

Academic Performance in a Two-Year Turfgrass Management Program as an Indicator for Career Success

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Abstract

Student academic performance, based on college final grade point average, tends to have a greater impact on career success in selected professions, most notably in the fields of law and medicine. Graduates with higher final GPAs customarily acquire more prestigious professional positions which result in higher compensation packages. Little information is available regarding the use of college academic performance as an indicator for career success in the turfgrass management industry. This study examines the relationship between student academic performance based on final college grade point average, in a two-year turfgrass management program and the success level achieved by graduates at least five years after graduation. Turfgrass management students typically view achieving success in the industry as being determined by securing high level professional positions such as golf course superintendents, sports turf facilities managers, landscaping managers, related business owners, or associated industry managers. This work focuses on turfgrass management graduates from the Ohio State University Agricultural Technical Institute (n = 347) between the years of 1996 and 2006. Data for this work was gathered through personal contact, alumni records and through industry professional organizational sources. Results of this particular study reveal that college graduates with higher grade point averages do not achieve higher levels of career success, both in professional positions held and compensation, than graduates with lower grade point averages in the turfgrass management industry.

Introduction

Career success can be viewed by both objective and subjective means. Objective measures of career success involve extrinsic factors such as salary amount and level of promotion whereas subjective measures of career success are exemplified by intrinsic factors such as job satisfaction or a sense of accomplishment (Judge et al, 1995, Gattiker et al, 1986). After reviewing several business studies, Calhoun and Reddy (1968) found an individual's salary level to be a consistent indicator of perceived occupational success. Additional work has provided an association between motivation and success. Waldman and Korbar (2004) designed a study to measure early career progress in the form of job satisfaction, number of promotions and current salary. Findings revealed that, although student GPA was not a good predictor of early career progress and success, salary was found to be a valuable indicator for student's perception of career success.

A literature search of four databases revealed no studies associated with using college final grade point average as an indicator for determining career success in the turfgrass management industry. A multitude of studies have been conducted over the past 100 years questioning the potential relationship between college grade point average and career success in other fields of endeavor.

The literature indicates—grade point average, impacts student's perceived career success in certain professions. *“Predictions of occupational performance from academic indexes were somewhat higher in business, law and nursing, somewhat lower in teaching and engineering*

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and not significant for MD's or PhD's [sic]." (Samson et al 1984). Economists have noted a positive relationship between undergraduate GPA and post college earnings (Wise, 1975, Filer, 1983). Sanders and Yakowitz (2011) determined that law school school GPA was an important predictor of career success in law.

A ten-year study conducted at the U.S. Air Force Academy to determine the factors that best predict military career success concluded the positive impact GPA had on success: "*a higher GPA would indicate a higher probability of career success as a military officer*" (Rodriguez, 2009). However, Rodriguez found that cadets' military performance average (MPA) had a higher impact on career success than GPA, which suggests that leadership ability has a greater influence on career success of Academy graduates than academic performance. In all, Rodriguez concluded that the "results suggest determinates [sic] of career success largely occur after graduation."

Hoyt (1965), one of the most referenced scholars in this discipline, completed a detailed review of 46 studies conducted from 1900 to 1965. Each of the studies was grouped into one of eight distinguishing categories: business, engineering, medicine, scientific research, teaching, miscellaneous occupations, studies of eminence and non-vocational accomplishments. Hoyt's findings suggested that the association between college grades and adult accomplishment was minute and possibly zero Nelson (1975) reviewed numerous studies and concluded: "*Although technical inadequacies of much research in this area make conclusions difficult to draw, much empirical evidence implies that grade point average is a poor predictor of later vocational achievement.*" Using the results of a statistical meta-analysis approach which combined data from Hoyt's and Nelson's studies, Cohen concluded that "*how well a student does in college relates only marginally with success in a career*" (Cohen, 1984).

Research conducted by Bretz (1989) applied meta-analytic techniques to analyze a set of published research associated with GPA and adult success. Results of this work varied. The results indicated that relative weaknesses found in the study suggest that GPA is not a true indicator for determining career success. Bretz supported these results by noting that college GPA is "simply a measure of academic achievement in classes that the particular student has taken." It is possible that variation in curricula and even within offerings of the same courses introduces sufficient variability in performance measures as to diminish the efficacy of GPA as an objective predictor of cognitive ability.

This study examines the relationship between student academic performance, based on final college

grade point average in a two-year turfgrass management program and the success level achieved by graduates at least five years after graduation.

Methods

As background to this study, a twenty question survey, developed by one of the authors, was administered to incoming freshman turfgrass management students at the Ohio State University Agricultural Technical Institute over a seventeen-year period (1995-2011). More than 800 students participated and provided feedback concerning their perception of career success in the turfgrass management industry. Topical criteria utilized to acquire the data focused on four categories: 1) professional industry position attained, 2) salary range or total compensation package in that industry position, 3) personal satisfaction with the position held and 4) what role academic performance (GPA) in college plays in relationship to graduates being successful in their careers. Students identified six career positions as being a measure for attaining success in the turfgrass industry: Director of golf course operations/general manager, golf course superintendent, assistant golf course superintendent, landscape manager/superintendent, business owner in a related field associated with turfgrass management and sales management positions related to turfgrass management. Students identified salary range/compensation packages based on position acquired with compensation greater than \$50,000 considered as successful. The majority of these student respondents indicated that academic performance does impact one's career advancement and success.

This study involved an extensive industry search of alumni (n=347) who graduated between 1997 and 2006. Data was gathered through personal contact (electronic of telephone conversation), personal interviews at state and national turfgrass industry conferences, alumni association records and through professional organization membership directories. Data collected included: professional position job title, salary, personal satisfaction of current position and their employment location (city/state/country). Official university records provided the final GPA and year of graduation for each graduate in the study group. An electronic search was conducted to gather demographic data (U.S. Bureau of Labor Statistics, 2010) related to average individual income associated with the county of residence of each study group individual. Six professional employment positions identified for this study included: golf course superintendents assistant golf course superintendents, directors of golf/golf general managers, associated sales managers, associated business owners and landscape managers. Four other related professional

Table 1. Numbers of study graduates, Average Salary, and Salary Range by position.

Position	Number of Graduates	Satisfied with Job	Average Salary	Salary Range
All Positions	208	194	\$56,880	\$35,000-100,000
Golf Course Superintendent	110	105	\$59,655	\$37,000-90,000
Asst. Golf Course Spt.	51	44	\$43,275	\$35,000-55,000
Directors/General Mgr of Golf	7	7	\$79,714	\$62,000-100,000
Assoc. Sales Managers	10	10	\$62,000	\$50,000-80,000
Assoc. Business Owners	15	15	\$72,667	\$55,000-100,000
Landscape Mgr.	7	6	\$53,571	\$45,000-75,000
Other	8	8	\$52,375	\$35,000-65,000

position categories were identified and recorded as other. These employment positions aligned with the six career positions identified by incoming students to be indications of career success as discussed above.

Of the 347 graduates identified 208 (59.8%) hold professional positions in the turfgrass industry. These 208 graduates were used in the analysis detailed below. Table 1 shows the numbers as well as salary information for each of these employment position groups.

To mitigate the effect of local cost of living variations, graduate income was divided by the average personal income for the respective U.S. County in which the graduate resides. Thus, the salary figures used in the statistical analysis are ratios of graduate salary indexed to the average local salary. Total number of people working in the profession based on region was not determined; therefore error of analysis was not determined. Graduates who reported working abroad were not included in the study.

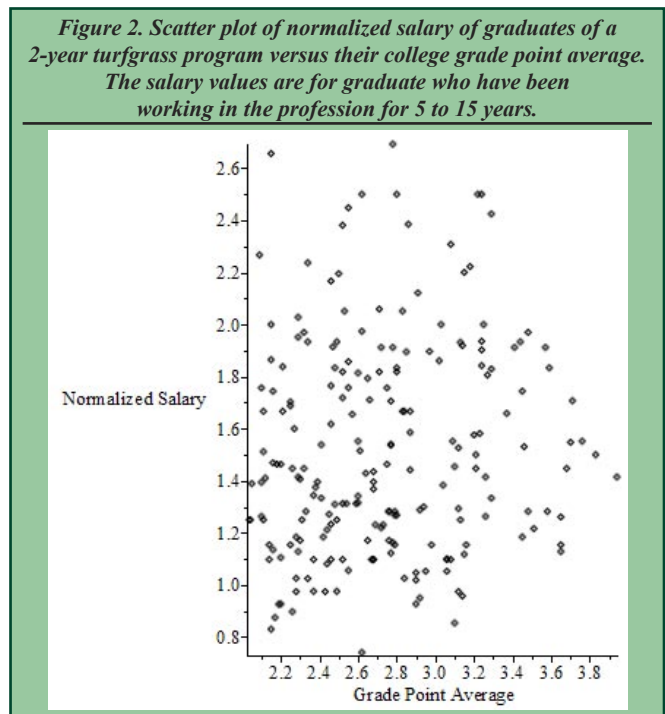
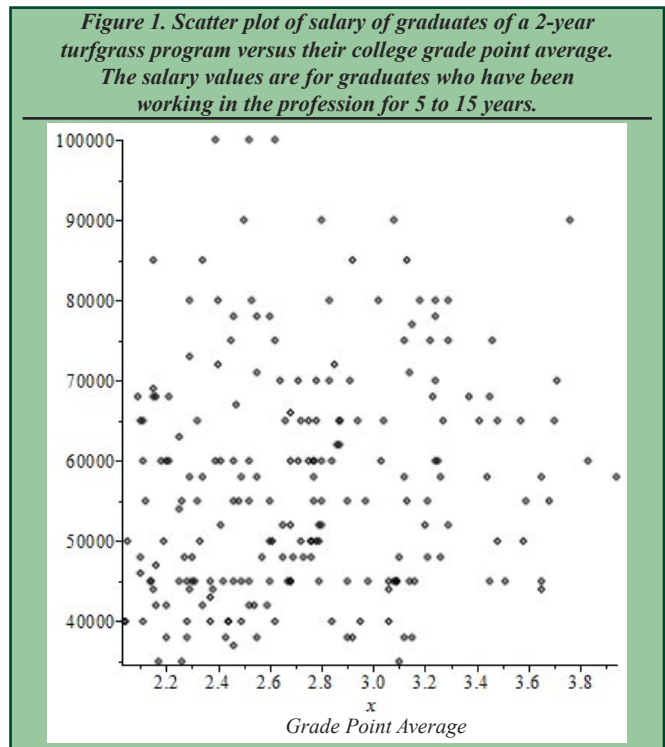
The data were plotted as a scatter plot to provide a visual indication of the relationship between GPA and salary level. Next, the relationship between graduating GPA and indexed salary was analyzed by computation of Pearson's product-moment correlation coefficient and of the critical correlation coefficient at $p = 0.05$ using a two-tailed test for all years and for each year of the study. To investigate whether job satisfaction was a factor that affected the relationship between GPA and salary, a second analysis of the data was conducted for only those people who reported being satisfied with their position and salary. The above statistics were developed for the following groupings of data:

- The data for all 208 graduates.
- All graduates by year.
- The data from all years for graduates who are currently satisfied with their employment position.
- Graduates who are currently satisfied with their employment position by year.

Results and Discussion

The scatter plot for salary level versus GPA data for all 208 graduates is shown in the Figure 1. As can be seen in the scatter plot, GPA and salary are only weakly correlated, if at all, when all graduates are included.

Figure 2 shows the scatter plot for normalized salary versus GPA data and also indicates very little or no correlation between the two variables. Correlation coefficients for the all graduates over the entire study period and for each year of the study are shown in Table 2. Correlation coefficients for the all graduates over the entire study period and for each year of the study for students who reports being satisfied with their employment position are shown in Table 3.



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Table 2. Pearson's Product-Moment Correlation Coefficients and critical Correlation Coefficients for all years and for individual years of study, including all graduates.

Year	N	Correlation Coefficient, <i>r</i>	Critical <i>r</i> , at <i>p</i> = 0.05
All Years Combined	208	0.108	0.135
1997	27	0.264	0.368
1998	24	0.027	0.390
1999	22	-0.189	0.406
2000	25	0.333	0.382
2001	21	0.402	0.415
2002	21	-0.024	0.415
2003	18	-0.179	0.447
2004	15	0.229	0.487
2005	21	0.066	0.415
2006	14	-0.209	0.503

Table 3. Pearson's Product-Moment Correlation Coefficients and critical Correlation Coefficients for all years and for individual years of study, including only graduates satisfied with current employment. Years with no unsatisfied students were omitted (shown in Table 2).

Year	N	Correlation Coefficient, <i>r</i>	Critical <i>r</i> , at <i>p</i> = 0.05
All Years Combined	194	0.094	0.140
1997	---	---	---
1998	23	-0.052	0.397
1999	20	-0.167	0.425
2000	21	0.341	0.415
2001	20	0.391	0.425
2002	17	-0.067	0.503
2003	16	-0.277	0.473
2004	---	---	---
2005	---	---	---
2006	---	---	---

Since the scatter plot for normalized salary gave no indication of correlation for the entire data set, correlation coefficients and critical coefficients for the groupings of data were computed to determine the significance of each. No correlation ($p = 0.05$, two-tailed test) was found between a student's final college GPA and the reported salary when considering all 208 graduates, with a correlation coefficient of 0.108 (critical $r = 0.135$). Correlations were also determined by year for all graduates within the year and no significant correlations were found (Table 2).

As stated above, to investigate whether job satisfaction was a factor that affected the relationship between GPA and salary, a second analysis of the data was conducted for only those people who reported being satisfied with their position and salary ($N = 194$). For this data set, the correlation coefficient was 0.0941 (critical $r = 0.140$), indicating no significant correlation. Also, no significant correlations were found between GPA and salary for graduates who reported being satisfied with their position when analyzed by year (Table 3).

The lack of significant correlation between GPA and salary for the groupings considered implies that higher GPA does not appreciably raise the likelihood of a higher salary. These results have implications pertaining to the requirements of turfgrass occupations as well as the expectations of potential employers in the turfgrass field. The authors find from personal interaction with

turfgrass professionals that employers of turfgrass management graduates tend to place a greater emphasis on considering past work experience, employment/college references, college attended and "personality type," rather than grade point average. This could be due to the fact that employers in the turfgrass industry:

- Value candidates with a diverse foundation of knowledge and skill to use in overcoming horticultural and equipment management challenges.
- Value candidates who possess good interpersonal or "people" skills for dealing with customer-related issues.
- Value candidates who possess a positive or "can do" outlook in the face of uncertain circumstances presented by the professional environment.
- Value candidates experienced with sports (eg, golf, field sports) because the turfgrass industry is so closely tied to athletics.

Future studies to elucidate career-success factors among turfgrass graduates will survey the perceptions of graduates who have worked in the industry for at least five years as well as perceptions of employers in the industry. Examples of intrinsic factors that can be yet be investigated include: graduate interest in the turfgrass profession after working in the industry, graduate desire to advance to a more responsible position and graduate perception of his or her worth to the organization. Additionally, an investigation of employer perceptions of attractive employment candidates as well as their perceptions of valuable employees may bring to light some career-success factors not heretofore considered

Summary

Results of this particular study imply that college graduates with higher grade point averages do not tend to achieve higher levels of career success from five to fifteen years after graduation, both in professional positions held and compensation packages earned, than graduates with lower grade point averages in the turfgrass management industry. These results tend to support the findings of other researchers that have suggested that college grade point average is not always a valid and reliable indicator of career success, especially in certain fields of study. Unlike business, law and some medical professions, final college GPA from a two-year degree program does not appear to be a valid predictor of future career success in turfgrass professions.

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