dents, access computer controls, and see the screen. A small monitor in the podium for the instructor to view while facing the students is ideal.

10. **Security**: Keys or security systems are difficult to manage, but necessary with high-value equipment. Difficulties can arise in coordinating with other faculty who use the classroom. This is usually not a problem once the classroom is used exclusively by instructors for the equipment.

11. **Hardware and software maintenance**: It is very difficult to install new hardware or update software when the classroom is used almost continuously. Most maintenance and upgrading must be done at night or on weekends. It is advisable to have back-up equipment in case of failure.

12. **Backup**: Instructors should have "conventional" lecture notes ready at all times in case the equipment fails. This usually requires eliminating some planned material, but this does minimize the amount of time lost while equipment is repaired or replaced.

13. **Be prepared for anything to go wrong that can go wrong.** Computer-aided learning is high technology on the "bleeding edge". An adventurous and experimental attitude will assist with dealing with unexpected problems and extend the instructors' expected life span.

14. **Do one step at a time.** Start by reproducing relatively 'conventional' notes in the system, then just add a few new diagrams, photographs or animations. The objective is teaching and learning. Just because computer facilities exist does not mean the class has to be a non-stop multimedia extravaganza. Sprinkling in even a few motion or sound events in a lecture helps to maintain student interest.

Perhaps the hardest aspect of multimedia is to *refrain* from using it where it is not needed. Too much video, animation, or graphics will overwhelm the students, may cause the lecture to be even more passive than traditional chalkboard lectures, and distract the instructor and students from the learning objectives. Like any tool or technology, multimedia computing can be as easily abused as used.

15. **Have fun!** That is what teaching is all about, but multimedia opens so many more creative opportunities for teaching and learning! Try to think in new ways. The possibilities for presentations are almost as endless as the sources and quantity of information we receive daily. Observe how data and information are organized in magazines, on television and in other software. Teaching college-level agriculture courses is in the middle of a flood in the information age. There seems to be great frustration in coping with the rapid pace of change, and many people have difficulty in keeping up. The adoption of computers to enhance teaching and learning by making the process more stimulating, rewarding, and enjoyable may go a long way toward improving the attitude of the public and students toward education.

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CASE STUDY

"Consumer Satisfaction" Response from Kansas State Alumni

Andrew P. Barkley

Abstract

The determinants of the degree of alumni satisfaction with their investment in college education were identified using survey data from recent graduates of the College of Agriculture at Kansas State University. Over 90 percent of the graduates from the classes of 1978 to 1988 reported being "Satisfied" or "Very Satisfied" with their investment in college education. Statistical analysis revealed that extracurricular activities, grades, college work experience, student loans, job type, and job satisfaction were associated with the level of alumni satisfaction with their college education. Implications for teaching and advising are discussed.

Introduction.

Agricultural faculty and administrators are charged with the development and implementation of curricula that meet the needs of an ever-changing student population. The agricultural sector has undergone enormous change in the last several decades, brought about by advances in technology, complex government programs, and the internationalization of food and fiber markets. One indication of the success of agricultural programs in keeping up with rapid changes in agricultural production and economic conditions is the degree of satisfaction that former students have with their investment in education.

The attitudes of recent alumni towards their college degree provide useful information concerning the level of "consumer satisfaction" with their investment in an educational experience (Drueckhammer and Key 1986; Nippo 1983; Trinklein and Wells 1989). While a college education is in many ways different than a loaf of bread or a haircut, the consumer analogy is appropriate to academic programs

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(continued from previous column.)

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in an increasingly competitive education market. The continued success of higher education in agriculture is similar to the production and sale of an economic commodity: both depend on consumer satisfaction. If consumers (students) are not receiving what they perceive to be a worthwhile investment, then agricultural programs will lose students to other educational opportunities. The objective of this study is to identify the determinants of the level of satisfaction that graduates of the College of Agriculture at Kansas State University have with their investment in education. Data from a survey of K.S.U. College of Agriculture Alumni from the classes of 1978 to 1988 were employed to find the statistical determinants of educational satisfaction.

Satisfaction Model

Given the purpose of this study to provide information concerning the degree of satisfaction among agriculture college alumni, a caveat is in order. Any self-reported measure of satisfaction is entirely subjective: different individuals will have different life experiences and "yardsticks" with which "satisfaction" is measured. Some graduates will place greater emphasis on their satisfaction with academic skills used later in graduate school, while others will be more concerned with people and communication skills.

A simple conceptual model of the degree of satisfaction with a college education is formed by postulating that the degree of satisfaction with college is a function of past experiences, and how those experiences relate to the current situation. Specifically, the level of alumni satisfaction with college is expected to be a function of (1) college experiences, (2) career experiences, and (3) personal characteristics. College experience was measured with several variables that were expected to be related to alumni satisfaction with college education: double major, number of activities and leadership positions, transfer status, college Grade Point Average (GPA), work hours in college, student loans, and the degree earned.

College advisors often recommend that students "get involved" in extracurricular activities, work, or academics in order to get the maximum benefit from their college experience. Thus, double majors, students with more activities and leadership positions, and students with higher grades were expected to be more satisfied with their college education than graduates who were less involved.

Greater work loads in college may result in greater degrees of satisfaction, if the pride of paying for one's own education leads to higher overall satisfaction with the college experience. However, an overworked student may not benefit from the combination of long hours of work and study. Thus, the impact of hours of work in college is uncertain without empirical evidence. Transfer students may be more or less satisfied than other students, based on the transition from Junior College to Kansas State University.

Student loans may influence a graduate's perception of his or her college experience, particularly during the period of loan repayment: higher levels of student loans were expected to have a negative impact on the degree of satisfaction with the investment in a college education. The degree earned (B.S., M.S., Ph.D., etc.) may also influence alumni responses concerning educational satisfaction. Well-prepared alumni who enter graduate or professional schools may be more satisfied with their college experience than others. Graduates who continue formal education due to a lack of job opportunities may not be as pleased with their college experience as those who were offered acceptable employment, or who planned for graduate school.

Career experiences were also expected to influence alumni perceptions about their college education. The type of job, earnings, length of time at the job, and degree of satisfaction were all anticipated to be possible determinants of satisfaction with education at K.S.U. Jobs for agricultural alumni include farm work, careers in government, nonagricultural jobs, and positions in agribusiness. The type of jobs that alumni accept after commencement may influence how graduates feel about their degree. Variables for farm employment, government employment, and nonagricultural employment were included in the model to test for the possibility that different job types influence the degree of alumni satisfaction with college education. Part-time workers, students, and self- employed individuals were also included in the model to test for possible differences in attitudes towards college education.

The current salary of agricultural alumni was expected to be positively associated with satisfaction with college education: higher incomes may lead to a perception of greater returns to an educational investment among some graduates. Similarly, the years of job experience may alter satisfaction levels. As time passes and careers progress, attitudes concerning college may change. The length of time spent at the current job may also alter perceptions.

Job satisfaction is expected to be a determinant of satisfaction with college education for two reasons. First, alumni in meaningful positions will be more likely to feel that their college education was worthwhile and successful than those who are unhappy with their career. Second, some personalities may be more inclined to report low levels of satisfaction in all areas of their life. These "pessimists" could influence the results of the model if not explicitly taken into consideration. Job satisfaction is one way of holding constant an alumni's subjective perception of satisfaction. Individual characteristics that were included in the model are gender and marital status.

Data

A survey was mailed to 5,023 graduates of the College of Agriculture at Kansas State University from 1978 to 1988 in

Table 1. Survey Response to Satisfaction with Education at K.S.U.

Response to Survey Question, "How satisfied are you with your investment in education at K.S.U.?"

Response	B.S. Degree	All Degrees
Very Satisfied	455	618
Satisfied	407	523
Indifferent	50	59
Dissatisfied	29	34
Very Dissatisfied	10	14
Total	951	1,248

August 1989. The research presented here is based on 1248 usable responses, representing a response rate of 25 percent. Table 1 reports the survey responses to the question, "How satisfied are you with your investment in education at K.S.U.?" for both B.S. recipients and all degree holders. Over 90 percent of both groups were either "Very Satisfied" or "Satisfied" with their investment in education.

Table 2 presents summary statistics of the variables included in the statistical analysis. Roughly 22 percent of the sample were women (GENDER). Approximately one third of the respondents were unmarried (UNMAR) at the time of the survey. The average number of activities (ACT) was approximately two, and the average number of leadership positions held (LEAD) was roughly 0.58 among agricultural graduates. Thirty-six percent of all graduates earned a GPA between 2.5 to 2.99 on a 4.0 scale (GPA2), 17 percent earned between 3.5 and 4.0 (GPA4), and 11 percent earned below a 2.5 (GPA1). Over 43 percent of all graduates were transfer students (TRANS), and less than 6 percent were double majors (DOUBLE).

Table 2. Summary of Data Used to Explain Satisfaction with K.S.U. Education.

Name	Description	B.S. Degree Mean	B.S. Degree S.D.	All Degrees Mean	All Degrees S.D.
DOUBLE	1=Double Major, 0=Else	0.036	0.186	0.058	0.233
GENDER	1=Female, 0=Male	0.204	0.403	0.218	0.413
ACT	No. of Activities	1.981	1.550	1.991	1.594
LEAD	No. of Leadership Positions	0.577	0.954	0.578	0.941
TRANS	1=Transfer, 0=Else	0.410	0.492	0.434	0.496
GPA1**	Undergrad GPA = 2.0-2.49	0.140	0.347	0.111	0.314
GPA2	Undergrad GPA = 2.5-2.99	0.396	0.489	0.355	0.479
GPA3	Undergrad GPA = 3.0-3.49	0.335	0.472	0.359	0.480
GPA4	Undergrad GPA = 3.5-4.00	0.127	0.333	0.173	0.378
UNMAR	1=Unmarried, 0=Married	0.333	0.472	0.323	0.468
EMP1	College Work = 0 hrs/wk	0.249	0.433	0.249	0.433
EMP2	College Work = 1-9 hrs/wk	0.178	0.382	0.176	0.381
EMP3**	College Work = 10-19 hrs/wk	0.313	0.464	0.319	0.466
EMP4	College Work = 20-29 hrs/wk	0.195	0.396	0.198	0.399
EMP5	College Work = 30+ hrs/wk	0.066	0.249	0.058	0.235
LOAN1**	Stu Loans = 0	0.410	0.492	0.434	0.496
LOAN2	Stu Loans = $1-$5,000	0.324	0.468	0.311	0.463
LOAN3	Stu Loans = $5,001-$10,000	0.217	0.412	0.206	0.405
LOAN4	Stu Loans = $10,001+	0.049	0.217	0.050	0.219
FARM	1=Farm Employment, 0=Else	0.174	0.379	0.150	0.357
GOVT	1=Government Emp., 0=Else	0.205	0.404	0.232	0.423
NONAG	1=Nonagr Emp., 0=Else	0.314	0.465	0.322	0.467
NEXP	Years Since Graduation	5.897	3.143	5.762	3.135
TENURE	Years at Current Job	3.954	2.911	3.908	2.891
PART	1=Part-Time Emp., 0=Else	0.032	0.175	0.028	0.165
STUDENT	1=Student, 0=Else	0.011	0.102	0.014	0.116
SELFEMP	1=Self-Employed, 0=Else	0.163	0.370	0.170	0.376
EARNINGS	Current Salary (1989 $)	29,890	15,806	31,498	16,416
JOBSAT1[1]	Very Dissatisfied with Job	0.014	0.116	0.012	0.109
JOBSAT2	Dissatisfied with Job	0.061	0.239	0.058	0.235
JOBSAT3	Indifferent toward Job	0.097	0.296	0.099	0.299
JOBSAT4**	Satisfied with Job	0.632	0.482	0.623	0.485
JOBSAT5	Very Satisfied with Job	0.197	0.398	0.207	0.405
MAST	1=M.S. Degree, 0=Else	--	--	0.143	0.351
MBA	1=M.B.A. Degree, 0=Else	--	--	0.014	0.116
PHD	1=Ph.D. Degree, 0=Else	--	--	0.041	0.198
LAW	1=Law Degree, 0=Else	--	--	0.006	0.080
VET	1=D.V.M. Degree, 0=Else	--	--	0.084	0.278

**Reference variable omitted from regression analysis reported in Table 3.
[1]Response to survey question, "Indicate your level of satisfaction with the following aspects of your job: OVERALL SATISFACTION."

Over three-quarters of the sample were employed during college (EMP2...EMP5), with just under one third of the alumni working 10-19 hours per week (EMP3). Forty-three percent of the sample did not rely on student loans to finance their education (LOAN1). However, many students financed their degree through loans, with 5 percent becoming indebted over $10,000 (LOAN4). After graduation, 15 percent of all graduates were employed in production agriculture (FARM), and 23 percent had government jobs (GOVT). Almost one-third took jobs outside of the agricultural sector (NONAG), one percent were students (STUDENT), roughly 3 percent were part-time workers (PART), and approximately 17 percent were self-employed (SELFEMP). Survey respondents had worked an average of 5.8 total years at the time of the survey (NEXP), had worked 3.9 years at their current job (TENURE), and had an average salary (EARNINGS) of $29,890 per year for B.S. holders and $31,498 per year for all degrees.

A majority of graduates reported being "Satisfied" with their current employment (JOBSAT4), whereas 7 percent of all respondents were either dissatisfied or very dissatisfied with their job (JOBSAT1, JOBSAT2). Twenty-four percent of the total sample held advanced degrees. In the statistical analysis presented below, the total sample was divided into two groups: (1) B.S. degree recipients, and (2) all degree recipients.

Results

Survey data on the level of satisfaction with an alumni's investment in education were collected in ordered discrete (rather than continuous) form. A logistic multiple regression model was utilized to explain the degree of satisfaction (Maddala and Amemiya). The estimated coefficients of the logit regression reveal the direction of change in the probability of a given satisfaction response resulting from a change in the independent variables. The actual change in the probability that a graduate is "Satisfied" or "Dissatisfied" depends on both the original probability and the initial values of the explanatory variables (Judge et al.). The changes in probability were calculated for each variable while holding the other variables constant at their sample means, and are reported, together with regression results, in Table 3.

Several of the explanatory variables were statistically significant determinants of alumni degree of satisfaction with their college education. The results in table 3 are interpreted as follows: a negative sign represents a negative correlation between the explanatory variable and the level of satisfaction with college. For example, women B.S. degree holders (GENDER) were less satisfied with their college education than men. The magnitude of the statistical relationship is the change in probability presented for each variable in table 3: women respondents with a B.S. degree were 8% more likely to be dissatisfied with their college education than men. This may be due to limited employment opportunities for women, or discrimination in the marketplace. More information is necessary to draw conclusions about the cause of this result. However, careful considera-

tion must be given to the possibility that women are not as satisfied with their experience in college as male graduates. It is also important to note that gender was not statistically significant in the total sample of all degrees.

Extracurricular activities (ACT) were associated with higher levels of college satisfaction, particularly among B.S. degree recipients. Leadership positions (LEAD) were found to influence college satisfaction for all degree programs, but not B.S. degree holders. This may be due to a stronger need for leadership skills in the type of jobs that require an advanced degree. Undergraduate grades (GPA) were found to be statistically related to job satisfaction: students who earned a GPA between 3.5 and 4.0 were more satisfied with college relative to graduates who earned low grades. The change in probability of 0.11 for B.S. recipients and 0.13 for all degrees demonstrates a strong linkage between high grades and satisfaction levels.

College satisfaction was also related to work experience (EMP), particularly for B.S. degree holders. Work hours both below and above 10 to 19 hours per week were negatively related to satisfaction with college education, relative to those alumni who worked 10 to 19 hours per week while enrolled in college (EMP3). This suggests that for many undergraduate students, a work load of 10 to 19 hours per week may be optimal. Students who worked at least 30 hours per week (EMP5) were neither more nor less satisfied than those who worked 10 to 19 hours. This may indicate the determinism and purpose that often characterize students who work nearly full time while in college.

As expected, student loans (LOAN) were negatively associated with college satisfaction. However, satisfaction levels of graduates with debt over $10,000 (LOAN5) were not statistically different from the satisfaction of graduates with no loans, whereas B.S. graduates with loans between $5,001 and $10,000 (LOAN3) were less satisfied than students with no loans. Transfer students (TRANS) were not statistically different from other students.

The type of employment taken by recent KSU graduates was statistically related to college satisfaction, but the level of job satisfaction had the greatest impact on the graduate response to satisfaction with college. While graduates employed in government jobs (GOVT), nonagricultural pursuits (NONAG), and part-time employment (PART) did not differ in attitude towards college, B.S. recipients employed in farming (FARM) were less satisfied with college relative to graduates employed in other occupations. This result may be due to a divergence between the knowledge provided by agricultural programs and the skills required to be a successful farmer. Further research is necessary to identify the cause of the relative dissatisfaction among graduates employed in farming.

Self-employed persons (SELFEMP) were not statistically different from others. Neither job experience (NEXP) nor job tenure (TENURE) affected satisfaction with college, indicating that attitudes towards college education did not change with the accumulation of experience. This result is consistent with the findings of Drueckhammer 1991, who concluded that survey responses of agricultural graduates are insensitive to the length of time between graduation and the time of the survey. Graduates who continued formal schooling (STUDENT) were dissatisfied with their college education relative to those who were employed after graduation. This may be due to students who were not happy with their original degree program, and who have returned in a subject that is closer to current career goals and aspirations.

Current alumni salary (EARNINGS) was associated with greater levels of satisfaction with college for all degrees, but not for B.S. degrees only. The magnitude of current earnings on satisfaction about college experience is small, indicating that perceptions of college satisfaction are based on more than pecuniary factors. The most important determinant of satisfaction with college, in terms of both statistical significance and magnitude, was job satisfaction

Table 3. Regression Results to Explain Satisfaction with K.S.U. Education.

Dependent Variable: Survey Response to Satisfaction with K.S.U. Education.

	B.S. Degree			All Degrees		
Independent Variable	Estimated Coeff.	t-Stat	Δ Prob.	Estimated Coeff.	t-Stat	Δ Prob.
DOUBLE	-0.337	0.979	-0.094	-0.308	1.234	-0.076
GENDER	-0.309*	1.784	-0.084	-0.220	1.480	-0.055
ACT	0.123***	2.713	0.031	0.069*	1.813	0.017
LEAD	0.058	0.787	0.014	0.138**	2.085	0.035
TRANS	-0.089	0.654	-0.024	-0.030	0.251	-0.007
GPA2	0.012	0.059	0.003	-0.005	0.024	-0.001
GPA3	0.286	1.368	0.074	0.201	1.012	0.050
GPA4	0.440*	1.673	0.107	0.507**	2.181	0.126
UNMAR	0.199	1.379	0.052	0.150	1.183	0.038
EMP1	-0.308*	1.736	-0.084	-0.055	0.354	-0.014
EMP2	-0.412**	2.125	-0.114	-0.174	1.020	-0.043
EMP4	-0.447**	2.391	-0.123	-0.285*	1.748	-0.071
EMP5	-0.230	0.825	-0.063	-0.130	0.503	-0.032
LOAN2	-0.196	1.273	-0.052	-0.172	1.271	-0.043
LOAN3	-0.309*	1.726	-0.084	-0.178	1.123	-0.044
LOAN4	-0.357	1.135	-0.099	-0.153	0.557	-0.038
FARM	-0.439**	1.931	-0.121	-0.240	1.235	-0.060
GOVT	0.035	0.205	0.009	0.181	1.236	0.045
NONAG	-0.192	1.281	-0.051	-0.131	1.004	-0.033
NEXP	-0.032	1.246	-0.008	-0.015	0.669	-0.004
TENURE	0.004	0.136	0.001	-0.001	0.030	-0.0001
PART	-0.079	0.210	-0.021	-0.019	0.054	-0.005
STUDENT	-1.133*	1.810	-0.324	-1.059**	2.173	-0.240
SELFEMP	-0.109	0.477	-0.029	-0.101	0.526	-0.025
EARNINGS	5.47*10-6	1.172	0.0001	0.001***	2.446	0.0001
JOBSAT1	-2.310***	4.338	-0.567	-2.072***	4.173	-0.383
JOBSAT2	-0.939***	3.403	-0.269	-0.905***	3.692	-0.212
JOBSAT3	-0.479**	2.176	-0.134	-0.635***	3.337	-0.154
JOBSAT5	0.626***	3.570	0.150	0.730***	4.752	0.179
MAST	--	--	--	-0.013	0.071	-0.003
MBA	--	--	--	-1.003**	2.054	-0.229
PHD	--	--	--	-0.052	0.156	-0.013
LAW	--	--	--	-0.077	0.102	-0.019
VET	--	--	--	0.418*	1.739	-0.104
INTERCEPT1	5.006***	11.106	--	4.410***	11.232	--
INTERCEPT2	3.569***	9.960	--	3.112***	9.690	--
INTERCEPT3	2.632***	7.835	--	2.209***	7.316	--
INTERCEPT4	0.073	0.230	--	-0.383	1.322	--
Model Chi-Square	241.194***			375.547***		
McFadden's R-Square	0.053			0.055		
% Correct Predictions	58.8			59.6		
Number of Observations	951			1,248		

Asterisks represent statistical significance at the ten percent level (*), the five percent level (**), and the one percent level (***).

(JOBSAT). This may be due to two reasons. First, individuals in challenging and meaningful careers may attribute much of their success to their investment in college. Conversely, dissatisfied workers may access blame on a poor college experience. Second, the measure of job satisfaction quantifies, to a degree, an individual's disposition. Individuals who are unhappy in any or all circumstances may be dissatisfied with both work and college experiences. On the other hand, cheerful personalities may give high marks to both college and work.

Graduates of the MBA program at KSU (MBA) were less satisfied with their education than alumni of other degree programs. This may be due to changing economic conditions, and a decrease in the demand for persons with advanced degrees in business administration. Alumni from the College of Veterinary Medicine (VET) were more satisfied with their college experience than others.

Implications for Teaching

Agricultural teachers, advisors, and administrators can enhance educational programs by responding to information provided by recent alumni. Perhaps the most important result of this survey was that over 90% of all responding alumni were either "Satisfied" or "Very Satisfied" with their investment in education in the College of Agriculture at Kansas State University. While the overall results of the college satisfaction data provide empirical evidence for a high degree of consumer satisfaction, agricultural educators must not become overly sanguine. Rapidly changing labor markets for agricultural graduates necessitate continual review and modification of course and degree offerings.

The results of this study provided evidence that suggestions for students to "get involved" is in many cases good advice, whether involvement is in extracurricular activities, achievement of high grades, or college work experience. Survey results indicate that a balance of work and study was associated with a rewarding college experience.

The statistical model also illuminated some aspects of agricultural education that are deserving of more study. Specifically, why were women graduates of B.S. programs in agriculture less satisfied with college than men? Why were graduates employed in farm jobs less satisfied than nonfarmers? And lastly, what caused graduates who are enrolled in school to be less satisfied with their college experience? Answers to these questions could greatly enhance the ability of agricultural educators to attract and retain students in the future. Enrollment could be increased significantly by providing degree programs and placement services for women that lead to successful and satisfying careers, a result also found by Paret (1991).

One major implication of this study is that graduates who become satisfied with their work are also satisfied with their college education. Placement of graduates into jobs that match personal characteristics, abilities, and career goals is a critical element of successful degree programs. Job satisfaction dominated all other determinants of alumni perceptions regarding satisfaction with college experience. Survey results indicate that an overwhelming majority of alumni were pleased with their college experience, the challenge to agricultural educators is to aspire to the level of excellence when every graduate can claim to be "Very Satisfied" with his or her investment in agricultural education.

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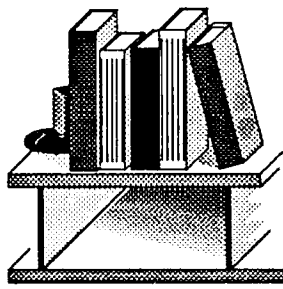

Book Reviews

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The NACTA Journal Book Review policy encourages the academic freedom of peers in the constructive criticism of unsolicited books submitted by publishers for review. The peer reviewers are persons who teach and/or conduct research in the subject matter area in which the book is written. A given review expresses the opinion of only the reviewer, and does not necessarily reflect the opinions of NACTA and/or the NACTA Journal.

G.O. Schwab, D.D. Fangmeier, W.J. Elliot, and R.K. Frevert. *Soil and Water Conservation Engineering* (Fourth Edition). John Wiley & Sons, Inc., 1993. 507 p. Clothbound.

This book updates the third edition of a book with the same title which was issued in 1981. Two of the four authors are new; however, they are from the same two institutions (The Ohio State University and University of Arizona) as the current senior authors. Past editions have been widely used as a text book in Agricultural Engineering programs.

The primary subjects covered include: conservation, hydrologic cycle, wind and water erosion and control practices, structures, waterways, terracing, embankments, flood control, drainage, water supply, and irrigation. It would be helpful if the reader or student had calculus, physics, surveying, soils, mechanics, and hydraulics prior to using the text.

The strength of the book continues to be it's emphasis on problem solving. Concepts in drainage, soil erosion, and irrigation management have been updated. Additional attention has been given to environmental issues.

Chapter 1 has been re-written to reflect concern for water quality. New erosion variables have been introduced to equations in Chapters 5,6,7, and 8. Laser surveying and grade control has been added to Chapter 12. Computer modeling for design, controlled drainage, and subirrigation were introduced in Chapter 14. Computer models and software program sources have been listed in the book. The conversion from English to International System of Units (SI) is almost complete.

I believe the book will continue to be a classic text book for undergraduate agricultural students and a handy reference for others interested in soil and water conservation.

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