

# Peer reviewed

[Education](#), [University](#)



Peer Reviewed Christopher A. Bailey baile1ca@cmich. edu is an Assistant Professor; Gregory A. Falls falls1ga@cmich. edu is a Professor; Paul A. Natke natke1pa@cmich. edu is a Professor; and Philip B. Thompson thomp1pb@cmich. edu is an Associate Professor in the Department of Economics at Central Michigan University, Mount Pleasant MI 48859. FAX 989-774-2040. Phone 989-774-3870. Abstract We used a stratified random sample to examine the spending patterns of a traditional student population at one large residential university in a small Midwestern town. Juniors and seniors spent more than underclassmen on recreation, food, general merchandise, and miscellaneous items. Male students spent more on recreation (40 percent more) while females outspent males on books and school supplies. Off-campus residents spent about twice as much on recreation, as well as more on food and for general merchandise. Those paying all their college expenses spent more overall and on general merchandise, food, and utilities. Students paying none of their college expenses spent less overall and less on gasoline and total miscellaneous items. Students who worked spent more overall and more in the following areas: general merchandise, food, utilities, and telecommunications. We also examined budget shares. Overall, books and recreation spending tend to be fixed as total spending increases, thereby reducing budget shares for these items. Women devote larger shares of their budget on general merchandise, while men favor recreation. Students who pay none of their college expenses spend relatively more on recreation and books. Working students devote larger shares of their budget on rent and telecommunications. Non-working students spend relatively more on recreation and books. These results

should be interpreted with caution since they represent a case study and do not apply to all university settings. Introduction Spending by college students has been identified as an important component of total consumer spending in the United States. One marketing firm estimated that “ traditional” college students, i. e., full-time students enrolled in four-year institutions, who represent about one-third of all students, spent \$23 billion in 1995 on essential items such as rent, food, gas, car insurance, tuition, and books. Another \$7 billion was spent on nonessentials (Ring 1997). Spending by college students may be very important to local communities because many residential colleges are large relative to the size of their host community. These colleges are often seen as important players in the local economy through current spending and employment and also as potential catalysts for local economic development (O’neal, 2007). Many universities have conducted economic impact studies to measure the overall influence the institution has on the local economy (Bailey et al., 2007; Beck, 1995; Eliot 1988; Felsenstein, 1996). What is sometimes underplayed is the role of students in determining the overall size and industry mix of the local economy. Local economic impact studies often use figures for student spending derived from secondary sources such as financial aid office estimates of the dollars needed by students for miscellaneous expenditures during the year. More precise information on the magnitude and pattern of student spending would improve the accuracy of studies of universities’ economic impact. In this paper we analyze the spending behavior of traditional college students, who account for a large portion of the revenues of many local businesses in small towns hosting residential colleges.

Although total spending by a student is often less than that of a local resident, student spending is concentrated in just a few areas, such as entertainment and food and beverage purchases in stores. In addition, many national retailers view traditional college students as a lucrative market since lifetime buying habits are formed in part during a person's college years. Spending behaviors established in college may continue through two transition phases: single to young married couple, and young married couple to families with small children at home (Wilkes 1995). Changing personal behaviors and societal trends have contributed to the common perception of college students relying heavily on credit, obtained mostly with credit cards. The average college undergraduate's credit card debt in 2001 was \$2, 327 and by 2006 had increased to \$2, 700 (Young Money, 2007); nearly one-half of all students had four or more credit cards (Hayhoe 2005). These changing attitudes toward the use of credit suggest that today's college students are likely to spend more than students in the past because spending by today's students is less constrained by current income and assets. This paper offers data to assess the accuracy of some perceptions about traditional college student spending and its potential impact on local economic conditions. We provide a descriptive analysis of the size and pattern of spending by college students at a single large university in a Midwestern small-town setting. The analysis focuses on a random sample of undergraduate students (stratified by gender and class level) and their spending behavior in the local area while attending classes. Spending behavior across demographic categories (e. g., gender, class standing), housing choice (on-campus or off-campus,) and employment are examined. The results provide insights about the

magnitude and pattern of student spending that would be helpful to college officials, community leaders, and local business owners in assessing the impacts of this spending on the local economy and local economic development.

**Survey Method and Data** Many empirical studies of college students' use of credit cards or attitudes toward money employ so-called "convenience samples", e. g., surveys distributed in classrooms, dormitories or cafeterias (Davies and Lea (1995); Xiao et al. (1995); Eastman et al. (1997); Warwick and Mansfield (2000); Roberts and Jones (2001); Kidwell and Turrisi (2003); and Hayhoe et al. (2005)). These convenience samples are non-random selections from the student population. Students choose classes for specific reasons and, thereby, self-select based on a set of personal and course characteristics. For example, survey answers from students in an introductory-level child development class are likely to be different from students in a senior-level finance course. These samples create problems for interpretation of results and bias inferences about the general student population. The nature and strength of these biases are typically unknown. Other studies survey a wide range of randomly selected students but obtain low response rates that suggest a potential unknown and unmeasured response bias (Medina et al. (1996); Markovich and DeVaney (1997); Hayhoe et al. (1999); Leach (1999); Hayhoe et al. (2000)). The sample data used for this paper was collected through a telephone survey. Staff members of the Center for Applied Research and Rural Studies (CARRS) at Central Michigan University (CMU) helped to write the survey questions. The Registrar's office used all undergraduate students enrolled on the main campus of CMU in the Spring 2005 semester (a population of roughly 18, 000) to provide a

randomly selected list of students stratified by gender and class standing. We opted for a telephone survey since it assured us of a stratified random sample. Eliot (1988) concluded that responses by students to questions about their spending behavior are not influenced by whether the survey was conducted by telephone or mail. CARRS conducted the survey during one week in March 2005 using interviewers from two undergraduate social science research methods courses. The use of students to complete the interviews may improve the accuracy of the data as student respondents may be more relaxed and respond more openly to fellow students than older adults. Calls were placed to 2,250 telephone numbers, of which 880 calls were answered and 503 surveys were completed. The overall response rate was 22 percent (503/2250), but 57 percent (503/880) of the students who answered phone calls participated in the survey (see Appendix B for a full survey phone call report). The survey instrument was composed of four parts for four separate research projects. To reduce the length of the survey and avoid respondent fatigue, two parts of the survey were answered by all respondents while the other two parts, including our questions on spending behavior, were answered by one-half of the respondents (i. e., 251). Allowing for coding errors, etc., our sample was reduced to 247 respondents. We believe this is a high-quality data set because of the stratified random sample selection process and the high participation rate. Most of the demographic proportions required of a stratified random sample are met in the student spending sample of 247 observations. Table 1 (below) displays the demographic characteristics of our sample and the proportions for the CMU student population. Gender and ethnicity characteristics of the sample

closely correspond to the CMU population. The largest discrepancy occurs in residency, as the sample overrepresents on-campus students and underrepresents off-campus students, as residency was not one of the target stratifications that were sought in the sampling process. Class proportions vary across the CMU population and the sample data. A clarification is in order. The Registrar's office selected students according to the characteristics of gender, ethnicity, and class standing for the Spring 2005 semester, the semester that the survey was conducted. Figures for the CMU population in Table 1 are those reported for the Fall 2005 semester. The only published census of the student population is in the Fall semester; Fall student characteristics vary in a consistent pattern from the Spring semester. There are relatively fewer seniors in the Spring semester as Fall graduation depletes this class and the proportion of freshman increases in the Spring semester since most freshmen haven't earned enough credits to move into the sophomore class. The number of freshmen, therefore, remains approximately the same in the Spring semester, while the total student population declines. The survey questions asked for personal information and the student's typical local spending behavior during the months they spend on campus. Surveyed students were asked about the amount they spent in various categories in Isabella County (where CMU is located) when the university is in session (late August through mid-May). All the surveyed students were asked the amount they spend during a typical week in retail stores, and how much of that was for groceries. The students were also asked about weekly gasoline and recreation expenditures as well as the amount they typically spend each semester for books and other school

supplies. Respondents living off campus, but not at-home with parents, were asked about monthly expenditures for rent, communication services (telephone, local cell phone, cable television and internet access), and other utilities (e. g., natural gas and electric). Students were given the opportunity to identify up to two additional types of expenditures that they incurred on a regular basis and up to two out-of-the-ordinary expenses that had incurred during the previous semester. Only a small number of respondents reported any spending in response to these questions. [1] Table 1: Selected

Demographic Characteristics of the Student Sample Variable Observations Percent of sample or mean value<sup>1</sup> CMU population proportions or mean values<sup>2</sup>

Gender	female	147	60%	57%	male	100	40%	43%	
Class	freshman	57	23%	27%	sophomore	45	18%	22%	
	junior	52	21%	20%	senior	93	38%	31%	
	Age		247	22 years	21 years	Ethnicity			
	white	226	91%	91%	Non-white	21	9%		
Residence	on-campus	121	49%	33%	off-campus	110	45%	67%	
	With parents	15	6%	Local in summer	62	26%	Have car	205	83%
Employed	130	53%	Work hours	130	22. 2/week	College financing	Pay none	42	17%
	Pay some	77	31%	Pay half	30	12%	Pay most	38	15%
	Pay all	59	24%	1:					
	represents the sample characteristics of the Spring 2005 survey					2:			

represents CMU's student census in Fall 2005 Table 2 (below) shows the general categories of spending that were reported and the corresponding average amount spent over a nine-month period for those students that reported any spending in these categories. The last category in this table is for spending identified by the respondent but not classified in the other categories. The most commonly reported miscellaneous spending was for automobile repair and services. Questions were asked about the amount and



the timing of spending since some spending tends to occur on a weekly basis (e. g., groceries and gasoline). Table 2: Mean Student Spending by Spending Category, 9-months Spending category Observations 9-month mean Percent of total spending

Spending Category	Observations	9-month mean	Percent of total spending
Recreation	239	\$1, 406	23%
Stores (includes food)	222	\$1, 283	19%
Food	211	\$842	12%
Rent	109	\$3, 228	24%
Telecommunications	103	\$776	5%
Books and supplies	87	\$606	4%
Gasoline	239	\$724	12%
Miscellaneous	198	\$592	8%
Hospitals	120	\$559	5%
Child care	8	\$2, 415	1%
Other nonprofit	62	\$601	3%
Religious organiz.	1	\$315	0%
State & local gov't	19	\$1, 826	2%
Other miscellaneous	2	\$208	0%
Utilities	1	\$4, 610	0%
Computer services	9	\$353	0%
Auto repair	13	\$587	1%
Recreation clubs	9	\$725	0%
Doctors and dentists	31	\$774	2%
Total annual spending	247	\$5, 928	100%

Notes: Only respondents reporting positive expenditures were included in the calculation of mean values. Total annual spending does not double-count food expenditures. Weekly and monthly expenditures were converted to figures based on a 9month calendar since most students reside in the local area only during the traditional academic year, i. e. the Fall and Spring semesters. Spending by students residing in the local area on a year-round basis was calculated as if they were 9-month residents to provide consistency in the reported figures. [2] A CMU Student Profile Since we take a case study approach, it is appropriate for us to provide a brief description of the CMU student population to aid in the interpretation of the results of our study. CMU is a regional university--one of 15 publicly-assisted universities in the state. In 2005 it attracted students from every county in Michigan as well as 47 other states. Ninety-eight percent of the students are Michigan residents, nine percent are self-identified as African American,

Native American, Asian or Hispanic, and 99 percent are U. S. citizens. The greatest proportion of students (29 percent) resided in the Detroit metropolitan area as high school students. The legal-age for drinking alcoholic beverages in Michigan is 21 years. The typical CMU undergraduate fits the description of a “ traditional student” (See Table 1 above.). Most are full-time students who live either in residence halls on campus (freshman are required to live on-campus) or nearby (i. e. within 5 miles) in off-campus rental housing. Only six percent were identified as living at home with their parents. Most (74 percent) leave town during the summer months to return to their home town or other areas to find work or internships. Their mean age is 22 years. The gender distribution (57 percent female, 43 percent male) reflects CMU’s academic traditions. CMU graduates more teaching majors annually than all but a handful of other universities in the nation and offers newer programs in health professions which attract a large number of female students. According to sample data, most students (83 percent) have use of a car, and about half are employed for an average of 22 hours per week. Thirty nine percent pay most or all, 43 percent pay some or about half, and 17 percent pay none of their college expenses. Patterns of Spending An overall description of the sample characteristics is provided in Table 2 (above). [3] Only students reporting positive expenditures were included in the calculation of mean values. Most students reported spending on recreation, stores, food, books and supplies, and gasoline. Students living on campus were not asked questions about living expenses since rent, utilities and telecommunications expenses are typically aggregated into a one-semester housing charge. Less than one-half of the respondents reported

any spending on rent, utilities, telecommunications, or miscellaneous items. The spending categories with the greatest mean values and widespread reporting of are rent, recreation, and general spending in stores (including food items). About one-half of the students indicated that they had spent funds on a variety of miscellaneous items. The most frequently cited items were auto repairs, physician and dentist services, and contributions to religious and non-profit organizations. Some categories of miscellaneous spending (i. e., child care, computers and computer services, and medical care) had large mean expenditures among those reporting any spending for these things. However, few students reported any spending in these categories. Table 2 (above) shows per student spending for all spending categories. The student sample spends a considerable amount on recreation (about 23 percent of total spending) and most of their spending at stores (about 66 percent) goes for food items. Spending on non-food items, i. e., general merchandise, is a modest \$441 in a none-month period. In fact, students in the survey spent more on text books (\$724) and gasoline (\$592) than non-food items in stores (\$441). Less than half of students pay for rent, utilities and telecommunications equipment and services, but these expenditures are considerable compared with other items of spending. Recall that about half the students lived in on-campus housing and were not asked questions about expenditures on rent, utilities and telecommunications. However, the overall student profile hides substantial variation in the pattern of spending across groups of students. Class standing clearly affects spending patterns shown in Table 3 (below). Perhaps first-year students have lower incomes from summer work and different

lifestyles than juniors and seniors. Freshmen are required to stay on-campus, and many sophomores choose to stay in dormitories — only 109 of the 247 respondents (44 percent) reported that they paid rent for off-campus housing and of only five of these were freshmen or sophomores. Freshmen and sophomores spend significantly less than juniors and seniors on a variety of items including recreation, food and non-food items from stores, and miscellaneous purchases. Seniors spend substantially more than underclassmen on recreation (69 percent and 95 percent more than freshmen and sophomores respectively), and they spend more than twice as much on miscellaneous items and general merchandise and food in stores. Some of these spending differences reflect Michigan’s legal drinking age of 21 and off-campus versus on-campus lifestyle choices. Table 3: Mean Student Expenditures by Class Standing, 9-month Figures

Spending category	Recreation	Stores (includes food)	Food	Rent	Telecommunications	Utilities	Books and supplies	Gasoline	Total miscellaneous	Total annual spending
Freshmen	n \$1, 079	\$733	\$512	\$5, 616	\$1, 350	\$0	\$686	\$595	\$462	\$2, 892
	% 53	35%	47	21%	42	13%	1	3%	1	1%
	1	0%	57	24%	34	12%	19	5%	57	101%
Sophomores	\$942	\$695	\$468	\$2, 948	\$495	\$795	\$700	\$493	\$217	\$3, 017
	n % 42	30%	39	20%	34	12%	4	9%	4	1%
	3	2%	44	23%	31	12%	23	4%	44	101%
Juniors	\$1, 358	\$1, 313	\$908	\$2, 803	\$608	\$544	\$750	\$561	\$487	\$6, 267
	n % 52	21%	48	19%	49	13%	31	26%	31	6%
	21	3%	53	12%	49	8%	29	4%	53	100%
Seniors	\$1, 833	\$1, 822	\$1, 114	\$3, 392	\$862	\$618	\$682	\$652	\$1, 014	\$8, 910
	n % 92	20%	88	19%	86	12%	73	30%	67	7%
	63	5%	93	8%	85	7%	36	4%	93	100%

Notes: Only respondents reporting positive expenditures were included in the calculation of mean values. n is the number of

observations. Percent is each category's percent of total spending. A t-test for difference in mean values was conducted for each figure in the table. Italicized cells denote that the cell's mean value is different from the grouped mean value of the other three classes and statistically significant at the 5 percent level. Total annual spending does not doublecount food expenditures. Another approach is to compare budget shares, rather than gross spending across categories. We know from Table 3 (above) that seniors spend, on average, \$6,000 more than freshmen. But do seniors apportion their spending across categories in a similar manner as freshman, or do they have different spending priorities? The columns labeled "percent" represent a category's share of total spending. Budget shares of categories associated with off-campus living clearly increase as students move through class standings since most underclassmen live on-campus. Two categories of spending, recreation and books, exhibit decreasing shares across the freshman-to-senior years. This suggests that gross spending in these categories increases at a slower rate than total spending across years. This trend may disappear if housing fees for on-campus students were added to their total spending. Previous studies indicate that gender influences college students' use of credit cards and their spending behavior (Chien and DeVaney (2001); Davies and Lea (1995); Furnham (1996); Hayhoe et al. (1999); Hayhoe et al. (2000); Leach et al. (1999); and Xiao et al. (1995)). We examine gender differences in Table 4 (below). Clearly, male students, on average, spend more than women on recreation. This differential is substantial both in terms of dollars (i. e., \$1,821 vs. \$1,289) and in percentages (i. e. men spend 46 percent more). Women spend more on

textbooks and school supplies (\$738 vs. \$647). [4] Other categories of spending exhibit no statistically significant differences in behavior across gender at a 95 percent confidence level. Table 4: Mean student expenditures by gender, 9-month Figures Spending category Recreation Stores (includes food) Food Rent Store: non-food Telecommunications Utilities Books and supplies Gasoline Total miscellaneous Total annual spending Female \$1, 289 \$1, 350 \$810 \$3, 341 \$540 \$662 \$635 \$738 \$553 183 \$5, 599 n 147 146 144 58 146 48 58 147 117 60 147 % 23% 24% 14% 24% 10% 4% 4% 13% 8% 1% 101% Male \$1, 821 \$1, 234 \$858 \$3, 100 \$376 \$536 \$508 \$647 \$655 \$293 \$6, 411 n % 100 28% 99 19% 97 13% 51 25% 99 12% 39 3% 47 4% 100 10% 82 8% 43 2% 100 100% t-statistic probability difference value in means 2. 59 0. 53 0. 36 0. 77 1. 29 1. 01 0. 92 2. 16 1. 40 1. 44 1. 39 0. 01 0. 60 0. 72 0. 44 0. 20 0. 31 0. 36 0. 03 0. 16 0. 08 0. 17 Notes: Only respondents reporting positive expenditures were included in the calculation of mean values. n is the number of observations. Percent is the category's percent of total spending. Total annual spending does not double-count food expenditures. Stereotyping and studies of student attitudes towards money and credit card use suggest that women are more likely to shop for clothing or personal items and use credit cards to purchase them (Hayhoe et al. (1999); Hayhoe et al. (2000); Leach (1999)). Our data does not support that contention. A t-test of the difference in means for the category of non-food store spending yielded insignificant results: a t-statistic of 1. 29 with a p-value of 0. 20. Several factors may explain our conflicting conclusion. One, our stratified random sample could remove response bias inherent in the sampling procedures of the previous studies. Two, if binge shopping is

practiced by a very small percentage of students, then it will have little impact on our mean spending figures. Three, since our survey data relies on student responses, binge spenders may under-report spending either to hide their problem behavior or because they do not know how much they are spending. Four, maybe there is some credence to the stereotype of fiscally-conservative Midwesterners. Five, following stereotypes, it may be that women spend more on clothing and men spend more on video games and equipment. Differences in budget shares across gender simply reflect differences in gross spending: women spend a greater dollar amount and share of their budgets in stores (24 versus 19 percent) while men spend a greater dollar amount and share on recreation (28 versus 23 percent). Lifestyle choices may also affect the level and pattern of spending by traditional college students. Table 5 (below) provides a comparison of mean values for on-campus residents, off-campus residents, and those students living at home with their parents. On average, students living off-campus, but not with parents, spend about twice as much as on-campus residents on recreation and stores and nearly three times as much in local stores on food items. Although there are few observations for the category, spending by students living at home with parents does differ from both dormitory and other off-campus residents. This group spends more on recreation, stores, food and miscellaneous items than dormitory residents, but these differences are not statistically significant. Students living at home in the local area spend more than the other two groups on gasoline. On-campus students may spend on gas to intermittently drive home on the weekends while at-home-students are likely to drive to and from campus each day;

perhaps multiple times per day. Since this group tends to be underclassmen, the differential between the on-campus and with-parents groups may, in part, measure how much time on-campus students spend away from campus. [5] On-campus students spend a greater share of their budget on recreation (34 versus 19 percent), stores (29 versus 17 percent) and books (24 versus 7 percent) than off-campus students. The book share difference is driven by differences in total spending since gross spending on books is nearly identical. Although off-campus students spend twice as much on recreation and stores than on-campus students, their shares of total spending are lower. Table 5: Mean student Expenditures by Place of Residence, 9-month Figures

Category	oncampus	offcampus	with parents
Recreation	\$1,024	\$2,004	\$1,706
Stores (includes food)	\$869	\$1,802	\$1,103
Food	\$434	\$1,263	\$748
Rent	no observ.	\$3,689	no observ.
Telecommunications	\$733	\$871	\$700
Utilities	\$476	\$578	\$864
Books and supplies	\$158	\$718	\$175
Gasoline	\$2,634	\$651	\$4,123
Total miscellaneous	\$2,634	\$290	\$4,123
Total annual spending	\$10,353	\$10,353	\$10,353
n	121	119	16
%	34%	29%	41%

Notes: Only respondents reporting positive expenditures were included in the calculation of mean values. n is the number of observations. Percent is each category's percent of total spending. A t-test for difference in mean values was conducted for each figure in the table. Italicized cells denote that the cell's mean value is different from the grouped mean value of the other two groups and



statistically significant at the 5 percent level. Total annual spending does not double-count food expenditures. Students have different budget constraints from one another. Although the survey did not specifically ask questions about the student's or parents' incomes or assets, it did ask whether the student worked and what proportion of college and other living expenses was paid by the students. Answers to these questions can measure a student's ability to pay, particularly for those items which represent discretionary expenditures (e. g. recreation spending). Table 6 (below) examines mean values for student spending based on the students' financial burden for college expenses. Again, recall that those students living on campus were not asked questions about their spending on rent, utilities and telecommunications. Variation in patterns for these three spending categories in this table could be the result of the surveying procedure. Relatively few of the differentials in spending are significant at the 5 percent level in Table 6; with many of these occurring for the " pay none" and " pay all" categories. Those students who " pay all" have higher overall expenditures than the other groups (when combined) in terms of stores, food, and utilities and overall spending. The " pay all" category is likely composed of students who are financially independent of their parents and are working substantial hours to support themselves. They are also more likely to be non-traditional students having parental responsibilities and different asset levels and lifestyles. All of these characteristics contribute to a higher overall level of spending. Those who " pay none" spend significantly less on gasoline, total miscellaneous, and overall spending. An examination of sample data suggests that students in the " pay all" and " pay none"

categories are substantially different in terms of work behavior and age. Students in the “ pay all” category were more likely to work (61 percent of the group) than the “ pay none” students (36 percent), and when they did work, they tended to work a greater number of hours: 22. 4 versus 16. 9 hours. In terms of age, the “ pay all” group was clearly older. The “ pay all” group had some of the oldest students in the sample (i. e., the oldest students in this group were 48, 40, 35 and 32), while the “ pay none” group had fewer of the oldest students (i. e., the oldest students in this group were 37, 24, 24 and 23). The mean age of the “ pay all” group was 23. 5 years, while that for the “ pay none” group was 21. 1 years. These characteristics suggest that more of the “ pay all” group would be classified as “ non-traditional” students. Budget shares for most categories of spending exhibit no consistent pattern in Table 6 (below). Two patterns do emerge, however: those students who “ pay none” of their college expenses tend to spend a greater proportion of their budget on recreation (29 percent) and books (15 percent) than students in the other categories, even though they spend comparable gross dollar amounts. Total annual spending generally rises as the proportion paid by students rises, with the exception of the pay-half and pay-most categories being reversed. The general trend may arise because both proportion of college expenses paid and total annual spending rise with student work hours and earnings. Another possibility is that with a higher proportion of college expenses paid by the student, there is less oversight of spending by the parents, with consequent upward pressure on current spending. Table 6: Mean Student Expenditures by Proportion of College Paid by Student, 9-month Figures

Spending category	pay none n	%	pay some n	%
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Recreation Stores (includes food) Food Rent Telecommunications Utilities  
 Books and supplies Gasoline Total miscellaneous Total annual spending \$1,  
 308 \$1, 096 \$844 \$2, 866 \$569 \$572 \$642 \$462 \$261 \$4, 423 41 29% 37  
 22% 33 15% 12 19% 11 3% 7 2% 42 15% 33 8% 18 3% 42 100% \$1, 328 \$1,  
 270 \$722 \$3, 210 \$814 \$556 \$747 \$541 \$492 \$5, 268 76 25% 71 22% 68  
 12% 25 20% 23 5% 20 3% 74 8% 59 14% 35 4% 77 100% pay half n % \$1,  
 483 \$1, 212 \$780 \$3, 293 \$503 \$456 \$688 \$675 \$346 \$6, 504 28 21% 28  
 17% 27 11% 18 30% 17 4% 17 4% 30 11% 26 9% 17 3% 30 100% pay most  
 n % \$1, 192 \$1, 052 \$885 \$3, 397 \$1, 170 \$342 \$674 \$660 \$565 \$5, 461 36  
 21% 30 15% 29 12% 16 26% 15 8% 13 2% 37 12% 31 10% 20 5% 38 100%  
 pay all n \$1, 699 \$1, 584 \$1, 001 \$3, 254 \$781 \$847 \$754 \$665 \$933 \$7,  
 953 57 21% 56 19% 54 12% 38 26% 37 6% 30 5% 59 9% 50 7% 30 6% 59

100% Notes: Only respondents reporting positive expenditures were included in the calculation of mean values. n is the number of observations is in parentheses. Percent is each category's percent of total spending. A t-test for difference in mean values was conducted for each figure in the table.

Italicized cells denote that the cell's mean value is different from the grouped mean value of the other four groups and statistically significant at the 5 percent level. Total annual spending does not double-count food expenditures. Table 7 (below) reports differences in spending between employed and unemployed students. Those who work spend more overall and in the specific categories of stores, telecommunications, and total miscellaneous spending. Using a 10 percent level of significance, one additional difference arises: working students spend more on gasoline. To the extent that these students are living off-campus and commute to work

via automobile, these spending differences are plausible. % Table 7: Mean Student Expenditures by Employment, 9-month Figures Spending category Recreation Stores (includes food) Food Rent Telecommunications Utilities Books and supplies Gasoline Total miscellaneous Total annual spending

Employment	n	\$	%	n	\$	%	n	\$	%	n	\$	%	n	\$	%	n	\$	%													
employed	1,465	\$1,506	911	3,308	\$881	657	715	649	239	6,714	129	21%	119	20%	114	12%	72	27%	67	7%	58	4%	132	11%	114	8%	60	2%	132	100%	
not employed	n	\$1,337	\$1,026	\$761	\$3,074	\$583	\$504	\$685	\$523	\$214	\$4,648	110	28%	103	20%	97	14%	37	21%	36	4%	29	3%	115	15%	85	8%	43	2%	115	100%

t-statistic difference in means 0.72 2.54 1.41 0.71 2.39 1.35 0.73 1.79 1.97 3.71 probability value 0.47 0.01 0.16 0.48 0.02 0.18 0.46 0.07 0.05 0.00

Notes: Only respondents reporting positive expenditures were included in the calculation of mean values. n is the number of observations is in parentheses. Percent is each category's percent of total spending. Total annual spending does not double-count food expenditures. With regard to budget shares, working students spend relatively more on rent (27 versus 21 percent) and telecommunications (7 versus 4 percent) than non-working students, while the unemployed spend a greater share of their budgets on recreation (28 versus 21 percent) and books (15 versus 11 percent). Summary Spending by college students can have a strong overall impact on local spending when they represent a large portion of the local population, and they may have a stronger impact on the mix of spending if their demographic characteristics substantially differ from the local population. Our study focuses on a traditional student population at a large residential university in a small Midwestern town and reveals that most students routinely spend a substantial portion of their total

expenditures on relatively few items: recreation, food, general merchandise, housing, books, and school supplies and gasoline. About one-half of the sampled students reported spending for off-campus housing, telecommunications equipment or services, and miscellaneous spending. On-campus residents--about one-half the sample--were not asked questions about these types of spending. Class standing influenced student spending. Juniors and seniors spent significantly more than freshmen and sophomores on recreation, food, general merchandise, and miscellaneous items. Male students spend more on recreation (41 percent more) than female students, while females outspent males by 15 percent on books and school supplies. Off-campus residents spent about twice as much as on-campus students on recreation, as well as more on food and general merchandise in stores. Although the survey did not directly ask about a student's ability to spend (i. e., their income and assets) or their family's financial status, we can infer that ability to pay does influence a student's spending choices. The proportion of college and other living expenses paid by a student clearly influenced spending behavior. Those that claimed to pay all of their college expenses also spent more in stores for food and utilities and spent more overall than other groups of students. The group of students who claimed to pay none of their college expenses spent less than the other groups on gasoline, total miscellaneous items, and overall spending. Students who were employed claimed, on average, to work 22 hours per week. Students who worked spent more than those who were unemployed in the following areas: in stores (general merchandise), food, utilities, telecommunications equipment and services, total miscellaneous spending, and overall spending.

They also spent more on gasoline. (This was significant at the seven percent level). We also looked briefly at shares of students' total spending going to different categories of spending. A few observations regarding these budget shares are worth noting. As students move through their college years they tend to spend a smaller share of their budgets on recreation and books.

Women tend to spend a greater share of their budget on general merchandise (i. e., store spending), while men favor recreation. On-campus students spend a larger share of their budget on recreation, stores and books, but these differences might disappear if we included housing fees as a part of total spending for on-campus students. Students who pay none of their college expenses spend relatively more on recreation and books than students bearing a greater proportion of college expenses. Working students spend a larger share of their budget on rent and telecommunications, while non-working students spend relatively more on recreation and books.

Overall, books and recreation spending tends to be relatively fixed as total spending increases; thus reducing relative budget shares for these categories. Researchers should incorporate information on the pattern of college student spending to accurately estimate the local economic impact of universities. This study is a step in the right direction, but it should only be used if the student population has similar characteristics as the university studied here. University administrators may find these spending patterns useful for planning purposes, either for internal programming or in their interactions with the local community. It is also clear that local merchants have a strong market incentive to respond to these patterns of student spending. These market signals are important for private sector allocation of

resources. Empirical evidence, such as that presented in this study, may improve private sector response to student spending behavior if local businesses were relying on impressions rather than hard evidence. However, these survey responses and statistical results should be interpreted with caution since they do not apply to all university settings. Students at non-residential urban campuses (i. e. “ commuter” colleges) would exhibit a different set of spending behaviors since a greater percentage would live with family members and would reside in the local area even if they were not enrolled at that college. To the extent that there are regional differences in spending behavior among the adult population, the results of this study may have limited ability to predict college student spending in other parts of the U. S. Other universities, urban or otherwise, that draw students from non-traditional populations would also exhibit different spending patterns. The typical college student in the U. S. is increasingly older, part-time and a member of a minority group (black, Asian and Hispanic) according to James and Sonner (2001). He or she is also more likely today to speak a language other than English at home (about 18 percent of students). Such demographics do not closely match those of the students surveyed in this study. Endnotes 1. We recognize that any survey of student spending could lead to inaccurate responses. Are students more likely to report spending in a category as zero or simply not respond (i. e., create a missing value) when they are uncertain if they’ve incurred any expense in the recent months? A student’s response about recent spending may be inaccurate because they simply have poor recall or there may be a response bias — e. g. males over-report expenditures on recreation because they desire a “ party animal”

image. Given the number and direction of all potential biases there is no clear direction for an aggregation of these biases — i. e. are areas of spending over- or under-reported? Another issue is the “ stability” of student spending from month-to-month. For students without a job, spending may follow a different pattern than working students. The jobless without on-going parental support draw-down assets as the school year progresses. Our survey was completed in mid-March, which is in the middle of the Spring semester and near the end of the school year. Some graduating seniors, having already secured a full-time job after graduation, may increase spending in the current period since they anticipate higher income later. There is no way to determine the direction of any potential bias introduced by variations in month-to-month spending. 2. We recognize that limiting our focus to a 9-month period and only local spending presents a few issues of measurement. For example: 1) we ignore any spending if it took place away from the local area whether in the summer or in the school year; and 2) a traditional student’s spending pattern may differ in the summer months “ at home” compared to their “ away at school months”. Work hours are likely to be different, as are social opportunities and place of residence (e. g., a move back into the parents’ household or a summer internship). If summer spending does differ from school-year spending both in terms of magnitude and pattern, then it will be inaccurate to use school-year spending to estimate summer spending. The size and direction of any estimation bias is unclear. 3. Readers should consider a few limitations when evaluating the survey results. The tables assume that students spend from their own resources even if those resources are obtained from parents. Since the focus



of the survey was local spending, many students did not report spending in some categories. For example, auto insurance was rarely reported because either it was paid outside the local area, i. e. " at home", or it was paid by others, such as parents. 4. Some studies have indicated that ethnicity affects college student buyer and credit card behavior (Chien and DeVaney (2001); Eastman (1997); Hayhoe et al. (2000); Hayhoe et al. (2005); Medina et al. (1996); Roberts and Jones (2001)). The data allow us to look at these differentials as well. However, given the ethnically homogeneous student population at CMU, the survey's stratified random sample included only 21 non-white students. In addition, this minority sample is heterogeneous — 10 black, six Native American, four Hispanic and one Asian. We believe that there are too few observations in the non-white category and sufficient heterogeneity within the group that any statistical inferences would be unreliable. However, a table of mean comparisons is available from the authors upon request. 5. The differential between on-campus students and those living at home could be explained, in part, by time spent in the local area. Assuming a nine-month academic year with four weeks of holiday breaks, and that on-campus students are from outside the local area, students living at home with parents could spend up to 14 percent more time in the local area. In addition, on-campus students may spend a substantial number of weekends away from campus. Considering spending on recreation, stores and gas alone, students living with parents spend 55 percent more on these items than on-campus students (i. e. \$3673 vs. \$2369), but presumably spend 14 percent more time in the local area. The remaining part of the difference in spending may be attributable to

behavioral and income differences rather than time spent in the local area.

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Appendix A Description of survey questions Questions asked by student interviewers were intended to make explicit to respondents what spending categories were being addressed. Below are the spending categories reported in the paper with examples of spending that interviewers used to prompt responses. Recreation: eating out, bars, casino etc. in the local area. Stores (includes food): groceries, clothing, personal care products, supplies, books other than textbooks etc. in the local area. Food: how many of those

dollars (spent in stores) are spent on food rather than other things? Rent: rent wherever you live in local area. Telecommunications: telephone, local cell phone, cable, internet access (exclude what is part of your rent). Utilities: natural gas, electric, water (exclude what is part of your rent). Books and supplies: books for courses and school supplies in local area. Gasoline: gasoline in local area. Miscellaneous spending: Is there any expense, contribution, or donation that you regularly pay weekly, monthly or yearly in the local area that we have not talked about? Do not include tuition payments here and focus on the local area. Out-of-the-ordinary spending: Think about the out-of-the-ordinary expenses you had last semester — maybe for car repair or fixing your computer or for a medical problem. Think about things you paid for in the local area. Interviewer prompt for most spending questions: If expenses are shared with roommates, include what the respondent is responsible for. It does not matter if the respondent pays or parents pay.

Appendix B Survey phone call report

Description	No answer	Busy signal	Answering machine	Wrong number	Fax/modem	Out of service	phone	Not available until survey over	Not home now	Immediate refusal	Refusal after starting with interview	Language barrier	Unfinished/call back	Not CMU undergraduate (sample error)	Quota filled	Complete	Total			
attempted	Not attempted	Total sample records	143	71	230	544	9	136	88	115	338	39	5	16	10	3	503	2250	274	2524
Percent of calls attempted																				
6%	3%	10%	24%	0%	6%	4%	5%	15%	2%	0%	1%	0%	0%	23%						