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CAMPUS CENTERS AND COMMUNITY

An Interactive Qualifying Project Report
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Abstract

This project explored the effect that campus centers have on the sense of community on college campuses. Design features of campus centers and the location of these features in relation to one another were utilized to predict the success of the campus center at Worcester Polytechnic Institute (WPI). It was determined that campus centers should be located in an area with high foot traffic, near both the residence halls and commuter lots, and should include an ATM, meeting rooms, informal lounges, and student organization offices. Based on these recommendations, WPI's campus center will help to provide the campus with a strong sense of community.

Acknowledgements

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INTRODUCTION

Many colleges and universities today have some sort of a student union. They may range from a lounge in one of the academic buildings to the $85 million Alfred Lerner Hall at Columbia University. The main differences between these two extremes are not necessarily those of cost, but of design and location. It was our goal to examine these two factors and determine how they affect the success of the campus center, and also how they affect the sense of campus community.

One of our hypotheses is that the sense of community on campuses is directly related to these factors. In order to show this, we developed and administered a survey nationally to campus center directors to determine if this hypothesis was in fact correct. We then used the information to create a list of essential ingredients that could be referred to in order to develop a successful campus center. In the final stage of this project, we suggest whether WPI's campus center will be successful in contributing to a greater sense of community on campus.

Before going any further, it is essential to understand that this paper focuses on campus centers at colleges and universities. Because there is no universal term for such institutions, the following phrases will be used interchangeably throughout this report to refer to a campus center: student union, college union, student center, and campus center.

1 LITERATURE REVIEW

1.1 History

In 1815 Cambridge University in England founded the first building intended for the purpose of being a place for college students to meet and socialize. Three debate societies wanted a place to call their own, so they joined together into a union and built a building for themselves ("Brief History", par. 1). The union building was more than just a debate hall, and as time progressed libraries, dining rooms, meeting rooms, game rooms, lounges, and offices were added. In America, the debate hall is no longer a factor in a student union, while in England it is still an integral factor. The first union in America was at Harvard in 1832, created for debate purposes. By 1880 Harvard had created a more general community than the debating society, calling it "Harvard Union" ("Brief History", par. 3). Their goal was to bring the whole campus community together. However, Houston Hall on the University of Pennsylvania's campus was the first union building erected for the sole purpose of being a student union in America (Klauder 247). In 1896, when Houston Hall was dedicated, the dedication address continually referred to the building as a "place where all may meet on common ground." ("College Union" 283).

The main purpose of a contemporary student union building in current thought is to strengthen the community of the college ("Role of College Union", par. 4). The community becomes stronger as the students and faculty of the college interact with each other. In the words of Woodrow Wilson, "the college must become a community of teachers and students." ("College Union" 282).

Presently, a college union is defined as a community center for college students and faculty. It is a place where students can relax and meet with one another and a place that brings the college together ("College Union" 281). This idea of a "community center" was first developed in the 1930s. The United States saw a very large growth in college unions in the years following World War II, as college enrollment rose dramatically ("Brief History", par. 4-5). College unions have been built all over the world; significant growth can be seen in colleges located in Japan and the United States ("College Union" 280). While each university throughout the world has a different reason for building their campus centers, most colleges come back to one idea. The idea is that "the student is a person as well as an intellect, that he has elementary human needs – to eat, to associate with his fellows" ("College Union" 283). These needs can only be met in a few places; the result was a college union. Student unions have grown from a group of debate teams in England to a worldwide student-centered place where the everyday needs of a college student's life can be met in one place.

1.2 Community in the College Union

Some people can live without others, but most people need others; most people need to be a part of a community. They need to feel secure and have a sense of belonging (Gardener 5). People enjoy being with others who share their values and are able to care about one another. The type of community a college campus has is one in which people from all over the world are brought together for one purpose, education (Gardener 12). Diversity, caring, and shared values are just some of the qualities needed to have a strong community, and these qualities are made available as a result of the higher education

system (Gardener 15-18). Participation, affirmation, and development are other important qualities needed for a stable community (Gardener 21-26). In a period of time in which overall community is regarded as generally low, it is even more important to be a part of a strong community. The development of strong communities among the younger members of our civilization is important so that when they depart from school they will be able to bring a sense of community with them and the understanding of how important community is ("College Union" 289).

The idea behind the college union is that once people enter, they will be immersed into what the building has to offer. This is like a shopping mall, in which people will enter through a central main entrance and immediately be immersed in what the shopping mall has to offer. They will be provided with instant visual access to what is available in the mall and will have clear sightlines to navigate themselves to the different areas, and feel as if they belong. These features help in the development of community. They bring everyone together and house them in an area where they go because they either want to go or have to go there. Without these considerations, it would be difficult to foster community.

According to Mary Geraghty, the ideal student union should include everything the student needs and wants in the building (par. 3). From food to meetings rooms and from a game room to their mailbox, the student union attracts the students and faculty alike. It gives them a home and it gives them a "living room" atmosphere, in which a student can just relax and socialize with their schoolmates ("Role of College Union" par. 4). According to an article in the ACUI *Bulletin,* building community on the college campus and especially in the college union starts with the employees and directors. If

they can take the extra time to show they care and show hospitality then that is going to go a long way in making the students feel more at home in the union and the college ("Community" 24). Again, this is an ideal model of a campus center, and not all campus centers are planned this way.

1.3 Design Trends and Styles

Before getting into specific trends and styles, it is important to realize that most campus centers are not one of the original buildings of the college campus. Because of this, they need to be added later, and need to fit into the existing campus. *American School and University* feels that it is important that campus centers complement the buildings around them, yet still be able to stand out as an imposing structure of unique design virtue ("Something More", 35). They report that the George W. Johnson Center at George Mason University used carefully detailed brick and decorative cast stone exterior to reflect the characteristics of the existing campus buildings, while creating a distinctive architectural presence ("Facility Focus: Student Unions", 33). This is not always the case, as the Alfred Lerner Hall at Columbia has a completely different architecture than the dominant style of the campus.

1.3.1 Location

According to Karen Arenson of the New York Times, a campus center should be a giant crossroads where students who would not ordinarily see one another can have the opportunity to meet on any given day (8). Many others share the idea that campus centers should be just that – the center of a campus. *American School & University* mentions quite often how building sites are chosen so that the campus center would occupy the

geographical center of campus life ("Something More", 28). Most schools that have a campus center do position it as close to the center or near the crossroads as possible. The Student Activity Center at the Philadelphia College of Osteopathic Medicine in Pennsylvania is located at the end of the major areas of the campus, therefore positioning itself at the crossroads of the busiest sections of the campus. Some colleges even go as far as to say that the center-of-campus location was the best feature of the center ("Student Centers", 146).

Positioning of the campus center is not a new idea; it has in fact been around for quite some time. In the mid 1960's, when Moshe Safdie received the commission to design the campus center for San Francisco State College, he choose a site where 3000-4000 students might all converge at noontime ("Activism", 67-68). The George W. Johnson Center at George Mason University is located at the geographical center of the campus-adjacent to many existing academic facilities and commuter parking ("Facility Focus: Student Unions", 33). The Cornell Campus Center at Rollins College is also located at the geographical center ("Student Centers", 22).

There are reasons other than the obvious ones why the central location is so important. The architectural firm Williams Trebilcock Whitehead Architects of Pittsburgh explains that their firm tries to place a union where there is the most foot traffic, so students use the building as a shortcut. Others apply this idea to other campus centers, like the Wilson Commons at the University of Rochester. The placement of the Wilson Commons at the juncture of academic traffic means that not only can it serve as a building but as a bridge joining one place on campus to another. Robert Godshall – who writes about community on the college campus as a partner at Herbert S. Newman and

Partners, New Haven, Conn., specialists in campus architecture – explains that the campus center should be the community's "Main Street". It should have common paths that connect to a shared main entry, allowing everyone who is coming and going from the building to experience the activity of the community around them (Godshall, 153).

It is the case that some campuses may need to be slightly adjusted to incorporate the campus center in the middle of their existing campus. At Beaver College in Glenside, PA, a new community walkway was designed around the student center, which helped move pedestrians from the exterior road to an interior campus walk ("Facility Focus: Student Unions", 32). Similarly, Tim Rosenbury notes that at Southern Missouri State University, the architects changed the circulation paths, widened sidewalks and enhanced points around the union in an attempt to draw students in (Rosenbury, 27).

1.3.2 Types of Spaces and Functions

As a result of campus centers being used as walkways, it is important to design the entry level of the center so that it is conducive to foot traffic. Once again, Moshe Safdie thought of this back in the 1960's and conceived a main floor space which would help in dividing up the foot traffic into a much more even flow throughout the center ("Activism", 67-68). This same idea was used on the campus center of California State at Sacramento. According to *American School and University*, because the center is located at the crossroads of the campus, the interior pedestrian concourse promotes visual access to different areas throughout the center ("Irresistably", 32). They also believe that although students and faculty will use the building as a shortcut, they will also find it warm and inviting to explore ("Something More", 28).

It is important to touch upon the other common desired characteristics of campus centers. Nearly all campus centers have a main atrium or entryway, with more than one entrance leading into it, but still serves as the main entrance to the building. The difference being that atriums usually span multiple stories, while main entryways do not. According to Robert Godshall, "A common entry maximizes the possibilities for contact between members of the community." (153) He also feels that the atrium funnels the foot traffic in order to create an atmosphere full of activity. Godshall also believes that the main entrance "...clearly establishes where the community begins, and for visitors, where to find it." (153). Furthermore, he feels that multiple main entries do not help the forming of community, whether it is in campus center or residence halls (Godshall, 153).

Quite often the atriums have a significant amount of glass. The glass is partially used to allow those outside to see in, but more importantly, it is intended to allow people to experience the outside while in the building. According to an article in *The Bulletin*, the Edminster Student Union at North Idaho College utilizes an atrium, with a glass roof that allows the area to be flooded with light, and all areas of the building open onto this main atrium ("Renovation", 13). The Student Union Building at the University of Central Florida features an 86 ft. high, four-story atrium covered with a skylight, which takes full advantage of the available natural light ("Facility Focus: Student Unions", 30). This is another way in which glass can help to bring the sense of an outside environment inside. At Southwest Texas State University natural lighting pours through the glass expanses on the atrium ("Educational Interiors", 123). Columbia University's Lerner Hall has a 5,600 square-foot glass façade and 100-foot glass ramps that crisscross throughout the atrium and overlook the main quadrangle. (Arenson, 8) *American School & University* believes

that glass lures students into the campus center because they can see the activities going on inside and can take part once inside. Also, once inside students are able to experience the outside weather, and nature while remaining inside a comfortable building ("Something More", 28-29).

The reason for these large open atrium areas is to provide students and visitors of the campus center with visual access to all areas of the building. Mike Harned, an architect for Butler/Bates, feels that "...by using large open areas it is very easy to find the way around the union, even for first time visitors." (Muschamp "Student Center", 27). In fact, students at Southwest Texas State University warned their campus center design team that they did not want their campus center to look like an office building ("Educational Interiors", 122).

1.3.3 Interior Spaces

Another trend in campus centers is that they tend to use large open interiors. An example is the first floor at Saint Norbert College in De Pere, Wisconsin, which serves as the building's living room with lounges, fireplaces, and other conveniences ("Renovation", 8). The Cesar Chavez Student Center at San Francisco State serves as the living room of the campus ("Renovation", 10). To further explain the concept of a campus living room, it can be described as a place where people can go and feel at home, a welcoming place of warmth and more importantly a place where community can develop. This is one of many goals of a campus center. Kimberly Newton notes that "They wanted to make Clark's new University Center more than just a building. They wanted warmth. They wanted community." (Newton). Kevin Petrie believes that a central

gathering area should be a place that "...hosts on any given weekday a dozen or more students that lounge about, chat, or study (Petrie, 2).

When Austin College began talks about renovating their campus center, they knew that both students and community needed to be central to their design, and now their campus center serves as a unifying force for the college ("Renovation", 9). Similar to being a unifying force for a school, many campus centers are often the heart of the campus. By being a unifying force, it allows the building to bring everyone together into one central location, whereas the heart of the campus refers to the place where all of the actions and functions are. Such is the case at North Idaho College.

With all of these large, open, and inviting spaces, one must not forget that a campus center should be easily navigable. *American School and University* feels that a student union should have an inviting space, clear way finding, be user-friendly, and still have a solid identity inside and out ("Student Centers", 146). Also, with large open areas, one may wonder how different areas stand out from one another. Many colleges follow the same approach that the University of California-San Diego used. That is they used functional physical barriers such as high bar counters to identify where the restaurant begins and ends ("University", 27). In addition to the large open areas, a design should never leave out the in-between spaces: places where people can still be part of a community yet step out of the way and have a little bit of privacy (Godshall, 154).

1.4 Community Perception of Architecture

An important factor in the design of a building is how the particular architecture will make an individual feel emotionally. When designing a campus center the architects

and designers must take into account that the building is for students, faculty and staff. The way certain design aspects are built has a large effect on the way a building is viewed by the community. For example a dark, ugly building would not be inviting for students, faculty, and staff. On the other hand, a big beautiful building will invite the community and will create a desire to go to the building for extended periods of time. The way a person feels in a building is as important as any other aspect of the design because if there is an uncomfortable feeling then the building will not be successful. Different angles, material, and styles make a building more or less inviting to certain communities. The use of glass and large open areas are just two ways in which a building can be inviting to the college community. The emotions felt by the community are very important in the design of any building (Bloomer & Moore).

Every aspect of the building serves a very important purpose for the overall design. From the stairs to the high ceilings, all the components of the building make the individual feel something inside. For example, the fireplace, although mechanically obsolete, still serves a grand purpose in being able to be an icon of much older times and a centerpiece of the room in which it is located. (Bloomer & Moore, 50). The community wants some unique and interesting. They do not want a plain building, they want something that catches their eye and makes them want to see more of it. An example of this can be seen in the fact that we all could imagine being on top of the Chrysler Building, but we find it hard to imagine being at the top of a regular building because that is not interesting and unique (Bloomer & Moore 61-62). Architects need to think of how the building will make the individual and community feel when they are in the design the

building and every little detail that makes the community feel better is good for the building.

1.5 Summary

The literature on campus centers suggests that such things as glass, a central location with high foot traffic, large open spaces, informal lounges, meeting rooms, multipurpose rooms, food, a main atrium, student activities and student organization offices all help in providing a strong sense of community at schools. It is these themes from the background literature upon which the survey will be based.

2 Methodology

2.1 Surveys

Our project was inspired by the current construction of WPI's first Campus Center, and our goal for the project was to determine what design factors in campus centers affect the sense of community on college campuses. In order to do this, we needed a first hand account of the state of campus centers throughout the country. More specifically, we looked at specific building characteristics, including services, furnishings, and amenities provided. We also looked at design techniques and the different types of rooms and facilities that are deemed important in a successful campus center.

There were two different surveys used in our project. The first survey was sent to campus center directors, because of their extensive knowledge concerning campus centers and what makes them successful. A list of schools was generated using the search engine provided by icollege.com, and using search criteria that most closely resembled WPI. We then generated a list of campus center directors by using the Association of College Unions International (ACUI) members' directory. When the ACUI directory provided no useful information for a certain school, we then used other college professionals, such as directors of student life and directors of student activities according to their websites and the National Association for Campus Activities (NACA) members' directory.

The second survey that we developed was given to Jim McLaughlin, Director of Student Activities and Campus Center at WPI. This survey was given to Mr. McLaughlin

because he is a member of the target group that the other surveys were sent to. We also decided to send it to Mr. McLaughlin because of his extensive experience with campus centers and his knowledge about how campus centers affect community on college campus.

After considering various methods on distributing the survey, the method of an email including a link to the survey was determined to be the best solution. This decision was based on many different factors, including: response time, cost, data analysis, and return percentage.

2.1.1 Campus Center Survey of Other Institutions

Our survey was broken up into three separate sections. The first section, called Institutional Information, dealt with questions regarding their institution. The purpose of this section was to determine demographic information, and to provide data to confirm that the schools that were surveyed were in fact similar to WPI. This was important because we wanted to survey schools that shared common characteristics such as size, location, and education with WPI.

The next section of the survey, titled Campus Center Information, was the most important section of the survey. It dealt with several different features and characteristics that campus centers may possess and how they affect their sense of community. These features included services, shops, visual access, and adjacencies used, among others. These questions were developed from the knowledge we gained during the literature review of our project. When doing our preliminary research, we made a point of noting

the common trends, features and characteristics of campus centers for future reference in our survey.

Only directors at institutions, which have a campus center, completed this section. If they did not have a campus center, directors were instructed to skip the remainder of the section. If they did have a campus center, directors were then asked a wide variety of questions about what their center did or did not have, and what features were or were not important.

The final section of our survey, entitled "Campus Centers and Community" was brief but extremely important. By asking open-ended questions we provided an opportunity for the respondents to convey to us, in their own language, how their campus center has affected the sense of community on their campus.

2.1.2 WPI Campus Center Survey

The second survey we developed allowed us to compare our results with WPI by eliciting information about the new campus center at WPI, which opened in March 2001. Since the purpose of this survey was to compare the results of the other surveys to those of WPI, we kept the content of both constant. This did however pose a slight problem when developing the survey. Since WPI's campus center was not yet open, we were unable to keep all of the questions the same. When we administered the survey the questions were instead posed in the future tense for WPI. In addition, questions had to be removed because they simply did not apply, or the answer could not be known.

3 Results

3.1 Results of WPI

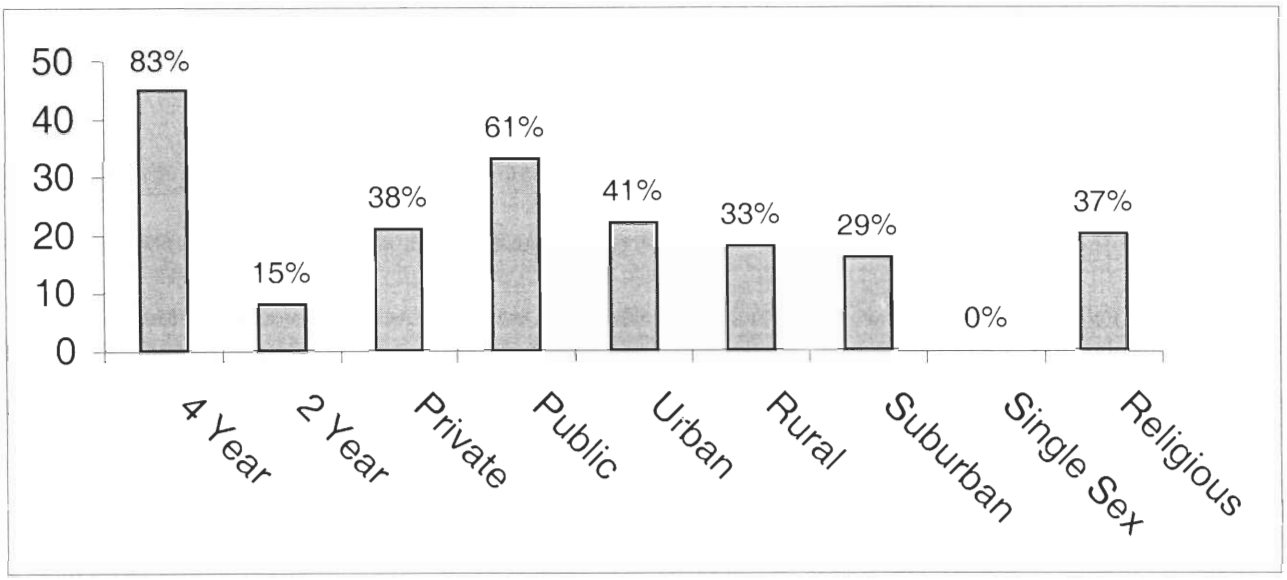
WPI is a 4-year institution with an undergraduate student body of 2501-4000 students and a graduate student body with less than 1000 students. Engineering and Science are the primary emphasis at WPI. The campus center at WPI is located in the geographical center of campus, where there is high foot traffic, and it is just a short walk from the commuter parking lots and residence halls. The campus center includes: offices, meeting rooms, multi-purpose rooms, food/dining services, mailroom, game rooms, bookstore, student organizations, rental space, ATM, and vending machines. WPI's campus center utilizes a lot of glass and has clear sight lines. The outside environment is very identifiable from within the building and the surrounding buildings complement the campus center nicely. The adjacencies in the campus center allow for the building to be successful. The campus center uses large open interior spaces as opposed to more corridors. The campus center rents out its space to external organizations, but this has no effect on the use of the campus center by students, faculty or staff as most rental times will be during the summer and vacation breaks. The renting of the campus center will have positive effects on the college as it will allow for more people to enjoy the WPI experience and it will bring in added revenue to the school. The majority of student activities, events and student organizations will be located in the campus center. Both informal and formal lounges are in the campus center. The informal lounges are more important as they provide people will the option of studying, talking, or eating in a setting the was intended to promote social interaction and designed as such, whereas formal

lounges have slightly less versatility and a more defined purpose. The bookstore sells the following items (in addition to textbooks): books, magazines, snacks, drinks, clothing, office/school supplies, computer supplies, music, and videos. The retail space in the campus center is comprised of the bookstore, an ATM, a snack bar and a coffee shop.

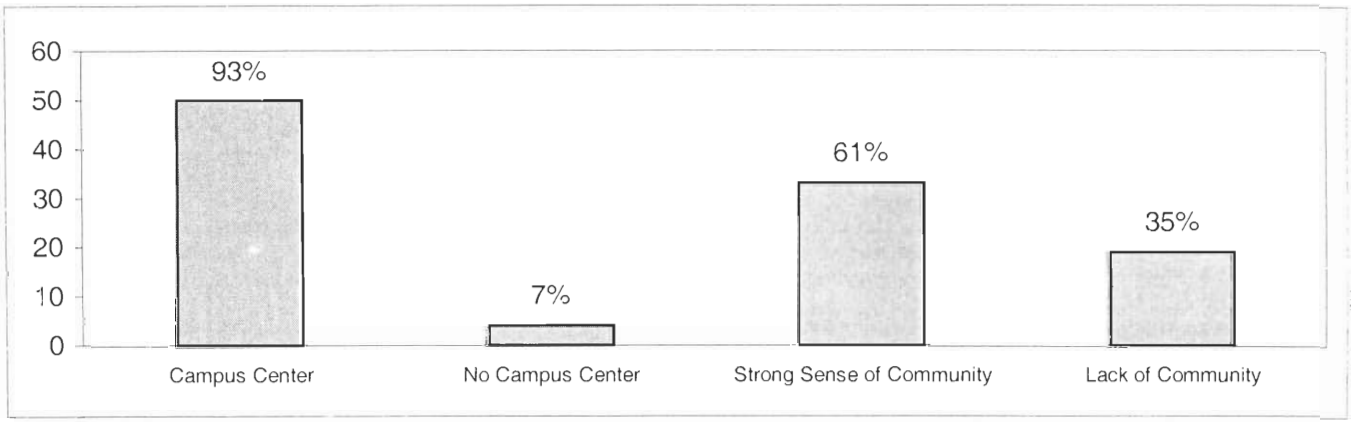
According to Jim McLaughlin, the six most important features that should be included in a campus center to provide a good sense of community are (from first to sixth): food/dining services, multi-purpose rooms, game rooms, student organization offices, meeting rooms, and athletic/recreation facilities.

3.2 Results of Other Institutions (Quantitative)

In this survey, fifty-four campus center directors participated. The purpose of this first section was to show that the schools surveyed were similar to WPI in size, location and areas of study. Most of the institutions surveyed were four-year schools. There was a 60/40 split between private and public schools, in the favor of public schools. 70% of the schools was determined to be in either urban or suburban settings which is where WPI would also be located. Nearly all of the schools surveyed had student body populations under 4000 undergraduates.

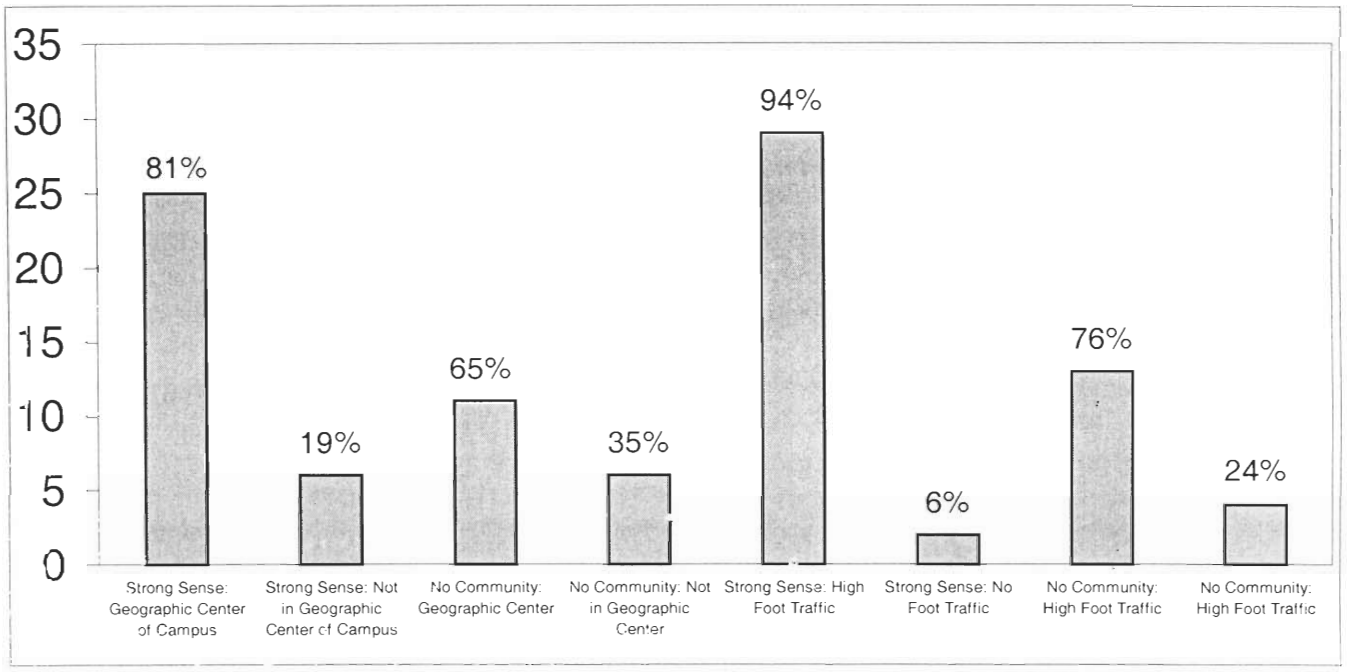


Although only 54 schools responded to the survey it was very representative as over 90% had a campus center. Of the schools with a campus center over 60% had a strong sense of community, while the other schools lacked a strong sense of community on their campus.

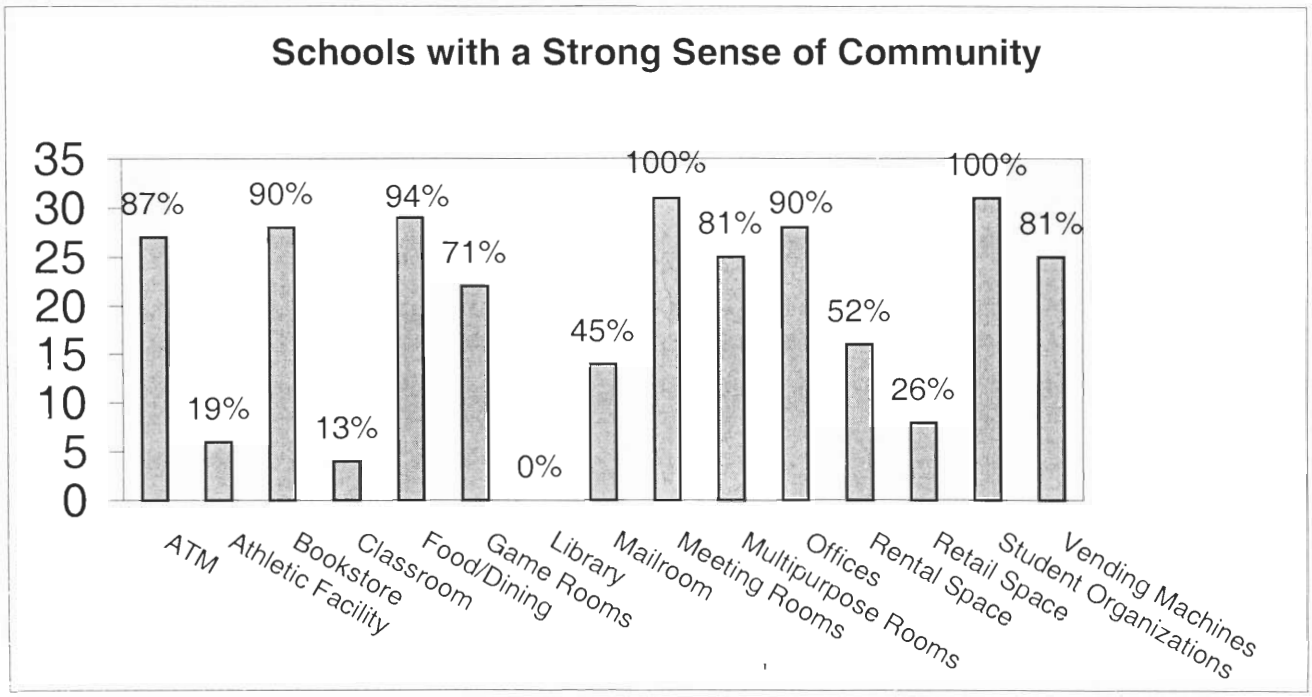


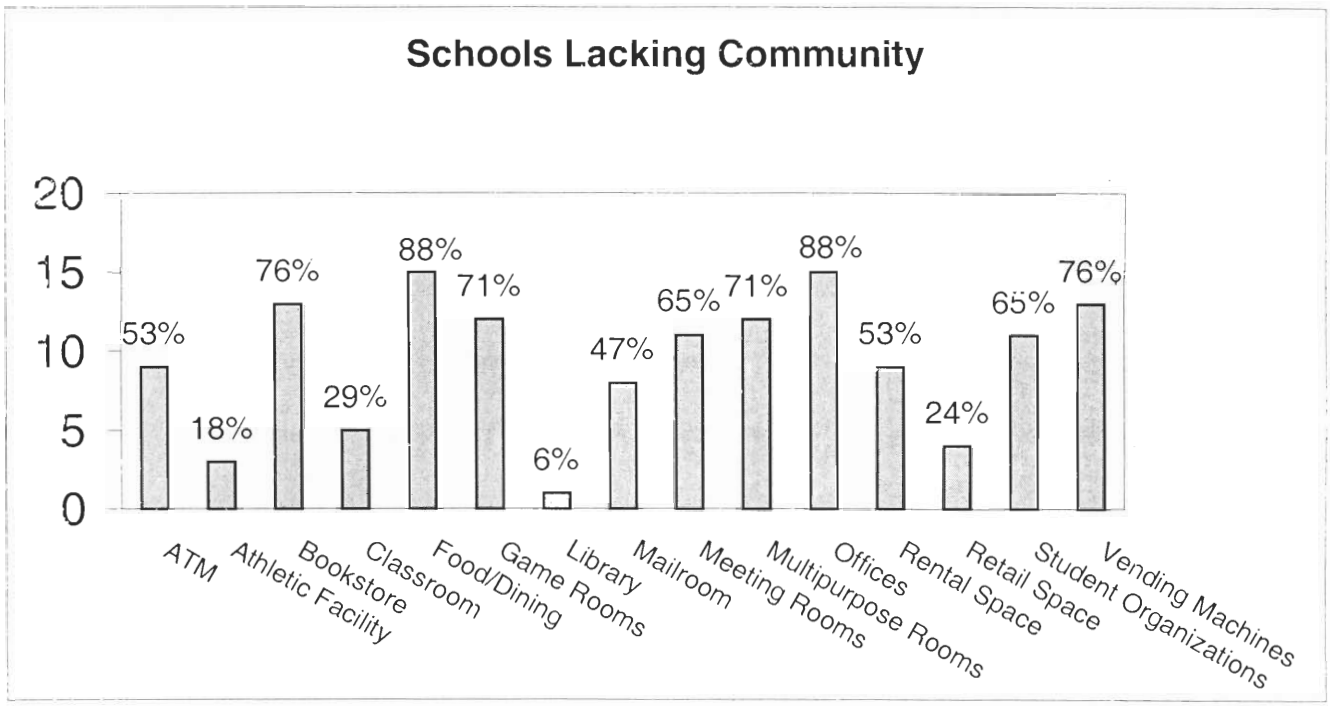
The campus center was located in the geographical center of campus in over 80% of the schools with community and 65% in the schools that lack community. Over 90% of the schools with community had their campus center located in an area with high foot traffic and three-fourths of the schools without community housed their campus center in

high foot traffic areas. These numbers suggest that most campus centers are located in the center of campus where there is a high traffic area.



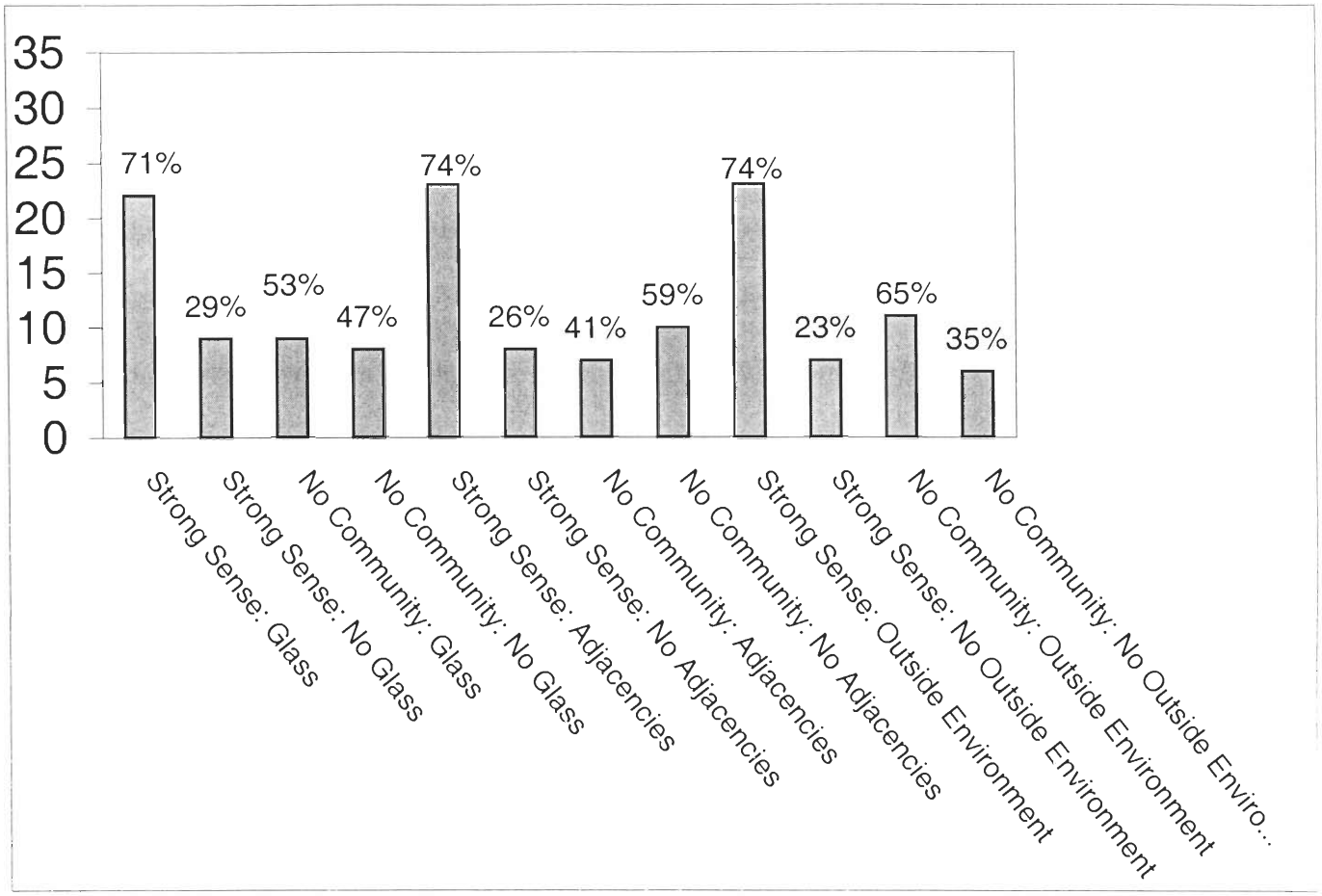
One thing that must be considered is that every campus center is different. However, despite these differences, many campus centers have the same features. According to our survey, 80% of the campuses who had a strong sense of community claimed to have the following: bookstore, food or dining services, meeting rooms, multipurpose rooms, offices, ATM, student organization offices, and vending machines, whereas those schools who did not have a strong sense of community only had Food/Dining Services and Offices ranking higher than 80%.



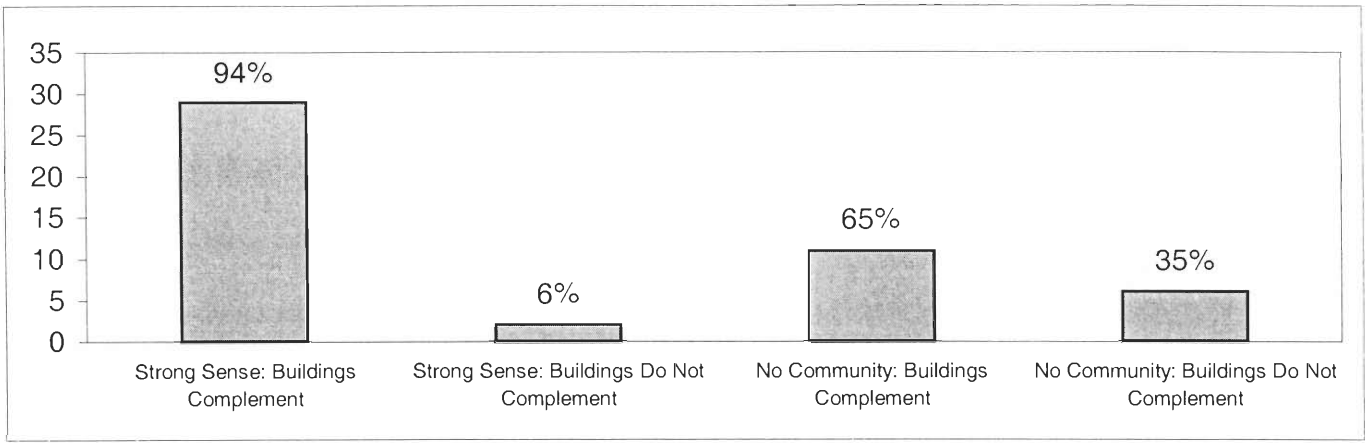


Through our travels to different campus centers and through our research, we noticed that most campus centers use glass, adjacencies or both in their design. When we

use the term "adjacencies", we are referring to the intentional placement of certain features of the building next to or near each other to optimize the use and satisfaction of these features. When asking this in our survey, 71% or the schools who had a strong sense of community also used a lot of glass in their design and 74 % used adjacencies in their campus. The numbers for the schools without community were lower as 53 % used a lot of glass and only 41% used adjacencies in their campus center. Many times, glass is used in order to bring the outside environment into the campus center in order to allow students to experience nature while enjoying the comfort of the campus center's interior. Of the schools that had a strong sense of community, 74% feel as if the outside environment is easily identifiable from within the building whereas 65% of the schools without community found the outside environment to be easily identifiable. The buildings and environment around the campus center can have an effect on the way the campus center is viewed, and used.



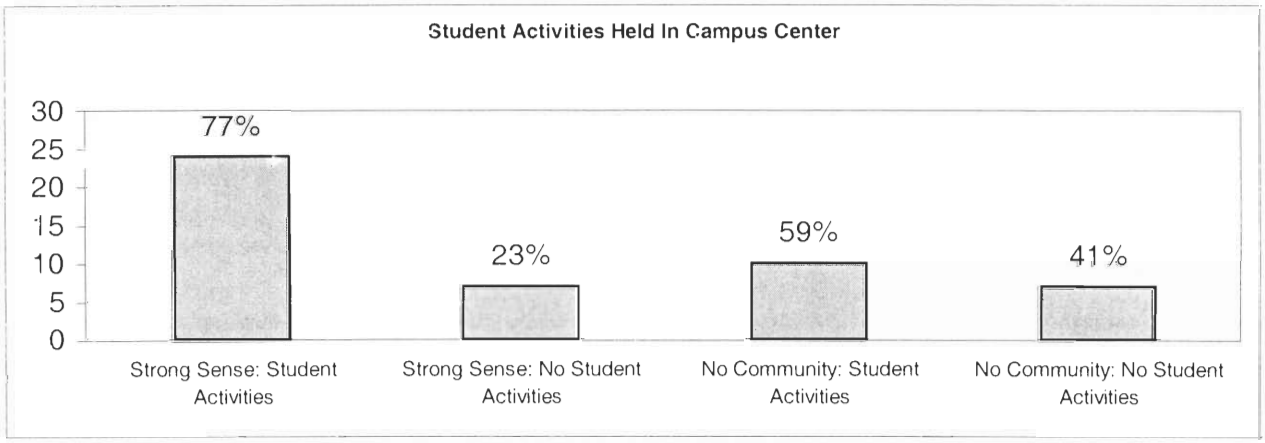
Although the outside environment needs to be identifiable from within the interior of the campus center, the campus center also needs to be identifiable from the outside. This is another reason for the glass. To aid in the identity of the campus center, the building is often designed to complement the surrounding buildings but not fit in completely. It is done this way so that the building is still able to keep its own identity while not looking totally out of place. According to our survey, almost 95% of the campuses that had a strong sense of community also have a building that complements the surrounding buildings, whereas only 65% of the campuses that lacked that strong sense of community could also claim that their campus center complements the surrounding buildings.

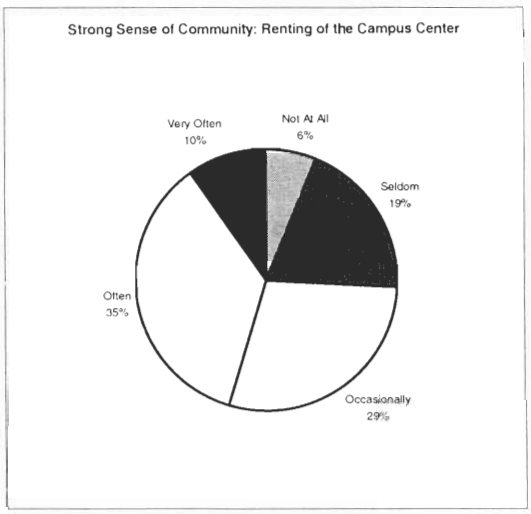


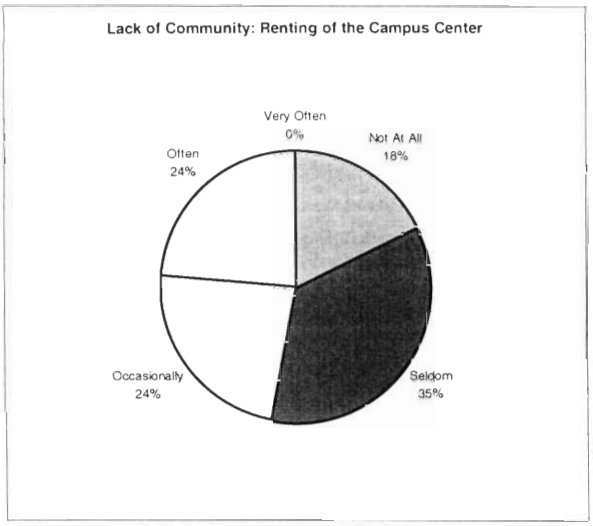
Through some of our surveys, we picked up on another theme used in campus centers; however, we also realized that not all campus centers followed this trend. Some campus centers tend to use a lot of corridors in their design, whereas others tend to use more large interior spaces. Our data shows a relatively even distribution of results on this question. When taking the data from all schools the results were right down the middle with 44% using a lot of corridors, and 54% using more large open interior spaces. When further analyzing this data and breaking it down into those campus with and without a strong community, the results stayed very similar, with those having a strong sense of community having 48% with more corridors, and 52% with more large open interior spaces. Those schools lacking the sense of community responded with a 60/40 split in favor of large interior spaces. However, of those who had more corridors than interior spaces, there was a majority of over 70% in each of the three categories who felt that their campus would be more successful if it had more large open interior spaces.

When developing our survey, it was suggested by a member of the staff at WPI to ask a question regarding campus center programming. From this suggestion we were able to develop a few questions regarding this topic. One of these questions was designed to

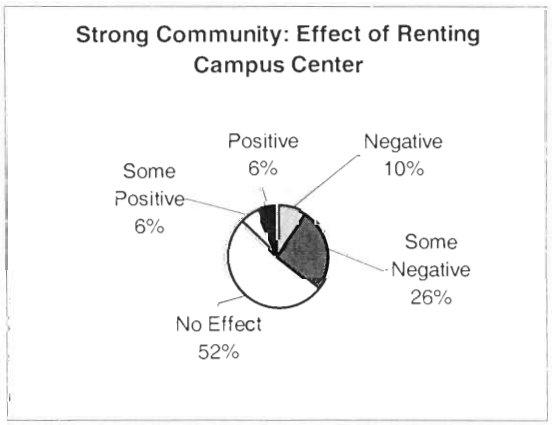
determine whether the majority of the student activities that are planned are also housed/held in their campus center. According to our data, 77% of the schools with a strong sense of community hold the majority of their student activities in their campus center. When the same question was asked of the school lacking community, a smaller majority of 59% responded affirmatively. Additionally, we looked at how often campuses rented out space in their campus center for other events such as conferences and conventions and also the effect that the renting has on the use that it receives form students, faculty and staff. Our results show that 45% of the strong community schools rent out their space more than occasionally whereas only 24% of the schools lacking community do the same. In a similar fashion, 25% of the strong community schools rent less than occasionally as compared to the 52% of the community lacking schools. The two types of schools were very similar in their responses to occasionally renting out their space, both in the area of 27%.

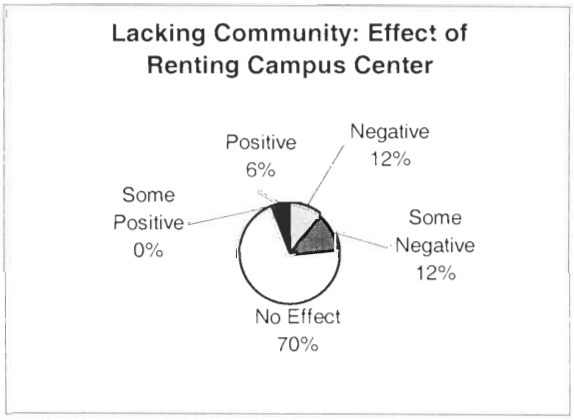




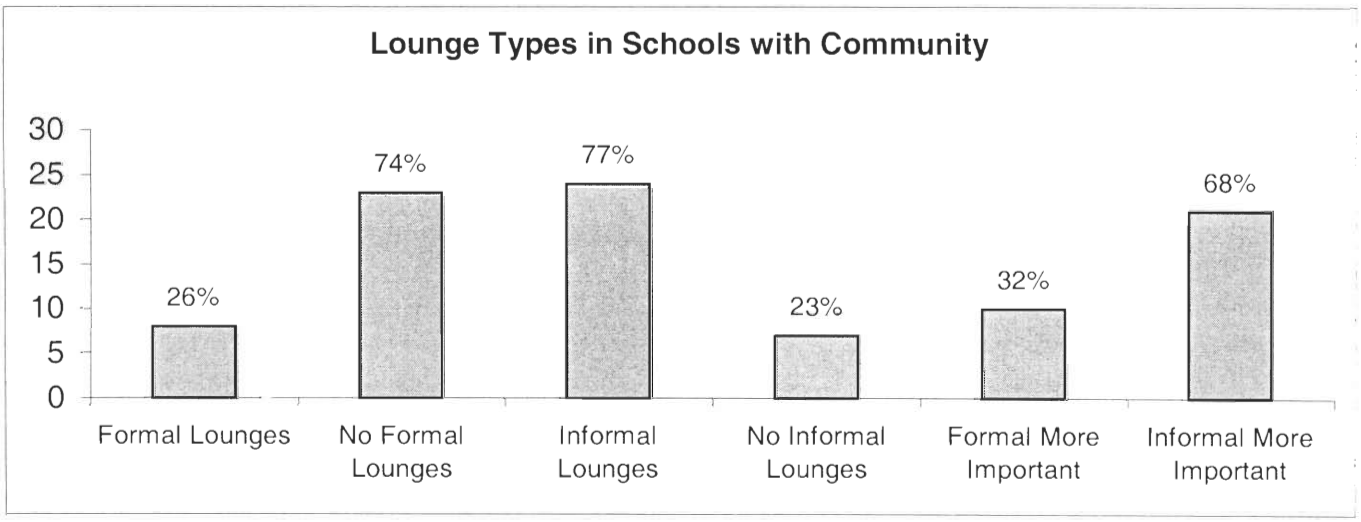


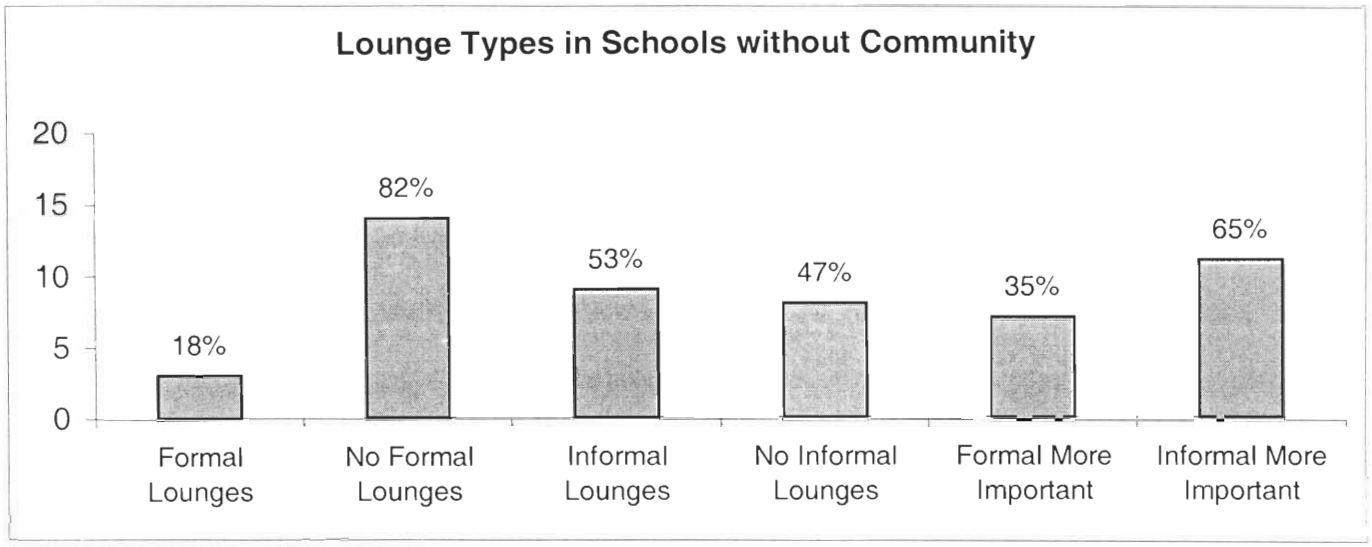
The effect that this renting had on the use that their centers received was very interesting. 36% of the schools that have a strong community claim to receive some sort of negative effect, whereas only 24% of the schools lacking community receive any sort of negative effect. In contrast, 12% of the community schools receive some sort of positive effect as a result of their renting, as compared to the 6% of the non-community schools who received any sort of positive effect due to the renting. Also, 71% of the non-community schools claimed that the renting had no effect on its usage, whereas just over half of the strong community schools claimed no effect at 52%.



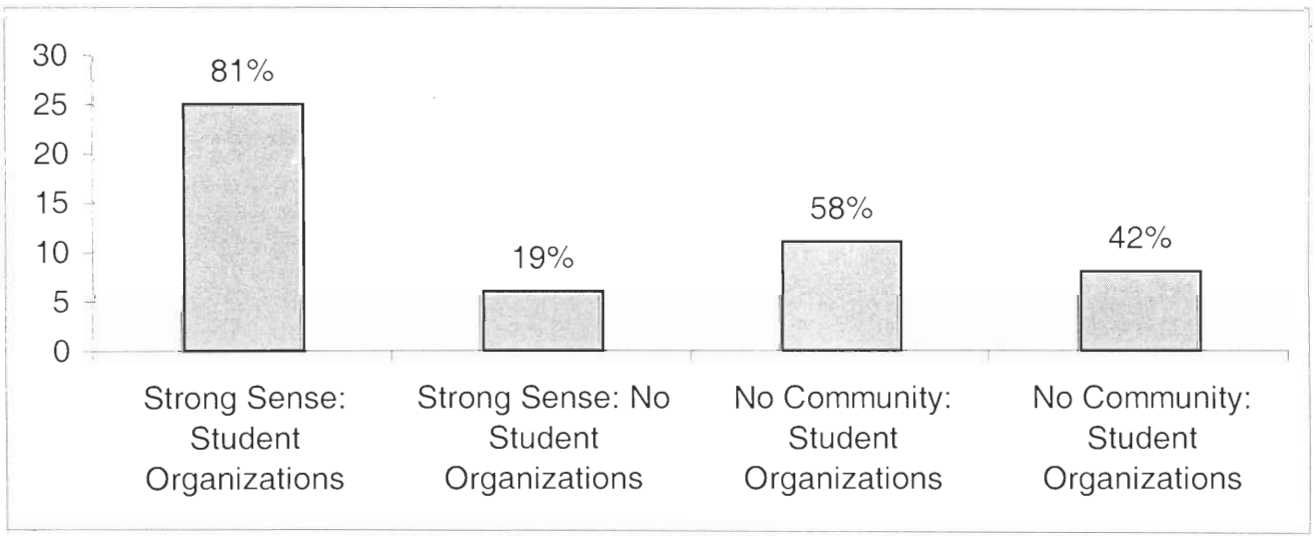


The different things that are common in campus centers have been mentioned throughout this section. One of these things that can be found in almost all campus centers is a lounge. Regardless of the type of lounge, almost every campus center has some. The two types of lounges noted were formal and informal spaces. Some centers have just one, while others have both. According to our results, 74% of the strong community schools did not have many formal lounges, and 82% of the community lacking schools also did not have many formal lounge areas. However, 77% of the strong-community school had many informal lounges compared to only 53% of the community-lacking schools. When asked which were more important, both the strong community schools and the non-strong community schools responded similarly with 68% and 65% respectively, that informal lounges were more important.

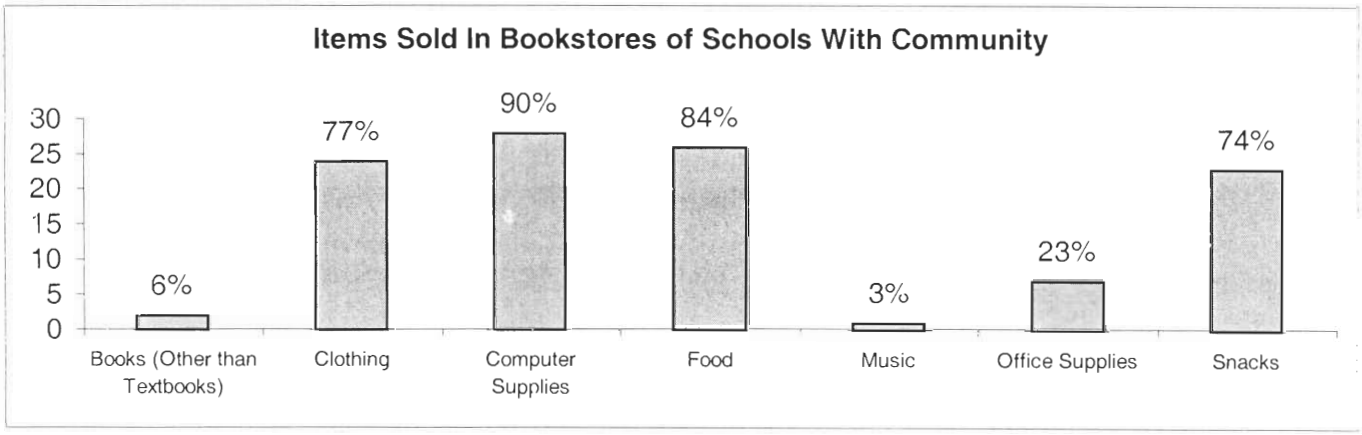


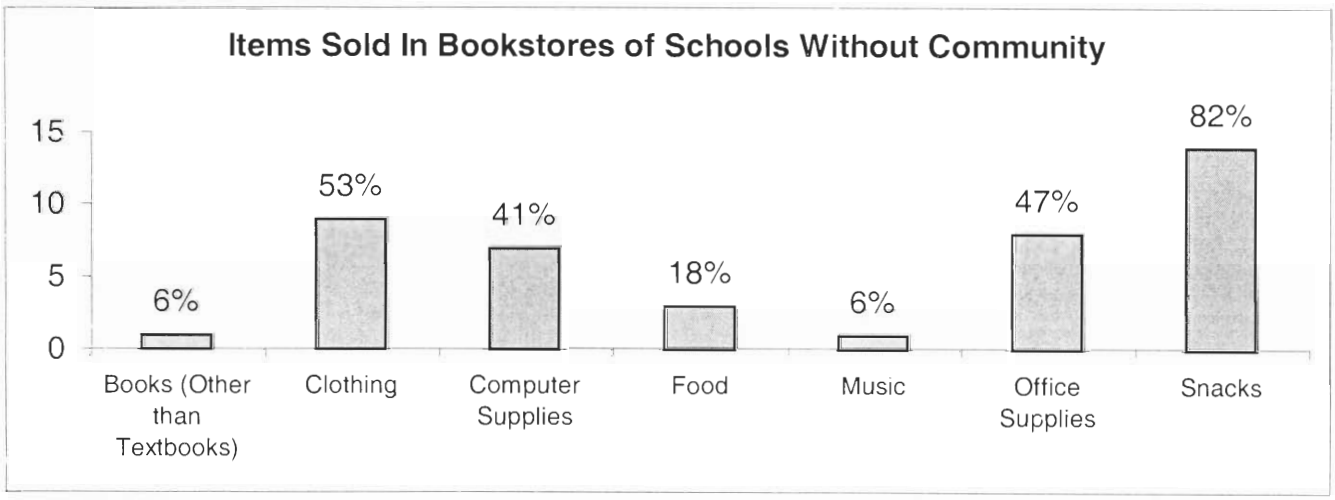


Within any given campus center, many different types of offices could potentially be present. One important type of office was student organization facilities. When we asked whether or not the majority of student organizations are housed in the campus center, a very large majority of 81% of the schools with a strong sense of community did indeed house their student organization offices in their campus center. By contrast, only 58% (still a majority) of the schools lacking community claimed to house their student organizations in the campus center.

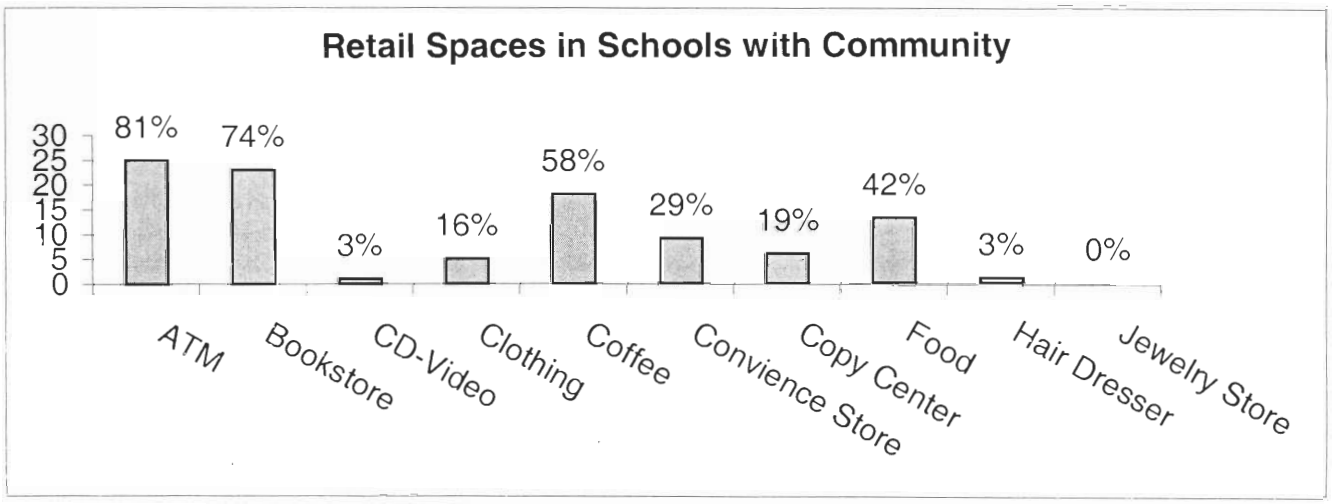


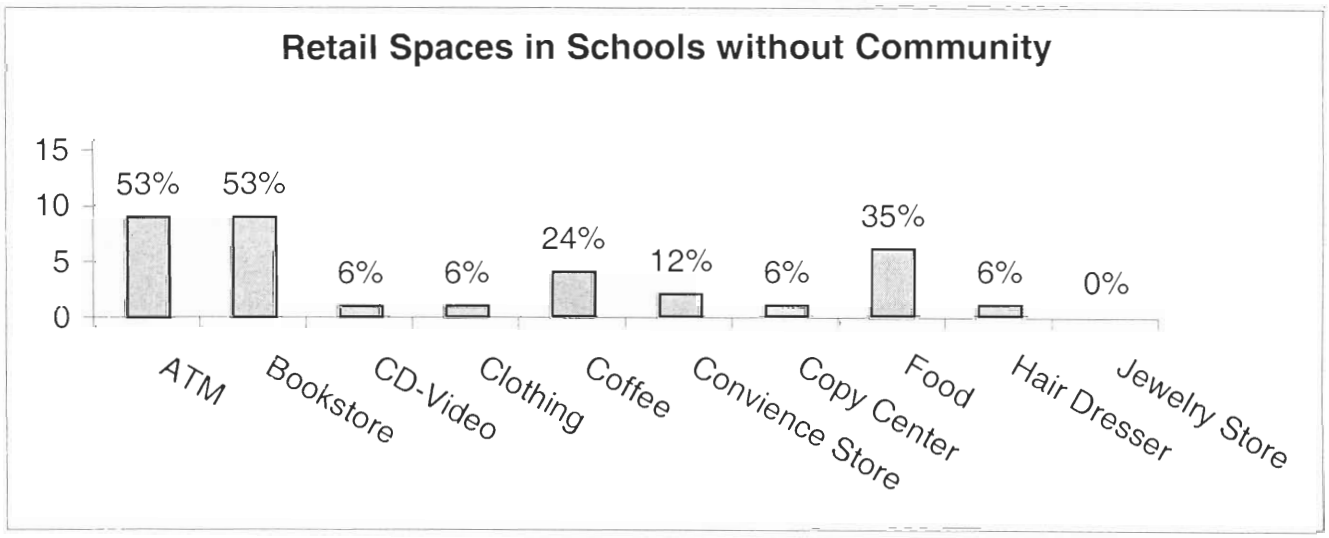
The next type of question we used looked at what was sold in various campus centers, whether it is in their bookstore or other retail space. We couldn't really ask one generic question, so we first decided to determine what was sold in the bookstores of the different schools. We compiled our list by using all of the items that were commonly sold in bookstores. From our data, we determined that in the schools that have a strong sense of community, the most common things sold were computer supplies, food and snacks, and clothing. These were all found in over 82% of the schools surveyed. The schools lacking the sense of community responded quite differently. They only had snacks available in 75% of the schools.





The next set of data looks at the retail space in campus centers. The most common retail available in the campus centers with the strong sense of community is ATMs and bookstores, both common in more than 75% of the campuses. In contrast the schools lacking community had ATMs and bookstores in only 53% of the campuses. Also, when discussing ATMs they are the only ones available on campus in 65% of the schools with strong community and 35% in the remaining schools.





The final section of our data looks at what the recipients of the survey thought were the most important features to be included in a campus center in order to provide a good sense of community. According to the schools who already posses a strong sense of community, the five most important features were food with an average rating of 2.2, multipurpose room averaging 3.8, meeting rooms averaging 4.3, bookstore with an average rating of 5.6, and finally mailrooms ranked fifth with an average rank of 5.8. According to the schools without that strong sense of community, the five most important were as follows. Food was the most important with an average rank of 3.3, then multipurpose room averaging a 4.8, followed by game room with an average rank of 5.0, then student organization offices with a rank of 5.5, and finally meeting rooms were ranked fifth receiving an average rank of 5.6.

Overall Rankings			
Rank	Total	Strong Community	No Community
1	Food	Food	Food
2	Multipurpose Room	Multipurpose Room	Multipurpose Room
3	Meeting Room	Meeting Room	Game Room
4	Student Organizations	Bookstore	Student Organizations
5	Bookstore	Mailroom	Meeting Room
6	Game Room	Student Organizations	Bookstore
7	Mailroom	Offices	Offices
8	Offices	Game Room	Convenience Store
9	Athletic Facilities	ATM	Mailroom
10	Convenience Store	Athletic Facilities	Athletic Facilities
11	ATM	Convenience Store	Copy Center
12	Copy Center	Copy Center	ATM
13	Retail Space	Vending Machines	Retail Space
14	Vending Machines	Retail Space	Vending Machines
15	Classroom	Classroom	Rental Space
16	Rental Space	Library	Classroom
17	Library	Rental Space	Library

3.3 Results of Other Institutions (Qualitative)

This part of the results will deal with the qualitative questions and the responses they yielded. One of the first open-ended type questions asked the respondents what other facilities their campus center had. Although most of the results were different, there was one similarity that was repeated by many. Many different campus centers had computers, although these ranged from stand-up email terminals to actual computer labs.

When asked where the campus center was located in relation to their residence halls and commuter lot, almost all of the schools, both those with a strong sense of community and those without, indicated that their campus was located either between the two, or a very short walking distance from both. When asked what particular adjacencies were used in their campus center, some common responses were that the bookstore was usually near the entrance, the mailroom was usually located near either the food/cash operation, and the meeting rooms were usually on the upper levels. Some schools made a mention of the student organizations and other offices being housed near each other, but most focused on the adjacencies of the bookstore, mailroom, and meeting rooms. There did not appear to be any difference between the results of the two different types of schools surveyed.

Next, the respondents indicated which of the two types of lounges were more important and why. These responses were remarkably similar between the two test groups. Almost all of the responses indicated that informal lounges were better because they provided a place for free discussion or interaction. It was suggested that students feel more comfortable in informal lounge areas because they don't feel quite as uptight.

Finally, we wished to determine whether or not campus centers, in the opinion of the respondents, helped in improving the sense of community on college campuses.

Again, the answers were very similar between the two groups. Nearly everyone who completed the survey felt that campus centers do in fact help to improve the sense of community. However, many of the respondents indicated that the campus center is a building, and that it is the entire program of the campus that improves community, not just the building.

3.4 Validity of Results

Our results for this project cannot be considered fully valid and reliable. Due to a low number of responses (~34%), our sample cannot be considered as a completely random sample, as not enough of our target group completed the survey. This does not mean that our data is not accurate; it only means that it cannot be guaranteed that all of the target group would have responded with the same patterns.

4 Recommendations

4.1 Recommendations for Strong Sense of Community

The responses from the campus center professionals indicated that there were certain features that would help in having a successful campus center. These features are outlined in our recommendations. These recommendation are based solely upon the collected data and are separate from the features that were common through the literature reviewed on campus centers. According to our data, a campus center that had these features would help in providing the campus with a strong sense of community. Those schools, which are either building a new campus center or renovating an already existing campus center, can use the recommendations that we make, but they may prove to be unhelpful in retrofitting a campus center, as that was beyond the scope of our project. Recommendations are based on the information we received from our surveys, specifically comparing the schools with and without strong senses of community.

Successful campus centers should be located in an area with high foot traffic on campus. If the campus has a significant amount of commuter students, the campus center should be located a short walk from both the residence halls and the commuter lots. The combination of these recommendations allows the campus center to be easily accessible and to be used as a shortcut on the way to and from class. The advantage of this is that it promotes community by placing students who may not normally see each other on a day-to-day basis in a common place.

Successful campus centers share particular features. Campus centers should include at least one ATM, meeting rooms, student organization offices, and optionally a

coffee shop. ATMs should be included in a campus center because they are a necessity to many students, faculty and staff, and provide a reason for students to go into the building. This also holds true for the coffee shops. Features that are used on a daily basis are intentionally placed in the campus center, as to insure that they will enter the building at least once every day. The hope is that once they enter the building, something will catch their attention and end up keeping them in the building for longer than intended. The same is true with conference/meeting rooms, and student organization offices as they serve as a reason to enter the building to meet with other people. Upon completion of the meeting of the group, other social interactions will take place, and they will be entertained by something else that the building has to offer.

Adjacencies are extremely important in the design of the campus center, as are the intentional placements of certain features of the building in order to optimize the use and satisfaction of these features. Since every school is different, adjacencies may differ based upon what the needs are of the individual school. Some useful adjacencies would be placing the bookstore near the entrance, meeting rooms on upper levels, mailroom located by either the food operation or game room, and student organization facilities located in the same area, clustered together. These suggestions are made based on the most common adjacencies recommended by our respondents.

The exterior design of the campus center should complement the surrounding buildings. The building should maintain its own identity on campus as well as looking as though it belongs on campus.

A successful campus center should have informal lounges as they give the students a place of their own to study, relax, and converse with friends in a more relaxed

setting. Informal lounges also promote social interaction in a setting that is more relaxed than a formal lounge. Lounges are important features, however informal lounges seem to help create more community than do formal lounges.

4.2 Other Suggestions

The suggestions found in this section were derived from the same data. Although there was not a significant difference in the pattern for those schools with a strong sense of community and those without, these features were deemed important to the success of campus centers, by directors.

Glass should play a significant role in the construction of campus centers. Using as much glass as possible allows for the outside environment to be enjoyed and experienced from within the campus center, allowing students, faculty and staff to enjoy what the building has to offer while still experiencing the external elements. Inside the campus center there should be more large open interior spaces, as opposed to corridors as large open spaces allow for more opportunity for interaction between people and a more user-friendly, navigable building, as everything can be seen better.

The majority of student activities that are planned on the campus should be housed in the campus center, giving students a reason to go to the campus center and then, when finished, using other services in the building. Informal lounges should be included in all campus centers as they give the students a place of their own to study, relax, and converse with friends in a more relaxed setting.

4.3 Validity of Recommendations and Suggestions

The recommendations that we have made are based upon statistical analysis of our data. We subjected all of our data to Chi-Square tests in order to determine whether there was a correlation between the results for those schools with a strong sense of community and those without. A Chi-Square probability of <0.09 was used as a guideline, as that would indicate strongly that there is a difference in the response patterns of those schools with and without a strong sense of community. Some of the Chi-Square tests used may be invalid due to our small sample size. However we feel as though the tests have been sufficient to make recommendations. A copy of the Chi-Square tests can be found in Appendix E.

When making suggestions in Section 4.2, the results from the Chi-Square tests were also considered but they did not show any significant deviations in voting trends between the two types of schools. Instead, the raw percentages were considered since we knew that the voting trends were consistent between the two groups. Suggestions were determined by considering those high percentages in the two sample groups, and then using approximately 70% as a guideline. If those schools with a strong sense of community had more than 70% in a certain category, then it was considered, and if both groups had 90% of a certain feature, then it was also considered.

5 Conclusions

The original goal of our project was to determine whether or not WPI's new Campus Center would be successful after it opened in March 2001. Throughout this project, we defined a "successful" campus center as one that helped in creating a strong sense of community on their campus. We planned to determine the success of WPI's campus center by first determining what made a successful campus center according to campus center professionals at colleges around the country, and also according to WPI's campus center director. We targeted those schools most like WPI so that we would have more accurate comparisons. Based on our results, we developed a list of recommendations that should be considered when either constructing or renovating a campus center.

When comparing the recommendations made to the results obtained from the survey given to Jim McLaughlin we noticed many similarities. According to Mr. McLaughlin our campus center has all of the features that we recommend in a campus center. In addition, WPI also meets all of our recommendations for the geographical location of a campus center on a college campus. The physical design of WPI's campus center utilizes a lot of glass, complements the other buildings, and uses primarily large open interior spaces. WPI has many informal lounge areas, which we recommend to allow more interaction between the people using the campus center. Regarding the interior design of WPI's campus center, it utilizes all of the adjacencies that we recommend, as the bookstore is near the entrance, the mailroom is near the food service, meeting rooms are upstairs, and the student organizations are all housed together.

According to Jim McLaughlin WPI will be planning the majority of our student activities in the campus center in the future, which we feel will be pivotal in its success. The campus center currently meets almost all of our recommendations and has plans to meet the remainder in the future. The results of this Interactive Qualifying Project demonstrate that WPI's new campus center should be very successful and will help to provide a strong sense of campus community.

The original strategy for the project was to gather information about the campus center at WPI from a student's perspective and to determine from them what is important in a campus center. A pre-test and a post-test were planned around the opening of the building. However, due to a delay in the opening of the building, it was not feasible to conduct these surveys. So, we opted to survey campus center professionals instead. We encourage further research in this area to determine WPI's opinion about the success of the campus center.

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Appendix A

February 14, 2001

Dear Colleague:

I am writing to you to request your assistance in helping a group of students that are doing an academic research project that relates to an assessment of opinions/perception of the impact of the College Union/Campus Center in creating a greater sense of community amongst the members of a university community. The students are also interested in examining how architectural design and the building program enhance the sense of community at a college or university. The students were inspired to choose this topic due to the construction of the first Campus Center on the campus of Worcester Polytechnic Institute (WPI). The Campus Center will open this March. Needless to say, all members of our university community are very excited about the opening of our new 72,000 square foot Campus Center.

I'm requesting you to take a few minutes of your time to answer the survey designed by the students. The students have made the survey user-friendly and you can respond on line by clicking here. This project is the Interactive Qualifying Project (IQP) for the students. Completing the IQP is one of the requirements to graduate for all students at WPI.

I thank you for your assistance in helping our students with this academic project. If you are using a telnet connection for your email, the web address for the survey is: http://www.wpi.edu/~rjlen3/feedback.htm

Sincerely,
James McLaughlin
Director, Campus Center and Student Activities
Worcester Polytechnic Institute

Appendix B

Hi, this email is regarding the email which we sent to you all approximately one week ago. This survey is an integral part of our Interactive Qualifying Project (IQP), a graduation requirement, here at Worcester Polytechnic Institute and without the results from this survey, it will not be possible to complete the project. The survey we sent out was regarding campus centers and their impact on the sense of community on college campus'. We wish to determine what features and characteristics that campus centers posses affect the sense of community on campus.

We generated a list of schools that are similar to WPI in different categories, and your names were chosen because we feel that you are the most knowledgeable people on your campus to answer this survey.

For those of you who have already completed this survey, we thank you and greatly appreciate your time and effort. If you have not already completed this survey, we ask you once again to please take 5 minutes to fill it out. We are relying on your help so we are able to complete our project and fulfill our graduation requirements. The survey can be accessed online at the following address: http://www.wpi.edu/~rjlen3/feedback.htm, and must be completed no later than Wednesday February 28, 2001. Thank You in advance for your help.

Sincerely,

Alexander J. Curry and Robert John Leonard
Biomedical Engineering
Worcester Polytechnic Institute

"Some people create with words or with music or with a brush and paints. I like to make something beautiful when I run. I like to make people stop and say, 'I've never seen anyone run like that before.' It's more than just a race, it's style. It's doing something better than anyone else. It's being creative."

-Steve Prefontaine

Appendix C

Campus Center Survey

We would first like to thank you for taking your time to fill out our survey. The purpose of this survey is to determine what the essential ingredients are that go into the making of a sucessful campus center and provide a strong sense of community on campus. Throughout this survey we will be using the term "campus center", but by this we are actually referring to many other names of buildings, including: student centers, student activity centers, campus centers, college unions, student unions, etc... Please answer the questions directly. Thank you again for you time and cooperation, it is greatly appreciated.

Part I. Institutional Information

1. Type of Institution (check all that apply):

- ☐ 4 Year
- ☐ 2 Year
- ☐ Private
- ☐ Public
- ☐ Urban
- ☐ Rural
- ☐ Suburban
- ☐ Single Sex
- ☐ Regiliously Affiliated

2. Undergraduate Student Body:

- ○ 0-1,000
- ○ 1,001-2,500
- ○ 2,501-4,000
- ○ 4,001-10,000
- ○ 10,001-20,000
- ○ Over 20,000

3. Graduate Student Body:

- ○ 0-1,000
- ○ 1,001-2,500
- ○ 2,501-4,000
- ○ 4,001-10,000
- ○ Over 10,000

4. My Institution is primarily known for its emphasis in:

- ☐ Business
- ☐ Education
- ☐ Engineering
- ☐ Liberal Arts
- ☐ Professional Fields
- ☐ Science
- ☐ Technology
- ☐ Other _____

5. Percentage of students living on-campus (Please specify).

- _____

6. Percentage of commuter students:

- ○ 0-20%
- ○ 21-40%
- ○ 41-60%
- ○ 61-80%
- ○ 81-100%

Part II. Campus Center Information

7. Does your campus currently include a campus center?

- ○ Yes (if Yes, please continue)
- ○ No (if No, skip to question #34)

8. Is your campus center located at or near the geographical center of your campus?

- ○ Yes
- ○ No

9. Is your campus center located in a place with high foot traffic?

- ○ Yes
- ○ No

10. Does your campus center include any of the following (check all that apply):

- ☐ ATM
- ☐ Athletic/Recreation Facilities
- ☐ Bookstore
- ☐ Classrooms
- ☐ Food/Dining Services
- ☐ Game Rooms
- ☐ Library
- ☐ Mailroom
- ☐ Meeting Rooms
- ☐ Multi-purpose rooms
- ☐ Offices
- ☐ Rental Space for Outside Organizations (Conventions, Conferences, etc....)
- ☐ Retail Space
- ☐ Student Organization Offices
- ☐ Vending Machines
- ☐ Other

11. How frequently do your students use your campus center?

- ○ Not at all
- ○ Seldom
- ○ Occasionally
- ○ Often
- ○ Very Often

12. If your Institution has a significant percentage of commuter students, where is your campus center located in relation to your residence halls and commuter parking lot?

13. Does your campus center utilize a lot of glass?

- ○ Yes
- ○ No

14. Does your campus center have clear sight lines? (Able to clearly identify the different areas of the building by standing in one place and looking around)

- ○ Yes

- ○ No

15. Does your campus center use certain adjacencies to make the building more successful? (i.e. Mailroom downstairs, bookstore near entrance, game room near lounge, etc...)

- ○ Yes
- ○ No

16. What are particularly good adjacencies or ones you wish your campus center had?

17. Is the outside environment easily identifiable from within the building?

- ○ Yes
- ○ No

18. Does your campus center compliment the other buildings on your campus? (i.e. does it fit in with the buildings around it and still house its own identity?)

- ○ Yes
- ○ No

19. Does your campus center primarily use more corridors in its design, or does it use more large open interior spaces?

- ○ Corridors (please answer #20, then skip to #22)
- ○ Large Open Interior Spaces (please skip to #21)

20. Do you think your campus center would be more successful if it had more large open interior spaces?

- ○ Yes
- ○ No

21. Do you think your campus center would be more successful if it had more corridors in its design?

- ○ Yes
- ○ No

22. Are most of the major student activities and events that are planned, also held in your campus center?

- ○ Yes
- ○ No

23. How often does your campus center rent out space to external organizations for special events such as conferences, conventions, etc...?

- ○ Not at all
- ○ Seldom
- ○ Occasionally
- ○ Often
- ○ Very Often

24. How much do you think the renting of your campus center space affects the use it gets from student/faculty/staff not participating in those events?

- ○ Negatively
- ○ Somewhat Negatively
- ○ No Effect
- ○ Somewhat Positively
- ○ Positively

25. Please explain in a few sentences your response to the previous question, specifically addressing why/why not the renting of campus center space affects the use of the other parts of the building.

26. Does your campus center have many formal lounge areas for students/faculty/staff to read, study, etc...?

- ○ Yes
- ○ No

27. Does your campus center have many informal lounge areas for students/faculty/staff to relax, meet with friends, talk with others, etc...?

- ○ Yes
- ○ No

28. Which do you feel are more important, formal lounge areas or informal lounge areas?

- ○ Formal Lounges
- ○ Informal Lounges

29. Please explain your response to the previous question specifically addressing why one type of lounge would be more advantageous than the other.

30. Are the majority of the offices for your student organizations housed in your campus center?

- ○ Yes
- ○ No

30. If your campus center has a bookstore, please identify what goods are sold other than textbooks. (Check all that apply)

- ☐ Books and Magazines
- ☐ Clothing
- ☐ Computer Supplies (Software, Hardware, etc...)
- ☐ Food (not including snacks)
- ☐ Music or Videos
- ☐ Office/School Supplies
- ☐ Snacks and Drinks
- ☐ Other

32. If your campus center has retail spaces, please identify what types of retail are available. (Check all that apply)

- ☐ ATM
- ☐ Bookstore
- ☐ CD/Video Sales/Rental
- ☐ Clothing Sales
- ☐ Coffee Shop
- ☐ Convenience Store
- ☐ Copy Centers
- ☐ Food Services (Not including school cafeteria food)
- ☐ Hair Dressers

- ☐ Jewelry Sales
- ☐ Other

33. If your campus center has an ATM(s), are there any other ATM's on campus? If so, specify how many other ATM's are there on your campus?

- ○ Yes
- ○ No

Part III. Campus Centers and Community

34. Do you think that your campus has a strong sense of community?

- ○ Yes
- ○ No

35. Do you think that campus centers help in improving the sense of community on college campus'? Why or why not?

36. Is there anything you would change about your campus center to make it more successful and increase the sense of community? If yes what? If no, why not?

37. Please rank the following features, from 1-14, that should be included in a campus center in order to provide a good sense of community? (1-Most Important, 14-Least Important)

- ATM
- Athletic/Recreation Facilities
- Bookstore
- Classrooms
- Convenience Store
- Copy/Print Center
- Food/Dining Services
- Game Rooms

- [ ] Library
- [ ] Mailroom
- [ ] Meeting Rooms
- [ ] Multi-purpose rooms
- [ ] Offices
- [ ] Rental Space for Outside Organizations (Conventions, Conferences, etc....)
- [ ] Retail Space
- [ ] Student Organization Offices
- [ ] Vending Machines
- [ ] Other

38. If you would like a copy of our project, please leave us your email address and upon completion a final copy will be sent to you.

Submit Form | Clear Form

Alexander Curry & Robert Leonard

Worcester Polytechnic Institute

Revised: February 13, 2001

Appendix D

Survey Questions

We would first like to thank you for taking your time to fill out our survey. The purpose of this survey is to determine what the essential ingredients are that go into the making of a successful campus center. Throughout this survey we will be using the term "campus center", but by this we are actually referring to many other types of buildings, including: student centers, student activity centers, campus centers, college unions, student unions, etc... So, if you have on your campus, any of the listed buildings, please answer the questions appropriately. Thank you again for your time; your cooperation is greatly appreciated.

Part I. Institutional Information

1. Type of Institution (check all that apply):
   - __ 4 Year
   - __ 2 Year
   - __ Private
   - __ Public
   - __ Urban
   - __ Rural
   - __ Suburban
   - __ Single Sex
   - __ Religiously Affiliated

2. Undergraduate Student Body:
   - __ 0-1000
   - __ 1001-2500
   - __ 2501-4000
   - __ 4001-10,000
   - __ 10,001-20,000
   - __ Over 20,000

3. Graduate Student Body:
   - __ 0-1000
   - __ 1001-2500
   - __ 2501-4000
   - __ 4001-10,000
   - __ Over 10,001
   - __ Does not apply

4. My institution is primarily known for its emphasis in:
   - __ Business
   - __ Education
   - __ Engineering

__ Liberal Arts
__ Professional Fields
__ Science
__ Technology
__ Other

5. Percentage of students living on-campus (Please specify)

   _____

6. Percentage of Commuting Students:
   __ 0-20%
   __ 21-40%
   __ 41-60%
   __ 61-80%
   __ 81-100%

Part II. Campus Center Information

7. Will your campus center be located at or near the geographical center of your campus?
   __ Yes
   __ No

8. Will your campus center be located in a place with high foot traffic?
   __ Yes
   __ No

9. Will your campus center include any of the following (check all that apply):
   __ Library
   __ Athletic/Recreation Facilities
   __ Classrooms
   __ Offices
   __ Meeting Rooms
   __ Multi-purpose rooms
   __ Food/Dining Services
   __ Mailroom
   __ Game Rooms
   __ Bookstore
   __ Student Organization
   __ Rental Space for Outside Organizations (Conventions, Conferences, etc...)
   __ Retail Space
   __ ATM
   __ Vending Machines
   __ Other _____

10. If your Institution has a significant percentage of commuter students, where will your campus center be located in relation to you residence halls and commuter parking lot?

_____

_____

_____

_____

_____

11. Will your campus center utilize a lot of glass?
    - __ Yes
    - __ No

12. Will your campus center have clear sight lines? (Able to clearly identify the different areas of the building by standing in one place and looking around)
    - __ Yes
    - __ No

13. Will the outside environment be easily identifiable from within the building?
    - __ Yes
    - __ No

14. Will your campus center be conscious of the other buildings on your campus? (i.e. does it fit in with the buildings around it and still house its own identity?)
    - __ Yes
    - __ No

15. Will your campus center primarily use more corridors in its design, or does it use more large open interior spaces?
    - __ Corridors (please answer #16, then skip to #18)
    - __ Large Open Interior Spaces (please skip to #17)

16. Do you think your campus center would be more successful if it had more large open interior spaces?
    - __ Yes
    - __ No

17. Do you think your campus center would be more successful if it had more corridors in its design?
    - __ Yes
    - __ No

18. Will your campus center rent out space to external organizations, for special events such as conferences, conventions, etc...?
    - __ Yes
    - __ No

19. How much do you think the renting of your campus center space will affect the use it gets from student/faculty/staff not participating in those events?
    - __ Negatively
    - __ Somewhat Negatively
    - __ No Effect
    - __ Somewhat Positively
    - __ Positively

20. Please explain in a few sentences your response to the previous question. Specifically addressing why/why not the renting of campus center space affects the use of the other parts of the building.

    _____
    _____
    _____
    _____
    _____

21. Will your campus center have many formal lounge areas for students/faculty/staff to read, study, etc...?
    - __ Yes
    - __ No

22. Will your campus center have many informal lounge areas for students/faculty/staff to relax, meet with friends, talk with others, etc...?
    - __ Yes
    - __ No

23. Which do you feel are more important, formal lounge areas or informal lounge areas?
    - __ Formal Lounges
    - __ Informal Lounges

24. Please explain your response to the previous question specifically addressing why one type of lounge would be more advantageous than the other.

    _____
    _____
    _____
    _____
    _____

25. Will the majority of the offices for your student organizations housed in your campus center?
    - __ Yes
    - __ No

26. If the campus center will have a bookstore, please identify what goods will be sold other than textbooks. (Check all that apply)
    - __ Books and Magazines
    - __ Food (not including snacks)
    - __ Snacks and Drinks
    - __ Clothing
    - __ Office supplies
    - __ Computer Supplies (Software, Hardware, etc...)
    - __ Music or Videos
    - __ Other _____

27. If your campus center will have retail spaces, please identify what types of retail will be available. (Check all that apply)
    - __ Food Services (Not including school cafeteria food)
    - __ Bookstore
    - __ Convenience Store
    - __ ATM
    - __ Copy Centers
    - __ Hair Dressers
    - __ Clothing Stores
    - __ Jewelry Stores
    - __ CD Stores
    - __ Coffee Shop
    - __ Other _____

28. If your campus center will have an ATM(s), are there any other ATM's on campus? If so, how many other ATM's are there on your campus?
    - __ Yes
        - __ 1
        - __ 2
        - __ 3
        - __ 4 or more
    - __ No

Part III. Campus Centers and Community

29. Do you think that your campus has a strong sense of community?
    - __ Yes
    - __ No

30. Do you think that campus centers help in improving the sense of community on college campus'? Why or why not?

_____

_____

31. Please rank the following features, from 1-14, that should be included in a campus center in order to provide a good sense of community? (1-Most Important, 14-Least Important)
    - __ Library
    - __ Athletic/Recreation Facilities
    - __ Classrooms
    - __ Offices
    - __ Meeting Rooms
    - __ Multi-purpose rooms
    - __ Food/Dining Services
    - __ Mailroom
    - __ Game Rooms
    - __ Bookstore
    - __ Student Organization Offices
    - __ Rental Space for Outside Organizations (Conventions, Conferences, etc...)
    - __ Retail Space
    - __ Other _____

Appendix E

The FREQ Procedure

Table of center by commun

center	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	6 4.25 0.7206 12.50 50.00 35.29	6 7.75 0.3952 12.50 50.00 19.35	12 25.00
yes	11 12.75 0.2402 22.92 30.56 64.71	25 23.25 0.1317 52.08 69.44 80.65	36 75.00
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of center by commun

Statistic	DF	Value	Prob
Chi-Square	1	1.4877	0.2226
Likelihood Ratio Chi-Square	1	1.4474	0.2289
Continuity Adj. Chi-Square	1	0.7590	0.3836
Mantel-Haenszel Chi-Square	1	1.4567	0.2275
Phi Coefficient		0.1760	
Contingency Coefficient		0.1734	
Cramer's V		0.1760	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	6
Left-sided Pr <= F	0.9399
Right-sided Pr >= F	0.1909
Table Probability (P)	0.1308
Two-sided Pr <= P	0.3002

Sample Size = 48

The FREQ Procedure

Table of foottraffic by commun

foottraffic	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	4 2.125 1.6544 8.33 66.67 23.53	2 3.875 0.9073 4.17 33.33 6.45	6 12.50
yes	13 14.875 0.2363 27.08 30.95 76.47	29 27.125 0.1296 60.42 69.05 93.55	42 87.50
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of foottraffic by commun

Statistic	DF	Value	Prob
Chi-Square	1	2.9276	0.0871
Likelihood Ratio Chi-Square	1	2.7883	0.0950
Continuity Adj. Chi-Square	1	1.5744	0.2096
Mantel-Haenszel Chi-Square	1	2.8666	0.0904
Phi Coefficient		0.2470	
Contingency Coefficient		0.2398	
Cramer's V		0.2470	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	4
Left-sided Pr <= F	0.9834
Right-sided Pr >= F	0.1068
Table Probability (P)	0.0902
Two-sided Pr <= P	0.1668

Sample Size = 48

The FREQ Procedure

Table of glass by commun

glass	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	8 6.0208 0.6506 16.67 47.06 47.06	9 10.979 0.3568 18.75 52.94 29.03	17 35.42
yes	9 10.979 0.3568 18.75 29.03 52.94	22 20.021 0.1957 45.83 70.97 70.97	31 64.58
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of glass by commun

Statistic	DF	Value	Prob
Chi-Square	1	1.5598	0.2117
Likelihood Ratio Chi-Square	1	1.5394	0.2147
Continuity Adj. Chi-Square	1	0.8712	0.3506
Mantel-Haenszel Chi-Square	1	1.5273	0.2165
Phi Coefficient		0.1803	
Contingency Coefficient		0.1774	
Cramer's V		0.1803	

Fisher's Exact Test

Cell (1,1) Frequency (F)	8
Left-sided Pr <= F	0.9404
Right-sided Pr >= F	0.1751
Table Probability (P)	0.1155
Two-sided Pr <= P	0.2285

Sample Size = 48

The FREQ Procedure

Table of adjacencies by commun

adjacencies / commun Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	10 6.375 2.0613 20.83 55.56 58.82	8 11.625 1.1304 16.67 44.44 25.81	18 37.50
yes	7 10.625 1.2368 14.58 23.33 41.18	23 19.375 0.6782 47.92 76.67 74.19	30 62.50
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of adjacencies by commun

Statistic	DF	Value	Prob
Chi-Square	1	5.1066	0.0238
Likelihood Ratio Chi-Square	1	5.0719	0.0243
Continuity Adj. Chi-Square	1	3.7951	0.0514
Mantel-Haenszel Chi-Square	1	5.0003	0.0253
Phi Coefficient		0.3262	
Contingency Coefficient		0.3101	
Cramer's V		0.3262	

Fisher's Exact Test

Cell (1,1) Frequency (F)	10
Left-sided Pr <= F	0.9949
Right-sided Pr >= F	0.0261
Table Probability (P)	0.0210
Two-sided Pr <= P	0.0324

Sample Size = 48

The FREQ Procedure

Table of outsideenvironment by commun

outsideenvironment
commun

Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	6 4.9583 0.2188 12.50 42.86 35.29	8 9.0417 0.12 16.67 57.14 25.81	14 29.17
yes	11 12.042 0.0901 22.92 32.35 64.71	23 21.958 0.0494 47.92 67.65 74.19	34 70.83
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of outsideenvironment by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.4784	0.4892
Likelihood Ratio Chi-Square	1	0.4713	0.4924
Continuity Adj. Chi-Square	1	0.1294	0.7191
Mantel-Haenszel Chi-Square	1	0.4684	0.4937
Phi Coefficient		0.0998	
Contingency Coefficient		0.0993	
Cramer's V		0.0998	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	6
Left-sided Pr <= F	0.8469
Right-sided Pr >= F	0.3555
Table Probability (P)	0.2024
Two-sided Pr <= P	0.5225

Sample Size = 48

The FREQ Procedure

Table of compliment by commun

compliment / commun	none	strong	Total
no	6	2	8
	2.8333	5.1667	
	3.5392	1.9409	
	12.50	4.17	16.67
	75.00	25.00	
	35.29	6.45	
yes	11	29	40
	14.167	25.833	
	0.7078	0.3882	
	22.92	60.42	83.33
	27.50	72.50	
	64.71	93.55	
Total	17	31	48
	35.42	64.58	100.00

Statistics for Table of compliment by commun

Statistic	DF	Value	Prob
Chi-Square	1	6.5761	0.0103
Likelihood Ratio Chi-Square	1	6.3480	0.0118
Continuity Adj. Chi-Square	1	4.6634	0.0308
Mantel-Haenszel Chi-Square	1	6.4391	0.0112
Phi Coefficient		0.3701	
Contingency Coefficient		0.3471	
Cramer's V		0.3701	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	6
Left-sided Pr <= F	0.9983
Right-sided Pr >= F	0.0169
Table Probability (P)	0.0153
Two-sided Pr <= P	0.0169

Sample Size = 48

The FREQ Procedure

Table of corridororinteriorspace by commun

corridororinteriorspace
commun

Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	10 9.2083 0.0681 20.83 38.46 58.82	16 16.792 0.0373 33.33 61.54 51.61	26 54.17
yes	7 7.7917 0.0804 14.58 31.82 41.18	15 14.208 0.0441 31.25 68.18 48.39	22 45.83
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of corridororinteriorspace by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.2299	0.6316
Likelihood Ratio Chi-Square	1	0.2307	0.6310
Continuity Adj. Chi-Square	1	0.0312	0.8598
Mantel-Haenszel Chi-Square	1	0.2251	0.6351
Phi Coefficient		0.0692	
Contingency Coefficient		0.0690	
Cramer's V		0.0692	

Fisher's Exact Test

Cell (1,1) Frequency (F)	10
Left-sided Pr <= F	0.7824
Right-sided Pr >= F	0.4310
Table Probability (P)	0.2134
Two-sided Pr <= P	0.7646

Sample Size = 48

The FREQ Procedure

Table of majority_of_student_activities by commun

majority_of_student_activities
commun

Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	7 4.9583 0.8407 14.58 50.00 41.18	7 9.0417 0.461 14.58 50.00 22.58	14 29.17
yes	10 12.042 0.3462 20.83 29.41 58.82	24 21.958 0.1898 50.00 70.59 77.42	34 70.83
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of majority_of_student_activities by commu

Statistic	DF	Value	Prob
Chi-Square	1	1.8377	0.1752
Likelihood Ratio Chi-Square	1	1.7965	0.1801
Continuity Adj. Chi-Square	1	1.0478	0.3060
Mantel-Haenszel Chi-Square	1	1.7994	0.1798
Phi Coefficient		0.1957	
Contingency Coefficient		0.1920	
Cramer's V		0.1957	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test	
Cell (1,1) Frequency (F)	7
Left-sided Pr <= F	0.9529
Right-sided Pr >= F	0.1531
Table Probability (P)	0.1060
Two-sided Pr <= P	0.2007

Sample Size = 48

The FREQ Procedure

Table of many_formal by commun

many_formal	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	14 13.104 0.0612 29.17 37.84 82.35	23 23.896 0.0336 47.92 62.16 74.19	37 77.08
yes	3 3.8958 0.206 6.25 27.27 17.65	8 7.1042 0.113 16.67 72.73 25.81	11 22.92
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of many_formal by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.4138	0.5201
Likelihood Ratio Chi-Square	1	0.4263	0.5138
Continuity Adj. Chi-Square	1	0.0808	0.7762
Mantel-Haenszel Chi-Square	1	0.4052	0.5244
Phi Coefficient		0.0928	
Contingency Coefficient		0.0924	
Cramer's V		0.0928	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	14
Left-sided Pr <= F	0.8415
Right-sided Pr >= F	0.3959
Table Probability (P)	0.2374
Two-sided Pr <= P	0.7230

Sample Size = 48

The FREQ Procedure

Table of many_informal by commun

many_informal / commun	none	strong	Total
no	8	7	15
	5.3125	9.6875	
	1.3596	0.7456	
	16.67	14.58	31.25
	53.33	46.67	
	47.06	22.58	
yes	9	24	33
	11.688	21.313	
	0.618	0.3389	
	18.75	50.00	68.75
	27.27	72.73	
	52.94	77.42	
Total	17	31	48
	35.42	64.58	100.00

Statistics for Table of many_informal by commun

Statistic	DF	Value	Prob
Chi-Square	1	3.0620	0.0801
Likelihood Ratio Chi-Square	1	2.9983	0.0834
Continuity Adj. Chi-Square	1	2.0286	0.1544
Mantel-Haenszel Chi-Square	1	2.9982	0.0834
Phi Coefficient		0.2526	
Contingency Coefficient		0.2449	
Cramer's V		0.2526	

Fisher's Exact Test

Cell (1,1) Frequency (F)	8
Left-sided Pr <= F	0.9802
Right-sided Pr >= F	0.0782
Table Probability (P)	0.0585
Two-sided Pr <= P	0.1083

Sample Size = 48

The FREQ Procedure

Table of more_important by commun

more_important

commun

Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
formal	6 5.6667 0.0196 12.50 37.50 35.29	10 10.333 0.0108 20.83 62.50 32.26	16 33.33
informal	11 11.333 0.0098 22.92 34.38 64.71	21 20.667 0.0054 43.75 65.63 67.74	32 66.67
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of more_important by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.0455	0.8310
Likelihood Ratio Chi-Square	1	0.0454	0.8314
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.0446	0.8328
Phi Coefficient		0.0308	
Contingency Coefficient		0.0308	
Cramer's V		0.0308	

Fisher's Exact Test

Cell (1,1) Frequency (F)	6
Left-sided Pr <= F	0.7053
Right-sided Pr >= F	0.5381
Table Probability (P)	0.2434
Two-sided Pr <= P	1.0000

Sample Size = 48

The FREQ Procedure

Table of majority_student_orgs by commun

majority_student_orgs
commun

Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	7 4.6042 1.2467 14.58 53.85 41.18	6 8.3958 0.6837 12.50 46.15 19.35	13 27.08
yes	10 12.396 0.4631 20.83 28.57 58.82	25 22.604 0.2539 52.08 71.43 80.65	35 72.92
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of majority_student_orgs by commun

Statistic	DF	Value	Prob
Chi-Square	1	2.6474	0.1037
Likelihood Ratio Chi-Square	1	2.5751	0.1086
Continuity Adj. Chi-Square	1	1.6577	0.1979
Mantel-Haenszel Chi-Square	1	2.5922	0.1074
Phi Coefficient		0.2348	
Contingency Coefficient		0.2286	
Cramer's V		0.2348	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	7
Left-sided Pr <= F	0.9741
Right-sided Pr >= F	0.1001
Table Probability (P)	0.0742
Two-sided Pr <= P	0.1733

Sample Size = 48

The FREQ Procedure

Table of only_ATM by commun

only_ATM	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	5 3.6667 0.4848 12.82 38.46 45.45	8 9.3333 0.1905 20.51 61.54 28.57	13 33.33
yes	6 7.3333 0.2424 15.38 23.08 54.55	20 18.667 0.0952 51.28 76.92 71.43	26 66.67
Total	11 28.21	28 71.79	39 100.00

Statistics for Table of only_ATM by commun

Statistic	DF	Value	Prob
Chi-Square	1	1.0130	0.3142
Likelihood Ratio Chi-Square	1	0.9868	0.3205
Continuity Adj. Chi-Square	1	0.3957	0.5293
Mantel-Haenszel Chi-Square	1	0.9870	0.3205
Phi Coefficient		0.1612	
Contingency Coefficient		0.1591	
Cramer's V		0.1612	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	5
Left-sided Pr <= F	0.9152
Right-sided Pr >= F	0.2616
Table Probability (P)	0.1768
Two-sided Pr <= P	0.4528

Sample Size = 39

The FREQ Procedure

Table of freq by commun

freq / Frequency / Expected / Cell Chi-Square / Percent / Row Pct / Col Pct	commun: none	commun: strong	Total
seldom	2 0.6957 2.4457 4.35 100.00 12.50	0 1.3043 1.3043 0.00 0.00 0.00	2 4.35
occasion	3 1.3913 1.8601 6.52 75.00 18.75	1 2.6087 0.992 2.17 25.00 3.33	4 8.70
often	8 5.5652 1.0652 17.39 50.00 50.00	8 10.435 0.5681 17.39 50.00 26.67	16 34.78
very_oft	0 7.3043 7.3043 0.00 0.00 0.00	21 13.696 3.8957 45.65 100.00 70.00	21 45.65
v_often	3 1.0435 3.6685 6.52 100.00 18.75	0 1.9565 1.9565 0.00 0.00 0.00	3 6.52
Total	16 34.78	30 65.22	46 100.00

Statistics for Table of freq by commun

Statistic	DF	Value	Prob
Chi-Square	4	25.0604	<.0001
Likelihood Ratio Chi-Square	4	32.7609	<.0001
Mantel-Haenszel Chi-Square	1	6.7199	0.0095
Phi Coefficient		0.7381	
Contingency Coefficient		0.5939	
Cramer's V		0.7381	

WARNING: 60% of the cells have expected counts less than 5. Chi-Square may not be a valid test

Fisher's Exact Test

Table Probability (P)	5.192E-08
Pr <= P	7.979E-07

Sample Size = 46

acurry 12APR01

The FREQ Procedure

Table of how_often_rent by commun

how_often_rent

	commun	
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	strong	none	Total
not_at_a	2 1.2917 0.3884 4.17 100.00 6.45	0 0.7083 0.7083 0.00 0.00 0.00	2 4.17
none	0 1.9375 1.9375 0.00 0.00 0.00	3 1.0625 3.5331 6.25 100.00 17.65	3 6.25
seldom	6 7.75 0.3952 12.50 50.00 19.35	6 4.25 0.7206 12.50 50.00 35.29	12 25.00
occasion	9 8.3958 0.0435 18.75 69.23 29.03	4 4.6042 0.0793 8.33 30.77 23.53	13 27.08
often	11 9.6875 0.1778 22.92 73.33 35.48	4 5.3125 0.3243 8.33 26.67 23.53	15 31.25
very_oft	3 1.9375 0.5827 6.25 100.00 9.68	0 1.0625 1.0625 0.00 0.00 0.00	3 6.25
Total	31 64.58	17 35.42	48 100.00

Statistics for Table of how_often_rent by commun

Statistic	DF	Value	Prob
Chi-Square	5	9.0521	0.0766

Likelihood Ratio Chi-Square	5	12.3176	0.0307
Mantel-Haenszel Chi-Square	1	2.9941	0.0836
Phi Coefficient		0.4554	
Contingency Coefficient		0.4144	
Cramer's V		0.4554	

WARNING: 67% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Table Probability (P)	2.125E-04
Pr <= P	0.0928

Sample Size = 48

acurry 12APR01

The FREQ Procedure

Table of renting_affect by commun

renting_affect	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	strong	none	Total
negative	3 1.9375 0.5827 6.25 100.00 9.68	0 1.0625 1.0625 0.00 0.00 0.00	3 6.25
none	0 1.2917 1.2917 0.00 0.00 0.00	2 0.7083 2.3554 4.17 100.00 11.76	2 4.17
somewhat	10 6.4583 1.9422 20.83 100.00 32.26	0 3.5417 3.5417 0.00 0.00 0.00	10 20.83
seldom	0 1.2917 1.2917 0.00 0.00 0.00	2 0.7083 2.3554 4.17 100.00 11.76	2 4.17
no_effec	16 10.333 3.1075 33.33 100.00 51.61	0 5.6667 5.6667 0.00 0.00 0.00	16 33.33
occasion	0 7.75 7.75 0.00 0.00 0.00	12 4.25 14.132 25.00 100.00 70.59	12 25.00
positive	2 1.2917 0.3884 4.17 100.00 6.45	0 0.7083 0.7083 0.00 0.00 0.00	2 4.17
v_often	0 0.6458	1 0.3542	1

	0.6458	1.1777	
	0.00	2.08	2.08
	0.00	100.00	
	0.00	5.88	
Total	31	17	48
	64.58	35.42	100.00

Statistics for Table of renting_affect by commun

Statistic	DF	Value	Prob
Chi-Square	7	48.0000	<.0001
Likelihood Ratio Chi-Square	7	62.3988	<.0001
Mantel-Haenszel Chi-Square	1	6.9813	0.0082
Phi Coefficient		1.0000	
Contingency Coefficient		0.7071	
Cramer's V		1.0000	

WARNING: 75% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

acurry 12APR01

The FREQ Procedure

Statistics for Table of renting_affect by commun

Fisher's Exact Test	
Table Probability (P)	2.356E-13
Pr <= P	2.592E-12

Sample Size = 48

The FREQ Procedure

Table of Features_ATM by commun

Features_ATM	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	8 4.25 3.3088 16.67 66.67 47.06	4 7.75 1.8145 8.33 33.33 12.90	12 25.00
yes	9 12.75 1.1029 18.75 25.00 52.94	27 23.25 0.6048 56.25 75.00 87.10	36 75.00
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_ATM by commun

Statistic	DF	Value	Prob
Chi-Square	1	6.8311	0.0090
Likelihood Ratio Chi-Square	1	6.6344	0.0100
Continuity Adj. Chi-Square	1	5.1309	0.0235
Mantel-Haenszel Chi-Square	1	6.6888	0.0097
Phi Coefficient		0.3772	
Contingency Coefficient		0.3530	
Cramer's V		0.3772	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	8
Left-sided Pr <= F	0.9983
Right-sided Pr >= F	0.0127
Table Probability (P)	0.0110
Two-sided Pr <= P	0.0147

Sample Size = 48

The FREQ Procedure

Table of Features_Athletics by commun

Features_Athletics / commun Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	14 13.813 0.0025 29.17 35.90 82.35	25 25.188 0.0014 52.08 64.10 80.65	39 81.25
yes	3 3.1875 0.011 6.25 33.33 17.65	6 5.8125 0.006 12.50 66.67 19.35	9 18.75
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_Athletics by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.0210	0.8847
Likelihood Ratio Chi-Square	1	0.0212	0.8843
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.0206	0.8859
Phi Coefficient		0.0209	
Contingency Coefficient		0.0209	
Cramer's V		0.0209	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	14
Left-sided Pr <= F	0.6948
Right-sided Pr >= F	0.6038
Table Probability (P)	0.2985
Two-sided Pr <= P	1.0000

Sample Size = 48

The FREQ Procedure

Table of Features_bookstore by commun

Features_bookstore commun			
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	4	3	7
	2.4792	4.5208	
	0.9329	0.5116	
	8.33	6.25	14.58
	57.14	42.86	
	23.53	9.68	
yes	13	28	41
	14.521	26.479	
	0.1593	0.0873	
	27.08	58.33	85.42
	31.71	68.29	
	76.47	90.32	
Total	17	31	48
	35.42	64.58	100.00

Statistics for Table of Features_bookstore by commun

Statistic	DF	Value	Prob
Chi-Square	1	1.6912	0.1934
Likelihood Ratio Chi-Square	1	1.6173	0.2035
Continuity Adj. Chi-Square	1	0.7620	0.3827
Mantel-Haenszel Chi-Square	1	1.6560	0.1981
Phi Coefficient		0.1877	
Contingency Coefficient		0.1845	
Cramer's V		0.1877	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	4
Left-sided Pr <= F	0.9554
Right-sided Pr >= F	0.1899
Table Probability (P)	0.1453
Two-sided Pr <= P	0.2256

Sample Size = 48

The FREQ Procedure

Table of Features_classroom by commun

Features_classroom	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	12 13.813 0.2378 25.00 30.77 70.59	27 25.188 0.1304 56.25 69.23 87.10	39 81.25
yes	5 3.1875 1.0306 10.42 55.56 29.41	4 5.8125 0.5652 8.33 44.44 12.90	9 18.75
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_classroom by commun

Statistic	DF	Value	Prob
Chi-Square	1	1.9641	0.1611
Likelihood Ratio Chi-Square	1	1.8887	0.1694
Continuity Adj. Chi-Square	1	1.0299	0.3102
Mantel-Haenszel Chi-Square	1	1.9232	0.1655
Phi Coefficient		-0.2023	
Contingency Coefficient		0.1983	
Cramer's V		-0.2023	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test	
Cell (1,1) Frequency (F)	12
Left-sided Pr <= F	0.1551
Right-sided Pr >= F	0.9610
Table Probability (P)	0.1161
Two-sided Pr <= P	0.2471

Sample Size = 48

The FREQ Procedure

Table of Features_food by commun

Features_food	commun	
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	2 1.4167 0.2402 4.17 50.00 11.76	2 2.5833 0.1317 4.17 50.00 6.45	4 8.33
yes	15 15.583 0.0218 31.25 34.09 88.24	29 28.417 0.012 60.42 65.91 93.55	44 91.67
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_food by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.4057	0.5241
Likelihood Ratio Chi-Square	1	0.3896	0.5325
Continuity Adj. Chi-Square	1	0.0083	0.9275
Mantel-Haenszel Chi-Square	1	0.3973	0.5285
Phi Coefficient		0.0919	
Contingency Coefficient		0.0916	
Cramer's V		0.0919	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test	
Cell (1,1) Frequency (F)	2
Left-sided Pr <= F	0.8794
Right-sided Pr >= F	0.4456
Table Probability (P)	0.3250
Two-sided Pr <= P	0.6073

Sample Size = 48

The FREQ Procedure

Table of Features_gameroom by commun

Features_gameroom	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	5 4.9583 0.0004 10.42 35.71 29.41	9 9.0417 0.0002 18.75 64.29 29.03	14 29.17
yes	12 12.042 0.0001 25.00 35.29 70.59	22 21.958 0.0001 45.83 64.71 70.97	34 70.83
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_gameroom by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.0008	0.9779
Likelihood Ratio Chi-Square	1	0.0008	0.9779
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.0007	0.9782
Phi Coefficient		0.0040	
Contingency Coefficient		0.0040	
Cramer's V		0.0040	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	5
Left-sided Pr <= F	0.6445
Right-sided Pr >= F	0.6142
Table Probability (P)	0.2586
Two-sided Pr <= P	1.0000

Sample Size = 48

The FREQ Procedure

Table of Features_library by commun

Features_library / commun	none	strong	Total
no	16	31	47
	16.646	30.354	
	0.0251	0.0137	
	33.33	64.58	97.92
	34.04	65.96	
	94.12	100.00	
yes	1	0	1
	0.3542	0.6458	
	1.1777	0.6458	
	2.08	0.00	2.08
	100.00	0.00	
	5.88	0.00	
Total	17	31	48
	35.42	64.58	100.00

Statistics for Table of Features_library by commun

Statistic	DF	Value	Prob
Chi-Square	1	1.8623	0.1724
Likelihood Ratio Chi-Square	1	2.1150	0.1459
Continuity Adj. Chi-Square	1	0.0950	0.7580
Mantel-Haenszel Chi-Square	1	1.8235	0.1769
Phi Coefficient		-0.1970	
Contingency Coefficient		0.1933	
Cramer's V		-0.1970	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	16
Left-sided Pr <= F	0.3542
Right-sided Pr >= F	1.0000
Table Probability (P)	1.3542
Two-sided Pr <= P	0.3542

Sample Size = 48

The FREQ Procedure

Table of Features_mailroom by commun

Features_mailroom	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	9 9.2083 0.0047 18.75 34.62 52.94	17 16.792 0.0026 35.42 65.38 54.84	26 54.17
yes	8 7.7917 0.0056 16.67 36.36 47.06	14 14.208 0.0031 29.17 63.64 45.16	22 45.83
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_mailroom by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.0159	0.8996
Likelihood Ratio Chi-Square	1	0.0159	0.8996
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.0156	0.9006
Phi Coefficient		-0.0182	
Contingency Coefficient		0.0182	
Cramer's V		-0.0182	

Fisher's Exact Test

Cell (1,1) Frequency (F)	9
Left-sided Pr <= F	0.5690
Right-sided Pr >= F	0.6664
Table Probability (P)	0.2354
Two-sided Pr <= P	1.0000

Sample Size = 48

The FREQ Procedure

Table of Features_meetingroom by commun

Features_meetingroom commun Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	6 2.125 7.0662 12.50 100.00 35.29	0 3.875 3.875 0.00 0.00 0.00	6 12.50
yes	11 14.875 1.0095 22.92 26.19 64.71	31 27.125 0.5536 64.58 73.81 100.00	42 87.50
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_meetingroom by commun

Statistic	DF	Value	Prob
Chi-Square	1	12.5042	0.0004
Likelihood Ratio Chi-Square	1	14.0955	0.0002
Continuity Adj. Chi-Square	1	9.4855	0.0021
Mantel-Haenszel Chi-Square	1	12.2437	0.0005
Phi Coefficient		0.5104	
Contingency Coefficient		0.4546	
Cramer's V		0.5104	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	6
Left-sided Pr <= F	1.0000
Right-sided Pr >= F	0.0010
Table Probability (P)	0.0010
Two-sided Pr <= P	0.0010

Sample Size = 48

The FREQ Procedure

Table of Features_multipurposeroom by commun

Features_multipurposeroom / commun Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	5 3.8958 0.3129 10.42 45.45 29.41	6 7.1042 0.1716 12.50 54.55 19.35	11 22.92
yes	12 13.104 0.093 25.00 32.43 70.59	25 23.896 0.051 52.08 67.57 80.65	37 77.08
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_multipurposeroom by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.6286	0.4279
Likelihood Ratio Chi-Square	1	0.6143	0.4332
Continuity Adj. Chi-Square	1	0.1882	0.6644
Mantel-Haenszel Chi-Square	1	0.6155	0.4327
Phi Coefficient		0.1144	
Contingency Coefficient		0.1137	
Cramer's V		0.1144	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	5
Left-sided Pr <= F	0.8745
Right-sided Pr >= F	0.3272
Table Probability (P)	0.2016
Two-sided Pr <= P	0.4856

Sample Size = 48

The FREQ Procedure

Table of Features_offices by commun

Features_offices	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	2 1.7708 0.0297 4.17 40.00 11.76	3 3.2292 0.0163 6.25 60.00 9.68	5 10.42
yes	15 15.229 0.0034 31.25 34.88 88.24	28 27.771 0.0019 58.33 65.12 90.32	43 89.58
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_offices by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.0513	0.8209
Likelihood Ratio Chi-Square	1	0.0505	0.8222
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.0502	0.8227
Phi Coefficient		0.0327	
Contingency Coefficient		0.0327	
Cramer's V		0.0327	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	2
Left-sided Pr <= F	0.7686
Right-sided Pr >= F	0.5884
Table Probability (P)	0.3570
Two-sided Pr <= P	1.0000

Sample Size = 48

The FREQ Procedure

Table of Features_rentalspace by commun

Features_rentalspace	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	8 8.1458 0.0026 16.67 34.78 47.06	15 14.854 0.0014 31.25 65.22 48.39	23 47.92
yes	9 8.8542 0.0024 18.75 36.00 52.94	16 16.146 0.0013 33.33 64.00 51.61	25 52.08
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_rentalspace by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.0078	0.9298
Likelihood Ratio Chi-Square	1	0.0078	0.9298
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.0076	0.9305
Phi Coefficient		-0.0127	
Contingency Coefficient		0.0127	
Cramer's V		-0.0127	

Fisher's Exact Test

Cell (1,1) Frequency (F)	8
Left-sided Pr <= F	0.5850
Right-sided Pr >= F	0.6510
Table Probability (P)	0.2360
Two-sided Pr <= P	1.0000

Sample Size = 48

The FREQ Procedure

Table of Features_retailspace by commun

Features_retailspace / commun Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	13 12.75 0.0049 27.08 36.11 76.47	23 23.25 0.0027 47.92 63.89 74.19	36 75.00
yes	4 4.25 0.0147 8.33 33.33 23.53	8 7.75 0.0081 16.67 66.67 25.81	12 25.00
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of Features_retailspace by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.0304	0.8617
Likelihood Ratio Chi-Square	1	0.0306	0.8612
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.0297	0.8631
Phi Coefficient		0.0251	
Contingency Coefficient		0.0251	
Cramer's V		0.0251	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test	
Cell (1,1) Frequency (F)	13
Left-sided Pr <= F	0.6940
Right-sided Pr >= F	0.5755
Table Probability (P)	0.2695
Two-sided Pr <= P	1.0000

Sample Size = 48

The FREQ Procedure

Table of Features_studentorg by commun

Features_studentorg Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	commun none	strong	Total
no	6	0	6
	2.125	3.875	
	7.0662	3.875	
	12.50	0.00	12.50
	100.00	0.00	
	35.29	0.00	
yes	11	31	42
	14.875	27.125	
	1.0095	0.5536	
	22.92	64.58	87.50
	26.19	73.81	
	64.71	100.00	
Total	17	31	48
	35.42	64.58	100.00

Statistics for Table of Features_studentorg by commun

Statistic	DF	Value	Prob
Chi-Square	1	12.5042	0.0004
Likelihood Ratio Chi-Square	1	14.0955	0.0002
Continuity Adj. Chi-Square	1	9.4855	0.0021
Mantel-Haenszel Chi-Square	1	12.2437	0.0005
Phi Coefficient		0.5104	
Contingency Coefficient		0.4546	
Cramer's V		0.5104	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test	
Cell (1,1) Frequency (F)	6
Left-sided Pr <= F	1.0000
Right-sided Pr >= F	0.0010
Table Probability (P)	0.0010
Two-sided Pr <= P	0.0010

Sample Size = 48

The FREQ Procedure

Table of Features_vending by commun

Features_vending commun Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	4	6	10
	3.5417	6.4583	
	0.0593	0.0325	
	8.33	12.50	20.83
	40.00	60.00	
	23.53	19.35	
yes	13	25	38
	13.458	24.542	
	0.0156	0.0086	
	27.08	52.08	79.17
	34.21	65.79	
	76.47	80.65	
Total	17	31	48
	35.42	64.58	100.00

Statistics for Table of Features_vending by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.1160	0.7334
Likelihood Ratio Chi-Square	1	0.1145	0.7350
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.1136	0.7361
Phi Coefficient		0.0492	
Contingency Coefficient		0.0491	
Cramer's V		0.0492	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	4
Left-sided Pr <= F	0.7645
Right-sided Pr >= F	0.5034
Table Probability (P)	0.2679
Two-sided Pr <= P	0.7266

Sample Size = 48

The FREQ Procedure

Table of CC_Retail_ATM by commun

CC_Retail_ATM	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	8 4.9583 1.8659 16.67 57.14 47.06	6 9.0417 1.0232 12.50 42.86 19.35	14 29.17
yes	9 12.042 0.7683 18.75 26.47 52.94	25 21.958 0.4213 52.08 73.53 80.65	34 70.83
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of CC_Retail_ATM by commun

Statistic	DF	Value	Prob
Chi-Square	1	4.0788	0.0434
Likelihood Ratio Chi-Square	1	3.9787	0.0461
Continuity Adj. Chi-Square	1	2.8480	0.0915
Mantel-Haenszel Chi-Square	1	3.9938	0.0457
Phi Coefficient		0.2915	
Contingency Coefficient		0.2799	
Cramer's V		0.2915	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	8
Left-sided Pr <= F	0.9900
Right-sided Pr >= F	0.0471
Table Probability (P)	0.0371
Two-sided Pr <= P	0.0549

Sample Size = 48

The FREQ Procedure

Table of CC_Retail_bookstore by commun

CC_Retail_bookstore / commun Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	8 5.6667 0.9608 16.67 50.00 47.06	8 10.333 0.5269 16.67 50.00 25.81	16 33.33
yes	9 11.333 0.4804 18.75 28.13 52.94	23 20.667 0.2634 47.92 71.88 74.19	32 66.67
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of CC_Retail_bookstore by commun

Statistic	DF	Value	Prob
Chi-Square	1	2.2315	0.1352
Likelihood Ratio Chi-Square	1	2.1938	0.1386
Continuity Adj. Chi-Square	1	1.3776	0.2405
Mantel-Haenszel Chi-Square	1	2.1850	0.1394
Phi Coefficient		0.2156	
Contingency Coefficient		0.2108	
Cramer's V		0.2156	

Fisher's Exact Test

Cell (1,1) Frequency (F)	8
Left-sided Pr <= F	0.9643
Right-sided Pr >= F	0.1208
Table Probability (P)	0.0851
Two-sided Pr <= P	0.2014

Sample Size = 48

The FREQ Procedure

Table of CC_Retail_cdvideo by commun

CC_Retail_cdvideo
commun

Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	16 16.292 0.0052 33.33 34.78 94.12	30 29.708 0.0029 62.50 65.22 96.77	46 95.83
yes	1 0.7083 0.1201 2.08 50.00 5.88	1 1.2917 0.0659 2.08 50.00 3.23	2 4.17
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of CC_Retail_cdvideo by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.1940	0.6596
Likelihood Ratio Chi-Square	1	0.1859	0.6663
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.1900	0.6629
Phi Coefficient		-0.0636	
Contingency Coefficient		0.0635	
Cramer's V		-0.0636	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	16
Left-sided Pr <= F	0.5878
Right-sided Pr >= F	0.8794
Table Probability (P)	0.4672
Two-sided Pr <= P	1.0000

Sample Size = 48

The FREQ Procedure

Table of CC_Retail_clothing by commun

CC_Retail_clothing
commun

Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	16 14.875 0.0851 33.33 38.10 94.12	26 27.125 0.0467 54.17 61.90 83.87	42 87.50
yes	1 2.125 0.5956 2.08 16.67 5.88	5 3.875 0.3266 10.42 83.33 16.13	6 12.50
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of CC_Retail_clothing by commun

Statistic	DF	Value	Prob
Chi-Square	1	1.0539	0.3046
Likelihood Ratio Chi-Square	1	1.1717	0.2790
Continuity Adj. Chi-Square	1	0.3253	0.5684
Mantel-Haenszel Chi-Square	1	1.0320	0.3097
Phi Coefficient		0.1482	
Contingency Coefficient		0.1466	
Cramer's V		0.1482	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	16
Left-sided Pr <= F	0.9400
Right-sided Pr >= F	0.2954
Table Probability (P)	0.2354
Two-sided Pr <= P	0.4022

Sample Size = 48

The FREQ Procedure

Table of CC_Retail_coffee by commun

CC_Retail_coffee / commun Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	13 9.2083 1.5613 27.08 50.00 76.47	13 16.792 0.8562 27.08 50.00 41.94	26 54.17
yes	4 7.7917 1.8451 8.33 18.18 23.53	18 14.208 1.0119 37.50 81.82 58.06	22 45.83
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of CC_Retail_coffee by commun

Statistic	DF	Value	Prob
Chi-Square	1	5.2745	0.0216
Likelihood Ratio Chi-Square	1	5.4931	0.0191
Continuity Adj. Chi-Square	1	3.9751	0.0462
Mantel-Haenszel Chi-Square	1	5.1646	0.0231
Phi Coefficient		0.3315	
Contingency Coefficient		0.3147	
Cramer's V		0.3315	

Fisher's Exact Test

Cell (1,1) Frequency (F)	13
Left-sided Pr <= F	0.9960
Right-sided Pr >= F	0.0219
Table Probability (P)	0.0179
Two-sided Pr <= P	0.0339

Sample Size = 48

The FREQ Procedure

Table of CC_Retail_conveniecncestore by commun

CC_Retail_conveniecncestore	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	15 13.104 0.2743 31.25 40.54 88.24	22 23.896 0.1504 45.83 59.46 70.97	37 77.08
yes	2 3.8958 0.9226 4.17 18.18 11.76	9 7.1042 0.5059 18.75 81.82 29.03	11 22.92
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of CC_Retail_conveniecncestore by commun

Statistic	DF	Value	Prob
Chi-Square	1	1.8532	0.1734
Likelihood Ratio Chi-Square	1	2.0072	0.1566
Continuity Adj. Chi-Square	1	1.0046	0.3162
Mantel-Haenszel Chi-Square	1	1.8146	0.1780
Phi Coefficient		0.1965	
Contingency Coefficient		0.1928	
Cramer's V		0.1965	

WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test	
Cell (1,1) Frequency (F)	15
Left-sided Pr <= F	0.9629
Right-sided Pr >= F	0.1585
Table Probability (P)	0.1213
Two-sided Pr <= P	0.2840

Sample Size = 48

The FREQ Procedure

Table of CC_Retail_copycenter by commun

CC_Retail_copycenter / commun	none	strong	Total
no	16	25	41
	14.521	26.479	
	0.1507	0.0826	
	33.33	52.08	85.42
	39.02	60.98	
	94.12	80.65	
yes	1	6	7
	2.4792	4.5208	
	0.8825	0.484	
	2.08	12.50	14.58
	14.29	85.71	
	5.88	19.35	
Total	17	31	48
	35.42	64.58	100.00

Statistics for Table of CC_Retail_copycenter by commun

Statistic	DF	Value	Prob
Chi-Square	1	1.5998	0.2059
Likelihood Ratio Chi-Square	1	1.8109	0.1784
Continuity Adj. Chi-Square	1	0.7010	0.4024
Mantel-Haenszel Chi-Square	1	1.5665	0.2107
Phi Coefficient		0.1826	
Contingency Coefficient		0.1796	
Cramer's V		0.1826	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	16
Left-sided Pr <= F	0.9643
Right-sided Pr >= F	0.2057
Table Probability (P)	0.1700
Two-sided Pr <= P	0.3956

Sample Size = 48

The FREQ Procedure

Table of CC_Retail_food by commun

CC_Retail_food	commun		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	11 10.271 0.0518 22.92 37.93 64.71	18 18.729 0.0284 37.50 62.07 58.06	29 60.42
yes	6 6.7292 0.079 12.50 31.58 35.29	13 12.271 0.0433 27.08 68.42 41.94	19 39.58
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of CC_Retail_food by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.2025	0.6527
Likelihood Ratio Chi-Square	1	0.2039	0.6516
Continuity Adj. Chi-Square	1	0.0200	0.8875
Mantel-Haenszel Chi-Square	1	0.1983	0.6561
Phi Coefficient		0.0650	
Contingency Coefficient		0.0648	
Cramer's V		0.0650	

Fisher's Exact Test

Cell (1,1) Frequency (F)	11
Left-sided Pr <= F	0.7747
Right-sided Pr >= F	0.4465
Table Probability (P)	0.2212
Two-sided Pr <= P	0.7622

Sample Size = 48

The FREQ Procedure

Table of CC_Retail_hairdresser by commun

CC_Retail_hairdresser commun Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	none	strong	Total
no	16 16.292 0.0052 33.33 34.78 94.12	30 29.708 0.0029 62.50 65.22 96.77	46 95.83
yes	1 0.7083 0.1201 2.08 50.00 5.88	1 1.2917 0.0659 2.08 50.00 3.23	2 4.17
Total	17 35.42	31 64.58	48 100.00

Statistics for Table of CC_Retail_hairdresser by commun

Statistic	DF	Value	Prob
Chi-Square	1	0.1940	0.6596
Likelihood Ratio Chi-Square	1	0.1859	0.6663
Continuity Adj. Chi-Square	1	0.0000	1.0000
Mantel-Haenszel Chi-Square	1	0.1900	0.6629
Phi Coefficient		-0.0636	
Contingency Coefficient		0.0635	
Cramer's V		-0.0636	

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Fisher's Exact Test

Cell (1,1) Frequency (F)	16
Left-sided Pr <= F	0.5878
Right-sided Pr >= F	0.8794
Table Probability (P)	0.4672
Two-sided Pr <= P	1.0000

Sample Size = 48