions about decision makers' perceptions about the difficulty of (1) specifying payment terms in international markets and (2) collecting payments in international markets. This new index seemed reasonable since these two questions were very similar in content and both had significant Chi-test statistics in the cross-tabulations.

The logistic regression that demonstrated the "best fit" for the available data set contained the following variables:

CUST = 0 when the respondent has no customers that export, or 1 when at least one customer exports.

EMPLOY = 0 when the firm employs fewer than 25, or 1 when it employs 25 or more.

INQOFT and INQSOM are a pair of categorical variables that when they both have a value of 0, the firm never receives unsolicited sales inquires from abroad. When INQOFT has a value of 0 and INQSOM has a value of 1, the firm sometimes receives unsolicited sales inquires, and when the values of the two variables are reversed, the firm often receives unsolicited inquires.

Similarly, TCPROB and TCNEUT are a pair of variables that when they both have a value of 0, the respondent does not believe that specifying and collecting payments in

⁶With logistic regression, survey questions with categorical responses (which was the case for almost all of the survey) had to be converted to sets of new dichotomous zero-one variables where the number of new variables equals one less than the number of categories respondents could chose in the original survey question.

international markets *would be/is* a problem. When TCPROB has a value of 0 and TCNEUT has a value of 1, the decision maker is neutral about this issue, and when the values of the two variables are reversed, the decision maker believes that specifying and collecting payments *would be/is* a problem for the firm.

Table 3 summarizes the coefficients and test statistics for this model.

Table 3 Coefficients and Test Statistics, "Best fit" Logistic Regression, "Naive" Logit Model, SAPMA Internationalization Study and Mail Survey, January-February, 1996.

Var.	B	S.E.	Wald	df	Sig.	R	Exp(B)
CUST	1.27	0.59	4.55	1	.033	.137	3.55
EMPLOY	1.01	0.64	2.52	1	.112	.062	2.75
INQOFT	5.04	1.53	10.9	1	.001	.256	154.6
INQSOM	3.27	1.09	9.00	1	.003	.227	26.25
TCPROB	-1.81	0.96	3.54	1	.060	-.107	0.16
TCNEUT	-0.64	0.88	0.52	1	.470	.000	0.52
Constant	-3.40	1.24	7.55	1	.006		

The column headed "B" contains the coefficients of the independent variables. Given that this is a logistic regression, these coefficients represent a change in the value of the independent variable from zero to one (or one to zero) will lead to a change in the value of the ratio of the probability that a firm will export over the probability that the firm will not export. In equation form:

$$\frac{Prob(exports)}{Prob(nonexports)} = e^{B_0 + B_1X_1 + \dots + B_iX_i}$$

Although this non-linear relationship makes interpreting the signs of the coefficients more complex, it is still a useful way of assessing the model. For the coefficients in Table 3, all of the signs are plausible and confirm the theoretical model. A positive sign on CUST indicates that having at least one customer that exports will increase the probability that the respondent will be an exporter. Similarly, the positive signs on EMPLOY, INQOFT and INQSOM indicate that being larger, and receiving unsolicited sales inquires from companies outside the U.S. will increase the probability that the respondent will export. The negative signs on TCPROB and TCNEUT

indicate that not having a clear advantage in handling customer payments in international markets will decrease the probability that the respondent will export.

Concerning the observed significance levels of each independent variable in the model (the column labeled "Sig" in Table 3), two of the variables -- EMPLOY and TCNEUT -- are not significant at the .10 level. However, since TCNEUT is part of a pair of categorical variables, it can not be removed from the model unless TCPROB is also removed. Since TCPROB is significant at the .1 level, both variables are retained. With EMPLOY, the case is less compelling. Since most internationalization models in the published literature contain a "firm size" explanatory variable, EMPLOY was kept in this model.

Table 4, the classification table, displays the frequencies of non-exporters and exporters that have been observed as compared to the number predicted by the logit model. As one measure of the model's performance, the 88.46% predictive accuracy reflects well on this model.

Table 4 Observed & Predicted Values for Dependent Variable, "Naive" Logit Model, SAPMA Internationalization Study and Mail Survey, January-February, 1996

Observed	Predicted		Percent Correct
	non-exporter	exporter	
non-exporter	60	7	89.55%
exporter	5	32	86.439%
	Overall		88.46%

Another measure of the model's goodness of fit is the Model Chi-square. This test statistic tests the null hypothesis that all of the coefficients of the model except the constant equal zero. The test uses two calculations of the likelihood statistic (the probability of the observed results given the parameter estimates), once for when only the constant is included in the model and once for when the full model is used. The standard way of reporting the likelihood statistic is negative two times its log and for this model, the values are 135.40 and 73.86, respectively. The Model Chi-square equals the difference between these two values, in this case 61.53 (with 6 degrees of freedom). At this value, the null hypothesis that all of the coefficients of the model are equal to zero is rejected at .005 probability level.

The final diagnostic test conducted on this model was to examine the 12 cases that the model incorrectly predicted. Five of the firms that were observed to be exporters were predicted by the model to be non-exporters. Similarly, seven of the firms that were observed to be non-exporters were predicted to be exporters. These 12 cases were reviewed for patterns in responses that

would identify the cases as obvious outliers, or identify an additional explanatory variable that should have been included in the logistic regression. No such pattern or explanatory variable was readily apparent, and it was concluded that given the current data set, nothing could be done to improve the model's predictive accuracy.

Factor Analysis: Although the "naive" logit model has predictive accuracy and its goodness of fit has been validated with a series of diagnostic tests, concern still exists about the general specification of the model. Logistic regression, like any form of multi-variate analysis, is susceptible to mis-specification errors (e.g., omitting an explanatory variable that should be in the model, or including a trivial or unrelated explanatory variable that should not be included). All of the independent variables in the current form of the logit model have some validation in economic theory and/or the precedent of published research. However, the vast majority of the data that was collected with the mail survey is excluded from the final analysis if that analysis concludes with the current logit model. To address this concern, factor analysis was conducted on the data base to see if more of the available information from the mail survey could be incorporated.

Factor analysis is a statistical technique that attempts to identify underlying "factors" that can explain observed behavior in a more comprehensive, and often, more qualitative way. Factors are "constructed" by statistically "combining" directly observable independent variables (e.g., mail survey questions) that are positively correlated. In the context of the SAPMA mail survey, factor analysis was used to see if the survey questions, or a subset of these questions, formed (i.e., "loaded onto") a cohesive, intelligible set of factors.

The first step of the factor analysis was to test for correlations among survey questions, and to assess whether or not there was sufficient correlations among these questions, or a subset of them, to warrant a factor analysis. If a question did not correlation with at least one other question, it was removed from the analysis. As questions were removed, two test statistics -- the Kaiser-Meyer-Olkin measure of sampling adequacy, and the Bartlett test for Sphericity -- were monitored to see if a given subset of questions were sufficiently related to each other to warrant a factor analysis. At the conclusion of this step, 23 questions were retained for further analysis. With this subset of 23 questions, the two test statistics -- the Kaiser-Meyer-Olkin test and the Bartlett Test of Sphericity -- had values of 0.75122 and 1026.04 (significance of .0000), respectively.

The second step was factor extraction. Using the principle-axis factoring method, initial estimates of six factors were created. Next, the initial factor matrix was rotated, using the varimax method, and the rotated factor matrix was reviewed to see if the factors "made sense", that is, do the groups of variables that have large loadings on the same factors seem consistent with economic theory and/or pragmatic experience. Finally, factor scores were calculated using the regression method and saved for use in the logistic regression analysis discussed below. The initial and final statistics, and the rotated matrix from the factor analysis are listed in the appendix.

The six factors did, in fact, form groupings of questions that followed closely with the theoretic model of the internationalization process referenced in the introduction of this document.

Factor 1 grouped six questions that were all closely related to issues of legal and contracting constraints in international markets -- all issues related to a decision maker's perceptions about his/her firm's ability to manage the **transaction costs** in international markets.

Factor 2 had high loadings on five questions about current and potential conditions (e.g., sales opportunities, overall growth, market share) of international markets related to the firm's products -- all issues related to market **demand**.

Factor 3 had high loadings on five questions about differentiating one's product in the market by price and technology employed in the design, production and processing of the firm's product -- all issues related to the firm's competitive advantage in managing its **transformation costs**.

Factor 4 had high loadings on three questions about breadth of market, and the level of exposure a given firm had to markets beyond the local level. The three questions gauged the frequency that the firm received unsolicited orders from companies outside the U.S., the percentage of their customers who were exporters, and the geographic range of their U.S. marketing efforts -- all issues related to market stimuli and how these stimuli **motivate** the decision maker.

Factor 5 had high loadings on two questions about the quality and specific features of the firm's products. Although these issues are similar to those captured in Factor 3, "differentiation by quality" loading as a separate factor most likely reflects the growing emphasis in U.S. businesses on **quality** in the work place (e.g., the wide-spread adoption of "Total Quality Management").

Factor 6 had high loadings on two questions about the difficulty of establishing contact and maintaining customer relations in the context of international markets. This suggests that an inability to build meaningful **relationships** acts as a barrier to the internationalization process.

A second logistic regression: The factor loadings appear to confirm the idea that there is a limited number of driving forces behind the internationalization process. However, the question remains, "Do these factors have any explanatory power?" To answer this question, the six factors were scored and these scores were used as the independent variables of a logistic regression.

The coefficients for the six factors are listed in the second column (labeled "B") of Table 5. The signs on these coefficients all appear plausible, although the negative sign on Factors 3 and 5, the transformation variables, are inconsistent with past findings.

Concerning each independent variable: Factor 1 is the capacity to manage transactions in international markets. The positive sign on its coefficient implies that this capacity will increase the probability that a firm is an exporter. Factor 2 is the perception that potential demand in international markets is, at best, limited. The negative sign on the coefficient implies that this attitude will decrease the probability that the firm is an exporter. Factor 3 is the tendency to differentiate one's product(s). The negative sign on this coefficient implies that producing a highly differentiated product will lower the probability that a firm is an exporter. Factor 4 is the degree of exposure to stimuli that motivate internationalization. The positive sign on the coefficient implies that this exposure increases the probability that a firm will export. Factor 5 is the

tendency to emphasize high quality in one's products. The negative sign on the coefficient implies that focusing on quality in production will decrease the probability that the firm will export. Factor 6 is the perception that customer relations are difficult in international markets. The negative sign on the coefficient implies that this perception will decrease the probability that the firm is an exporter.

Table 5 Coefficients & Test Statistics, Logistic Regression, "6 Factor" Model, SAPMA Internationalization Study and Mail Survey, January-February, 1996.

Var.	B	S.E.	Wald	df	Sig	R	Exp(B)
FAC1	.73	.35	4.32	1	.038	.134	2.08
FAC2	-.96	.40	5.93	1	.015	-.174	.38
FAC3	-.82	.37	4.87	1	.027	-.149	.44
FAC4	2.47	.53	21.40	1	.000	.387	11.87
FAC5	-.91	.41	4.92	1	.027	-.150	.40
FAC6	-.93	.45	4.31	1	.038	-.133	.39
Constant	-1.07	.35	9.19	1	.002		

In addition to having plausible signs on all of the coefficients, the observed significance levels of each of the factors (i.e., the independent variables of the model) are significant at the .05 level (the column labels "Sig" in Table 5).

Like Table 3, Table 6 displays the frequencies of non-exporters and exporters that have been observed as compared to the number predicted by the "6 Factor" logit model. The total number of firms, n=98, is less than the 104 noted above because six cases were rejected for missing data. As one measure of the model's performance, the 87.76% predictive accuracy reflects well on this model.

Table 6 Observed & Predicted Values for Dependent Variable, "6 Factor" Logit Model, SAPMA Internationalization Study and Mail Survey, January-February, 1996

Observed	Predicted		Percent Correct
	non-exporter	exporter	
non-exporter	56	5	91.80%
exporter	7	30	81.08%
Overall			87.76%

The Model Chi-squared test statistic was 63.68 with six degrees of freedom, the test statistic is significant at the .005 level, and the null hypothesis -- that all of the coefficients are zero -- is rejected.

The 12 cases that the model failed to predict correctly were reviewed to see if there were obvious outliers or key independent variables that could explain why this had happened. However, no discernable pattern was apparent.

Conclusions

This study began with two general research questions about smaller Michigan agri-food firms. The first was a call for a status report on the current level of international market activity demonstrated by these firms. The study's conclusion: a small but growing number of these firms are active in export markets.

Of the 242 firms that were successfully contacted by post and/or telephone, 31% were currently exporting their products (n=75). An additional 5% of the firms indicated that they had exported in the past but were now focusing more on U.S. markets (n=11). Another 19% of the firms indicated that they were curious about export markets, even though they had not yet started exporting (n=45).

The second research question sought to assess the potential opportunities that international markets might provide smaller Michigan agri-food firms. Given that 31% of the contacted firms were active exporters, the obvious conclusion is that there must be at least some potential in international markets. What is not as obvious is an explanation of why only *some* firms are exporting, while others are choosing to stay away from these same "opportunities."

To address this issue, a questionnaire was mailed to the 242 firms. 112 firms returned completed surveys. Information from the mail survey and subsequent statistical analysis identified a set of explanatory variables that influenced the probability that a given firm would be an exporter. The implications of these findings are that decisions about exporting are influenced by the following:

- * a decision maker's perceptions about transaction costs in international markets (e.g., the costs of writing and negotiating contracts, collecting payments, enforcing protection from bankruptcy defaults)
- * a decision maker's perceptions about demand in international markets (e.g., growth of markets, sales opportunities, global supply relative to demand)
- * the ability to establish and sustain relationships with international customers
- * key environmental stimuli that increase the decision maker's exposure to an international frame of reference (e.g., receiving unsolicited orders from customers outside the U.S., having customers who are exporters)
- * firm size correlates positively with the probability to export. However, size is neither a necessary nor sufficient condition to be an exporter. The study identified both very small firms (as few as 2 employees) that were exporters and larger firms (over 100 employees) that were non-exporters.

APPENDIX

Table A1a. Number of Firms by Industry, Target Population, SAPMA Internationalization Study and Mail Survey, January-February, 1996¹

Industry Number	Industry Name	Dun & Bradstreet Count
2011	meat packing	61
2013	processed meats, sausages	47
2022	imitation, real & proc. cheeses	11
2032	canned specialties	4
2033	canned vegetables/fruits	43
2034	dehydrated vegetables/fruits	3
2035	pickled vegetables/fruits; salad dressings	25
2037	frozen vegetables/fruits	19
2038	frozen, miscellaneous	20
2043	cereal, breakfast foods	3
2045	flour mixes	11
2051	bakery products	115
2052	cookies, crackers	17
2053	frozen bakery products	5
2084	wine, brandy, spirits	17
2099	food prep., miscellaneous	107
3523	farm machinery manufacturing	54
3556	manufacturing of food product processing equipment	25
Target Population Total (unadjusted) ² :		587

¹Industry Numbers & Names are from the Standard Industrial Classification Manual of the Office of Management and Budget, Executive Branch of the U.S. Government.

²Total exceeds the actual number of firms in the target population (n=543) since some firms are involved in more than one industry.

Table A1b. Additional Industries Included in Initial Data Screening, SAPMA Internationalization Study & Mail Survey, January-February, 1996¹

Major Group & Industry Number	Industry Name
Agricultural Services	
0722	Crop Harvesting, Primarily by Machine
0723	Crop Preparation Services
0761	Farm Labor Contractors
0762	Farm Management Services
Food & Kindred Products	
2015	Poultry Slaughtering/Processing
2021	Creamery Butter
2023	Dry, condensed, evaporated products
2024	Ice Cream and frozen desserts
2026	Fluid milk
2041	Flour & Other Grain Mill Products
2046	Wet corn milling
2047	Dog and Cat food
2048	Other prepared feeds
2063	Beet sugar
2068	Salted/Roasted nuts and seeds
2075	Soybean oil mills
2076	Other vegetable oil mills
2077	Animal & Marine fats & oils
2079	Edible fats & oils
2096	Potato chips and similar snacks
2098	Macaroni and spaghetti

¹Major Groups, Industry Numbers & Names are from the Standard Industrial Classification Manual of the Office of Management and Budget, Executive Branch of the U.S. Government.

Table A1b. Additional Industries Included in Initial Data
con't. Screening, SAPMA Internationalization Study & Mail Survey, January-February, 1996

Major Group & Industry Number	Industry Name
Chemical & Allied Products	
2873	Nitrogen Fertilizers
2874	Phosphate fertilizers
2879	Other agricultural chemicals
Leather & Leather Products	
3111	Leather tanning & finishing
Wholesale Trade -- Durable products	
5083	Farm and Garden machinery
Wholesale Trade -- Nondurable Products	
5141	Groceries, general line
5142	Packaged frozen goods
5143	Dairy products, except dry or canned
5144	Poultry and poultry products
5147	Meats and meat products
5148	Fresh fruits and vegetables
5149	Other groceries and related products
5153	Grain and field beans
5154	Livestock
5159	Other farm-product raw materials
5191	Farm Supplies

¹Major Groups, Industry Numbers & Names are from the Standard Industrial Classification Manual of the Office of Management and Budget, Executive Branch of the U.S. Government.

Initial Statistics for Factor Analysis, Extraction Stage using Principal Axis Factoring (PAF)

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
Q2A	.29841	*	1	4.83333	21.0	21.0
Q2B	.46739	*	2	3.52480	15.3	36.3
Q2C	.37467	*	3	2.95390	12.8	49.2
Q2D	.46452	*	4	1.69360	7.4	56.5
Q2E	.35505	*	5	1.30610	5.7	62.2
Q2F	.55506	*	6	1.07749	4.7	66.9
Q2G	.63521	*	7	.89138	3.9	70.8
Q6BA	.70435	*	8	.82425	3.6	74.4
Q6BB	.81333	*	9	.75719	3.3	77.7
Q6BC	.76136	*	10	.73954	3.2	80.9
Q6BD	.65668	*	11	.60636	2.6	83.5
Q6BE	.37434	*	12	.55919	2.4	85.9
Q6BF	.46011	*	13	.51000	2.2	88.2
Q7	.48810	*	14	.42959	1.9	90.0
Q9BA	.39791	*	15	.36748	1.6	91.6
Q9BB	.70041	*	16	.36037	1.6	93.2
Q9BC	.71550	*	17	.32476	1.4	94.6
Q9BD	.66833	*	18	.28308	1.2	95.8
Q9BE	.62092	*	19	.24447	1.1	96.9
Q9BF	.44170	*	20	.23544	1.0	97.9
Q9BG	.63182	*	21	.22308	1.0	98.9
Q15	.34226	*	22	.13775	.6	99.5
Q21	.45760	*	23	.11684	.5	100.0

PAF extracted 6 factors. 26 iterations required.

Final Statistics for Factor Analysis:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
Q2A	.24900	*	1	4.48312	19.5	19.5
Q2B	.47855	*	2	3.15200	13.7	33.2
Q2C	.23127	*	3	2.47761	10.8	44.0
Q2D	.49107	*	4	1.25655	5.5	49.4
Q2E	.33963	*	5	.84797	3.7	53.1
Q2F	.73615	*	6	.65613	2.9	56.0
Q2G	.70698	*				
Q6BA	.68607	*				
Q6BB	.80135	*				
Q6BC	.79604	*				
Q6BD	.62614	*				
Q6BE	.52360	*				
Q6BF	.42581	*				
Q7	.53055	*				
Q9BA	.43089	*				
Q9BB	.70394	*				
Q9BC	.74323	*				
Q9BD	.66031	*				
Q9BE	.63822	*				
Q9BF	.42498	*				
Q9BG	.64732	*				
Q15	.34254	*				
Q21	.65974	*				

Rotated Factor Matrix (where VARIMAX converged in 6 iterations):

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor
6						
Q2A	.15150	-.15243	.40707	-.04672	.18354	.03514
Q2B	.00855	-.12838	.66889	-.01712	.09774	.06882
Q2C	.12388	.08748	.44714	.01602	-.06429	.06286
Q2D	-.09895	.07348	.68541	-.06404	.04471	-.00078
Q2E	-.08244	.03429	.49974	.26522	.09687	.04686
Q2F	-.05596	-.04278	.16985	-.08891	.81644	.16693
Q2G	.02765	-.15707	.57703	.07953	.58481	-.01622
Q6BA	-.06878	.80044	.09847	-.17355	-.02486	-.01403
Q6BB	-.15692	.84114	.05931	-.19885	.14442	.07277
Q6BC	-.09828	.86133	-.15075	-.09428	-.08574	.07432
Q6BD	-.03416	.76885	-.05511	-.15935	-.05459	-.04944
Q6BE	-.04041	.15685	.12887	-.10262	.12322	.67457
Q6BF	.14359	.56835	-.03032	-.04806	-.13560	.24608
Q7	.13179	-.27831	-.14409	.64041	-.00360	-.06948
Q9BA	.38893	-.02083	-.07173	-.07034	-.04487	-.51680
Q9BB	.78991	.00837	.23499	.11146	-.05713	-.09488
Q9BC	.79859	-.04703	.12274	.24873	-.12857	-.09901
Q9BD	.79109	-.04379	.11776	.02590	-.05307	-.12330
Q9BE	.78284	-.10657	.06667	-.02174	-.04543	.08393
Q9BF	.63350	-.00071	-.08832	.01972	.08768	-.08823
Q9BG	.74783	-.04904	-.26954	-.01387	.10993	.02721
Q15	.04224	-.23735	.12901	.51662	-.01737	.02428
Q21	.05585	-.09262	.04623	.80125	-.04805	-.03992

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