

Southern California Food And Agricultural Firms

Marvin L. Klein

Abstract

A study was undertaken to develop a profile of the food and agricultural industry in Southern California and the educational background preferred by managers for entry level, college graduates in these firms. Approximately 90% of the 177 responding firms operate beyond the farm gate, and 42% engage in international business. The largest proportion of the firms has sales in the \$1 million to \$10 million range and employ more than 50 employees. Over half of the firms engaged in international business employ less than six employees in the international division.

Managers stress the importance of interpersonal and communicative skills for prospective employees. They also appear to place a higher value on the acquisition of skills than on acquired knowledge or experience. International business firms rate knowledge about export policies, trade barriers and international marketing the highest. Three quarters of the managers indicate that a bachelors degree is sufficient for entry level employment. Entry level employment in international business, however, appears to require a higher degree level than does employment in domestic markets.

Introduction

The realities of agriculture in contemporary American society are vastly different than we have historically conceived them. Consequently, we have developed educational programs that purport to explain, and prepare college graduates for employment in, a sector that is vastly different than many of us in agricultural education seem willing to admit. At the very least, two profound changes have dramatically changed the landscape confronting today's agricultural graduate. First, very few of these graduates will work directly with the farm production sub-sector, and in fact, these graduates will increasingly work more closely with the final consumer. Second, the food and agricultural sector, at all levels, will operate in the context of an integrated world market system.

These changes make it necessary to re-evaluate our educational programs in agriculture and to specifically address the following questions:

- 1 What are the competencies required of graduates of colleges of agriculture?
- 2 What is the demand, in quantitative terms, for graduates of colleges of agriculture?

A study was conducted to address these questions in the

highly urbanized geographical region of Southern California. This paper presents the findings of the study with regard to the first question.

Background

Agricultural economists have frequently written on the subject of the demand for, and relevance of, education in agricultural economics. (Sparks, 1975; Luby, 1975; Kendrick, 1975; Downey, 1975; Schrimper, 1981; Schotzko, 1981; Litzenberg & Schneider, 1983;) More recently, researchers have specifically addressed the subjects of agribusiness management research and the educational needs of private sector agribusiness firms in particular. (Litzenberg and Schneider, 1986; Van Ravenswaay, 1986; Sporleder, 1986; Jensen and Pipe, 1987; Litzenberg and Schneider, 1988.)

The work done by agricultural economists in these areas tend to fall into one of three general categories: (1) measuring the market demand for candidates with graduate degrees, usually Ph.D, agricultural economists; (2) defining the most desirable educational output for undergraduate degree programs (this most often entails a discussion about the relative merits of developing the individual -- the general education emphasis on increasing the cultural awareness and improving the interpersonal and communication skills of students, -- vis-a-vis developing career skills); and (3) articulating the necessity of changing the orientation of agricultural economics degree and research programs to address the needs of the private sector agribusiness community. This last category stresses the need for taking more of a business orientation to agricultural economics programs, and it usually seems to imply the need for a change in orientation for undergraduate and graduate level education and training.

When working directly with industry representatives, researchers have found that agribusiness managers place less emphasis on the desirability of a specialized educational background for prospective employees and more emphasis on communication and interpersonal skills. (Sparks, 1975; Luby, 1975; Litzenberg and Schneider, 1988). Furthermore, the need for improving the adaptive learning and problem solving capabilities of students also might be inferred from the estimate that the average college undergraduate is expected to change jobs seven times and careers three times over their lives. (Chickering, 1981)

If these authors are correct in assessing the needs of a cross section of agribusiness firms, a continued reliance on highly specialized degree programs in the disciplinary based organizational structures of the contemporary university may be undermining the value of the education our students receive.

Klein is a professor in the Agricultural Business Management/International Agriculture Department, College of Agriculture, California State Polytechnic University, Pomona, CA 91768-4044

Description Of The Study

A mail questionnaire was developed and sent to 632 business firms in Southern and Central California. A total of 177 useable responses were received that represents a 28% response rate. The purpose of the questionnaire was to identify the type of business firms in the region and the educational and experiential skills required for entry level employment in these industries. The questionnaire was mailed to firms, chosen at random from the southern and central regions of California, from membership directories for numerous food and agricultural business associations. The study emphasized beyond the "farm gate" food and agricultural businesses.

The respondents were asked to assess employment attributes required for entry level positions requiring a college degree for their firm. The respondents were asked to rate these attributes on a scale of one to four with a #1 representing a low level of importance and #4 representing a high level of importance. Rank ordering of the respondent assessments was obtained by calculating a weighted average of the rating for each attribute. (See tables 3,4,5, & 6.) Therefore, the most highly rated skill would be the one with the highest average rating.

The attributes were broken into three categories: skills, knowledge and experience. The intent of this classification scheme was to isolate skills as attributes that might be regarded as more flexible for continued learning and application to new areas once an employee has been hired.

Survey Results

Approximately 90% of the responding firms are "beyond the farm gate" businesses. The largest categories represent the broker/distributor/wholesaler and manufacturing/processing categories with approximately 30% and 25% of the total respondents respectively. Approximately 12% of the respondents are classified as growers/shippers.

One of the principal goals of the survey was to obtain information on the international business aspects of the region's food and fiber firms. Forty-two percent of all responding firms claim to engage in international business. Aside from the retail sector firms, which claim no international operations, a significant portion of all other sectors engage in international business. Those proportions range from 29% for service firms and 52% of the processing firms to nearly 70% for marketing firms. Nearly half of all grower/shippers and broker/distributor/wholesalers engage in international business.

The respondent firms are broken down by sales volume

Table 1: Sales Volume -- Domestic And International Operations

1986 Sales Dollars (000 \$)	Domestic		International	
	Firms	%	Firms	%
< 500	19	12.2	16	24.2
500 - 1,000	11	7.1	14	21.2
1001 - 10,000	58	37.2	24	36.4
10,001 - 25,000	21	13.5	4	6.1
> 25,000	47	30.1	8	12.1
TOTAL	156*	100.1	66	100.0

*Differs from 177 because some respondents did not answer these questions.

and number of employees for both their domestic and international operations (in tables 1 and 2). The highest proportion of firms, in both international and domestic markets, have a sales volume in the \$1 million - \$10 million range. Thirty-seven percent of the domestic operations and 36% of the international operations had sales in this range. The international operations of the respondent firms do, however, appear to be smaller than the domestic divisions. Approximately 80% of the firms reporting international operations report a sales volume for that division of \$10 million or less with nearly 25% reporting less than \$500,000 annual sales in the international division. Furthermore, more than half of all firms in international business employ five or fewer employees.

Cross-tabulations were computed by type of business and sales volume, but not included as a separate table. However, it should be noted that the service firms tend to be the smallest with 30% recording sales of less than \$500,000. The largest firms were the manufacturing/processing and marketing categories with 48% and 40%, respectively, recording sales in excess of \$25 million in 1986. Approximately 40% of the brokers/distributors/wholesalers firms and grower/shippers had sales in the \$1-10 million range and nearly 30% of the broker/distributor/wholesaler grouping had sales in excess of \$25 million.

Employer Educational Needs

Seventy-five percent of the respondents indicated that a Bachelor of Arts (Science) degree best reflected the skills and aptitudes they rated in the questionnaires. A Master of Arts degree and no college degree were each preferred by 12% of the respondents. Significantly, 70% of the retail business category said "no degree" and none of these retail firms indicated a need for a master's degree.

The firms claiming international divisions indicated a preference for a masters degree 22%, whereas only 5% of the domestic firms indicated a preference for employees with a masters degree. It appears, based on these responses, that a higher degree level may be preferred by firms engaged in international business than by those firms engaged solely in domestic operations. This is consistent with the findings of Sakamoto (1988) when he reported that business executives indicate a preference for graduate school preparation for work in international business.

The results of respondent evaluations of skills, knowledge and experience for the domestic market are presented in Tables 3,4, and 5, while the results for the international market are presented in Table 6. In Tables 3, 4, and 5, both the rank order within each category and the rank order across

Table 2: Number Of Employees -- Domestic And International Operations

Employees	Domestic		International	
	Firms	%	Firms	%
< 5	23	16.7	24	52.2
6 - 20	34	24.6	8	17.4
21 - 50	31	22.5	6	13.0
> 50	50	36.2	8	17.4
TOTAL	138*	100.0	46	100.0

*Differs from 177 because some respondents did not answer these questions.

Table 3: Average Rating And Rank Order For Employment Skills And Aptitudes (All Respondent Firms) "Please rate each skill/aptitude according to the level of proficiency required for an entry level position requiring a college degree in your firm."

Skill An ability to:	Average Rating*	Within group Rank Order	All Groups Overall Rank order
Identify goals and objectives for your firm	2.66	8	9
Identify and manage risk and uncertainty	2.74	7	8
Use basic accounting techniques	2.47	10	16
Express ideas clearly both verbally and in writing	3.24	2,3	2,3
Use general computer software	2.31	14	26
Develop programs and policies	2.22	16	30,31
Evaluate programs and policies	2.41	12	20,21
Read and use financial statements	2.40	13	22
Maximize and coordinate the use of human and physical resources	2.90	4	4
Be a team player in problem solving situations	3.29	1	1
Use selling techniques	2.88	5	5
Use marketing techniques	2.82	6	7
Forecast economic, business and agricultural trends	2.28	15	29
Solve complex problems	2.56	9	13,14
Work without supervision	3.24	2,3	2,3
Determine trends in consumer demand	2.46	11	17
Influence public policy making	1.88	17	39

*Represents a weighted average of respondent evaluations of attributes on a four point scale with #1 representing a low level of importance and #4 representing a high level of importance.

the three categories are presented. In general it should be noted that "skills", (Table 3), tend to be given a higher rating than knowledge or experience. For example, in the overall rank ordering, (the five highest average ratings from tables 3, 4, and 5) the first five, and eight of the top ten factors are skills and attributes identified in Table 3. The sixth highest rated factor was "sales experience" (Table 5) and the tenth was knowledge about "health and safety regulations..." (Table 4). These results seem to imply that prospective employers place a higher value on skills and personal attributes than knowledge and experience.

When looking at the three categories separately, the results of this survey parallel and tend to support the findings

of the Litzenberg and Schneider study (1988) in some important areas. In particular, some of the highest ratings are given to interpersonal characteristics and non-specialized skills. For example, the highest ranked skill in the present study was the ability to be a team player in problem solving situations (Table 3). The ability to express ideas clearly both verbally and in writing and to work without supervision were rated the next highest and were given the same rating. On the other hand, more specialized skills such as the abilities to "read and use financial statements", "use computer software" and "forecast economic, business and agricultural trends" were ranked number 13, 14 and 15, respectively.

The ability to identify goals and objectives for the firm

Table 4: Average Rating And Rank Order Of Importance Of Different Types Of Knowledge For Employment (All Respondent Firms) "Please rate the importance of being knowledgeable in the following areas for employment with your firm"

Knowledge An understanding of	Average Rating*	Within group Rank Order	All groups Overall Rank Order
Computer modeling in agricultural projections	2.04	11	34,35
The economics of the business firm	2.63	2	11
The economics of the general economy	2.30	7,8	27,28
U.S. agricultural policies and their impacts on agribusiness firms	2.22	9	30,31
Food science and processing	2.30	7,8	27,28
Food, transportation and distribution systems	2.48	4	15
Farm credit systems	2.02	12	36
Agricultural financial institutions	2.07	10	33
General crop production systems	2.41	6	20,21
Dairy production and processing	1.65	14	40
Animal production systems	1.95	13	37
Plant production systems	2.44	5	18
Environmental regulations and how they affect the firm's operation	2.56	3	13,14
Health and safety regulations and how they affect the firm's operation	2.64	1	10

*Represents a weighted average of respondent evaluations of attributes on a four point scale with #1 representing a low level of importance and #4 representing a high level of importance.

was ranked eight which appears to be less important in this study than in the Litzenberg and Schneider study. (1988) This might be explained by the effort in the present study to address entry level positions, whereas the earlier study addressed entry, mid and upper level positions. This explanation may be supported by the generally low ratings given to company policy making factors such as; develop programs and policies (number 16), solve complex problems (number 9), determine trends in consumer demand (number 11), and influence public policy making (number 17).

When asked to evaluate the importance of different types of knowledge for employment, the respondents gave a high rating to the economics of the business firm and generally low ratings to animal and dairy production knowledge number 13 and number 14 respectively. (See Table 4) These ratings are consistent with the Litzenberg and Schneider study, which also found that business managers placed a relatively low rating on the more technical and specialized plant and animal production systems.

These findings should, however, be interpreted with caution. It is quite likely that the low ratings given to animal production systems, in part, reflects the lack of beef, hog or poultry production oriented firms in the survey. In short, there are few of these types of business operations within the geographical area of the present study. Knowledge about plant and general crop production systems, on the other hand, rated 5th and 6th, respectively, which most likely reflects the views of the fruit and vegetable growers involved in the fresh produce trade.

In terms of knowledge preferred by business firms, Table 4 suggests some interesting results that most likely reflect the characteristics and composition of the food and fiber system in Southern California. For example, knowledge about health and safety regulations and environmental regulations and how they affect the firm's operations received the highest and the third highest ratings respectively. Furthermore, knowledge about food transportation and distribution systems was ranked fourth highest.

These findings reflect a perception on the part of managers that environmental, health and safety regulations will increasingly impact on business operations. It can be argued that business firms are recognizing the realities of society's

Table 5: Average Rating And Rank Order Of Different Types Of Experience For Employment (All Respondent Firms) "Please rate the importance of having experience in the following areas for employment in your firm.)"

Experience in (on)	Average Rating*	Rank Order	Overall Rank
Marketing	2.62	2	12
In brokering	2.26	7	29
In sales	2.84	1	6
In food wholesaling	2.42	3	19
In food retailing	2.36	5	24
On a ranch	1.94	10	38
On a farm	2.20	8	32
With an agribusiness firm	2.33	6	25
With extra curricular activities	2.04	9	34,35
With an industry internship	2.37	4	23

*Represents a weighted average of respondent evaluations of attributes on a four point scale with #1 representing a low level of importance and #4 representing a high level of importance.

demands for a "safe and healthy environment," both within the firm and the society at large.

Table 5 presents the results of the survey questions which attempted to identify employer preferences for experience. The preferred type of experience was in the area of sales. This was followed by marketing experience and then experience in food wholesaling. Not surprisingly, these results replace the types of experience that relate directly to working in the food distribution system beyond the farm (ranch) gate.

Within the International business category, the most highly rated types of information were related to issues of export policies and procedures (number 1), understanding international trade issues (tariffs, etc.) and the ability to identify marketing opportunities overseas (Table 6). These results should not be too surprising since they are all related to the area of improving the export potential of business firms. A significant finding, however, is the high rating (4th highest) given to the ability to speak a foreign language.

By identifying the firms that engage in international business, we find that business firms place a high value on international skills. For example, in terms of overall rating score, (comparing the average rating with those from tables 3, 4 and 5) knowledge about export procedures and policies, understanding trade issues, and ability to identify overseas

Table 6: Average Rating And Rank Order Of The Importance Of International Skills And Experience For Employment (International Business Firms Only) "If your firm operates internationally, or is interested in international sales, please rate the importance of the following skills and experience."

Experience/Knowledge	Average Rating*	Rank Order
Understanding of export policies and procedures	2.92	1
Understanding of international trade issues (terms of trade, tariffs, etc)	2.70	2,3
Understanding of economic development patterns in developing countries	2.25	8
Understanding of agricultural project planning in developing countries	1.98	10
Understanding of how cultural values/religious beliefs affect agribusiness firm operations	2.16	9
Experience working in a developing country	1.82	11
Ability to speak a foreign language	2.63	4
Ability to identify marketing opportunities overseas	2.70	2,3
Understanding of agricultural marketing systems in developing countries	2.54	5
Understanding of the influence of foreign institutions	2.30	7
Experience working with an international agribusiness firm	2.31	6

*Represents a weighted average of respondent evaluations of attributes on a four point scale with #1 representing a low level of importance and #4 representing a high level of importance.

marketing opportunities would rank 4th and 9th over all categories. Furthermore, knowledge about export policies and procedures received a higher rating score than any type of knowledge listed in Table 4, and a higher score than any type of experience listed on Table 5. Additionally, the ability to speak a foreign language would rank eleventh, as it received a rating score as high as knowledge about the economics of the business firm.

Based on these evaluations, it appears that knowledge and skills in international business are rated quite highly by firms engaged in international trade. The relatively low ratings found in the Litzenberg and Schneider (1988) study might simply reflect the views of firms that do not see a role for themselves in the international marketplace

Conclusions

The findings in this study regarding business evaluations of skills and educational background were similar to earlier studies in that interpersonal and communicative skills are rated very highly by managers. This study also lends support to the contention that the international business component of the companies requires a higher degree level for entry level positions than do the domestic operations.

Furthermore, if these findings and the underlying assumptions regarding the classification by skills, knowledge and experience are correct, they may raise questions about the appropriateness of our educational methods. If, for example, through subject matter specialization, we stress the acquisition of knowledge at the expense of teaching students how to think and react in a problem solving context, we may not be adequately preparing students for successful employment in the contemporary business environment.

Chickering, Arthur W. et al. (1981) *The Modern American College, Responding to the New Realities of Diverse Students and a Changing Society*. San Francisco: Jossey-Bass

Downey, W. D., (1975). "Projected Replacement Needs for Agricultural Economists: Reply." *American Journal of Agricultural Economics*. 64, 1053-1061.

Jensen, F.E., and Pope, III, A. P. (1987). "The Changing Structure of U.S. Agriculture and Implications for Research in Agribusiness Firms." *Agribusiness: An International Journal*. Vol 3, No. 2, 139-150.

Litzenberg, K.K., Gorman, W.D. and Schneider, V.E. (1983). "Academic and Professional Programs in Agribusiness." *American Journal of Agricultural Economics*, 65, 1060-1064.

Litzenberg, K.K. and Schneider, V.E. (1986). "A review of Past Agribusiness Management Research." *Agribusiness: An International Journal*. Vol. 2, No. 4, 397-408.

Litzenberg, K.K. and Schneider, V.E. (1988). "Educational Priorities for Tomorrow's Agribusiness Leaders." *Agribusiness: An International Journal*. Vol. 4, No. 2, 187-195.

Luby, P.J. (1975). "Perspective from the Meat-Packing Industry." *American Journal of Agricultural Economics*, 57, 791-795

Sakamoto, Shiori, (1988). "Employer Needs for Graduates Trained in International Business." *Cal Poly Scholar*, Vol. 1, (49-58)

Schotzko, R.T. (1981). Projected Replacement Needs for Agricultural Economists: Reply." *American Journal of Agricultural Economics*. 63, 751-752.

Schrimper, R.A. (1981). "Projected Replacement Needs for Agricultural Economists: Comment." *American Journal of Agricultural Economics*. 63, 718-750.

Sparks, W. R. (1975). "Perspective from the Grain Trade." *American Journal of Agricultural Economics*. 57, 788-790.

Sporleder, T.L. (1986). "Agribusiness Marketing Research in a Transition World Economy." *Agribusiness: An International Journal*. Vol. 2, No. 4, 431-442.

Van Ravenswaay, E.O. (1986). "A Review of Past Agribusiness Management Research." *Agribusiness: An International Journal*. Vol. 2, No. 4, 409-420.

Results of the 1990 NACTA Judging Contest Held at University of Minnesota, Waseca, MN On April 26-28,

Sweepstakes Award

Two Year College Division	Four Year College Division
1. University of MN, Crookston	Illinois State University
2. Black Hawk East	University of Wisc-River Falls
Overall Sweepstakes	
University of MN, Crookston	

Dairy

Two Year College Division	Four Year College Division
High Individual -- Guernsey	
1. T. Fry, Lakeland College	C. Beyer, Univ of WI-River Falls
2. C. Erbsen, Highland Community	J. Grape, Univ of WI-River Falls
3. H. Williams, Morrisville	K. Upson, Cal Poly
4. T. Franks, Black Hawk East	K. Junge, Univ of WI-River Falls
5. A. Sonner, Morrisville	J. White, Illinois State
High Team -- Guernsey	
1. Morrisville	Univ of WI-River Falls
2. Black Hawk East	Illinois State
3. Highland Community	Cal State Poly Pomona
High Individual -- Brown Swiss	
1. J. Darling, Morrisville	C. Beyer, Univ of WI-River Falls
2. A. Sonner, Morrisville	D. Jarden, Illinois State
3. H. Williams, Morrisville	J. Grape, Univ of WI-River Falls
4. K. Kellen, U of M Crookston	J. Penton, Cal State Poly Pomona
5. S. Bentley, U of M Crookston	J. Wilson, Illinois State
High Team -- Brown Swiss	
1. Morrisville	Univ of WI-River Falls
2. U of M Crookston	Illinois State
3. Lakeland College	Cal State Poly Pomona
High Individual -- Holstein	
1. B. Thiel, Hutchinson	C. Beyer, Univ of WI-River Falls
2. E. Nelson, Illinois Valley Comm	R. Bills, Cal State Poly Pomona
3. S. Bentley, U of M Crookston	J. White, Illinois State
4. D. Edge, Black Hawk East	D. Jarden, Illinois State
5. R. Cipperly, Morrisville	K. Upson, Cal Poly
High Team -- Holstein	
1. Morrisville	Illinois State
2. U of M Crookston	Cal State Poly Pomona
3. Black Hawk East	Univ of WI-River Falls
High Individual -- Reasons	
1. A. Sonner, Morrisville	C. Beyer, Univ of WI-River Falls
2. H. Williams, Morrisville	J. White, Illinois State
3. H. Williams, Morrisville	R. Bills, Cal State Poly Pomona
4. B. Thiel, Hutchinson	J. Wilson, Illinois State
5. C. Erbsen, Highland Community	K. Junge, Univ of WI-River Falls
High Team -- Reasons	
1. Morrisville	Univ of WI-River Falls
2. U of M Crookston	Illinois State
3. Black Hawk East	Cal State Poly Pomona
High Individual -- Overall	
1. H. Williams, Morrisville	C. Beyer, Univ of WI-River Falls
2. A. Sonner, Morrisville	D. Jarden, Illinois State
3. S. Bentley, U of M Crookston	J. Grape, Univ of WI-River Falls
4. C. Erbsen, Highland Community	J. White, Illinois State
5. J. Darling, Morrisville	J. Wilson, Illinois State
High Team -- Overall	
1. Morrisville	Univ of WI-River Falls
2. U of M Crookston	Illinois State
3. Black Hawk East	Cal State Poly Pomona

Crops

Two Year College Division	Four Year College Division
High Individual -- Plant & Seed Identification	
1. R. Anderson, U of M Crookston	S. Clay, Oklahoma State
2. M. Verner, Eastern Oklahoma St	A. Bussan, U of WI-Platteville