Timeliness of Registration and Course Outcomes

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Research Question

The Enrollment Committee requested that I test the hypothesis that students who register for a course "late", as defined as "the day the term begins or after", have poorer outcomes (e.g. fail, withdraw) than students who register on time.

Method

Data were acquired from the last completed semester, Fall 2011, which began August 25, 2011. Courses that began later in the semester were excluded, to avoid muddying the waters so to speak. All the records ($N = 547$) with a registration date of August 25, 2011 or later were included in the analysis, whereas the "on time" registrations -- those prior to August 25, 2011 -- were randomly sampled due to the volume ($N = 11,000+$) and redundancy of the data. For example, a student may have registered for a particular course in April, dropped it a week later, re-registered in August, been dropped for non-payment, and then enrolled again, producing 5 records overall, and 3 "new enrollment" records for one course. Datatel generates a final course grade for each of those earlier records. Only the final enrollment record per student per course was included, which was determined manually after random sampling. The courses in the final dataset fell in the following divisions: 35.6% HSS, 30.2% SM, 23.3% BUS, 6.1% IT, and 4.8% HS.

Results

A two-way chi-square analysis was conducted to determine whether timeliness of registration is related to course performance. The relationship between the two variables was statistically significant, Pearson $\chi^2(7, N = 1217) = 40.7$, $p < .001$. The Contingency Coefficient illustrates that 18% of the variance in student outcome was accounted for by whether they registered on time or late. In other words, knowing whether or not a student registered before

classes began enhances our prediction of their outcome by 18%. As conveyed in Table 1 and

Figure 1, students who enrolled late were twice as likely as timely enrollers to receive an E. The

withdrawal rate for the two groups was the same. Given the low frequency of U ($N = 29$) and H

($N = 25$) outcomes in the dataset, these specific figures may be less representative of other

semesters of data.

    If one defines a positive outcome as an A, B, C, or H, 63.7% of on time enrollers had

positive course outcomes compared to 50.5% of late enrollers. Excluding course withdrawals,

77.6% of timely enrollers had positive course outcomes, compared to 61.3% of late enrollers.

Table 1   **Registration Type and Course Outcome**

Grade	Timely	Late
A	25.8%	17.2%
B	22.8%	18.1%
C	13.0%	13.2%
D	7.0%	8.2%
E	10.0%	19.7%
H	2.1%	2.0%
U	1.3%	3.7%
W	17.9%	17.9%
Total	100%	100%
Frequency	670 (sample)	547

Figure 1   **Registration Type and Course Outcome**
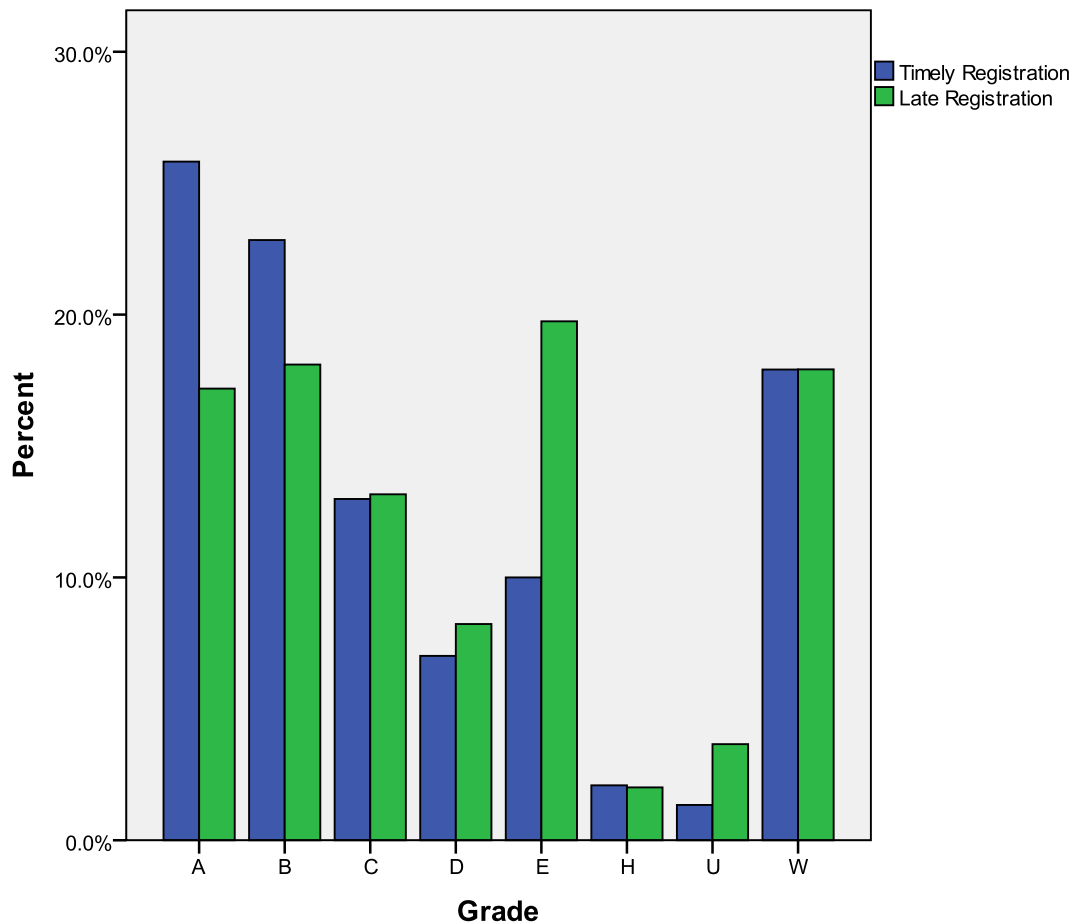
Registering late vs. on time also served as a predictor of term GPA, $t(1126) = 5.91, p <$ .001. The mean term GPA was 2.31 ($SD = 1.35$) for on time enrollers, and 1.83 ($SD = 1.46$) for late enrollers, which is a mean difference of .48 between the two enrollment groups. The eta square index indicated that 2.8% of the variance in GPA was accounted for by timeliness of registration; thus while statistically significant, or in other words, reliable, date of enrollment has a much stronger relationship with course grade (18%) than term GPA. Figure 2 illustrates the results and also demonstrates that there is more variation in tern GPA within the late enroller group than within the timely enrollers.

Figure 2 **Registration Type and Term GPA**
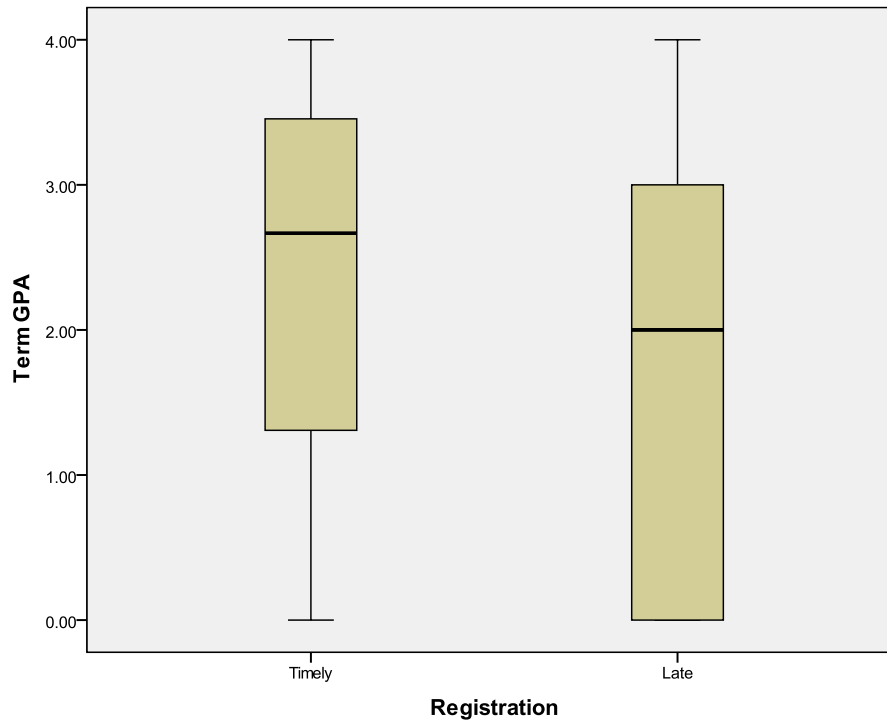
Conclusion

Given that each analysis was statistically significant at the $p < .001$ level, we can be quite confident that the results reflect a genuine relationship between time of registration and course outcome, rather than being attributable to chance. The results do not necessarily extend to courses that start later in the semester, as they were not included in the analysis.