

ABSTRACT

Ethnic Preference in Outdoor Recreation: William Cameron Park, Waco, Texas

Staron X-evier Faucher, M.E.S.

Mentor: Susan P. Bratton, Ph.D.

Everyday, hundreds of recreationalists from various ethnic backgrounds visit Cameron Park. They participate in a variety of activities ranging from hiking to picnicking. In 2006, the Cameron Park Recreational Use Survey was administered to Cameron Park visitors via opportunistic sampling to chronicle recreational activities and user concerns in Cameron Park. Pearson's Chi Square Test of Independence determined if significant differences in preference for outdoor recreational activities exist between user groups. First, the results of this study suggest there are statistically significant differences in preference for outdoor recreational activities among African Americans, Hispanic, and Caucasians. Differences are significant in preference for 7 of 24 activities, including hiking, biking, and family gatherings. Second, there are statistically significant differences in preference for outdoor recreational activity among Cameron Park visitors with different incomes, gender, age, education, and residence. Other factors influenced by ethnicity include recreational site choice and perception of safety.

Ethnic Preference in Outdoor Recreation: William Cameron Park, Waco, Texas

by

Staron X. Faucher, B.A., M.S.R.C.P.

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Approved by the Department of Environmental Studies

Susan P. Bratton, Ph.D., Chairperson

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Approved by the Thesis Committee

Susan P. Bratton, Ph.D., Chairperson

Sara Alexander, Ph.D.

Jerry Park, Ph.D.

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J. Larry Lyon, Ph.D., Dean

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DEDICATION

To my brother Tremale – an inspiration

To John Eugene Trusty

To my grandfather Clifton B. Reece

To my Mother and Father

To my Grandmother Mary C. Reece

CHAPTER ONE

Introduction

Given the growth in both income and opportunity among minority groups in America in recent decades, many formally marginalized groups are now showing an increase in park participation. In fact, much speculation has gone into the impact of ethnicity on recreational preference. Some experts believe the surge in the Hispanic population, especially in the west, will have a significant impact on the future management of America's park system (California State Parks, 2004). In California, the burgeoning Hispanic population is expected to jump from 12 million to 21 million by 2025, 43% of the state's total population. Moreover, little has been done to specifically address the needs and preferences of African Americans in outdoor recreation.

In 1968, Black noted that no one had analyzed the attitudes of African Americans in regards to open space (Wilson, 1990). In 2008, there is still little information pertaining to the specific preferences among African Americans in regards to outdoor leisure activities. However, Driver et al. (1996) believes that in order to gain true understanding of minority preferences in outdoor recreational activities, public land managers have to be responsive to the values and changing needs of an increasingly diverse clientele. Despite accounting for 75% of the participation growth in backpacking, bird watching, picnicking, and various other outdoor activities, minority needs are still ignored in outdoor recreational development (Dwyer, 1994).

Chavez (2002) indicates that California Parks, as well as those in other states, have a diverse range of ethnic visitors and are not well prepared to meet their various needs.

In 2000, the City of Waco hired Carter and Burgess, a consulting firm, to produce a comprehensive parks, recreation, and open space master plan (2000). The main objectives of the master plan are the following:

- To provide the framework for orderly and consistent planning and development in the area of recreation in Waco, Texas.
- To provide detailed research facts concerning the citizens of Waco and the role of parks and recreation.
- To establish priorities and statements of direction based on documented facts and research, and a community-based needs assessment.
- To provide direction in the area of acquisition and development of parkland to meet current and future needs.

According to Carter and Burgess, the comprehensive parks, recreation, and open space master plan process is continuous and requires an annual evaluation by the Parks and Recreation Department and should be updated every five years to assess the “current priorities, action plans, and budget estimates for implementation” (2000). A Cameron Park survey of recreational preference and the demographic factors that may have an influence on visitor preferences will simultaneously assess the priorities of Cameron Park’s visitors.

The primary purpose of my thesis research is to identify relationships between ethnicity and preferences in outdoor recreation in Cameron Park. The main research question is:

Does ethnicity significantly affect preferences in outdoor recreation among users in Cameron Park?

The other demographic factors of influence that will be examined are: income, age, education, location, and gender. Additional questions include:

1. Do outdoor recreational preferences of visitors to Cameron Park differ by ethnicity?
2. Do outdoor recreational preferences of visitors to Cameron Park differ according to other socio-demographic characteristics such as income, age, gender, residence, and/or level of education?
3. Are there differences in perception of safety according to ethnicity?
4. Does age influence engagement in active versus Social/Passive and competitive recreational activities?

My research hypotheses are:

- Outdoor recreational preferences of visitors to Cameron Park differ by ethnicity.
- Outdoor recreational preferences of visitors to Cameron Park differ according to: income, age, gender, residence, and/or level of education.

The first objective in assessing the ethnic preference in outdoor recreation in Cameron Park is developing an on-site sampling design and procedure to identify characteristics of park use by different ethnic or groups, and the effects of income, age, location, education, and gender on activity preference. The second objective is to determine if income, age, residence, education, or gender have a greater impact on outdoor recreational preferences than ethnicity. In accordance with the *Comprehensive Parks, Recreation, and Open Space Master Plan* (2000), supplementary objectives will include (1) identifying problems park users have had in terms of access to recreational activities in Cameron Park, (2) classifying park users by income, residence, gender, age, and level of education, (3) determining park user perceptions of safety, and (4) identifying the frequency of park visitation. The final objective is to develop a set of recommendations for the *Comprehensive Parks, Recreation, and Open space Master Plan* to aide Cameron Park managers in meeting the needs of its increasingly diverse clientele.

The results of this research will reveal more than the previous study because it examines not only the specific preferences in Cameron Park, but more importantly, the specific needs and preferences of the different subpopulations within the park. In order to meet the needs of Cameron Park's diverse clientele, a thorough examination of park preferences along ethnic lines and an analysis of the demographics that affect those preferences are necessary. An analysis of the factors that most affect outdoor recreational preference will not only provide a demographic assessment of the park, but more importantly, a way to meet the needs of the increasingly diverse clientele in Cameron Park and within the Bosque and Brazos River corridor.

CHAPTER TWO

Review of Recreation and Ethnic Literature

Cultural Recreation

Recreational patterns are a reflection of culture. According to Dawson and Karlis (1998), recreational activities are “freely chosen and engaged in for pleasure and satisfaction.” Although recreation is a voluntary exercise, it is largely composed of organized cultural events such as family picnics or sporting events. Both African Americans and Hispanics tend to engage in leisure activities that not only reflect their own cultures, but mainstream American culture as well. Many studies have sought to examine these phenomena using comparisons. Examples include: the impact of ethnicity on preferences for passive or active recreation, the desired functions of park lands, and the impact of socio-demographic characteristics on preferences for park opportunities and the environment (Crespo, Smith, Anderson, Carter-Pokras, and Ainsworth, 2000).

African American Leisure Preferences

Although only limited information is available on the specific recreational patterns of African Americans, many studies throughout the latter half of the 20th century compared African Americans and mainstream America in terms of preferences in outdoor recreation. Studies reveal that on average, African Americans participate in fewer activities than Caucasians and Hispanics.

In a 1998 national study addressing outdoor recreation participation rates, only 38% of African American respondents said they participated in outdoor recreation at least

once monthly; the average for all other sub-groups was 57% (Roper and Starch, 1998). Overall recreational use statistics reveal that African Americans participate in recreational activities at a rate 50% lower than any other subpopulation in the U.S. In fact, in activities ranging from camping and hiking to rock climbing and sailing, African Americans only participated in an average of 1.8 out of 36 possible activities. Nationally, most Americans participated in an average of 4.1 activities. A follow-up study in 2004 reveals that African Americans participate in an average of 2.3 activities, compared to 5.3 for Caucasians and 3.5 for Hispanics (RoperASW, 2004). Both studies, however, are somewhat biased because the activities listed in the surveys are comprised primarily from the traditions of Caucasian middle-class America. Organized recreational activities, such as football and basketball, were not included. Bryant (1995) contends that the economic costs of traveling to outdoor recreational areas have also been a burden. It is less expensive to indulge in basketball in the backyard, or on a public court, than to travel from the inner city to a park for nature-based outdoor leisure activities. Gobster's (2002) study of urban parks in Chicago, however, reveals that African Americans have a higher rate of participation in park activities such as sightseeing, people watching, and socializing than any other ethnic group. They also have greater preferences for cultural facilities, zoos, and watching or playing sports.

Compared to Caucasians, African Americans prefer open and well-groomed natural environments with more "structured amenities such as ball fields and paved trails" (Payne, et al., 2001). In a study of tourism destinations, Phillipp (1993) found that Caucasians were significantly more likely to prefer wild land leisure areas. Also, 57% of Caucasians, compared to 27% of African Americans, prefer preserved natural areas

(Virden, 1999); however, 66% of African Americans prefer nature conservation over active outdoor recreation (Payne, Mowen, Orsego-Smith, 2002). In spite of Payne's results, Virden (1999) found that African Americans display a greater desire for the recreational function of a natural setting as opposed to Caucasians who showed a greater appreciation for the aesthetic value. In a study comparing rural Caucasians and African Americans, Johnson et al. (1998) found no significant differences in the preference of consumptive recreational activities such as fishing, hunting, and the collection of forest products. A study of 1200 African American and Caucasian middle and high school students "found that greater desire for modern comfort was associated with lower preference for wild-land environments... [and African American] female students [expressed a] greater preference for non-wild-land social activities" (Floyd, et al., 1995).

Historical Roots

Historically, rural African Americans lived in conjunction with the land. Wilson asserts that African Americans were not as heavily impacted by the Great Depression as other subgroups because they supplemented their needs by utilizing the land's natural resources. In the ensuing years, ethnic discrimination barred African Americans from accessing natural recreation areas like beaches and parks; the trickle-down effect inhibited future African American generations from engendering a true appreciation for natural amenities (Bryant, 1995). In Chicago's Lincoln Park, more African Americans reported incidents of unruly police and park staff behavior and racial prejudice than any other ethnic group (Gobster, 2002).

In a study of different meanings various ethnic groups associate with their outdoor recreation activities, Virden and Walker (1999) found that meanings are not only

constructed, but given by the social structure and culture within which the individual operates; this is called the socio-cultural approach. Further, the socio-cultural approach maintains that macro-social variables, such as segregation or ‘diminished opportunity’ influence a person’s interaction with the environment (Winkle and Saegert, 1990). The meaning of a recreational activity or experience in a particular culture is not only the function of a unique individual state, but an amalgamation of characteristics of common backgrounds and experiences as well (Wekerle, et al, 1980). Subsequently, Noble argues that because African American participation in mainstream activities was blocked for much of the twentieth century, they found a means of meeting their need for symbols, values, and meaning within their own communities. Bryant (1999), however, found that African Americans, despite the smaller predilection for open park space, displayed equal concern for the loss of or harm to parks or open space. African Americans also demonstrate a greater need for additional park space than Caucasians, which correlates with the lack of parkland available in predominately African American areas.

Perhaps the greatest deterrent of African American participation in outdoor recreation is the perceived lack of available outdoor recreational activities. Nationwide, only 30% of African Americans felt their availability of recreational activities was ‘very good’ or ‘excellent;’ the lowest of any subgroup African Americans were also the least likely, 9%, to take an outdoor recreationally oriented vacation. Only 52% of African Americans, again the lowest of all subgroups, found that their selection of outdoor recreation sites was at least “good” (Roper and Starch, 1998).

Hispanic Preferences in Outdoor Recreation

Given the recent surge of Hispanics in the general population, much research has been conducted on the recreational use patterns of Hispanics. Chavez studied the recreational use trends of Hispanics in 2000 and 2002, focusing on both cultural identification and group dynamics. When comparing different ethnic groups, she found that Hispanics have a more positive outlook towards the environment than any other ethnic group (Chavez, 2002). Moreover, California Forest Service records indicate that 88% of the visitors to southern California's outdoor recreation sites are Hispanic (California State Parks, 1998). Changing demographics in Idaho are making park developers recognize the needs of other subgroups. Hispanics, once a transient group, are requiring the state to develop more open urban spaces for soccer fields and large family gatherings (Achana, 2004).

Despite the desire for more developed urban areas, 60% of Hispanic visitors to Chicago's Lincoln Park visit for 'natural beauty' (Gobster, 2002). 'Feeling in harmony with nature' was more important to Hispanics than for any other subgroup (Chavez, 2002). Like African Americans and Caucasians, Hispanics have a great appreciation for the natural environment. According to Chavez, 80% of Hispanic park visitors believe 'protection of the natural environment' is important (2002). Chavez believes Hispanic appreciation for natural beauty stems from cultural roots. She asserts that many Latinos visit natural settings because it reminds them of their homeland and provides an opportunity to pass along their love of nature to subsequent generations.

Similar to African Americans, Hispanics like developed features along with their natural amenities. They prefer large areas with toilets, lights, and large tables (Chavez,

2000). Despite the need for larger developed areas to facilitate family gatherings, the average group outdoor recreation site is designed for 4 to 6 people. Although statically, Hispanics prefer more developed sites, they also have the lowest preference for national monuments and historical areas. In a study addressing the dislikes of different ethnic groups, over 20% of Hispanics disliked national monuments and cultural areas; only 7% of non-Hispanic respondents agreed (California State Parks, 1998). On the same note, a study of minority preferences in Phoenix indicates that Hispanics are more likely to visit national parks and monuments outside city limits (Gramann and Floyd, 1991).

A similar study revealed that meeting new people was the least concern for all subpopulations when participating in recreation except Hispanics; roughly 46% of Hispanic park users felt meeting new people was important, only 15.8% of non-Hispanic park visitors felt the same (Giant Sequoia National Monument, 2004). Conversely, the U.S. Army Engineer Research and Development Center (1999) maintains that Hispanics are primarily motivated by social experiences. Gobster's (2002) more recent study in Chicago's Lincoln Park revealed that only 4.8% of Hispanics like to socialize when participating in recreation activities in the park.

Gramann (1996) argues that Caucasians and Hispanics are more similar than African Americans and Hispanics in terms of outdoor recreation preferences. In fact, the 1986 Market Opinion Research study reveals that the level of participation in the leisure activities of Caucasians and Hispanics differs by more than 10% in only 3 of 35 recreation activities: "running or jogging," "driving for pleasure," and "attending zoos or fairs." Gramann believes the differences between the two subgroups are due, in part, to the lower average age among Hispanics.

Chavez (2002) found that many Hispanics participate in outdoor recreational activities at natural resource sites because they do not feel their local communities are safe places for recreation. In Gobster's study, Hispanics showed the greatest disdain for the presence of drunks and drug users, and were second only to Caucasians in terms of the importance of safety (2002). Moreover, over 90% of Hispanic park users feel outdoor recreation reduces juvenile crime, compared to 58% of non-Hispanic users (California State Parks, 1998). Likewise, 90% of California Hispanics moderately or strongly agreed that more outdoor recreational areas were needed near cities; only 65% of the non-Hispanic population felt as strong.

Caucasian Preferences in Outdoor Recreation

The recreational preferences of Caucasians stand out compared to other ethnic groups. Studies indicate that Caucasians not only participate in outdoor recreational activities more frequently than other subgroups, but participate in a wider range of activities as well. Forty-two percent of the Caucasian respondents in Gobster's (2002) study of Chicago's Lincoln Park indicate that they visit the park nearly every day. Eighty-seven percent of Caucasian respondents to Payne, Mowen, and Orsego-Smith's (2002) telephone survey of park preferences and behaviors in Cleveland, Ohio compared to 72% of African American respondents said they visited a park in the 12 months prior to being surveyed.

Of the 249 Caucasian respondents in Gobster's 2002 study, 75.8% participate in active individual activities. Active individual activities ranged from walking a dog to bicycling. Forty-five percent of the Caucasian respondents participate in passive activities, such as picnicking and relaxing, and 22.2% participate in active group

activities such as basketball and tennis. Thirty-nine percent, the highest of any sub-group, participated in water sports.

Although Gobster's findings indicate that Caucasians have the lowest rate of participation in social activities (45%), Barnette (2006) argues in her University of Illinois study of ethnicity, gender, and recreation, that Caucasians "exceed all other ethnic groups in social leisure (460)." Barnette's post hoc tests also reveal that Caucasians have a higher level of participation than Hispanics in active sports (463). Gobster (2002) found that 28.6% of Hispanics compared to 22.2% of Caucasians participated in active group activities or sports. Thirty-three percent of the Caucasian respondents compared to 28% Hispanic respondents in Barnette's study participated in sports (2006).

In regards to site preference, 61% of Caucasian respondents in Gobsters (2002) study said they liked the park for its natural beauty. In fact, 18.7%, the highest of any subgroup indicated that the park amenities they liked most were the trees and vegetation. An additional 25% said they liked the water and shore line. Phillip (1993) suggests that when choosing where to recreate, Caucasians focus on the desired environment rather than social interaction. Moreover, 67% of Caucasians, compared to 38% of African Americans believe the purpose of parkland is for conservation rather than preservation (Payne, et al., 2002). Caucasians prefer actively using the environment in the recreational pursuits rather than socializing within it.

External Impacts on Recreation Preference

Gobster believes significant differences in 24 out of 34 recreational activities between different ethnic groups indicate that differences in park preference are, at least in part, due to ethnic differences. External factors, such as transportation alternatives and

cost and internal factors like perception of safety and site facilities encourage or discourage park use among a diversity of individuals (Gobster, 2002). Caucasians were twice as likely to say they were unsafe than any other subpopulation in the Lincoln Park study; 47% said they felt unsafe while participating in outdoor recreation activities. The primary safety issue for Caucasians is ‘poorly lit areas after dark’ (Gobster, 2002). Others contend that there are more factors at play that also bear a significant role in ethnic preferences in leisure activities, including residence and ethnicity (Payne, Mowen, and Orsego-Smith, 2005).

The Effects of Residence on Recreation

There is a lack of consideration for spatial context in recreation research (Smale, 1998). According to Payne et al. (2005), “spatial context is generally regarded as lying at the root of choice, preference, and ultimately, the behavioral patterns expressed by an individual.” When born into a particular environment, an individual adapts and adjusts to survive within that setting. With that adjustment also comes both culture and preference for certain factors of that environment over others. Similarly, Schroeder (1983) found that those who spend the majority of their lives in “urban areas [are] more likely to prefer developed parks... those from suburbs [or] rural backgrounds [are] more likely to prefer natural forest environments.”

Floyd and Shinenew (1999) argue that socioeconomic status and ethnicity go hand-in-hand. Therefore, when one transcends his/her original socioeconomic level that person adapts the culture and norms of their new socioeconomic location, regardless of ethnicity. Himstra (2005) argues that in groups with high levels of interracial contact, African Americans and Caucasians are very similar in terms of recreational preferences, showing

significant differences in 8 of 25 activities (Ibid). Moreover, Edwards (1981) asserts that the relationship between recreational preference and residential location supersedes ethnicity. He attributes it to acculturation, or the level to which a person is assimilated into the mainstream culture. He found that ethnicity was not a factor in recreational preference among African Americans living in Caucasian “areas, [but] rather, their socioeconomic status and available opportunities accultured them into normative activities in these residential locations” (Edwards, 1981). However, Haley found in a study over the allocation of parkland and recreation across residential locations, “that [when] there was opportunity in gaps in recreation sources among cities and suburbs, these gaps narrowed somewhat overtime” (1985).

In 1985, Smale used census tracts to examine recreation center membership and correlated the data with demographic and distance measures. He found that membership was not only higher in affluent areas with large families, but also concluded that increased residential distance from the recreation site decreased the probability of membership. Similarly, the 2002 Lincoln Park findings also indicate that African Americans, Hispanics, and Asians live further away from Lincoln Park than Caucasians, which suggests there may be access restraints to minorities (Gobster).

In a 1988 study examining outdoor recreation preferences between African Americans in suburban Ann Arbor and urban Detroit, Kaplan and Talbot (1988) found that recreational activities were analogous among Blacks from rural and urban areas. Payne et al. (2005) purport that recreational preferences and behavior are omnipresent “along [ethnic] lines, and they are consistent across residential location and opportunity variations.” Stamps and Stamps (1985) also found that African Americans, regardless of

their living environment, were, in terms of recreational pursuits, more similar to one another than to Caucasians. Additionally, Dwyer (1987) found that once income, gender, location, and age were controlled, considerable differences in leisure participation remained between ethnic groups.

The Effects of Ethnic Identity on Recreation

Ethnicity, in terms of cultural identification, is perhaps the most interesting factor that affects racial preferences in leisure activities. According to Shinew et al. (2006), little research has been conducted on the impact of belonging to multiple ethnic groups on recreational preference. Li et al. (2007) argue that studies operating under the assumption that different ethnic groups are culturally homogenous “may neglect important with-in group differences in values and possibly other aspects of culture (538).” It is important to examine the recreational preferences of African Americans from the North versus the South or Hispanics with Puerto Rican rather than Mexican roots. Few studies examine the differences.

There has been little research on the recreational preferences of Caucasian ethnic groups in America. According to Stodalska and Jackson (1998), many argue that Caucasians “share similar leisure behaviors, patterns, [and] choices [because]... ethnicity is often hidden or invisible (43).” Li et al. (2007) asserts that Americans with Welsh, Scottish, British, or German, backgrounds are often studied as one homogenous group.

Gobster (2002) examined the differences between African Americans with southern roots and those with northern backgrounds in the Chicago area. Those with southern roots were more likely to live near a park and travel there by foot. In fact, 34% of southern-rooted African Americans, versus 19% of northern-rooted African

Americans, were not only more prone to visit the park by foot, but a higher frequency visited the park on a weekly or daily basis; 42% versus 20% respectively. Activities vary as well. African Americans with southern roots were more likely to fish, swim, and picnic; those with northern roots were more likely to bicycle and golf.

Differences along ethnic lines in the Hispanic community are also evident. Gobster indicated the greatest differences in preference for soccer; 26% of Central and South Americans play but only 14% of those of Mexican descent participate. Zero percent of those of Puerto Rican descent play. Puerto Ricans preferred basketball. Also, 47% of Puerto Ricans swam, compared to 31% and 23% among Mexican Americans and South and Central Americans respectively (2002).

Conclusion

Overall, the literature suggests that race and ethnicity do influence preference for outdoor recreational activities. It indicates key differences among various ethnic subgroups. African Americans prefer social activities in structured well-groomed and open environments. Hispanics also prefer social activities; the activities are family oriented and involve more natural than structured environments. Caucasians, however, have a greater predilection for active leisure, and participate in a wider range of activities overall. They prefer more undeveloped wild land locations.

Opinions however differ on the overall catalyst in recreational choice. Many differences recreational preference, according to the literature, can be attributed, at least in part, to social variables such as income, residential location, gender, and age. Income impacts the affordability of certain activities and residential location has a bearing on the accessibility of recreational activities and locations.

According to the literature, ethnicity and the additional social variables impact preference for outdoor recreational activities. These findings are important in parks and recreation planning because they help provide more accurate measures of park user desires and needs. The replication of these studies in Cameron Park will not only help park planners in the development of park amenities, it will help facilitate the needs and desires of the parks diverse clientele.

CHAPTER THREE

Research Design and Methods

This research was designed to use quantitative and categorical data primarily. The data were gathered using the Cameron Park Recreational Survey. The recreational survey was structured to collect basic demographic information, recreational activities, and future development preferences. The questions were mostly close-ended to facilitate data processing; a Likert scale was used to gauge overall perceptions of the park and the need for additional facilities. The objective here was to better understand respondent viewpoints about Cameron Park development and available recreational activities.

Research Questions

To better gauge the impact of ethnicity preference for outdoor recreational activities, the following questions were answered.

1. Are there differences in the recreational preferences of African Americans, Caucasians, and Hispanics?
2. Are there differences in the aggregated main activity preferences of African Americans, Hispanics, and Caucasians?
3. Are there differences in the Cameron Park recreational locations most preferred by African Americans, Hispanics, and Caucasians in Cameron Park?
4. Are there differences in the aggregated main Cameron Park recreational locations of African Americans, Hispanics, and Caucasians?

Additional questions were derived to determine the impact of the income, gender, residential location, age, and education level.

1. Are there differences in the Cameron Park Recreational activities most preferred among different: income levels, residential locations, education levels, genders, or age?
2. Are there differences in the aggregated main activity preferences among different: income levels, residential locations, education levels, genders, or age?
3. What is the frequency of park user visitation by ethnicity?
4. Are there differences in the frequency of park visitation among African Americans, Hispanics, or Caucasians?
5. Do African Americans on average participate in 50% fewer recreational activities than Hispanics or Caucasians when they visit the park?
6. Are there differences in ethnic perceptions of safety in Cameron Park?

Research Objectives

The specific objectives of this research and are:

1. To develop an onsite sampling design and procedure to identify characteristics of park use by different ethnic groups.
2. To identify the influences of: income, age, residence, education, and gender on activity preference.
3. To chronicle problems park users have had in terms of access to recreational activities.
4. To classify park user income, sex, age, education, and residence.
5. To identify park user perception of safety.
6. To determine the frequency of park visitation.
7. To develop a set of recommendations to aide park managers in meeting the needs of its diverse clientele.
8. To compare the findings of scholars such as Gobster (2002), Stamps and Stamps (1985), Kaplan and Talbot (1988) to 2006 Cameron Park results.

Time Table

The field investigation began in late October and November of 2006 with the observation and assessment of several test sites. The Baylor Internal Review Board approved the study's design and sample instrument in February 2006. The data collection began in late January of 2006 and continued until August of 2006 via opportunistic sampling. Due to consent issues, the survey population did not include minors. Only adults 18 years and older were surveyed. The majority of the data were collected between January and August of 2006. Analysis began in May of 2007.

Survey Instrument

Park visitors were surveyed using the Cameron Park Recreational Use Survey found in the Appendix A. The Cameron Park Recreational Use Survey includes a demographic section, where respondents answered questions such as ethnicity, age, and zip code to determine residential location. Zip codes were used to match respondent locations to the five zones presented in the Comprehensive Parks, Recreation, and Open Space Master Plan. Respondents with zip codes outside the five zones presented in the Comprehensive Parks, Recreation, and Open Space Master Plan were placed in the categories: “Other Texas Cities,” “Other States,” and “International.” In the ensuing sections, respondents were asked to indicate their preference for park activities such as fishing, hiking, and picnicking. Respondents were also asked to identify attributes of the park that they feel need to be added or improved upon.

Survey questions include:

1. Where do you participate in your Cameron Park recreational activities?
(Check all the apply)
2. What recreational activities are you participating in today? *(Check all that apply)*

Ethnic Categories

To determine ethnicity, respondents were asked to identify their race or ethnicity (Appendix A, question 20). The majority of the respondents selected only one ethnicity. Respondents selecting more than one ethnicity were aggregated into the Other category in the frequency distribution because there were too few people in each combination of ethnicities.

Survey Locations

The research was conducted in Cameron Park in Waco, Texas. Located on the banks of the Brazos River, Cameron Park is the quintessential urban park. It offers both developed and wild land outdoor recreational activities. Although the park does not allow camping, there are several challenging hiking, biking, and bridle trails. The park is home to a diverse array of plant and animal species, and every spring the Miss Nellie's Pretty Place draws crowds with an arrangement of various wildflower species. Throughout the park, visitors can also participate in more developed activities such as soccer, volleyball, disk golf, and football.

Data Collection

Although Cameron Park Spans 416 acres, the survey was only administered at ten sample sites across the park. Accordingly, each location was chosen with regard to accessibility, visibility, visitor density, and the types of activities available. Pecan Bottoms, for instance, was selected due to its high visitor density and the capacity for multiple types of activities. Jacobs Ladder was chosen because of its central location between the flood plain area and the high visitor density. Proctor Springs, however, was not chosen due to low user density and observed illegal activities.

User density was determined during the observation and site assessment period in late October and November 2005. Surveys were administered opportunistically. Surveyors asked every park visitor they encountered to complete a survey. This precluded any respondents possibly participating in illegal activities. Though surveying times were opportunistic, the sampling zones were surveyed seven days a week between 7:00 a.m. and 7:00 p.m. To avoid bias, surveys were administered at variable times

throughout the day to capture park users who visit during high and low density periods. Limiting surveying to high density hours will prejudice those who prefer solitude in their recreational pursuits.

Surveying location was also opportunistically selected. During periods of low visitor density, surveys were administered without regard to location, but instead the presence of potential respondents. Surveys were administered in all areas of the park, including, but not limited to Pecan Bottoms, Anniversary Park, Circle Point, Lovers Leap, and Cameron Park East.

During peak visitor periods, surveys were administered using two methodologies: With and without assistants. When surveying assistants were available, surveys were simultaneously administered at the three locations. Assistants administered surveys at the lower, middle, and upper levels of the park. The Lower Levels consisted of: Pecan Bottoms, Jacobs Ladder, Anniversary Park, Redwood Shelter, and Cameron Park East. The Middle Levels included: Mouth of the Bosque, Lawson's Point, and Emmons Cliff. The Upper Levels included: Lovers Lead and Circle Point. When assistants were not available, surveys were administered at rotating locations. Surveys were either administered from Pecan Bottoms to Lovers Leap or vice versa for thirty minutes to one hour depending on visitor density. Descriptions of the survey locations are in the Appendix B.

Constraints

Although the survey was conducted to gather information about ethnic preferences in Cameron Park, many ethnic groups were under sampled. This is due to the low population of some ethnic groups in Waco and the unwillingness of some

respondents to complete surveys. Respondents who categorized themselves as Asian, for instance were not included in the analysis because there were too few respondents to generate reliable results. The preferences of respondents who selected more than one ethnicity, an important subgroup, were not analyzed for the same reason.

The language barrier was also a constraint. Many Hispanics indicated that they could not complete a survey because they did not speak English. This could account for the low number of Hispanic respondents. Some respondents, however, gave this excuse, but were observed speaking English moments before they were asked to complete a survey. This could have been averted had a Spanish version of the survey been created.

There were a number of reasons many individuals were not surveyed. Some park visitors were not surveyed because they never exited their vehicles or were observed participating in illegal activities. Others felt the survey was too long or invasive. Another constraint was time. For safety reasons, surveying was not allowed after dusk. Many of the parking lots in which surveys were administered are not lit and there was danger of being run over by an automobile or falling victim to a crime. Survey respondents might have been afraid of being approached after dark as well.

CHAPTER FOUR

Data Analysis

The data gathered from the Cameron Park Recreational Use Survey was analyzed using SPSS version 17.0 (SPSS, Inc., 2002), Microsoft Office Excel (2007), and JMP 7.0.1 (2007). The initial analysis included a frequency distribution to determine the usage of each park amenity. Next, frequency distributions of the ethnic backgrounds of respondents, without regard to activity preference, were analyzed. This information was then compared to the demographic information gathered on the City of Waco, Texas from the 2006 American Community Survey (2006) to make note of any major discrepancies in between the two samples. The American Community Survey was used because the survey was conducted in 2006 and data from the 2000 census is dated.

Pearson's χ^2 Test was used to determine statistically significant differences in recreational patterns and/or preferences by ethnicity. Many scholars, such as Edwards (1981), maintain that other variables, such as income, residence, and education, have a more significant bearing on user preference for outdoor recreation. In light of Edward's assertion, χ^2 tests were also run to determine if outdoor recreational preference is statistically relevant to: gender, residence, age, income, or education.

Due to small sample sizes, respondents in the Asian, Native American, and Other ethnic categories were not included in the χ^2 Test. Individually, the three groups do not have enough respondents to produce reliable χ^2 results, and aggregating the groups would erase valuable information about the individual subgroups.

For statistical analysis, the recreational activities such as “Hiking,” “Picnicking,” and “Nature Communing,” listed in the Cameron Park Recreational Use Survey were analyzed individually and then aggregated into use categories such as “Competitive,” “Social/Passive,” and “Active.” In this study, Competitive activities are defined as competitive team or individual sports. Active activities are defined as faster paced physical activities participated in for exercise or entertainment. Social/Passive activities are defined as slower paced and/or social activities designed for internal, intellectual, or passive entertainment. Although most often categorized as a consumptive activity, fishing was included in the Social/Passive category because it is a passive or slower paced activity, and not an exercise. Nature communing and bird watching were also included in this category because they are internal or intellectual activities rather than exercises. The activities in each category are listed in table A.19 in Appendix B.

To further this analysis of park preference in Cameron Park, and because the data from this survey are valuable to the City of Waco for park planning purposes, a number of supplementary variables were also analyzed using cross tabulations. These variables include:

1. Park Seasonal Preference
2. Preferred time of visitation
3. Safety Concerns
4. Usual Mode of Transportation to the Park
5. Frequency of visitation
6. Overall Feelings about the Cameron Park
7. Needed Parks Additions

CHAPTER FIVE

Results

Frequency Distribution of Respondent Ethnicity in Cameron Park

According to 2006 American Community Survey, the total population in Waco, Texas, when the Cameron Park Recreational Survey was administered, was 119,394 with a margin of error of +/- 5684. Of that population, 48% were Caucasian alone, 27.3 % were Hispanic alone, and 20.5% were African American (American Community Survey, 2006 & Table 1.2). An additional 2.5% of the population was Asian, .2% was Native American, and 1.5% was in the other category. The Cameron Park ethnic responses were similar in all cases, with the exception of Hispanics, where the proportion of respondents was much lower. This is due to under sampling of the Hispanic population in Cameron Park. According to the 2006 American Community survey, 27.3% of the Waco population categorized themselves as Hispanic alone (Table 1.2). Only 16.2% of the Cameron Park respondents listed that they were Hispanic alone (Table 1.1). Among the other ethnic categories, the differences were much smaller. Similar to the American community survey results, the majority of the survey respondents in Cameron Park, 52.3%, were Caucasian. The African American and Asian response rates were also similar to the American Community Survey results with percentages of 22.8% and 3.3% respectively (Table 1.1). The Other Category in the Cameron Park survey is composed of those who categorized themselves as more than one ethnicity; 4.3% of the respondents

selected this category. Only 1.5% of the respondents in the American Community Survey selected this category.

Table 1.1. Frequency Distribution of Respondent Ethnicity in Cameron Park

Ethnicity	Frequency	Percent	Valid Percent	Cumulative Percent
African American	69	22.4	22.8	22.8
Asian	10	3.2	3.3	26.2
Caucasian	158	51.3	52.3	78.5
Hispanic	49	15.9	16.2	94.7
Native American	3	1.0	1.0	95.7
Other	13	4.2	4.3	100.0
Total	302	98.1	100.0	
Missing	6	1.9		
Total	308	100.0		

Table 1.2. 2006 American Community Survey: Ethnicity and Population Projection for Waco, Texas

Ethnicity	Frequency	Percent	Margin of Error (+/-)
African American	24430	20.5%	2979
Asian	2940	2.5%	700
Caucasian	57500	48.2%	3821
Hispanic	32593	27.3%	3209
Native American	186	0.2%	157
Other	1745	1.5%	*
Total	119394	100.0%	5684

Source: 2006 American Community Survey

Frequency Distribution of Respondent Education, Age, and Gender

The education attainment level with the highest number of respondents was ‘Some College or Additional School’ which accounted for 40.8% of the total respondents (Table 1.3). Respondents with Bachelor’s Degrees accounted for 19.7% of the population; 17.4% had either a high school diploma or GED. Respondents with graduate degrees accounted for 10.9% of the sample, and 6.2% had at least some graduate experience. The level with the least respondents was “Grades 9-11,” with 4.9% of the respondents. There were no survey respondents in the “Grades 0-8” category.

Table 1.3. Frequency Distribution of Respondent Education Attainment Level

Education Level	Frequency	Percent	Valid Percent	Cumulative Percent
Grades 9- 11	15	4.9	4.9	4.9
Diploma or GED	53	17.3	17.4	22.4
Some College or Additional School	124	40.4	40.8	63.2
Bachelors Degree	60	19.5	19.7	82.9
Graduate Work	19	6.2	6.3	89.1
Graduate Degree	33	10.7	10.9	100.0
Total Valid	304	99.0	100.0	
Missing	3	1.0		
Total	307	100		

The ages of the survey respondents ranged from 18 to 67 (Table 1.4). The average respondent age was 30.27 with a median of 27, though 84.3% of the respondents were age 40 or below (Table A.15). The ages were slightly skewed to the right with a standard deviation of 10.29. Further, 62% of the respondents were below the mean age of 30. In fact, 52.3% of the respondents were between 18 and 27. The mode of the age analysis is 21 which had a total of 19 respondents. The disaggregated frequency distribution of respondent age can be found in Table A.15 of Appendix C. For analysis, respondent age was aggregated into four categories: “Under 25,” “25-29,” “30-39,” and “40 and Older.” The largest percentage of the respondents were in the Under 25 age category with 36.67% of the valid respondents; 22% were in the 25-29 age category, and 22.33% were in the 30-39 range. The smallest percentage of respondents, 19.33% were in the 40 and older age category. The ratio of men and women respondents was relatively even with 153 female and 152 male respondents (Table 1.5). Male and female respondents were also very similar in age. The average age of male respondents was just over 30; females averaged just over 29 years of age (Table A.14).

Table 1.4. Frequency Distribution of Aggregated Respondent Age

Age	Frequency	Percent	Valid Percent	Cumulative Percent
Under 25	110	35.71	36.67	36.67
25-29	66	21.43	22.00	58.67
30-39	67	21.75	22.33	81.00
40 and over	58	18.83	19.33	100.00
Total Valid	300	97.40	100.00	
Missing	7	2.27		
Total	308	100.00		

Table 1.5. Frequency Distribution of Respondent Gender in Cameron Park

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	153	49.67	50.16	50.16
Male	152	49.35	49.83	100.0
Total Valid	305	99.02	100.0	
Missing	3	0.01		
Total	308	100.0		

Frequency Distribution of Respondent Residential Location

Residential location was measured using the respondents' zip code. The zip codes were divided into four categories: 'International', 'Other States', 'Other Texas Cities', and 'Waco Area'. The international category consists of respondents whose reside outside the United States. There is only one respondent in this category; she is from Italy (Table 1.6). The 'Other States' category is composed of respondents who reside in states other than Texas. Respondents in this category hail from states as close as Oklahoma and as far as Indiana. There are five respondents in this category. The 'Other Texas Cities' category consists of respondents who live outside the Waco area. The category includes locations within the Waco Metropolitan Statistical Area, such as McGregor or Axtell, and cities as far away as Midland or Houston. This category made up 18.9% of the total respondents. The 'Waco' category included all of the zip codes in the Waco city limits as well as Hewitt (76643) and Woodway (76712). The Cities: Beverly Hills (76711),

Bellmead, and Lacey Lakeview (76705) are included in the analysis but share zip codes with the city of Waco. Seventy-nine percent of the respondents were in this category. Though the 'International,' 'Other States,' and 'Other Texas Cities' zip codes were aggregated for analysis, the Waco area zip codes were analyzed individually to determine the demographic and recreational characteristics of the different areas in around the city.

The Waco zip code with the largest number of respondents was 76706 (Table 1.6 & Figure 1). Twenty-two percent of the total respondents reside in this area. The second largest number of Waco survey respondents reside in the 76710 zip code area; 12.2%. 76708 was next with 10.1% of the respondents, followed by 76707 and 76705 with 8.8% and 5.7% of the respondents respectively. The zip codes with the least number of participants were 76714, which had 3 respondents, and 76711 with 4. The average number of respondents per zip code was 20. Because the respondents exact address was not requested for the survey I was unable to determine the true effect of residential distance from the park on the level of visitation.

Frequency Distribution of Cameron Park Recreational Activities

Respondents selected a wide variety of main activities in the survey, ranging from hiking or biking to military marksmanship. The number of respondents selecting each activity ranged from 1 to 46, with the highest level of participation in biking, which accounted for 19.2% of the valid respondents. The activities with the next highest level of preference were in walking and jogging. Sixteen percent of the valid respondents chose walking and 15.8% of the respondents chose jogging. Disk golf followed with 11.3% of the respondents. Of the total respondents 8.3% chose family gatherings as their main activity; 7.5% chose picnicking. The lower range of responses came in activities such as

the fishing and horseback riding, which were preferred by 2.1% and 1.3% of the respondents respectively. Seven of the 31 total activity categories had only 1 respondent and 7 had no respondents.

Table 1.6. Respondent Residential Location Descriptive Statistics

Zip Code	Frequency	Percent	Valid Percent	Cumulative Percent
Other States	5	1.6	1.7	1.7
International	1	0.3	0.3	2.0
Other Texas	56	18.2	18.9	20.9
Cities				
76643	8	2.6	2.7	23.6
76701	9	2.9	3.0	26.7
76704	16	5.2	5.4	32.1
76705	17	5.5	5.7	37.8
76706	65	21.2	22.0	59.8
76707	26	8.5	8.8	68.6
76708	30	9.8	10.1	78.7
76710	36	11.7	12.2	90.9
76711	4	1.3	1.4	92.2
76712	12	3.9	4.1	96.3
76714	3	1.0	1.0	97.3
76798	8	2.6	2.7	100.0
Total	296	96.4	100.0	
Missing	11	3.6		
Total	307	100.0		

Frequency Distribution of Aggregated Main Recreational Activities

The largest number of respondents selected ‘Active’ activities such as hiking and jogging, as their main recreational activity; 147 or 61.3% (Table 1.8). The ‘Social/Passive’ category had the second highest number of respondents with 61 or 25.4%. The ‘Competitive’ category made up the lowest percentage of respondents, 13.3%, with 32.

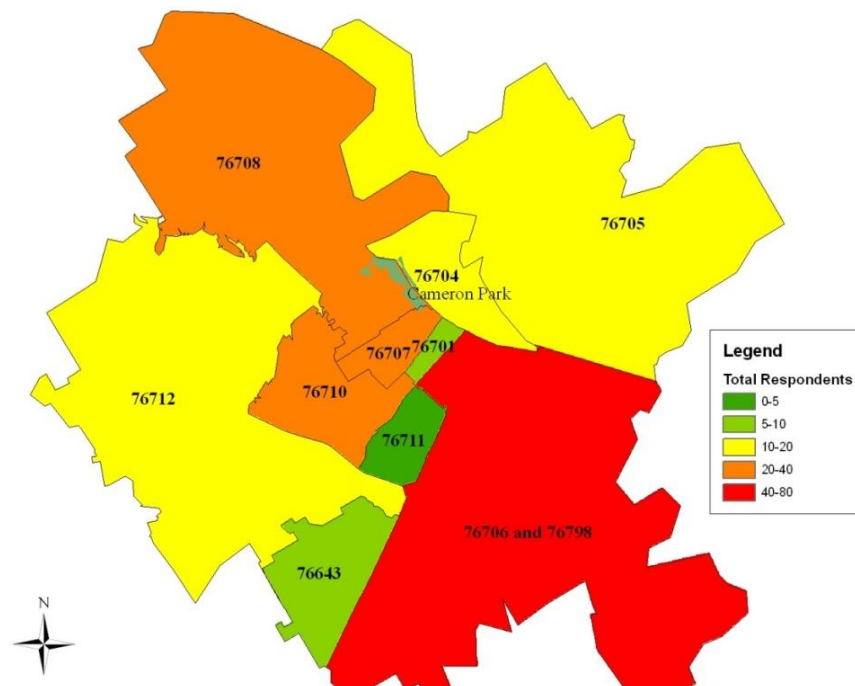


Figure 1. Respondent Residential Dispersion by Zip Code Map

Main Activity Frequency Distribution by Ethnicity

Of the 47 valid African American respondents, 2.13% chose 'Competitive' activities as their main recreational activity; 46.81% chose 'Active' activities (Table 1.9). The highest percentage of African Americans, 51.06%, chose 'Social/Passive' activities. Of the 138 total valid Caucasian respondents, 16.7% chose 'Competitive' activities as their main recreational activity; 13.77% chose 'Social/Passive' activities (Table 1.9). The highest percentage of Caucasian, 69.57% chose 'Active' activities. Of the 31 total valid Hispanic respondents, 22.58% chose 'Competitive' activities as their main recreational activity; 32.26% chose 'Social/Passive' activities (Table 1.9). The highest percentage of Hispanics, 45.16%, chose 'Active' activities. Of the 20 total valid respondents from the Other Ethnicity Category, 22.58% chose 'Competitive' activities as their main recreational activity; 35% chose 'Social/Passive' activities (Table 1.12). The highest

percentage of respondents from the Other Ethnicity category, 60%, chose ‘Active’ activities.

Table 1.7. Frequency Distribution of Main Activity Preferences in Cameron Park

Activity	Frequency	Percent	Valid Percent	Cumulative Percent
Hiking	16	5.2	6.7	6.7
Biking	46	15.0	19.2	25.8
Jogging	38	12.4	15.8	41.7
Walking	39	12.7	16.3	57.9
Sightseeing	4	1.3	1.7	59.6
Romance	2	0.7	0.8	60.4
Picnicking	18	5.9	7.5	67.9
Fishing	5	1.6	2.1	70.0
Disk Golf	27	8.8	11.3	81.3
Soccer	1	0.3	0.4	81.7
Family Gathering	20	6.5	8.3	90.0
Bird watching	1	0.3	0.4	90.4
Boating	2	0.7	0.8	91.3
Spray park	2	0.7	0.8	92.1
Volleyball	3	1.0	1.3	93.3
Horseback Riding	3	1.0	1.3	94.6
Special events	3	1.0	1.3	95.8
Other	3	1.0	1.3	97.1
Reading	2	0.7	0.8	97.9
Hockey	1	0.3	0.4	98.3
Parking	1	0.3	0.4	98.8
Zoo	1	0.3	0.4	99.2
Marksmanship	1	0.3	0.4	99.6
Rollerblading	1	0.3	0.4	100.0
Total Valid	240	78.2	100.0	
Missing	67	21.8		
Total	307	100.0		

Table 1.8. Frequency Distribution of Aggregated Main Activity Preferences in Cameron Park

Activity	Frequency	Percent	Valid Percent	Cumulative Percent
Competitive	32	10.4	13.3	13.3
Active	147	47.9	61.3	74.6
Social/Passive	61	19.9	25.4	100.0
Total Valid	240	78.2	100.0	
Missing	67	21.8		
Total	307	100.0		

Table 1.9. African American Aggregated Main Activity Distribution

Activity	Frequency	Percent	Valid Percent	Cumulative Percent
Competitive	1	1.45	2.13	2.13
Active	22	31.88	46.81	46.81
Social/Passive	24	34.78	51.06	100
Total Valid	47	68.12	100	
Missing	22	31.88		
Total	69	100		

Table 1.10. Caucasian Aggregated Activity Distribution

Activity	Frequency	Percent	Valid Percent	Cumulative Percent
Competitive	23	14.56	16.67	16.67
Active	96	60.76	69.57	69.57
Social/Passive	19	12.03	13.77	100
Total Valid	138	87.34	100	
Missing	20	12.66		
Total	158	100		

Table 1.11. Hispanic Aggregated Activity Distribution

Activity	Frequency	Percent	Valid Percent	Cumulative Percent
Competitive	7	14.29%	22.58%	22.58%
Active	14	28.57%	45.16%	45.16%
Social/Passive	10	20.41%	32.26%	100.00%
Total Valid	31	63.27%	100.00%	
Missing	18	36.73%		
Total	49	100.00%		

Table 1.12. Other Ethnicity Aggregated Activity Distribution

Activity	Frequency	Percent	Valid Percent	Cumulative Percent
Competitive	1	3.85%	5.00%	5.00%
Active	12	46.15%	60.00%	60.00%
Social/Passive	7	26.92%	35.00%	100.00%
Total Valid	20	76.92%	100.00%	
Missing	6	23.08%		
Total	26	100.00%		

Respondent Frequency of Visitation

In a measure of the frequency of park visitation, the highest percentage of respondents, 27.24%, visit the park on a weekly basis; 25.58% reported visiting the park monthly (table 1.13). The percentage of respondents visiting the park on a daily was 19.6, and 12.29% visit 2 to 3 times a year. An additional 7.97% of the respondents visit yearly, and 7.31% were surveyed on their first visit to the park.

Of the 69 African American respondents, 17.39% reported visiting the park on a daily basis; 26.09% visit weekly. African Americans were the most likely to visit the park monthly, with 28.99% of the respondents. Thirteen percent reported visiting the park 2 to 3 times a year, 8.7% reported that they visit the park yearly, and 5.8% reported that they were surveyed on their first visit to the park. Among the 157 Caucasian respondents, 24.84% reported visiting the park on a daily basis; an equal percentage visits weekly. Caucasian were the least likely to visit the park monthly, with 22.93% of the respondents. Ten point nineteen percent reported visiting the park 2 to 3 times a year, 9.55% reported that they visit the park yearly, and 7.64% reported that they were surveyed on their first visit to the park. Of the 49 Hispanic respondents, 12.24% reported visiting the park daily; 38.78%, the highest of any subgroup, visit weekly. Sixteen point thirty-three percent reported visiting 2 to 3 times per year and 2.04% reported that they visit the park yearly. An additional 2.04% said were surveyed on their first trip to the park. Among the 26 respondents in the Other category, 7.69% reported visiting the park on a daily basis; 23.08% visits weekly. The highest percentage of those in the Other category visited the park monthly with 26.92%; 15.38% reported visiting 2 to 3 times a year. An additional

7.69% visit yearly, and 19.23%, the highest of any subgroup, were surveyed during their first visit to the park.

Table 1.13. Respondent Frequency of Visitation by Ethnicity

Ethnicity	Daily	Weekly	Monthly	2-3 Visits Per Year	Yearly	First Time	Total
African American	17.39%	26.09%	28.99%	13.04%	8.70%	5.80%	69
Caucasian	24.84%	24.84%	22.93%	10.19%	9.55%	7.64%	157
Hispanic	12.24%	38.78%	28.57%	16.33%	2.04%	2.04%	49
Other	7.69%	23.08%	26.92%	15.38%	7.69%	19.23%	26
All Respondents	19.60%	27.24%	25.58%	12.29%	7.97%	7.31%	301

Frequency Distribution of Respondent Location of Recreation Participation

The frequency distribution of respondent recreational locations was used to determine the locations respondents most often participate in their recreational activities. In the survey, respondents were asked to indicate all of the locations in Cameron Park they participate in recreational activities.

Table 1.14. Frequency Distribution of Respondent Recreational Location

Location	Frequency	Percent
Pecan Bottoms	131	42.81
Lovers Leap	114	37.25
Wilderness Trails	103	33.66
Miss Nellie's Pretty Place	89	29.08
Paved Jogging Trails	71	23.20
Redwood Shelter	66	21.57
West Disk Golf Course	57	18.63
Jacob's Latter	56	18.30
Circle Point	52	16.99
East Disk Golf Course	49	16.01
Emmons Cliff	48	15.69
Lawson's Point	46	15.03
Cameron Park East	44	14.38
Anniversary Park	29	9.48
Mouth of the Bosque	21	6.86

The largest percentage of respondents, 42.81%, indicated that they participate in their recreational activities in Pecan Bottoms (Table 1.14). This was despite the low percentage of respondents who indicate that they participate in the recreational activities associated with Pecan Bottoms, i.e., picnics and family gatherings (Tables 1.7, 2.1, and 4.1). Lovers Leap was second with 37.25% followed by the Wilderness Trails and Miss Nellie's Pretty Place with 33.66% and 29.08% respectively. The Paved Jogging Trails were next with 23.20% the Red Wood Shelter with 21.57%. The lowest percent of respondents participate in recreational activities at the Mouth of the Bosque. This could be due to the secluded location, lack of lights, and the harsh driving conditions entering and exiting the site.

Frequency Distribution of Respondent Main Recreational Location in Cameron Park

A frequency distribution was used to determine the type of recreational locations respondents most prefer. For the analysis, locations were aggregated three categories: Developed, Trails, and Vista. The "Developed" category includes locations such as Anniversary Park and Pecan Bottoms that feature more developed amenities such as playground equipment and picnic tables. The "Trails" category includes locations such as the wilderness trails and the Jacob's Ladder. The "Vista" category includes scenic areas such as Miss Nellie's Pretty Place and Lovers Leap that feature natural amenities and views throughout the park.

Table 1.15. Frequency Distribution of Respondent Main Recreational Location

Location Type	Frequency	Percent	Valid Percent	Cumulative Percent
Developed	119	38.64	46.67	46.67
Trails	88	28.57	34.51	81.18
Vista	48	15.58	18.82	100.00
Total Valid	255	82.79	100.00	
Missing	53	17.21		
Total	308	100.00		

The largest percentage of respondents, 46.67%, selected developed areas as their main recreational location (Table 1.15). An additional 34.51% selected trails as their main location, and 18.82% chose Vistas.

Does Ethnicity Significantly Preference for Outdoor Recreational Activities?

Pearson's χ^2 test of Independence was also used to determine if there was a difference in the outdoor recreational activities most preferred by African Americans, Hispanics, and Caucasians. Specifically, the research question asks: Is there an ethnic effect on preference for outdoor recreational activity? A first step was to investigate specific activities. Among those with adequate sample sizes, seven displayed statistically significant differences in preference among ethnic groups at the 95% confidence level. Differences in preference for family gatherings are significant by ethnicity, with Caucasians showing the least preference for this activity and African Americans the greatest ($\chi^2 = 40.583$, $p < .0001$) (Table 2.1). Caucasian preference for Nature Communing, Hiking, Biking, Disk Golf and Jogging are also significant ($\chi^2 = 7.336$, $p = .0255$; $\chi^2 = 24.632$, $p < .0001$; $\chi^2 = 29.052$, $p < .0001$; $\chi^2 = 18.913$, $p = .0003$, $\chi^2 = 9.305$, $p = .0255$;). Further, Hispanic preference for Other Activities are significant at the 95% confidence interval ($\chi^2 = 12.710$, $p = .0017$). The results for Other Activities, however, are suspect because there are 20% of the cells have an expected count less than 5.

Because statistically significant differences were found in 7 of 24 activities, the null hypothesis, that there are no differences in the outdoor recreational preferences of African Americans, Hispanics, and Caucasians is rejected.

Table 2.1. Pearson's χ^2 Test of the Activities Respondents Most Prefer by Ethnicity

Main Activity	Percent African American	Percent Hispanic	Percent Caucasian	Total Park	Pearson Chi Square	P Value
	N= 69	N=49	N=158	N=276		
Social/Passive	51.06	32.26	33.33	25.42	27.502	<.0001
Family Gathering	53.62	38.78	25.88	27.69	40.583	<.0001
Nature Communing	13.04	4.08	19.62	14.33	7.336	0.0255
Other*	1.45	12.24	1.9	4.23	12.710	0.0017
Active	46.81	45.16	62.50	61.25	11.514	0.0032
Hiking	21.74	22.45	50.63	37.46	24.632	<.0001
Biking	17.39	24.49	51.9	37.79	29.052	<.0001
Jogging	30.43	30.61	45.57	40.72	6.434	0.0401
Competitive*	2.13	22.58	4.17	13.33	8.023	0.0181
Disk Golf	7.25	16.33	31.01	21.5	16.863	0.0002

The results of χ^2 analysis of ethnicity and aggregated main activity showed that there was a difference in preference. African Americans and Hispanics favor Social/Passive and Active activities at similar levels; Caucasians, however, strongly preferred Active, followed by Competitive activities ($\chi^2 = 32.103$, $p < .0001$). (Table 2.2)

Table 2.2. Pearson's χ^2 Test: Ethnicity and Main Recreational Activity Preference

Ethnicity	Number of Participants Per Category			df	Chi Square		
	Competitive	Active	Social/ Passive		Likelihood Ratio	Pearson	P
African American	1	22	24	4	32.776	32.103	<0.0001
Caucasian	23	96	20				
Hispanic	7	14	10				
Total	31	132	54				

In order to account for the much larger sample of Caucasians, the African American, Hispanic, and Other ethnic categories were aggregated into the “All other Ethnicities” category and compared to Caucasians. The analysis revealed that there were differences in the preferences of Caucasians and all other groups combined ($\chi^2=23.958$, $p<.0001$). (Table 2.3) Though there were fewer than 5 African Americans respondents in the competitive category, a test on the main activity preferences of African Americans and Hispanics revealed significant differences in the main activity preferences of the two subpopulations ($\chi^2 = 9.145$, $p = .0103$). (Table 2.4) African Americans had lower engagement in Competitive Activities, than Hispanics. African Americans also significantly differed from Caucasians, as did Hispanics, in the main activity preferences of the compared ethnic groups ($\chi^2=28.373$, $p<.0001$; 6.6836 , $p=.0254$). (Table 2.5)

Table 2.3. Pearson’s χ^2 Test: Caucasians and all Other Ethnicities and Main Activity Preference

Ethnicity	Number of Participants Per Category			df	Chi Square		
	Competitive	Active	Social/ Passive		Likelihood Ratio	Pearson	P
All Other Ethnicities	8	36	34	2	23.287	23.958	<0.0001
Caucasian	23	96	20				
Total	32	144	61				

Table 2.4. Pearson’s χ^2 Test: African American and Hispanic and Main Activity

Ethnicity	Number of Participants Per Category			df	Chi Square		
	Competitive	Active	Social/ Passive		Likelihood Ratio	Pearson	P
African Americans	1	22	24	2	9.489	9.145	.0103
Hispanics	7	14	10				
Total	8	36	34				

Table 2.5. Pearson's χ^2 Test: African American and Caucasian and Main Activity Preference

Ethnicity	Number of Participants Per Category			df	Chi Square		
	Competitive	Active	Social/ Passive		Likelihood Ratio	Pearson	P
African Americans	1	22	24	2	27.813	28.373	<.0001
Caucasians	23	96	20				
Total	24	118	44				

Table 2.6. Pearson's χ^2 Test: Caucasian and Hispanic and Main Activity Preference

Ethnicity	Number of Participants Per Category			df	Chi Square		
	Competitive	Active	Social/ Passive		Likelihood Ratio	Pearson	P
Hispanics	7	14	10	2	6.6836	7.348	0.0254
Caucasians	23	96	20				
Total	30	110	27				

Ethnicity and Preference for Recreational Location

In terms of preferred location for recreation, Pearson's χ^2 tests indicated statistically significant differences in 7 out of 15 Cameron Park locations, including: Miss Nellie's Pretty Place, Anniversary Park, Pecan Bottoms, Wilderness Trails, Lovers Leap, East Disk Golf Course, and West Disk Golf Course (Table 2.7). African Americans had stronger preferences for Pecan Bottoms and Miss Nellie's Pretty Place ($\chi^2=18.352$, $p<.0001$; $\chi^2=17.102$, $p=.0002$) than African Americans and Hispanics. Caucasians, in contrast, had stronger preferences for the east and west disk golf courses and the wilderness trails ($\chi^2=18.365$, $p<.0001$; $\chi^2=19.336$, $p<.0001$; $\chi^2=10.887$, $p=.0043$). An aggregated analysis did not find a significant difference by ethnicity, however, among developed, trail, and vista locations overall ($\chi^2 = 5.420$, $p=.2469$) (Table 2.8).

Table 2.7. Pearson's χ^2 Test: Most Preferred Recreational Location and Ethnicity

Main Activity	Percent African American	Percent Hispanic	Percent Caucasian	Total Park	Pearson Chi Square	P Value
	N= 69	N=49	N=158	N=276		
Developed	55.74	43.24	39.10	45.82	4.711	.0949
Anniversary Park*	11.59	20.41	5.7	9.48	9.514	0.0086
Pecan Bottoms	65.22	34.69	36.08	42.81	18.352	<.0001
East Disk Golf Course	7.25	4.08	25.48	16.07	18.365	<.0001
West Disk Golf Course	10.14	4.08	28.48	18.63	19.336	<.0001
Trails	18.03	16.22	21.80	19.12	.751	.6871
Wilderness Trails	21.74	24.49	41.77	33.66	10.887	0.0043
Vista	26.23	40.54	39.10	35.06	3.415	.1813
Miss Nellie's Pretty Place	46.38	36.73	20.25	29.08	17.102	0.0002

Table 2.8. Pearson's χ^2 Test of Main Location and Ethnicity

Ethnicity	Number of Activities Per Category			df	Chi Square Likelihood		P
	Developed	Trails	Vista		Ratio	Pearson	
African American	34	16	11	4	5.469	5.420	0.2469
Caucasian	52	52	29				
Hispanic	16	15	6				
Total	102	83	46				

Education and Activity Preference

For analysis purposes, the original education attainment levels were aggregated into the following categories:

1. "0-8" was removed because there were no respondents in the category
2. "Grades 9-11" and "Diploma or GED" became "High school ED"
3. "Some College or Additional School" was left as an individual category
4. "Bachelors" was left as an individual category
5. "Graduate Work" and "Graduate Degree" became "Graduate"

The Pearson's χ^2 Test of the differences in the outdoor recreational activities most preferred by respondents with different levels of education revealed statistically significant differences in 7 of 24 recreational activities, including Romance, Family

Gatherings, Hiking, Biking, Other, Fishing, and Jogging (Table 3.1). Levels of education are, of course, related to age. Those with graduate education were the least likely to engage in Romance, while those with some college education the most likely. Those with bachelor's and graduate education were less likely than those with high school or some college education to report using the Park for Family Gatherings and Fishing, and more likely to engage in Hiking, Biking and Jogging.

Table 3.1. Pearson's χ^2 Test: Education Level and Activities Most Preferred

Main Activity	High School Ed	Some College	Bachelors	Graduate	Total Sample	Pearson	P
	N=68	N=124	N= 60	N=52	N=304		
Social/Passive	52.08	22.77	16.67	12.20	25.63	23.960	<.0001
Romance	19.12	25.81	20.00	5.77	19.74	9.307	0.0255
Family Gathering	42.65	27.42	16.67	19.23	27.3	13.194	0.0042
Bird Watching*	10.29	4.03	3.33	5.77	5.59	4.002	0.2612
Other*	10.29	2.42	3.33	1.92	4.28	7.894	0.0482
Active	35.42	62.38	75.00	73.17	61.34	19.846	0.0002
Hiking	17.65	34.68	58.33	48.08	37.83	26.348	<.0001
Biking	14.71	36.29	56.67	51.92	38.16	28.918	<.0001
Jogging	26.47	41.94	53.33	40.38	40.46	9.764	0.0207
Fishing	16.18	27.42	13.33	11.54	19.41	9.017	0.0291
Competitive	12.50	14.85	8.33	14.63	13.03	1.335	0.7207

Using aggregate activity categories, respondents with a high school education preferred Social/Passive activities, and those with Some College were the most likely to engage in Competitive or team activities. Respondents with Bachelors and Graduate degrees had a strong preference for Active activities such as hiking and biking ($\chi^2=26.380$, $p = .0002$). (Table 3.1a)

Table 3.1a. Pearson's χ^2 Test: Education and Main Activity Preference

Education Level	Number of Participants Per Category			df	Chi Square		P
	Competitive	Active	Social/ Passive		Likelihood Ratio	Pearson	
High School ED	7	17	25	6	25.469	26.380	0.0002
Some College or Additional School	15	63	23				
Bachelors Degree	4	36	8				
Graduate Work	6	30	5				
Total	32	146	61				

Residential Location and Main Activity Preference

Pearson's χ^2 Test was used to determine if there are differences in the outdoor recreational preferences of respondents living in different residential areas. Zip codes were used to distinguish residential location. In the initial analysis, zip codes outside the Waco area, but still within the state of Texas were aggregated into the "Other Cities in Texas" category; those residing outside Texas, including international respondents, were placed in the "Outside Texas" Category. Zip codes within the Waco area were analyzed individually. The frequency distribution of respondent zip code however revealed that there were too few respondents in within each zip code to conduct a valid χ^2 test. To combat the lack of respondents, the zip codes were aggregated into 3 geographically based categories for χ^2 analysis: Within 1 Mile, Between 1 and 10 Miles, and Over 10 Miles. Three out of 15 recreational activities displayed significant differences in recreational activity at the 95% confidence level: Family Gathering, Walking, and Hiking. Several additional activities displayed trends at the 90% confidence level, including Romance, Sightseeing, Spray Park and Jogging, suggesting under-sampling for this relationship. (Table 3.2)

Table 3.2. Pearson's χ^2 Test: Residential Location and Activities Most Preferred

Main Activity	Percent Over 10 Miles	Percent Within 1 Mile	Between 1 and 10 Miles	Total Sample	Pearson Chi Square	P
	N= 70	N=80	N=146	N=296		
Social/Passive	26.23	33.33	21.55	25.74	2.882	0.2367
Romance	11.43	16.25	23.97	18.92	5.3630	0.0685
Sightseeing	22.86	36.25	39.04	34.46	5.6430	0.0595
Family Gathering	20	41.25	25.34	28.38	9.6010	0.0082
Special	4.29	15	10.96	10.47	4.6430	0.0981
Spray Park	5.71	17.5	11.64	11.82	4.9830	0.0828
Active	62.30	51.67	64.66	60.76	2.879	0.2370
Hiking	38.57	27.5	45.21	38.85	6.8230	0.0330
Biking	47.14	30	39.04	38.51	4.6670	0.0970
Jogging	24.29	33.75	46.58	40.2	4.8710	0.0875
Walking	30	47.5	54.11	46.62	11.0860	0.0039
Competitive	11.48	15.00	13.79	13.50	0.338	0.8444
Volleyball*	4.29	15	9.59	9.8	4.8640	0.0879

To complete the analysis of residential location and the recreational activities most preferred, the Pearson's χ^2 Test of Independence was used to determine if there are differences in the aggregated main activity preferences of residents living within 1 Mile of Cameron Park, Between 2 and 10 Miles of Cameron Park, or Over 10 Miles away from Cameron Park. The differences were not significant, however ($\chi^2 = 3.536$, $p = .4684$). (Table 3.3)

Table 3.3. Pearson's χ^2 Test: Residence and Main Activity Preference

Residential Location	Number of Participants Per Category			df	Chi Square		
	Competitive	Active	Social/ Passive		Likelihood Ratio	Pearson	P
Over 10 Miles	7	38	16	4	3.538	3.563	.4684
2 - 10 Miles	16	75	25				
Within 1 Mile	9	31	20				
Total	32	144	61				

Gender and Aggregated Main Activity Preference

The Pearson's χ^2 Test of differences in the recreational activities most preferred among males and females indicated significant difference in 9 out of 24 recreational activities (Table 3.4). Among these women were more likely to participate in Family Gathering, Wildflowers, Walking and Spray Park, the latter probably as caretakers for children. Men were more likely to participate in Biking, Fishing, Disk Golf and Soccer. Analysis of aggregate data indicated a significant difference in preferences between genders, with men more engaged in Competitive Activities, and women in Social/Passive ($\chi^2=15.967$, $p = 0.0003$). (Table 3.5)

Table 3.4. Pearson's χ^2 Test: Gender and Recreational Activities Most Preferred

	Female	Male	Total Park	Pearson	P
Main Activity	N=153	N=152	N=305		
Social/Passive	33.63	18.25	25.52	7.408	0.0065
Picnic	44.44	26.32	35.41	10.957	0.0009
Family Gathering	37.25	17.76	27.54	14.517	0.0001
Wildflowers	14.47	5.92	10.20	6.243	0.0125
Spray Park	16.34	7.24	11.80	6.069	0.0138
Active	61.06	61.11	61.09	0.000	0.9938
Biking	28.76	47.37	38.03	11.205	0.0008
Walking	57.52	35.53	46.56	14.819	0.0001
Fishing	13.73	25.00	19.34	6.212	0.0127
Competitive	5.31	20.63	13.39	12.065	.0005
Disk Golf	10.46	32.24	21.31	21.567	<.0001
Soccer	7.19	14.47	10.82	4.193	0.0406

Table 3.5. Pearson's χ^2 Test: Gender and Main Activity Preference

Gender	Number of Participants Per Category			df	Chi Square		
	Competitive	Active	Social/ Passive		Likelihood Ratio	Pearson	P
Male	26	77	23	2	16.934	15.967	0.0003
Female	6	69	38				
Total	32	147	61				

Income and Preferred Recreational Activities

A Pearson's χ^2 Test of Independence was then used to determine differences in the recreational preferences of respondents earning between \$0-15,999, \$16,000-25,999, \$26,000-36,999, \$37,000-59,999, or \$60,000->\$100,000. Income was significantly related to differences in 4 out of 24 recreational activities at the 95% confidence level, including: Picnicking, Biking, Disk Golf, and Volleyball (Table 3.6). Picnicking and Disk golf decline in preference with increased incomes, possibly because higher income individuals and families have barbeques at home or participate in league activities. Data on these subjects are not available. The preference for biking increases with income, perhaps due to the expense of the equipment. The aggregated activity data show a significant difference between the upper and lower income categories, with higher income park users preferring the Active activities, and the two lowest income categories, with higher levels of participation in Social/Passive activities ($\chi^2 = 25.975$, $p=0.001$).

Table 3.6. Pearson's χ^2 Test: Income and Main Activity Preference

	\$0 - 15,999	\$16,000- 25,999	\$26,000- 36,999	\$37,000- 59,999	\$60K and up	Total Park	Pearson	P
Main Activity	N= 73	N=51	N=39	N=72	N=66	N=301		
Social/ Passive	27.59	45.00	45.45	15.25	12.50	25.53	20.975	0.0003
Picnic	50.68	35.29	43.59	33.33	16.67	35.55	18.826	0.0009
Spray Park	10.96	13.73	20.51	15.28	3.03	11.96	8.681	0.0696
Active	60.34	37.50	36.36	71.19	76.79	60.85	23.314	0.0001
Biking	39.73	23.53	25.64	43.06	48.48	37.87	11.026	0.0263
Competitive	12.07	17.50	18.18	13.56	10.71	13.62	1.422	0.8404
Disk Golf	35.62	23.53	10.26	19.44	13.64	21.59	14.216	0.0066
Volleyball*	12.33	7.84	23.08	9.72	0	9.63	15.928	0.0031

Table. 3.7. Pearson's χ^2 Test: Income and Main Activity Preference

Income	Number of Participants Per Category			df	Chi Square Likelihood Ratio		P
	Competitive	Active	Social/P assive		Ratio	Pearson	
\$0-15,999	7	35	16	8	26.170	25.975	.0010
\$16,000- 25,999	7	15	18				
\$26,000- 36,999	4	8	10				
\$37,000- 59,999	8	42	9				
\$60,000- >\$100,000	6	43	7				
Total	32	143	60				

Ethnicity and Perception of Safety

Safety is a key issue for Cameron Park, given its reputation among many users and nonusers as an unsafe location. In the survey, respondents were asked if they ever felt unsafe in the park, and if so to list where and when. Interestingly, only 40.8% of the survey respondents felt unsafe while visiting the park (Table 3.8). Among those who felt unsafe in the park, the 29.5% felt unsafe anywhere in the park at night (Table A.10). The actual location listed most often as unsafe was the wilderness trails, selected by 8% of the respondents. Ethnicity significantly effects feeling unsafe in the park, with 41.67% of Caucasians, 18.84% of African Americans, and 41.67% of Hispanics at times feeling unsafe when visiting the park ($\chi^2=18.750$, $p= .0003$). (Table 3.9)

Table 3.8. Respondent Perceptions of Safety in Cameron Park

Ethnicity	Respondents Feeling Unsafe in the Park		Total
		Percentage	
African American	13	18.84%	69
Caucasian	76	48.72%	156
Hispanic	20	41.67%	48
Other	13	50.00%	26
Total	122	40.80%	299

Table 3.9. Pearson's χ^2 Test: Ethnicity and Perception of Safety

Ethnicity	Number of Activities Per Category		df	Likelihood Ratio	Chi Square	
	Unsafe	Safe			Pearson	P
African American	13	56	3	20.143	18.750	0.0003
Caucasian	76	80				
Hispanic	20	28				
Other	13	13				
Total	177	122				

Ethnicity and Frequency of Visitation

The frequency at which respondents visit Cameron Park is not only important along ethnic lines, but for the entire park as well. Because there were fewer than five respondents in several frequency categories, the activity categories were aggregated into the following categories concerning frequency of visitation:

1. "Nearly Every day" became "Daily"
2. "Nearly Every Week" became "Weekly"
3. "11-25 Times a Year" and "Once a Month" became "Monthly"
4. "2-3 Times a Year" and "Once a Year or Less" became "1-3 Times a Year"
5. "This is my First Time" became "First Visit"

Overall, 72.43% of respondents visit the park monthly; 46.84% visit at least weekly (Table 3.10). Among the ethnicities, the χ^2 test did not reveal significant differences at the 95% confidence level, suggesting relatively equitable patterns of use (Table 3.10).

Table 3.10 Pearson's χ^2 Test: Ethnicity and Frequency of Visitation

Ethnicity	Number of Activities per Category					df	Chi Square		P
	Daily	Weekly	Monthly	Visits a year	First Visit		Likelihood Ratio	Pearson	
African American	12	18	20	15	4	12	16.435	16.902	.1533
Caucasian	39	39	36	31	12				
Hispanic	6	19	14	9	1				
Other	2	6	7	6	5				
Total	59	82	77	61	22				

Average Number of Activities Participated in on the Day Surveyed by Ethnicity

A frequency distribution was used to determine if African Americans on average participate in 50% fewer recreational activities when they visit the park, as the literature on ethnicity and recreation suggests. The analysis was conducted by summing the total number of recreational activities respondents indicated they were participating in on the day they were surveyed. The sum was then averaged for respondents in each ethnic category as well as for the entire park. On average, Cameron Park survey respondents participated in 2.73 recreational activities on the day they were surveyed (Table 3.11). Among the ethnic groups, African Americans averaged in the highest number of activities on the day surveyed with 3 – contrary to the literature. Caucasians and Hispanics averaged 2.65 and 2.63 recreational activities respectively. Respondents in the other category averaged 2.73 activities on the day surveyed.

Table 3.11. Descriptive Statistics of Recreational Activities Participated in on the Day Surveyed

Ethnicity	Mean	Median	Mode	Standard Deviation
African American	3.00	2	1	3.11
Caucasian	2.65	2	1	2.40
Hispanic	2.63	1.5	1	2.71
Other	2.73	2	1	2.65
Total	2.73	2	1	2.63

Age and Activity Preference

Pearson's χ^2 test was used to determine the impact of Age on preference for outdoor recreational activity. In order to determine the recreational activities most preferred by income level, respondents were asked to indicate the recreational activities they most often participate in.

Ages were aggregated into four categories:

1. "Under 25,"
2. "25-29,"
3. "30-39,"
4. "Over 40."

Four activities produced significant differences: Romance and Jogging, which were most important to respondents younger than 25, Disk golf which was most popular with respondents 29 and younger, and Wildflowers which were most preferred by the oldest class of respondents (Table 3.12). When the activities were aggregated, there were no differences by age among the major classes, ($\chi^2 = 3.079$, $p=.7989$) indicating that ethnicity and income are more important factors in determining who participates in Active versus Passive/Social recreation in Cameron Park (Table 3.13).

Table 3.12. Pearson's χ^2 Test: Age and Recreational Activities Most Preferred

	Under 25	25-29	30-39	40 and Over	Total Park	Pearson	P
Main Activity	N=109	N= 66	N=67	N=58	N=300		
Social/Passive	26.09	26.92	20.83	28.26	25.63	0.802	0.8490
Romance	31.19	18.18	13.43	8.62	20.00	15.171	0.0017
Wildflowers	9.26	13.64	1.49	18.97	10.37	11.194	0.0107
Active	59.78	55.77	68.75	63.04	61.34	1.942	0.5845
Jogging	55.05	39.39	37.31	18.97	40.67	21.017	0.0001
Competitive	14.13	17.31	10.42	8.70	13.03	1.990	0.5744
Disk Golf	27.52	30.30	10.45	13.79	21.67	12.190	0.0068

Table 3.13. Pearson's χ^2 Test: Age and Aggregated Main Activity

Age	Number of Activities Per Category			Df	Chi Square		
	Competitive	Active	Social/ Passive		Likelihood Ratio	Pearson	P
25-29	9	29	14	6	3.132	3.079	0.7989
30-39	5	33	10				
40 and Over	4	29	13				
Under 25	13	55	24				
Total	31	146	61				

CHAPTER SIX

Discussion

Ethnicity and Recreation in Cameron Park

The primary thesis research question asks if ethnicity significantly affects preferences in outdoor recreation among users in Cameron Park. The results indicate that there are significant differences in the recreational preferences of African Americans, Hispanics, and Caucasian. The initial analysis of respondent ethnicity and the differences in preference for each outdoor recreational activity found differences in only 7 of the 24 possible activities (Tables 2.1 and 4.1).

Interestingly, the majority of the respondents in each of the aggregated main activity categories selected: Biking, Walking, Family Gatherings, Disk Golf, and Jogging as their main recreational activity (Table 2.1). These categories account for 5 of the 7 statistically significant differences in the χ^2 test of ethnicity and activities most preferred. Respondents from the 6 aforementioned categories make up 77.63% of the total respondents in the aggregated main activity categories.

The differences in preference among the different subgroups were more pronounced when respondents were asked to select only one activity as their main recreational activity. African Americans had the lowest level of participation in Competitive activities. In fact, only 1 African American respondent selected a Competitive activity as their main activity (Table 2.2). The low level of participation in Competitive activities could be due to the lack of Competitive activity infrastructure.

The park has few open and unobstructed fields for activities such as football, and no basketball courts. The baseball fields are reserved for league play. When asked about needs of the park, 60.8% of African Americans indicated that the park needs basketball courts; the Competitive recreational activity most often associated with African Americans (Figure A.14). If the infrastructure is in place, participation requires only a ball, and adequate space, it is often free. Many of these activities are not available in the park.

Although the results indicate that Hispanics have a higher level of participation in Active and Competitive activities, that level is significantly lower than Caucasians (Table A.1). In fact, less than 25% of Hispanics or African Americans prefer Active or Competitive activities that require outside equipment. This indicates that cost, an unstudied variable in the survey, income, residential location, or other social variables may have a bearing on the level of participation in certain activities.

Among Active activities, Caucasians have a much higher level of preference; 69.57%. The χ^2 test of differences between Caucasians and all other ethnicities reveals that Caucasians are more than twice as likely to participate in Active activities as all other subgroups combined (Table 2.3). This could, however be due to the under sampling of African Americans and Hispanics. The highest percentage of African Americans selected Social/Passive activities, 51.06%, compared to 32.26% of Hispanics and only 13.77% of Caucasians (Tables 1.9-1.12).

Differences in Ethnic Preference for Outdoor Recreational Activity: Literature Comparison

The Cameron Park study indicated a relatively small number of significant differences between the different ethnic groups given that Gobster found significant differences in 24 of 34 possible recreational activities in his Linkin Park study (2002). The contingency tables reveal several differences as well as similarities between subgroups. More similarities were revealed when respondents were asked to select all of the activities they most prefer. An almost equal percentage of African Americans and Caucasians selected Romance as one of the recreational preferences they most prefer, 20.29% and 20.89% respectively (Table A.1). There were also similarities in preference for walking. African Americans and Hispanics were similar in preference with 53.62% and 51.02 respectively. Likewise, 42.03% of African Americans and 44.9% of Hispanics selected picnicking as one of the activities they prefer; this is compared to only 31.65% of Caucasians.

The higher percentage of preference for Social/Passive activities such as Picnicking and Family Gatherings among African Americans and Hispanics is supported by the research. According to Payne et al. (2001) and Chavez (2002) African Americans and Hispanics have a higher predilection for social activities. The low percentage of Caucasians selecting Family Gatherings, 25.88%, supports Gobster's (2002) argument that Caucasians have a lower level of participation in Social/Passive Activities (Table 2.1). This, however, could be the result of aggregation. Barnette (2006) found in her University of Illinois study that Caucasians had a higher level of participation in Social activities, 44% compared to 33% of African Americans, 35% of Hispanics, and 29% of Asians. The differences in Cameron Park could be due to Caucasian preference for

conducting barbeques and similar events, such as birthday parties at home. In Cameron Park, Caucasian participation in more Passive than Social activities such as Nature Communing, 19.62%, is higher than African Americans at 13.4% and Hispanics at 4.08% (Table 2.1).

The high level of Caucasian participation in Hiking, 50.63%, is supported by Phillipp's assertion that Caucasians are significantly more likely to participate in wild land leisure activities (1993). In fact, Crespo (2000) argues that African Americans and Hispanics participate in little to no active recreational activities. The Cameron Park results were not as extreme; African Americans and Hispanics have the highest rate of participation in Walking, 53.62% and 51.02% respectively (Table 2.1). Nearly a third of both subgroups selected jogging as an activity they most prefer.

Differences in Ethnic Frequencies of Park Visitation

Another important aspect of ethnicity and preference for outdoor recreational activities is frequency of park visitation. The literature suggests that African Americans participate in recreational activities significantly less often than other ethnicities. In Cameron Park, differences in frequency of visitation among African American, Hispanic, Caucasian, and Other groups were not significant at the 95% confidence level (Table 3.10). In fact, Hispanics have the highest percentage of respondents who visit the park at least monthly; 79.39% (Table 1.13). The frequencies of African Americans and Caucasians that visit the park monthly are nearly identical. Similar to Gobster's (2002) results, Caucasians have the highest percentage of respondents who visit the park daily, followed by African Americans.

The analysis of the number of activities participated in on the day survey by ethnicity revealed that African Americans participate in far more activities than indicated in the literature (Table 3.11 and Roper and Starch 1998). Cameron Park African American respondents participated in an average of 3 out of 24 activities on the day they were surveyed, the highest of any subgroup. Caucasians and Hispanics averaged 2.65 and 2.63 recreational activities respectively.

Differences in Cameron Park Recreational Location by Ethnicity

An additional component of ethnic preference in outdoor recreational activity is recreational location. The analysis revealed statistically significant differences in preference for 7 of 15 Cameron Park locations (Table 2.7). Differences in preference for aggregated main recreational locations, however, were not statistically significant at the 95% confidence level. According to the literature, African Americans and Hispanics prefer well groomed developed areas compared to Caucasians who prefer wild land leisure locations such as trails (Payne et al., 2001 and Phillipp, 1999). In Cameron Park there is no obvious trend. Caucasians and Hispanics were often more similar in terms of participation at developed locations. African Americans, for instance, had the lowest rate of participation at the Redwood Shelter, 13.04%, compared to Caucasians and Hispanics who participated at rates of 20.95% and 25.41% respectively. They, however, have the highest level of participation at Pecan Bottoms, 65.22% (Table 2.7). Despite the literature and high percentage of African Americans participating in recreational activities at Developed sites overall, they only have the highest frequency of participation at 2 of the 6 Developed sites: Pecan Bottoms and Cameron Park East.

Similar to the literature, Caucasians have the highest rate of participation at trail locations. In fact, there is a higher level of Caucasian participation at every trail site but Jacob's Ladder, where African Americans have the highest level of participation. Differences in participation at Trail locations among African Americans, Caucasians, and Hispanics, however, are not statistically significant.

Chaves found in her 2000 and 2002 studies of the recreational trends of Hispanics in the natural environment that similar to African Americans and Caucasians, Hispanics have a great appreciation for the natural environment. In addition, Gobster (2002) found that 61.4% of Hispanic respondents compared to 61.3% of Caucasians and 37.1% of African Americans in the Linkin Park Survey visit the park for natural beauty. The Cameron Park results were similar. Hispanics have the highest percentage of participants at Vista locations. Despite these findings, none of the Vista locations have a dominant number of Hispanic Participants. Hispanic participation is only above the park average at 1 of the 5 Vista locations, Miss Nellie's Pretty Place, which is also an important locale for family gatherings and children's play. Differences in participation at Vista locations among African Americans, Caucasians, and Hispanics, however, are not significant at the 95% confidence level.

Ethnicity and Perception of Safety

Another important aspect of park participation is perception of safety. Gobster (2002) found that Caucasians were twice as likely to say they felt unsafe while participating in recreational activities in Linkin Park. Differences among Cameron Park respondents in terms of feeling were almost as extreme (Table 3.9). Caucasians have the greatest number of respondents who feel unsafe in the park; 48.72%, compared to

18.84% of African Americans and 41.67% of Hispanics. Despite the similar percentage of Caucasian and Hispanics who feel unsafe, differences in perception of safety are statistically significant (Table 3.10).

In Cameron Park, time and location have just as great a bearing on perception of safety as ethnicity. According to Table 3.11, 40.80% of the total survey respondents indicate that there are places in the park that they feel unsafe. When respondents were asked to list the places they feel unsafe, 33.33% indicated that they feel unsafe at night (Table A.10). Wilderness Trails were the most frequently listed locations respondents feel unsafe.

The Impact of Residence on Preference for Outdoor Recreational Activities

Outdoor recreational preference is influenced by more than ethnicity. There are a number of socio-demographic factors that affect preference. The foundation of what motivates a person to participate in certain recreational activities lies in his or her age, education, income and gender. The core factors are often defined by residential location. According to Edwards (1981), residential location supersedes ethnicity in preference for outdoor recreational activities. This, according to Floyd and Shinenew (1999), is because when a person leaves their socio-economic base or environment; they must adapt the cultures and ideals of the group that dominates their new location to succeed. This adjustment includes preference for recreational activities. Despite the assertions of scholars such as Payne et al. (2005) and Hamstra (2005), that is, that residential location has a significant impact on preference for outdoor recreational activity, differences in the main activity preferences of Cameron Park survey respondents living in different residential locations were not significant (Table 3.3). The low level of confidence in the

analysis of location and preference for outdoor recreation may; however, be the result of zip code aggregation. Aggregating the zip codes based on geographic distance eliminates the social aspects of residence.

To further test the precedence of residential location over ethnicity, Edwards (1981) experiment was duplicated. A χ^2 Test was used to determine if there was a difference in the preferences of African Americans and Caucasians living in zip code 76706, the zip code with the highest number of Caucasian survey respondents. Eleven of the 69 total African Americans respondents live in this zip code, the second highest percentage of African Americans in among Waco zip codes (Figures A.5 and A.6). Forty-one Caucasians live in zip code 76706, the highest among Waco zip codes. Edwards study indicates significant differences in 8 of 25 recreational activities. Similarly, the Cameron Park results indicated significant differences in just 5 of 24 activities (Table A.18). Interestingly, the test indicated that Caucasians have a higher preference for Picnicking than African Americans. The trend, however, is reversed for family gatherings. This trend could be driven by the high percentage of Caucasian students and the inability of the survey to capture perception. Seventy percent of the African American respondents living in zip code 76706 visited the park with family on the day surveyed compared to only 11% of Caucasians (Figure A.8). Closer analysis indicates that more than 69% of the Caucasian respondents living in zip code 76706 are students (Figure A.7). A student participating in a picnic with friends will call a picnic a picnic; respondents visiting the park with family can call a picnic a family gathering or a picnic. This is an indicator that many of the respondents who selected family gatherings as their main activity may have been on picnics.

Residential Distance and Preference for Outdoor Recreational Activity

The analysis of the differences in activities most preferred by respondents living in different residential locations, based on distance, indicates significant differences in preference for Family Gatherings, Hiking, and Walking (Table 3.2). Despite the low level of significance, there were some key differences in the preference. For instance, although the p-value for differences in preference for picnicking was only .3381, the frequency of participation among residential locations was different. The frequency of participation decreases as respondents residential distance increases. Those living within 1 mile of park had the highest level of participation in picnicking, 40%, followed by 35.62% of those living between 1 and 10 miles away from the park and 28.57% of those living more than 10 miles away. The trend was the same for 6 of 11 social activities. There were also many similarities between those living in different residential areas. Those living within 1 mile of the park and those living between 1 and 10 miles had nearly identical rates of zoo attendance; 32.50% and 32.19% respectively. Rates of participation were also similar in Disk Golf; 20% of respondents living within 1 mile of the park, 23.29% of respondents living between 1 and 10 miles, and 21.43% those living over 10 miles away from the park.

The difference in frequency could be the result of the geographic perception of the park in the minds of users. For those living within 1 mile, Cameron Park may be a local park, designed for more casual gatherings and more intimate social events. This trend is evidenced by the higher level of frequency in social activities such as Family Gatherings and the Spray Park (Table 3.2). Those living between 1 and 10 miles may view it as a city park, reserved for active exercise and nature based activities, evidenced

by the higher frequency in participation in activities such as Sightseeing, Walking, and Jogging. Respondents living over 10 miles away from the park may see it as a regional park, participating in activities that take advantage of the parks natural geographic features. Respondents living in over 10 miles away had high level of participation in activities such as Hiking and Biking, which take advantage of the parks terrain. Kemperman and Timmermans (2008) found in a study of the effects of socio-demographic and residence on leisure activity that those living in urbanized areas have a higher rate of participation in cultural or family oriented activities such as family gatherings and picnics. Those living in more non-urbanized areas prefer more nature based outdoor recreational activities.

Educational Attainment Level and Preference for Outdoor Recreational Activities

Another socio-demographic factor that must be taken into account is educational attainment level. The χ^2 Test indicated statistically significant differences in preference for outdoor recreational activity among different levels of education (Tables 3.2 and 3.1). Despite these differences, respondents with different education levels were very similar in preference for certain activities. Respondents in the Bachelor's and Graduate categories have similar levels of participation in Biking; 56.67% and 51.92% respectively. Those in the Bachelors and High School ED categories also have similar levels of participation in Romance; 20% and 19.12% respectively. Similarities in preference for activities that overall reveal statistically significant differences indicate that other socio-demographic variables may have an effect on the results. The similarities and differences in preference for Biking, for instance, may be the results of similarities in the incomes or gender of respondents in the Bachelor's and Graduate categories.

Similarities in preference for Romance among respondents in the Bachelor's and High School ED categories may be affected by similarities in respondent age or distance from the park.

Income Level and Preference for Outdoor Recreational Activity

Though the literature supports the significant impact of income on preference for recreational activity, statistically significant differences are found in the preference for only 4 of 24 recreational activities (Table 3.5). Although statistically significant differences were found in the aggregated main activity preferences of the different income levels, some similarities in preference between the different income levels were found in all aggregated activity categories. Among Social/Passive activities, all respondents had a similar level of preference for special events (Table A.7). Among Active activities, respondents in the \$0-15,999, \$16,000- 25,999, and the \$26,000-\$36,999 categories had very similar levels of Walking. Among Competitive activities, 9.59% of respondents earning \$0-15,999 play football in the park compared to 9.80% of those earning \$16,000-25,999.

The similarities between respondents earning \$0-15,000 and other income categories may be the result of the large population of students. In fact, 67.65% the respondents earning \$0-15,000 were students (Figure A.9). Student respondents are not only influenced by their own incomes, but their families as well. This issue cannot be further explored because the survey did not ask for demographic information on the respondents families.

The Influence of Age on Preference for Outdoor Recreational Activity

It is important to examine the influence of age on preference for outdoor recreational activities. The results, however, indicate that age has little influence on preference for recreational activities. In the Pearson Chi Square test of Age and the recreational activities most preferred, differences were only found in four activities: Romance, Wildflowers, Jogging, and Disk Golf (Table 3.12). In fact, age and residence were the only two socio-demographic variables that do not have a significant bearing on aggregated main activity preference (Tables 3.3 and 3.13). This, however, does not mean that age is not important. Many scholars, Payne et al. (2002), for instance, argue that age has an influence on other demographic variables such as ethnicity and location when leisure choices are made.

In Cameron Park visitors in all age groups participate equally in a wide array of activities. In the Social/Passive category, there are very similar levels of participation among the different age groups in the Spray Park category (Table 3.12). Interestingly, respondents in the “Under 25” and “40 and Over” categories are the most similar in this category; 10.09% and 10.34% respectively. Respondents 25-29 and 30-39 also had similar levels of preference; 12.12% and 14.93% respectively. In preference for Active activities, respondents from all age groups have similar levels of reference for the zoo. Again, respondents 40 and Over and Under 25 were the most similar with 31.03% and 32.11% respectively; 25.76% of respondents 25-29 years old and 29.85% of respondents 30-39 prefer the zoo. Among Competitive active activities, respondents 25-29, 30-39, and 40 and Over were similar in preference for Volleyball; 7.58%, 8.96%, and 8.62% respectively.

The results of the χ^2 Test not only revealed that there are no difference in the outdoor recreational preferences of respondents in different age groups, it indicated that no age group is being left out as far as available recreational activities in the park. In fact, more than 50% of the respondents in each age category rated their overall experience as excellent; 70.17% of respondents 40 and older have excellent experiences when they visit the park (Figure A.10). In fact, no respondents rated their overall experience poorly.

The Influence of Gender on Preference for Outdoor Recreational Activity

Gender distribution is an important factor when analyzing park preference. Phillipp (1998) argues that ethnicity and gender define recreational experience among African American adolescents, a trend that persists through adulthood. Shinew, Floyd, and Noe (1994) found positive correlations in the recreational preferences of men regardless of social class. Men and women are not only different physically, but socialized to participate in and prefer different aspects in life. This holds true in recreational preferences as well.

The χ^2 Test of the differences in the outdoor recreational activities men and women most prefer indicated statistically significant differences in 9 of 24 activities; the most between any subpopulations (Table 3.4). Differences were also significant in aggregated main activity preference (Table 3.5). Unlike Residential Location and Education Level, differences in gender are present in all three activity categories (Table 3.4).

In 2006, Sylvia-Bobiak and Caldwell found that men have a higher rate of participation in active activities than females. The Cameron Park results were somewhat different. Though the Pearson's Chi Square Test revealed statistically significant

differences in the main activity preferences of men and women, and differences in preference for 3 of the 8 possible Active activities, the χ^2 test also revealed that men and women are not different in their overall preference for Active activities. Despite significant differences in specific activities they participate in, male and female respondents have similar levels of participation in Active activities (Table 3.4). Overall, 61.06% of the women surveyed and 61.11% of the men prefer active activities. The similarities in the levels of participation in the aggregated categories, juxtaposed the differences in the frequency of participation in the individual categories is an indicator that park is efficient in meeting the needs of the individuals without sacrificing the needs of others.

CHAPTER SEVEN

Conclusions and Implications for Park Planning

Improvements in Safety

Although Cameron Park is among the most valuable assets in the City of Waco, there are a number of improvements that need to be made to ensure its continued success. Items associated with safety were the top concerns (Figure A.11). In fact, nearly 70% of all respondents indicate that the park needs more security and more well lit areas. This result corresponds with the high percentage of respondents indicating that they were mostly afraid of being in the park at night or in dark or isolated places. In order to combat this anxiety, more lights need to be installed throughout the park. Some of the most poorly lit areas include the parks winding roads, Proctor Springs, and the Mouth of the Bosque. Cameron Park East has the best lighting among park locations. A recent City of Waco bond issue included provisions for more lighting in Cameron Park. This should help alleviate some of the concerns with lighting in the park. To tackle security concerns, park rangers and police officials should be more visible as they patrol the park rather than hiding in order to catch speeders. Increased security and lighting will also improve the reputation of the park.

Improved Infrastructure

Although park officials do a good job maintaining trails and playground equipment, the roads, parking lots, and restroom facilities need work. When respondents

were asked to indicate what they liked least about the park, over 50% of the respondents indicated that they had problems with the park's facilities and maintenance (Figure A.12). Facilities and maintenance items include too few restrooms and water fountains, too few parking facilities, too few lights, and poor roads. More lights, water fountains, and restrooms are essential components in the overall development of the park because they make the park more accessible to families and increase the overall use of areas such as the Mouth of the Bosque and the wilderness trails. The maintenance of parking facilities and roads are important because; more than 80% of survey respondents usually travel to the park via car or truck (Table A.11).

Promotion of Natural Amenities

When respondents were asked to indicate what they liked most about the park, nearly 40% indicated that they liked the environment (Figure A.13). Environmental components include the Brazos River, trees, scenery, and wildlife. Interestingly, over 22% of respondents indicated that they most liked the park facilities and maintenance. Several respondents commented that they liked the fact that the park is clean, well maintained, and offers several recreational activities from which to choose. Others liked the disk golf course and playground areas. To capitalize on the amenities most liked by survey respondents, steps should be taken to promote the river. There are few docks and no designated swimming areas. To improve river use, the city should provide incentives for recreational water businesses such as pedal boat and canoe rentals.

To better assess the need for additional open space and developed facilities such as the disk golf courses, spaces should be surveyed for user loads. The West Disk Golf course is often backed up at peak user times. Expanding the course or breaking it up into

three smaller courses may alleviate the problem. Another option would be encouraging use of the East Disk Golf Course, which has more open space and fewer users. Park planners have to be careful when expanding the disk golf courses or other developed areas as conflicts may arise between active and social/passive groups vying for the same space.

Investments in Tourist Activities

The large number of respondents living outside the City of Waco and throughout the state is an indicator that the park is becoming a tourist draw. Visitors come from across the state to hike and bike through some of the most diverse terrain in Central Texas. The current development of canoeing and kayaking trails along the river shore should attract even more users from out of town. This can add up to more social and economic gains for the city in the form of more diverse park clientele and an increase in tourism dollars.

Infrastructure Improvement to Facilitate Park Use by Different Ethnic Groups

To increase the level of visitation among minority groups, the city should invest in infrastructure that supports family and social/passive activities. According to Figure A.15, 70% of both African Americans and Hispanics visited the park with family members on the day they were surveyed. This suggests the need for not only more playgrounds and social gathering venues such as the Club House and the Redwood Shelter, but more open space to accommodate large groups. Nearly 50% of survey respondents indicate that the park needs more covered picnic tables; 30% desire more open space (Figure A.11).

Increasing the amount of social infrastructure is essential to the development of the park because it will be immediately accessible to park users. Investments in bike trails and the disk golf courses are important, but require equipment that may not be affordable for all user groups. Pecan Bottoms has the highest level of use among Cameron Park locations, but is often over crowded (Table A.2). Small investments, such as more frequent mowing and additional tables in areas such as Lawson's Point or Emmons Cliff, may spark the interest of visitors and relieve Pecan Bottoms. The more active, social/passive, and competitive recreationalists visiting a site at a given time, the safer it is. Increasing the perception of safety in the park will improve its overall image and draw more visitors.

Conclusion

Cameron Park is a diverse recreational venue in terms of park activities and visitors. Overall, there are differences in the recreational preferences of African Americans, Hispanics, and Caucasians. Similar to the research, Caucasians had a higher level of participation in active and competitive activities and African Americans and Hispanics had a greater preference for Social/Passive activities. Increasing participation in Active and Competitive activities among minority groups is important because the literature suggests significant levels of participation in active and competitive activities such as soccer and basketball (Gobster, 2002). This indicates that some subgroups within the African American and Hispanic populations are not being enticed to visit the park. This cannot be accomplished without investment in the necessary park infrastructure. Increasing the participation of Caucasians in Social/Passive activities should also be a goal of the park. The low percentage of Caucasian's visiting the park with family

members indicates that the park is not the main recreational site choice of Caucasian families (Table A.18). To increase the number of Caucasian families visiting the park a city wide study is needed to determine family recreational preferences. The results should then be incorporated into the park.

Drawing multiple user groups into a park and then marginalizing them once they are inside is a tragedy chronicled year after year in leisure research. Cameron Park is one of the few places in the City of Waco that draws visitors from all demographic groups and attempts to intermingle them. Although significant differences were found in the preference for some recreational activities among all demographic groups, the most important finding in this study is that similarities were present. Those similarities are essential to the overall development of the park and the City of Waco as a whole. One respondent noted that as an African American, Cameron Park used to be the only place he felt he could safely escape urban life. The park is quickly becoming a safe escape for all user groups regardless of ethnicity, income, or age.

APPENDICES

APPENDIX A

Cameron Park Recreational Use Survey

I. Basic Information

3. How often do you visit Cameron Park? (*Check all that apply*)
- | | |
|---|---|
| a. <input type="checkbox"/> Nearly every day | c. <input type="checkbox"/> 11-25 times a year |
| b. <input type="checkbox"/> Nearly every week | d. <input type="checkbox"/> Once a month |
| | e. <input type="checkbox"/> 2-3 times a year |
| | f. <input type="checkbox"/> Once a year or less |
| | g. <input type="checkbox"/> This is my first time |
4. In which season(s) do you **usually** visit the park? (*Check all that apply*)
- | | |
|------------------------------------|------------------------------------|
| a. <input type="checkbox"/> Winter | c. <input type="checkbox"/> Summer |
| b. <input type="checkbox"/> Spring | d. <input type="checkbox"/> Fall |
5. At what times do you **most often** visit the park? (*Check all that apply*)
- | | |
|--|--|
| a. <input type="checkbox"/> 7am - 11am | c. <input type="checkbox"/> 3pm - 7pm |
| b. <input type="checkbox"/> 11am - 3pm | d. <input type="checkbox"/> 7am - 12am |
6. What mode of transportation do you **normally use** to get to the park? (*Check all that apply*)
- | | |
|---|--|
| a. <input type="checkbox"/> Cab or taxi | e. <input type="checkbox"/> Automobile |
| b. <input type="checkbox"/> Bicycle | f. <input type="checkbox"/> Other: |
| c. <input type="checkbox"/> Walking | _____ |
| d. <input type="checkbox"/> Bus | |
7. Are you visiting the park alone or in a group today?
- | |
|------------------------------------|
| a. <input type="checkbox"/> Alone |
| b. <input type="checkbox"/> Group: |
| How many people _____ |
8. Are any of the people you are traveling with members of your family?
- | |
|---------------------------------|
| a. <input type="checkbox"/> yes |
| b. <input type="checkbox"/> no |
9. What do you **like most** about Cameron Park? _____

10. What do you **like least** about Cameron Park? _____

Recreational Activities

11. Where do you participate in your Cameron Park recreational activities?

(Check all that apply)

- | | |
|---|---|
| a. <input type="checkbox"/> Miss. Nellie's Pretty Place | h. <input type="checkbox"/> Mouth of the Bosque |
| b. <input type="checkbox"/> Anniversary Park | i. <input type="checkbox"/> Emmons Cliff |
| c. <input type="checkbox"/> Pecan Bottoms | j. <input type="checkbox"/> Lovers Leap |
| d. <input type="checkbox"/> Redwood Shelter | k. <input type="checkbox"/> Paved jogging trails |
| e. <input type="checkbox"/> Wilderness trails | l. <input type="checkbox"/> Cameron Park West |
| f. <input type="checkbox"/> Lawson's Point | m. <input type="checkbox"/> East Disk Golf Course |
| g. <input type="checkbox"/> Circle Point | n. <input type="checkbox"/> West Disk Golf Course |

12. What recreational activities are you participating in today? *(Check all that apply)*

- | | |
|--|--|
| a. <input type="checkbox"/> Hiking | m. <input type="checkbox"/> Soccer |
| b. <input type="checkbox"/> Biking | n. <input type="checkbox"/> Nature Communing |
| c. <input type="checkbox"/> Jogging | o. <input type="checkbox"/> Family gathering |
| d. <input type="checkbox"/> Walking | p. <input type="checkbox"/> Bird watching |
| e. <input type="checkbox"/> Sightseeing | q. <input type="checkbox"/> Boating |
| f. <input type="checkbox"/> Romance | r. <input type="checkbox"/> Baseball |
| g. <input type="checkbox"/> Football(American) | s. <input type="checkbox"/> Spray park |
| h. <input type="checkbox"/> Picnicking | t. <input type="checkbox"/> Volley ball |
| i. <input type="checkbox"/> Zoo | u. <input type="checkbox"/> Horseback riding |
| j. <input type="checkbox"/> Fishing | v. <input type="checkbox"/> Special events |
| k. <input type="checkbox"/> Education | w. <input type="checkbox"/> Wild flowers |
| l. <input type="checkbox"/> Frisbee golf | x. <input type="checkbox"/> Other: _____ |

13. Which recreational activities do you **most prefer**? (*Check all that apply*)

- | | |
|--|--|
| a. <input type="checkbox"/> Hiking | m. <input type="checkbox"/> Soccer |
| b. <input type="checkbox"/> Biking | n. <input type="checkbox"/> Nature Communing |
| c. <input type="checkbox"/> Jogging | o. <input type="checkbox"/> Family gathering |
| d. <input type="checkbox"/> Walking | p. <input type="checkbox"/> Bird watching |
| e. <input type="checkbox"/> Sightseeing | q. <input type="checkbox"/> Boating |
| f. <input type="checkbox"/> Romance | r. <input type="checkbox"/> Baseball |
| g. <input type="checkbox"/> Football(American) | s. <input type="checkbox"/> Spray park |
| h. <input type="checkbox"/> Picnicking | t. <input type="checkbox"/> Volley ball |
| i. <input type="checkbox"/> Zoo | u. <input type="checkbox"/> Horseback riding |
| j. <input type="checkbox"/> Fishing | v. <input type="checkbox"/> Special events |
| k. <input type="checkbox"/> Education | w. <input type="checkbox"/> Wild flowers |
| l. <input type="checkbox"/> Frisbee golf | x. <input type="checkbox"/> Other: _____ |

Which is your **main** recreational activity? (*Check only one*)

- | | |
|---|---|
| y. <input type="checkbox"/> Hiking | kk. <input type="checkbox"/> Soccer |
| z. <input type="checkbox"/> Biking | ll. <input type="checkbox"/> Nature Communing |
| aa. <input type="checkbox"/> Jogging | mm. <input type="checkbox"/> Family gathering |
| bb. <input type="checkbox"/> Walking | nn. <input type="checkbox"/> Bird watching |
| cc. <input type="checkbox"/> Sightseeing | oo. <input type="checkbox"/> Boating |
| dd. <input type="checkbox"/> Romance | pp. <input type="checkbox"/> Baseball |
| ee. <input type="checkbox"/> Football(American) | qq. <input type="checkbox"/> Spray park |
| ff. <input type="checkbox"/> Picnicking | rr. <input type="checkbox"/> Volley ball |
| gg. <input type="checkbox"/> Zoo | ss. <input type="checkbox"/> Horseback riding |
| hh. <input type="checkbox"/> Fishing | tt. <input type="checkbox"/> Special events |
| ii. <input type="checkbox"/> Education | uu. <input type="checkbox"/> Wild flowers |
| jj. <input type="checkbox"/> Frisbee golf | vv. <input type="checkbox"/> Other: _____ |

14. Which is your **main location** for recreational activities in Cameron Park (*Check only one*)

- | | |
|---|--|
| a. <input type="checkbox"/> Miss. Nellie's Pretty Place | h. <input type="checkbox"/> Mouth of the Bosque |
| b. <input type="checkbox"/> Anniversary Park | i. <input type="checkbox"/> Emmons Cliff |
| c. <input type="checkbox"/> Pecan Bottoms | j. <input type="checkbox"/> Lovers Leap |
| d. <input type="checkbox"/> Redwood Shelter | k. <input type="checkbox"/> Paved Jogging Trails |
| e. <input type="checkbox"/> Wilderness Trails | l. <input type="checkbox"/> Cameron Park West |
| f. <input type="checkbox"/> Lawson's Point | m. <input type="checkbox"/> Disk Golf Course |
| g. <input type="checkbox"/> Circle Point | |

15. Are there any places you feel unsafe in Cameron Park?

- a. ☐ No
b. ☐ Yes

i. if yes where _____

16. If you answered yes to question 16, at what time of day do you feel the **least safe**?

a. _____ 7am - 11am

c. _____ 3pm - 7pm

b. _____ 11am - 3pm

d. _____ 7am - 12am

17. How would you rate your **usual experience** in Cameron Park?

Excellent

Neutral

Poor

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

18. How do you feel about your **overall access** to recreational activities in Cameron Park?

Excellent

Neutral

Poor

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

19. What is your **overall feeling** about Cameron Park?

Excellent

Neutral

Poor

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

Developmental Preferences

Please circle the number that best expresses how you feel about the needs of Cameron Park:

	<u>Strongly Approve</u>		<u>Neutral</u>	<u>Strongly Disapprove</u>	
More covered picnic areas:	1	2	3	4	5
More paved trails:	1	2	3	4	5
More open areas:	1	2	3	4	5
More well-lit areas:	1	2	3	4	5
More security:	1	2	3	4	5
More natural forested areas:	1	2	3	4	5
Basketball courts:	1	2	3	4	5
Soccer fields:	1	2	3	4	5

Demographics

20. What is your race or ethnicity? (*Check all that apply*)

- | | |
|--|---|
| a. <input type="checkbox"/> African American | d. <input type="checkbox"/> Hispanic |
| b. <input type="checkbox"/> Asian or pacific
islander | e. <input type="checkbox"/> Native American |
| c. <input type="checkbox"/> Caucasian (non-
Hispanic) | f. <input type="checkbox"/> Other: _____ |

21. Age _____ (*years*)

22. Residence (zip code): _____

23. What is your highest level of education? (*check only one*)

- | | |
|---|--|
| a. <input type="checkbox"/> Grades 0-8 | e. <input type="checkbox"/> Bachelors degree |
| b. <input type="checkbox"/> Grades 9-11 | f. <input type="checkbox"/> graduate work |
| c. <input type="checkbox"/> High school
Diploma or GED | g. <input type="checkbox"/> Graduate Degree |
| d. <input type="checkbox"/> Some college or
additional schooling | |

24. Gender:

- | | |
|----------------------------------|------------------------------------|
| a. <input type="checkbox"/> Male | b. <input type="checkbox"/> Female |
|----------------------------------|------------------------------------|

25. Occupation: _____

26. Please indicate your household income (*check only one*)

- | | |
|--|--|
| a. <input type="checkbox"/> \$0 to 15,999 | d. <input type="checkbox"/> \$37,000 to 50,999 |
| b. <input type="checkbox"/> \$16,000 to 25,999 | e. <input type="checkbox"/> \$60,000 to 99,999 |
| c. <input type="checkbox"/> \$26,000 to 36,999 | f. <input type="checkbox"/> >\$100,000 |

Thank you for your time and assistance

APPENDIX B

Proposed Survey Locations

The Pecan Bottoms Area

The Pecan Bottoms Picnic area was chosen because it offers nearly all of the park's amenities. The area has many benches, both covered and uncovered picnic tables, and grills. There is a paved jogging trail along the river, several shade trees, Frisbee golf, and plenty of open space for activities like soccer and football. There is no restroom.

The aquatic playground section of Pecan Bottoms was chosen because it attracts a wide variety of park visitors. Moreover, it offers an aquatic spray park, a playground for young children, and covered benches and picnic areas. There are several shade trees, and a river view. There are, however, no restrooms and the river view is stymied by the Brazos Place apartments.

Anniversary Park Area

The anniversary park area was chosen because it includes the Cameron Park Clubhouse and Miss Nellie's Pretty Place. Anniversary Park is the ideal location for organized family events, and features a playground, covered and uncovered picnic tables, shade trees, a paved walkway, and a wilderness view. The area is well kept and has a restroom.

The Clubhouse is a location for special gatherings available by reservation, but the porch is often frequented by park visitors attempting to escape the sun. The area is very well lit and there are a few uncovered picnic tables. There is no restroom.

Miss Nellie's Pretty Place is home to a wildflower garden. It is a gated area with a large fountain and gravel paths through a native flower garden. Unfortunately, the wildflowers will not be in season during the data collection portion of my experiment.

Redwood Shelter/ Jacob's Ladder

The Redwood Shelter is a covered picnic area, with a river and wilderness view. It is surrounded by a large open area with no paved paths; the area does feature shade trees, a few uncovered picnic tables, Frisbee golf, and restrooms. The Redwood Shelter is primarily available through reservation, but the location was chosen because many visitors park their vehicles in the parking lot.

Jacob's Ladder offers both wilderness and river views. There is a covered picnic area, Frisbee golf, and a large field for activities such as soccer and football. Many park visitors like to climb the site's steep stairs for exercise. The area, however, is primarily used as a parking lot for river trail hikers, bikers, and joggers.

Lawson's Point

Lawson's Point is a large open area in the highlands of the park. There are several covered and uncovered picnic areas, benches, a sand volleyball court, shade trees, and a gravel path. The path leads to several unpaved wildland trails and a cliff side view of the river. There is also a picnic area just inside the forest on the gravel path.

Circle Point

Circle Point offers park visitors a scenic cliff side view of the Brazos River. There are two covered picnic tables and a few uncovered tables in the forest. Several unpaved paths lead into the wilderness, the grass is high, and there is not much open space. While the site offers access to hiking, biking, and bridle trails, it is not well lit.

Mouth of the Bosque

The Mouth of the Bosque has a covered picnic area and a scenic wilderness view of the river. There is also a fishing bank and access to a hiking and jogging trail. Although the site contains a restroom, the grass is high and the area is not as well maintained as the other test sites.

Emmons Cliff

Emmons Cliff is an open section of the park with a few shade trees. There are both covered and uncovered picnic tables, several grills, lights, and a restroom. The site offers access to several hiking and biking trails. A scenic river view is available if the user is willing to travel through the brush to reach the cliff's edge.

Lovers Leap

Lovers Leap offers covered picnic areas with large tables and a scenic river view. There are no paved walkways, but the site has access to several hiking, biking, and bridle trails. There are a few shade trees, but the majority of the space is open and can be used for activities like soccer or football.

Cameron Park East

Initially, plans were to exclude Cameron Park East, however, observations revealed a critical subpopulation of park users. The western shore of the river has many fishing areas and paved paths. There are several covered and uncovered picnic tables, a scenic river view, and a playground. The area is also well lit and is equipped with restrooms.

APPENDIX C

Additional Tables and Figures

Table A.1. Pearson's Chi Square Test of the Activities Respondents Most Prefer by Ethnicity

Main Activity	Percent African American	Percent Hispanic	Percent Caucasian	Total Park	Pearson Chi Square	P
	N= 69	N=49	N=158	N=307		
Social/Passive	51.06	32.26	33.33	25.42	27.745	<.0001
Romance	20.29	14.29	20.89	19.54	1.068	0.7849
Sightseeing	39.13	26.53	35.44	34.2	2.502	0.4749
Education*	11.59	6.12	6.96	7.82	1.802	0.6146
Picnic	42.03	44.9	31.65	35.18	6.472	0.0908
Family Gathering	53.62	38.78	25.88	27.69	40.583	<.0001
Bird Watching*	4.35	6.12	5.06	5.54	1.302	0.7286
Nature Communing	13.04	4.08	19.62	14.33	7.336	0.0255
Special	13.04	16.33	8.86	10.75	3.151	0.3689
Wildflowers	10.14	8.16	12.1	1.267	1.267	0.7369
Spray Park	17.39	16.33	9.49	11.73	6.066	0.1085
Other*	1.45	12.24	1.9	4.23	12.710	0.0017
Active	46.81	45.16	62.50	61.25	11.547	0.0091
Hiking	21.74	22.45	50.63	37.46	24.632	<.0001
Biking	17.39	24.49	51.9	37.79	29.052	<.0001
Jogging	30.43	30.61	45.57	40.72	6.434	0.0401
Walking	53.62	51.02	41.77	46.25	3.247	0.3551
Zoo	26.09	34.69	31.01	29.64	1.901	0.5931
Fishing	23.19	14.39	19.62	19.22	1.675	0.6424
Boating	5.8	8.16	12.66	10.42	2.899	0.4075
Horseback Riding*	10.14	4.08	5.06	6.51	3.025	0.3878
Competitive*	2.13	22.58	16.67	14.35	8.023	0.0181
Football*	14.49	14.29	8.23	10.1	4.636	0.2005
Disk Golf	7.25	16.33	31.01	21.5	16.863	0.0002
Baseball*	7.25	8.16	8.23	7.17	2.735	0.4344
Volleyball*	14.49	14.29	6.33	9.45	5.516	0.1377
Soccer	8.7	16.33	10.76	10.75	2.489	0.4773

Table A.2. Pearson's Chi Square Test: Most Preferred Recreational Location and Ethnicity

Main Activity	Percent African American	Percent Hispanic	Percent Caucasian	Percent Other	Total Park	Pearson	P
	N= 69	N=49	N=158	N=30	N=306		
Developed Anniversary Park*	55.74	43.24	39.10	65	45.82	7.901	.0481
Pecan Bottoms East Disk Golf Course	11.59	20.41	5.7	6.67	9.48	10.094	0.0178
West Disk Golf Course	65.22	34.69	36.08	40	42.81	18.492	0.0003
Redwood Shelter	7.25	4.08	25.48	6.67	16.07	21.478	<.0001
Cameron Park East	10.14	4.08	28.48	10	18.63	21.709	<.0001
Trails Wilderness	13.04	20.41	25.95	20	21.57	4.839	0.1839
Trails Mouth of Bosque	21.74	6.12	13.92	13.33	14.38	5.802	0.1216
Paved Trails	18.03	16.22	21.80	10	19.12	1.944	.5842
Jacob's Ladder	21.74	24.49	41.77	33.33	33.66	10.894	0.0123
Vista Miss Nellie's Pretty Place	15.94	10.2	20.25	10	16.67	3.923	0.2699
Circle Point	20.29	12.24	27.22	26.67	23.2	5.26	0.1537
Lawson's Point	24.64	14.29	15.19	26.67	18.3	4.808	0.1864
Emmons Cliff	26.23	40.54	39.10	25	35.06	4.419	.2197
Lovers Leap	46.38	36.73	20.25	23.33	29.08	17.849	0.0005
	15.94	10.2	19.62	16.67	16.99	2.43	0.488
	8.7	14.29	18.35	13.33	15.03	3.623	0.3051
	18.84	8.16	17.09	13.33	15.69	2.976	0.3953
	44.93	30.61	39.87	16.67	37.25	8.566	0.0357

Table A.3. Pearson's Chi Square Test: Education Level and Activities Most Preferred

Main Activity	Bachelors	Graduate	High School Ed	Some College	Total Sample	Pearson	P
	N= 60	N=52	N=68	N=124	N=304		
Social/Passive							
Romance	20.00	5.77	19.12	25.81	19.74	9.307	0.0255
Sightseeing	36.76	26.92	26.47	41.13	34.54	5.794	0.1221
Education*	8.33	15.38	4.41	6.45	7.89	5.517	0.1376
Picnic	40.00	28.85	36.76	34.68	32.20	1.614	0.6561
Family Gathering	16.67	19.23	42.65	27.42	27.3	13.194	0.0042
Bird Watching*	3.33	5.77	10.29	4.03	5.59	4.002	0.2612
Nature							
Communing	18.33	15.38	10.29	14.52	14.47	1.717	0.6332
Special	13.33	3.85	13.24	11.29	10.86	3.442	0.3282
Wildflowers	18.33	9.62	8.82	7.32	10.23	5.595	0.1331
Spray Park	11.67	9.62	8.82	13.71	11.51	1.255	0.7398
Other*	3.33	1.92	10.29	2.42	4.28	7.894	0.0482
Active							
Hiking	58.33	48.08	17.65	34.68	37.83	26.348	<.0001
Biking	56.67	51.92	14.71	36.29	38.16	28.918	<.0001
Jogging	53.33	40.38	26.47	41.94	40.46	9.764	0.0207
Walking	55.00	50.00	39.71	45.16	46.71	3.342	0.3418
Zoo	31.67	38.46	19.12	31.45	29.93	5.181	0.1208
Fishing	13.33	11.54	16.18	27.42	19.41	9.017	0.0291
Boating	10.00	13.46	2.94	12.10	9.87	5.117	0.1634
Horseback Riding*	6.67	1.92	7.35	7.26	6.25	2.036	0.5651
Competitive							
Football*	11.67	11.54	8.82	9.68	10.2	0.42	0.9360
Disk Golf	28.33	21.15	11.76	23.39	21.38	5.746	0.1235
Baseball*	5.00	7.69	7.35	8.06	7.24	0.591	0.8985
Volleyball*	8.33	7.69	7.35	12.10	9.54	1.623	0.6541
Soccer	6.67	11.54	13.24	11.29	10.86	1.535	0.6742

Table A.4. Pearson's Chi Square Test: Residential Location and Activities Most Preferred

Main Activity	Percent Over 10 Miles	Percent Within 1 Mile	Between 1 and 10 Miles	Total Sample	Pearson	P
	N= 70	N=80	N=146	N=296		
Social/Passive						
Romance	11.43	16.25	23.97	18.92	5.3630	0.0685
Sightseeing	22.86	36.25	39.04	34.46	5.6430	0.0595
Education*	5.71	12.5	6.85	8.11	2.9200	0.2322
Picnic	28.57	40	35.62	35.14	2.1690	0.3381
Family Gathering	20	41.25	25.34	28.38	9.6010	0.0082
Bird Watching*	4.29	6.25	6.16	5.74	0.3600	0.8351
Nature Communing	11.43	12	15.75	14.53	0.7320	0.6933
Special	4.29	15	10.96	10.47	4.6430	0.0981
Wildflowers	8.7	8.75	11.64	10.17	0.6880	0.7090
Spray Park	5.71	17.5	11.64	11.82	4.9830	0.0828
Other*	4.29	3.75	4.11	4.05	0.0300	0.9852
Active						
Hiking	38.57	27.5	45.21	38.85	6.8230	0.0330
Biking	47.14	30	39.04	38.51	4.6670	0.0970
Jogging	24.29	33.75	46.58	40.2	4.8710	0.0875
Walking	30	47.5	54.11	46.62	11.0860	0.0039
Zoo	24.29	32.5	32.19	30.41	1.6250	0.4438
Fishing	17.14	17.5	21.23	19.26	0.7270	0.6954
Boating	5.71	10	12.33	10.14	2.2750	0.3206
Horseback Riding*	7.14	7.5	4.79	6.08	0.8430	0.6560
Competitive						
Football*	8.57	11.25	9.59	9.8	0.3170	0.8533
Disk Golf	21.43	20	23.29	21.96	0.3410	0.8432
Baseball*	7.14	7.5	7.53	7.43	0.0110	0.9943
Volleyball*	4.29	15	9.59	9.8	4.8640	0.0879
Soccer	8.57	15	8.9	10.47	2.4020	0.3009

Table A.5. Pearson's Chi Square Test: Gender and Recreational Activities Most Preferred

	Female	Male	Total Park	Pearson	P-Value
Main Activity	N=153	N=152	N=305		
Social/Passive	33.63	18.25	25.52	7.408	0.0065
Romance	19.61	19.74	19.67	0.001	0.9774
Sightseeing	37.25	31.58	34.43	1.088	0.2969
Education*	7.84	7.89	7.87	0.000	0.9866
Picnic	44.44	26.32	35.41	10.957	0.0009
Family					
Gathering	37.25	17.76	27.54	14.517	0.0001
Bird					
Watching*	4.58	6.58	5.57	0.582	0.4456
Nature					
Communing	12.42	16.45	14.43	1.003	0.3167
Special	11.11	10.53	10.82	0.027	0.8694
Wildflowers	14.47	5.92	10.20	6.243	0.0125
Spray Park	16.34	7.24	11.80	6.069	0.0138
Other*	5.23	3.29	4.26	0.703	0.4019
Active	61.06	61.11	61.09	0.000	0.9938
Hiking	34.64	40.79	37.70	1.228	0.2679
Biking	28.76	47.37	38.03	11.205	0.0008
Jogging	39.22	41.45	40.33	0.158	.6912
Walking	57.52	35.53	46.56	14.819	0.0001
Zoo	32.68	26.97	29.84	1.186	0.2762
Fishing	13.73	25.00	19.34	6.212	0.0127
Boating	7.84	11.84	9.84	1.375	0.2410
Horseback					
Riding*	6.54	5.92	6.23	0.049	0.8242
Competitive	5.31	20.63	13.39	12.065	.0005
Football*	7.84	12.50	10.16	1.811	0.1784
Disk Golf	10.46	32.24	21.31	21.567	<.0001
Baseball*	4.58	9.87	7.21	3.192	0.0740
Volleyball*	10.46	8.55	9.51	0.322	0.5707
Soccer	7.19	14.47	10.82	4.193	0.0406

Table A.6. Chi Square Analysis: Income and Main Activity Preference

	\$0- 15,999	\$16,000 - 25,999	\$26,000 - 36,999	\$37,000 - 59,999	\$60K and up	Total Park	Pearson	P
Main Activity	N= 73	N=51	N=39	N=72	N=66	N=301		
Social/Passive								
Romance	28.77	15.69	23.08	16.67	13.64	19.60	6.570	0.1604
Sightseeing	43.43	29.41	41.03	34.72	24.24	34.55	7.204	0.1255
Education*	8.22	7.84	15.38	6.94	3.03	7.64	5.389	0.2497
Picnic	50.68	35.29	43.59	33.33	16.67	35.55	18.826	0.0009
Family								
Gathering	23.29	41.18	30.77	27.78	19.70	27.57	7.648	0.1054
Bird								
Watching*	8.22	5.88	5.13	4.17	3.03	5.32	2.132	0.7115
Nature								
Communing	19.18	7.84	15.38	11.11	16.67	14.29	4.092	0.3937
Special	9.59	9.80	15.38	11.11	10.61	10.96	1.003	0.9094
Wildflowers	13.70	5.88	10.26	12.68	7.58	10.33	2.945	0.5670
Spray Park	10.96	13.73	20.51	15.28	3.03	11.96	8.681	0.0696
Other*	4.11	7.84	2.56	2.78	3.03	3.99	2.623	0.6227
Active								
Hiking	46.58	27.45	25.64	44.44	36.36	37.87	8.569	0.0728
Biking	39.73	23.53	25.64	43.06	48.48	37.87	11.026	0.0263
Jogging	49.32	29.41	43.59	38.89	37.88	40.20	5.378	0.2507
Walking	45.21	49.02	48.72	52.78	37.88	46.51	3.369	0.4981
Zoo	32.88	37.25	30.77	31.94	18.18	29.90	6.106	0.1913
Fishing	21.92	25.49	28.21	11.11	15.15	19.27	7.400	0.1162
Boating	17.81	3.92	7.69	9.72	7.58	9.97	7.729	0.1020
Horseback								
Riding*	8.22	9.80	10.26	4.17	1.52	6.31	5.655	0.2264
Competitive								
Football*	9.59	9.80	15.38	11.11	7.58	10.30	1.726	0.7859
Disk Golf	35.62	23.53	10.26	19.44	13.64	21.59	14.216	0.0066
Baseball*	10.96	3.92	7.69	6.94	6.06	7.31	2.474	0.6494
Volleyball*	12.33	7.84	23.08	9.72	0	9.63	15.928	0.0031
Soccer	17.81	11.76	12.82	8.33	4.5	10.96	6.970	0.1375

Table A.7. Chi Square Analysis: Income and Main Activity Preference

	\$0- 15,999	\$16,000 - 25,999	\$26,000 - 36,999	\$37,000- 59,999	\$60K and up	Total Park	Pearson	P
Main Activity	N= 73	N=51	N=39	N=72	N=66	N=301		
Social/ Passive	27.59	45.00	45.45	15.25	12.50	25.53	20.975	0.0003
Picnic	50.68	35.29	43.59	33.33	16.67	35.55	18.826	0.0009
Family Gathering	23.29	41.18	30.77	27.78	19.70	27.57	7.648	0.1054
Bird Watching*	8.22	5.88	5.13	4.17	3.03	5.32	2.132	0.7115
Nature Communing	19.18	7.84	15.38	11.11	16.67	14.29	4.092	0.3937
Special	9.59	9.80	15.38	11.11	10.61	10.96	1.003	0.9094
Wildflowers	13.70	5.88	10.26	12.68	7.58	10.33	2.945	0.5670
Spray Park	10.96	13.73	20.51	15.28	3.03	11.96	8.681	0.0696
Other*	4.11	7.84	2.56	2.78	3.03	3.99	2.623	0.6227
Active	60.34	37.50	36.36	71.19	76.79	60.85	23.314	0.0001
Hiking	46.58	27.45	25.64	44.44	36.36	37.87	8.569	0.0728
Biking	39.73	23.53	25.64	43.06	48.48	37.87	11.026	0.0263
Jogging	49.32	29.41	43.59	38.89	37.88	40.20	5.378	0.2507
Walking	45.21	49.02	48.72	52.78	37.88	46.51	3.369	0.4981
Zoo	32.88	37.25	30.77	31.94	18.18	29.90	6.106	0.1913
Fishing	21.92	25.49	28.21	11.11	15.15	19.27	7.400	0.1162
Boating	17.81	3.92	7.69	9.72	7.58	9.97	7.729	0.1020
Horseback Riding*	8.22	9.80	10.26	4.17	1.52	6.31	5.655	0.2264
Competitive	12.07	17.50	18.18	13.56	10.71	13.62	1.422	0.8404
Football*	9.59	9.80	15.38	11.11	7.58	10.30	1.726	0.7859
Disk Golf	35.62	23.53	10.26	19.44	13.64	21.59	14.216	0.0066
Baseball*	10.96	3.92	7.69	6.94	6.06	7.31	2.474	0.6494
Volleyball*	12.33	7.84	23.08	9.72	0	9.63	15.928	0.0031
Soccer	17.81	11.76	12.82	8.33	4.5	10.96	6.970	0.1375

Table A.8. Pearson's Chi Square Test: Age and Recreational Activities Most Preferred

	Under 25	25-29	30-39	40 and Over	Total Park	Pearson	P
Main Activity	N=109	N= 66	N=67	N=58	N=300		
Social/Passive	26.09	26.92	20.83	28.26	25.63	0.802	0.8490
Romance	31.19	18.18	13.43	8.62	20.00	15.171	0.0017
Sightseeing	44.04	31.82	29.85	27.59	35.00	6.388	0.0942
Education*	8.26	7.58	5.97	10.34	8.00	0.834	0.8413
Picnic	38.53	37.88	32.84	27.59	35.00	2.377	0.4979
Family							
Gathering	22.94	22.73	29.85	37.93	27.33	5.260	0.1537
Bird							
Watching*	5.50	6.06	2.99	8.62	5.67	1.873	0.5993
Nature							
Communing	14.68	10.61	14.93	18.97	14.67	1.730	0.6304
Special	10.09	7.58	14.93	12.07	11.00	2.005	0.5715
Wildflowers	9.26	13.64	1.49	18.97	10.37	11.194	0.0107
Spray Park	10.09	12.12	14.93	10.34	11.67	1.064	0.7857
Other*	1.83	4.55	4.48	6.90	4.00	2.689	0.4421
Active	59.78	55.77	68.75	63.04	61.34	1.942	0.5845
Hiking	45.87	36.36	35.82	29.31	38.33	4.905	0.1789
Biking	44.95	28.79	35.82	41.38	38.67	4.942	0.1761
Jogging	55.05	39.39	37.31	18.97	40.67	21.017	0.0001
Walking	53.21	42.42	53.73	34.48	47.33	7.091	0.0691
Zoo	32.11	25.76	29.85	31.03	30	0.827	0.8430
Fishing	22.94	16.67	22.39	13.79	19.67	2.694	0.4413
Boating	11.93	15.15	4.48	6.90	10.00	5.287	0.1520
Horseback							
Riding*	8.26	4.55	1.49	10.34	6.33	5.255	0.1540
Competitive	14.13	17.31	10.42	8.70	13.03	1.990	0.5744
Football*	10.09	15.15	5.97	8.62	10.00	3.279	0.3506
Disk Golf	27.52	30.30	10.45	13.79	21.67	12.190	0.0068
Baseball*	9.17	7.58	2.99	8.62	7.33	2.555	0.4654
Volleyball*	11.93	7.58	8.96	8.62	9.67	1.079	0.7820
Soccer	15.60	7.58	4.48	12.07	10.67	6.255	0.0999

Table A.9. Frequency Distribution of Respondent Zip Code by Ethnicity

Zip Code	African American	Percent	Hispanic	Percent	Caucasian	Percent
Other States Outside	0	0.00%	0	0.00%	5	3.40%
Waco	10	14.93%	8	17.02%	41	27.89%
76701	1	1.49%	0	0.00%	7	4.76%
76704	11	16.42%	2	4.26%	2	1.36%
76705	4	5.97%	2	4.26%	6	4.08%
76706/76798	11	16.42%	5	10.64%	41	27.89%
76707	9	13.43%	10	21.28%	7	4.76%
76708	13	19.40%	7	14.89%	10	6.80%
76709	1	1.49%	0	0.00%	0	0.00%
76710	5	7.46%	8	17.02%	18	12.24%
76711	1	1.49%	3	6.38%	0	0.00%
76712	0	0.00%	2	4.26%	9	6.12%
76714	1	1.49%	0	0.00%	1	0.68%
Total	67		47		147	

Table A.10. Frequency and Percentage of the Locations Respondents Felt Unsafe

Location	Frequency	Percent	Valid Percent
Miss. Nellie's	1	0.83%	0.93%
Pecan Bottoms	3	2.48%	2.78%
Redwood shelter	2	1.65%	1.85%
Wilderness Trails	10	8.26%	9.26%
Circle Point	1	0.83%	0.93%
Mouth of the Bosque	1	0.83%	0.93%
Emmons Cliff	1	0.83%	0.93%
Lovers Leap	5	4.13%	4.63%
Jacobs Ladder	1	0.83%	0.93%
Any where alone	5	4.13%	4.63%
Bridge	1	0.83%	0.93%
Everywhere	2	1.65%	1.85%
Any place at night	36	29.75%	33.33%
When people sit in cars	1	0.83%	0.93%
Colcord and University Parks	1	0.83%	0.93%
Restrooms/ outhouses	2	1.65%	1.85%
Remote places	2	1.65%	1.85%
Remote dark places	2	1.65%	1.85%
Where bad things happen	2	1.65%	1.85%
Near the river	5	4.13%	4.63%
Upper park	2	1.65%	1.85%
Woods	1	0.83%	0.93%
Entire park	2	1.65%	1.85%
Seven sisters (curvy roads)	2	1.65%	1.85%
Cameron Park East	1	0.83%	0.93%
Dangerous roads	1	0.83%	0.93%
Lovers leap/ wilderness trails	2	1.65%	1.85%
Wilderness trails/ paved roads	2	1.65%	1.85%
Where there is no security	1	0.83%	0.93%
Cliff tops	1	0.83%	0.93%
Upper park trails	1	0.83%	0.93%
Lovers leap/ Emmons	1	0.83%	0.93%
Below cliffs	2	1.65%	1.85%
Lovers leap/ circle point	2	1.65%	1.85%
Near MCC	1	0.83%	0.93%
Lovers leap and Jacobs ladder	1	0.83%	0.93%
Where people drop rocks	1	0.83%	0.93%
Missing	13	10.74%	
Total	121		
Total Valid	108		

Table A.11. Additional Variables: Respondent Modes of Transportation to the Park

Ethnicity	Visited by Means other than an Automobile		Total
		Percent	
African American	14	20.29	69
Caucasian	34	21.52	158
Hispanic	4	8.16	49
Other	5	19.23	26
Total	57	18.87	302

Table A.12. Aggregated Main Activity Preference by Level of Education

Activity	Competitive		Active		Social/ Passive		Total
		Percent		Percent		Percent	
Grades 9-11	0	0.00	2	1.37	4	6.56	6
High school diploma	6	19.35	15	10.27	21	34.43	42
Some college or Additional School	15	48.39	63	43.15	23	37.70	101
Bachelors	4	12.90	36	24.66	8	13.11	48
Graduate Work	3	9.68	11	7.53	2	3.28	16
Graduate Degree	3	9.68	19	13.01	3	4.92	25
Total	31		146		61		238

Table A.13. Average Number of Recreational Activities Respondents Participated in on the Day Surveyed

Ethnicity	Activity Category				Descriptive Statistics		
	Social/ Passive	Active	Competitive	All Activities	Mode	Median	Standard Deviation
African American	1.55	1.14	0.22	2.91	1	2	3.10
Caucasian	1.06	1.32	0.27	2.65	1	2	2.40
Hispanic	1.45	0.90	0.24	2.59	1	1	2.69
All Respondents	1.27	1.19	0.25	2.72	1	2	2.63

Table A.14. Respondent Age by Gender

Age Statistic	Female	Male
Average	29.72	30.80
Median	26.5	27.5
Mode	24	25
Minimum	18	18
Maximum	67	67

Table A.15. Frequency Distribution of Respondent Age

Age	Frequency	Percent	Valid Percent	Cumulative Percent	Mean	Median	Std. Deviation	Mode
18.00	9	2.9	3.0	3.0	30.27	27	10.29	21
19.00	18	5.9	6.0	9.0				
20.00	14	4.6	4.7	13.7				
21.00	19	6.2	6.3	20.0				
22.00	15	4.9	5.0	25.0				
23.00	16	5.2	5.3	30.3				
24.00	18	5.9	6.0	36.3				
25.00	18	5.9	6.0	42.3				
26.00	14	4.6	4.7	47.0				
27.00	16	5.2	5.3	52.3				
28.00	9	2.9	3.0	55.3				
29.00	9	2.9	3.0	58.3				
30.00	11	3.6	3.7	62.0				
31.00	9	2.9	3.0	65.0				
32.00	7	2.3	2.3	67.3				
33.00	7	2.3	2.3	69.7				
34.00	4	1.3	1.3	71.0				
35.00	9	2.9	3.0	74.0				
36.00	5	1.6	1.7	75.7				
37.00	5	1.6	1.7	77.3				
38.00	7	2.3	2.3	79.7				
39.00	3	1.0	1.0	80.7				
40.00	11	3.6	3.7	84.3				
41.00	5	1.6	1.7	86.0				
42.00	7	2.3	2.3	88.3				
43.00	3	1.0	1.0	89.3				
44.00	1	0.3	0.3	89.7				
46.00	4	1.3	1.3	91.0				
47.00	1	0.3	0.3	91.3				
48.00	3	1.0	1.0	92.3				
49.00	3	1.0	1.0	93.3				
50.00	5	1.6	1.7	95.0				
51.00	1	0.3	0.3	95.3				
52.00	3	1.0	1.0	96.3				
53.00	2	0.7	0.7	97.0				
54.00	2	0.7	0.7	97.7				
55.00	1	0.3	0.3	98.0				
59.00	1	0.3	0.3	98.3				
62.00	1	0.3	0.3	98.7				
65.00	2	0.7	0.7	99.3				
67.00	2	0.7	0.7	100.0				
Valid Total	300	97.7	100.0					
Missing	7	2.3						
Total	307	100.0						

Table A.16. Cross Tabulation of Respondent Residential Location and Frequency of Visitation

Residence	Daily	Weekly	Monthly	2-3 Visits a Year	Yearly	First Time	Total	Percent
Other States	1	0	0	1	0	3	5	1.69
International	0	1	0	0	0	0	1	0.34
Other Cities in Texas	3	13	8	11	10	11	56	18.98
76643	3	3	0	0	0	2	8	2.71
76701	1	3	2	2	1	0	9	3.05
76704	5	2	8	1	0	0	16	5.42
76705	3	5	3	5	1	0	17	5.76
76706	16	22	16	4	5	1	64	21.69
76707	7	3	8	5	2	1	26	8.81
76708	6	9	10	3	1	1	30	10.17
76710	11	10	10	3	1	1	36	12.20
76711	0	2	2	0	0	0	4	1.36
76712	2	3	4	2	1	0	12	4.07
76714	1	1	1	0	0	0	3	1.02
76798	0	3	2	1	0	2	8	2.71
Total	59	80	74	38	22	22	295	
Percentage	20.00	27.12	25.08	12.88	7.46	7.46		

Table A.17. Chi Square Test of Ethnicity and Income

Income	Number of Participants Per Category			df	Chi Square		
	African American	Hispanic	Caucasian		Likelihood Ratio	Pearson	P
\$0-15,999	11.59%	18.37%	28.66%	8	35.621	34.915	<.0001
\$16,000- 25,999	21.74%	22.45%	12.10%				
\$26,000- 36,999	27.54%	20.41%	5.10%				
\$37,000- 59,999	20.29%	24.49%	27.39%				
\$60,000- >\$100,000	18.84%	14.29%	26.75%				
Total	25.09%	17.82%	57.09%				

Table A.18. Chi Square Test of the Differences in the Outdoor Recreational Activities Most Preferred by African Americans and Caucasians Living in Zip Code 76706

Main Activity	Percent African American	Percent Caucasian	Total Park	Pearson Chi Square	P Value
	N=8	N=34	N=42		
Social/Passive	50.00	8.882	16.67	7.906	0.0049
Picnic	9.09	46.34	38.46	5.973	0.0241
Family Gathering	45.45	14.63	0.0263	4.939	0.0263
Active	50.00	73.53	69.05	1.678	0.1952
Hiking	27.27	60.98	53.85	3.964	0.0465
Biking	9.09	58.54	48.08	8.494	0.0036
Competitive*	0.00	17.65	14.29	1.647	0.1994
Disk Golf	0.00	39.02	30.77	6.201	0.0128

Table A.19. Aggregated Recreational Activity Categories

Social/Passive	Active	Competitive
Sightseeing	Hiking	Football
Romance	Biking	Disk Golf
Picnicking	Walking	Soccer
Fishing	Horseback riding	Baseball
Education	Zoo	Volleyball
Nature Communing	Marksmanship	Hockey
Family Gathering	Rollerblading	
Bird watching	Boating	
Special Events		
Wildflowers		
Other		
Reading		
Parking		
Spray Park		

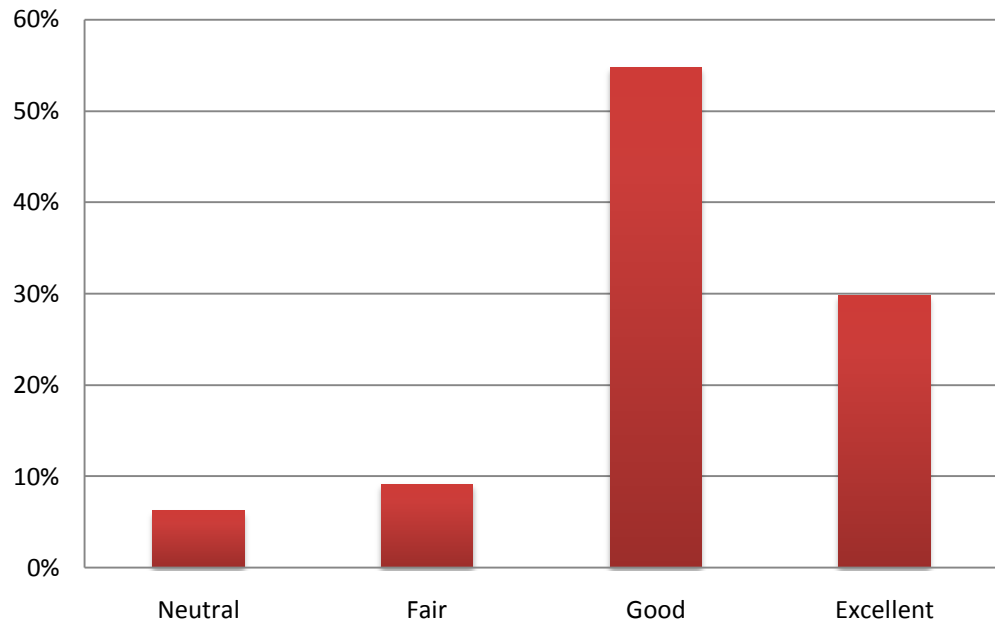


Figure A.1. Rating of Usual Park Experience by Cameron Park Visitors

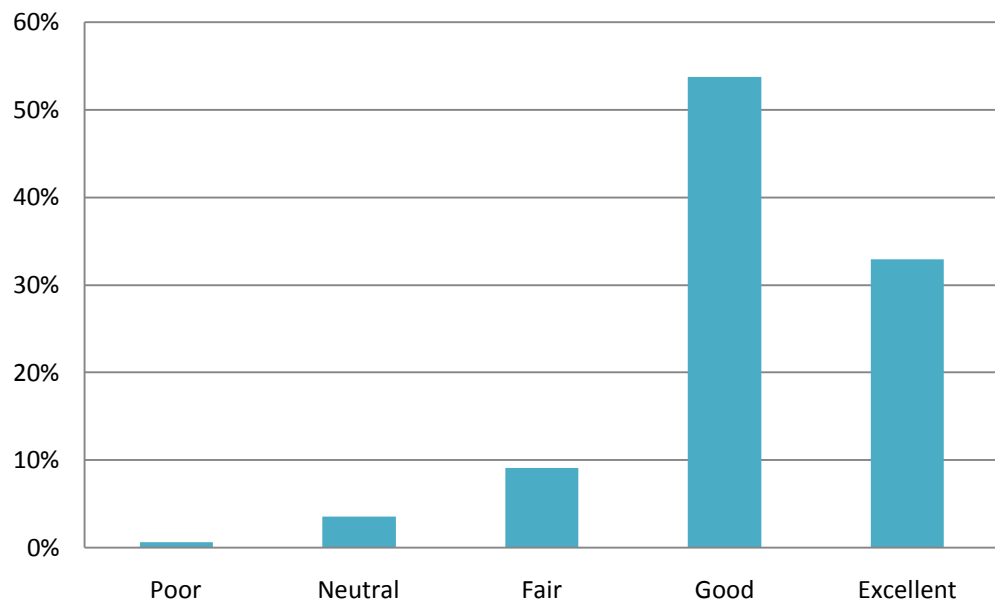


Figure A.2. Rating of Visitor Overall Feeling about Cameron Park

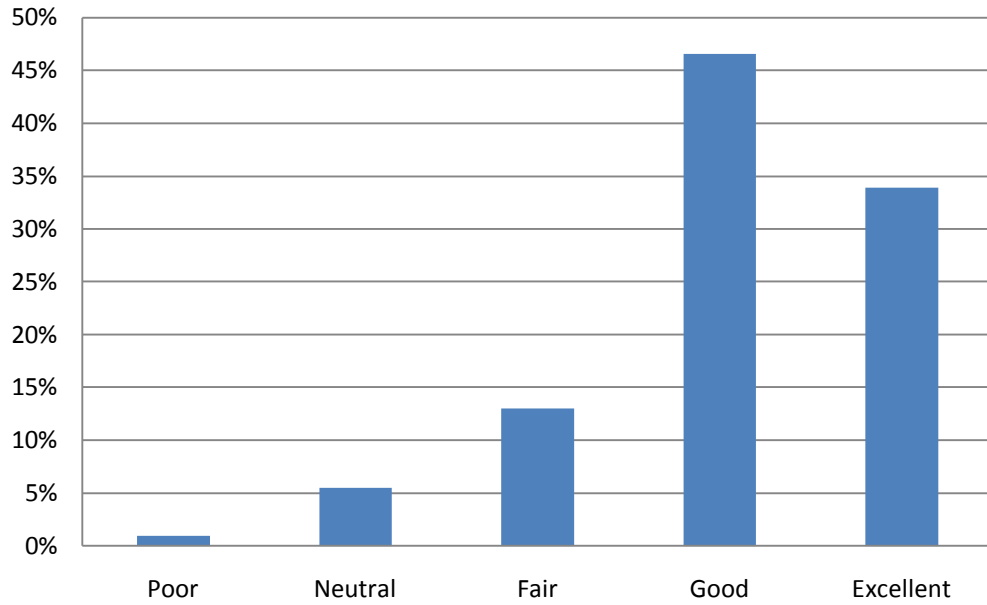


Figure A.3. Rating of Visitor Access to Recreational Activities in Cameron Park

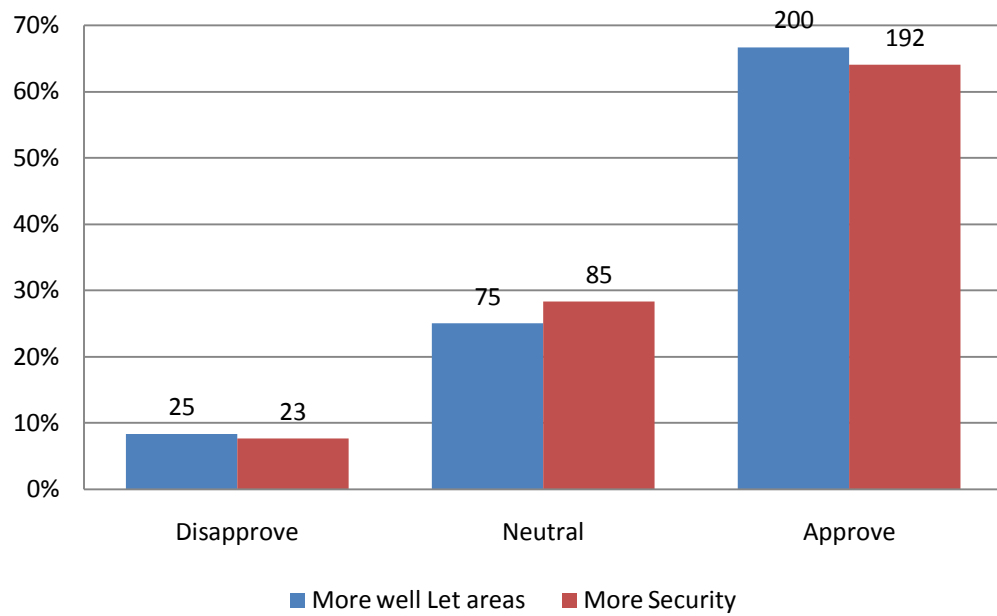


Figure A.4. Cameron Park Visitor Desire for More Lighting and Security

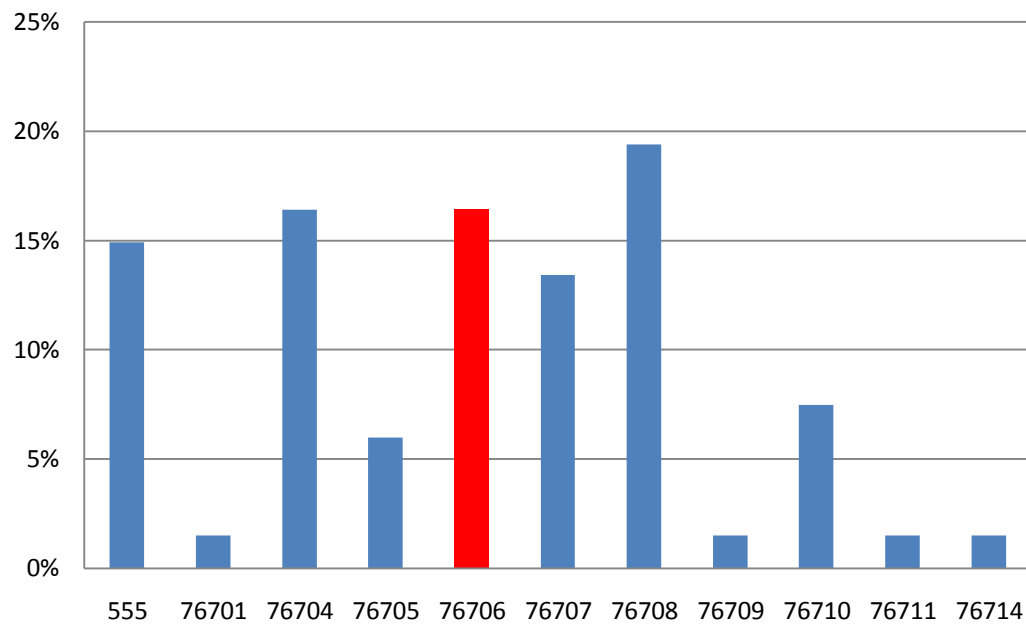


Figure A.5. African Amerincan Residential Distribution: 76706 Highlighted.

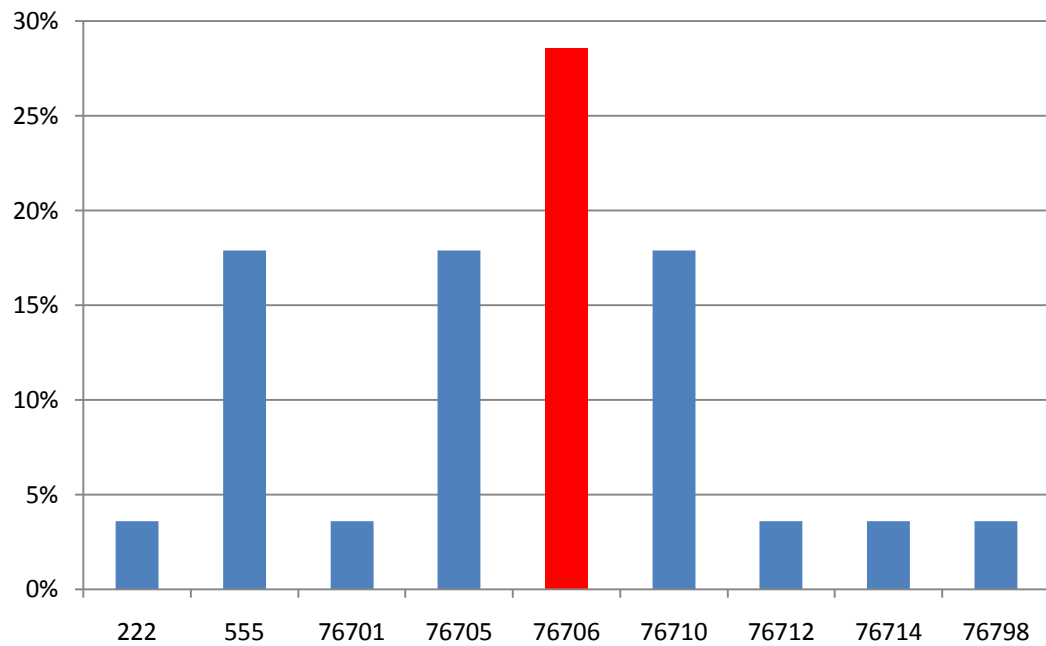


Figure A.6. Cauasian Residential Distribution: Zip Code 76706 Highlighted

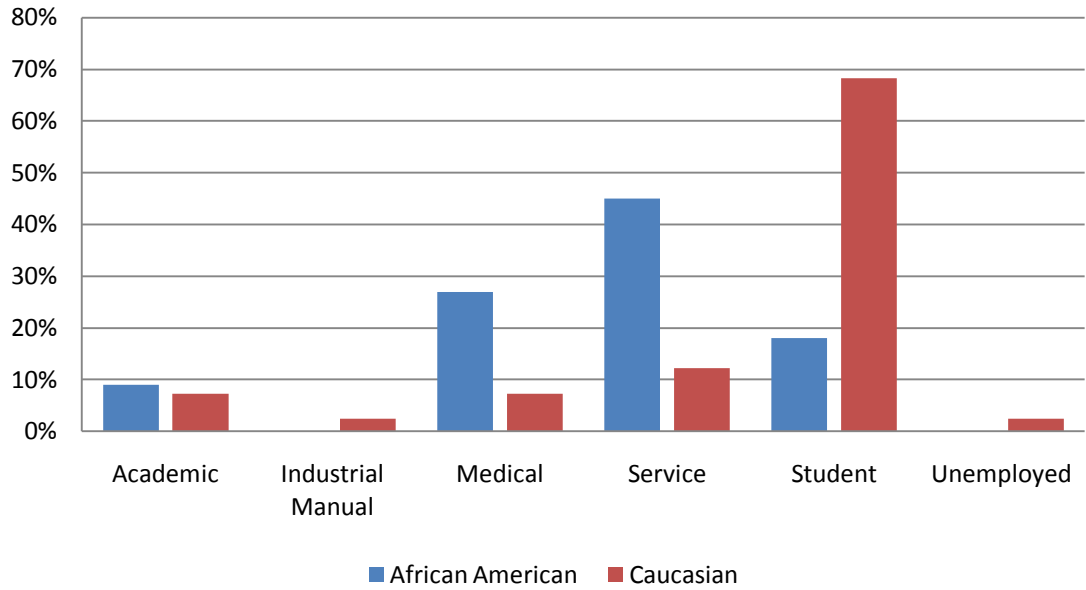


Figure A.7. Occupations of African Americans and Caucasians Living in Zip Code 76706

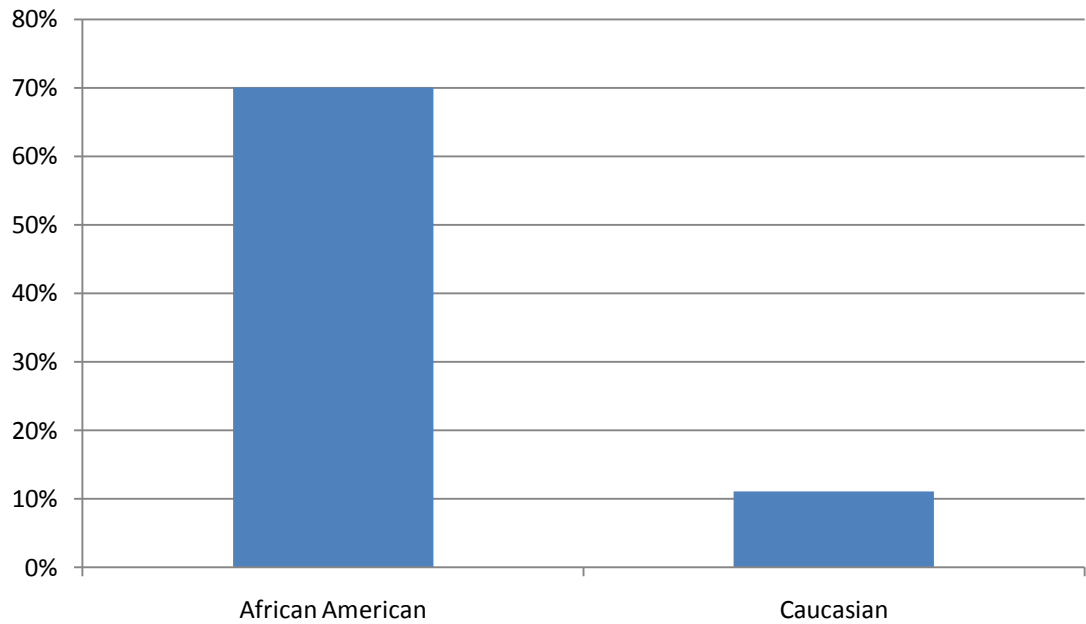


Figure A.8. Percentage of African American and Caucasian Respondents Visiting the Park with Family on the Day Surveyed

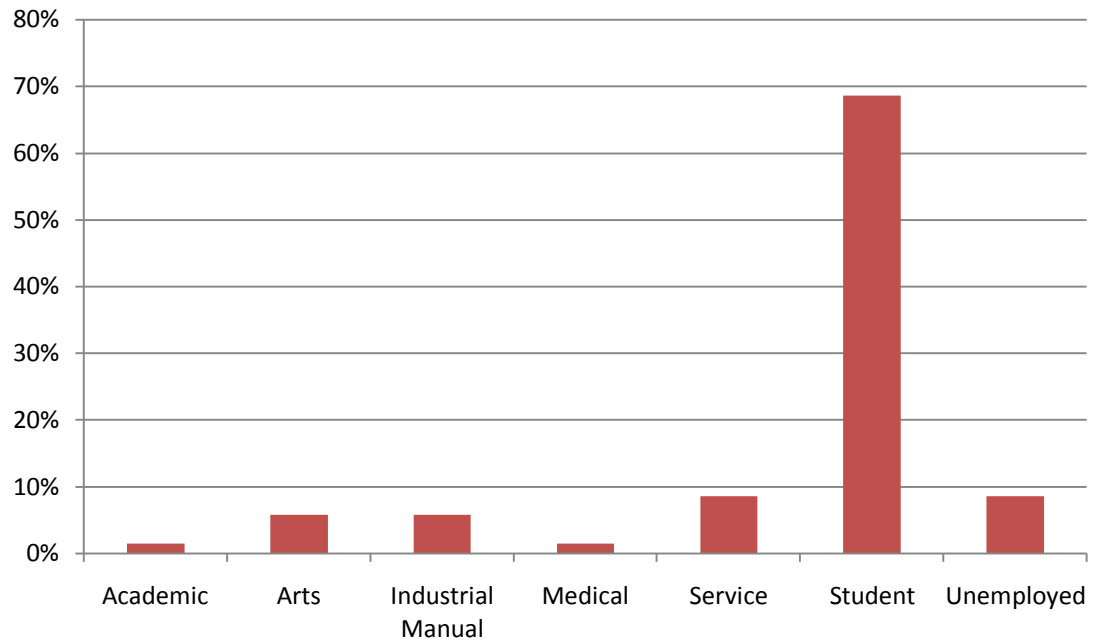


Figure A.9. Distribution of Respondents earning \$0-15,999 per Year by Occupation

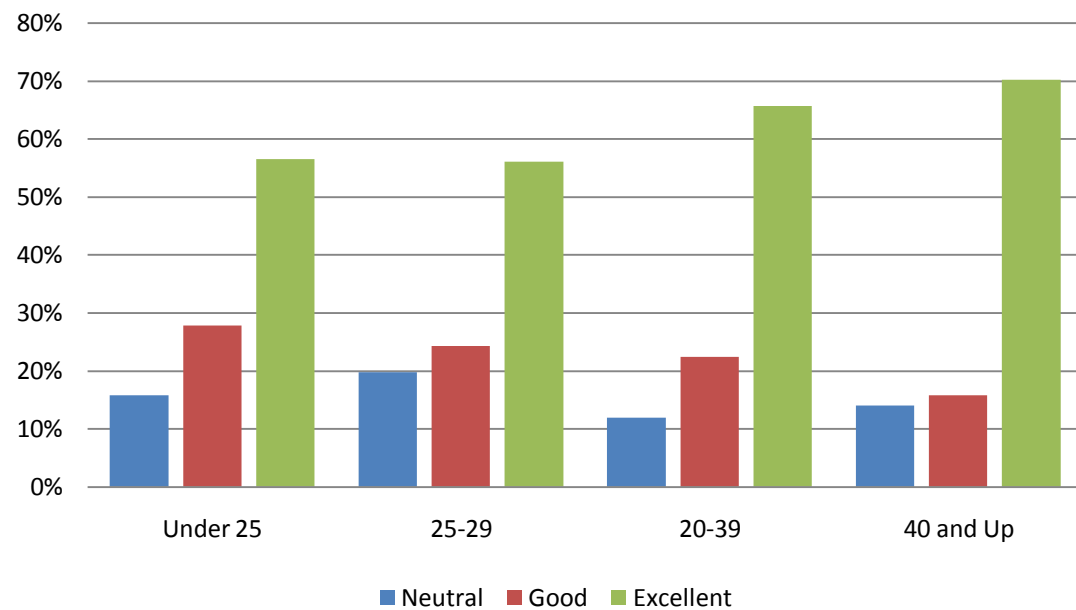


Figure A.10. Distribution of Age and Overall Cameron Park Experience

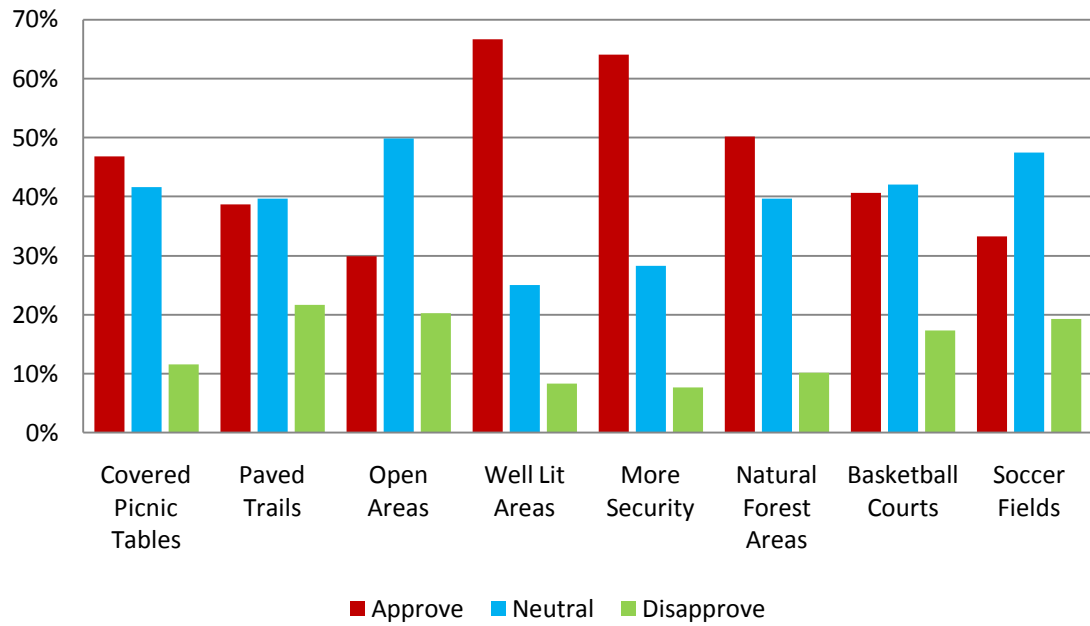


Figure A.11. Respondent Developmental Preferences

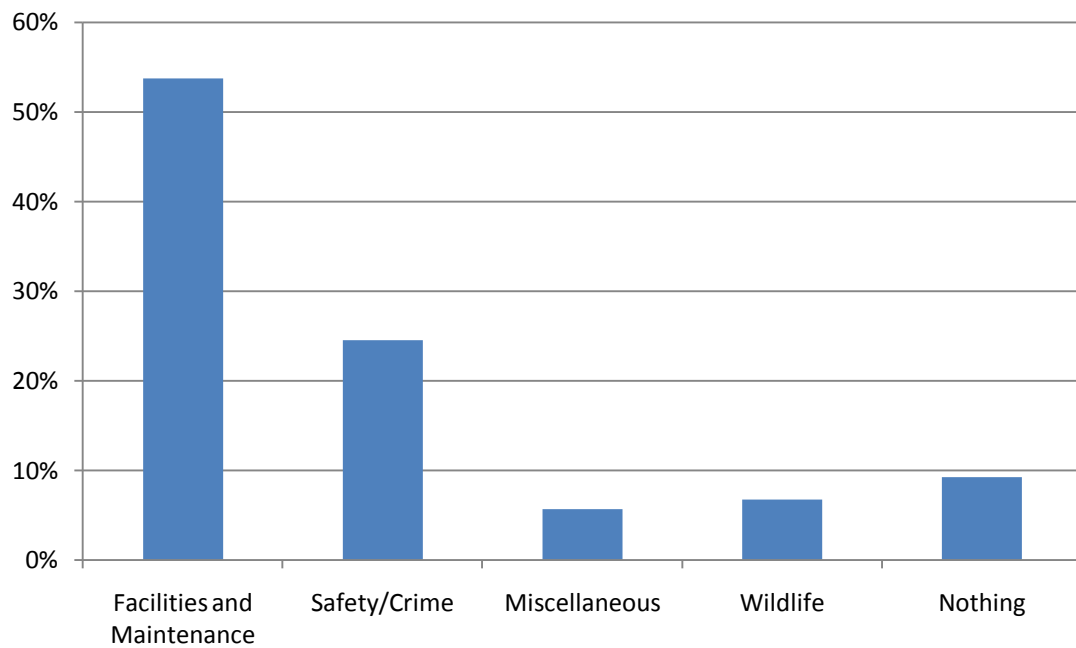


Figure A.12. Attributes Respondents Least Like in Cameron Park

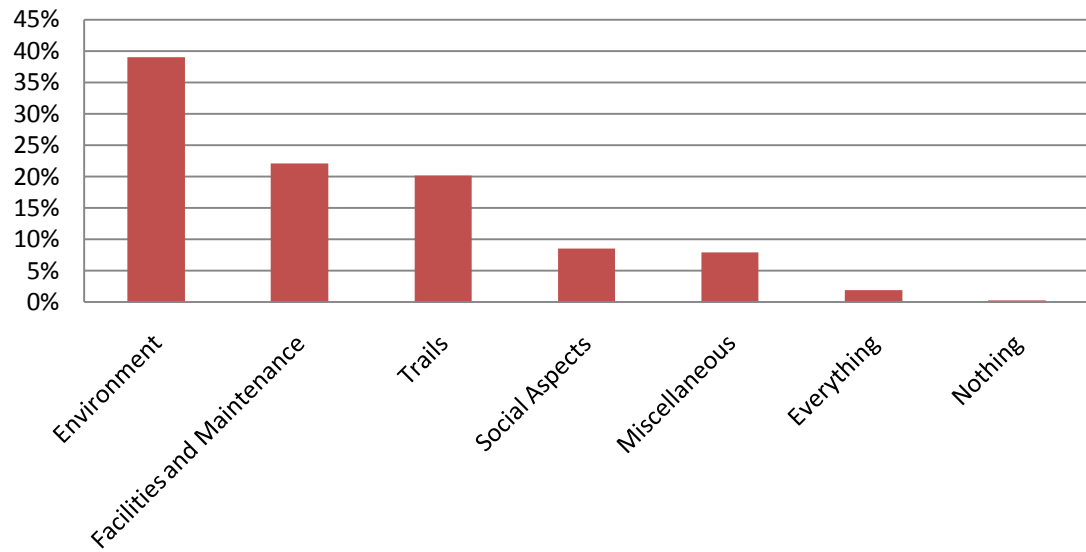


Figure A.13. Attributes Respondents Like Most in Cameron Park

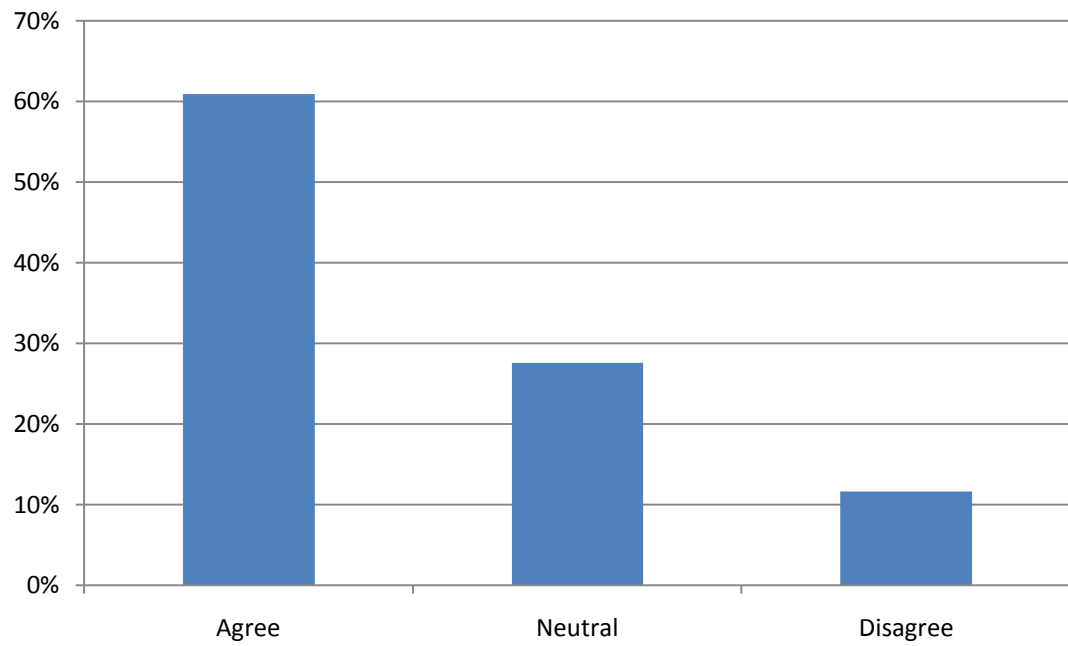


Figure A.14. African American Desire for Basketball Courts in Cameron Park

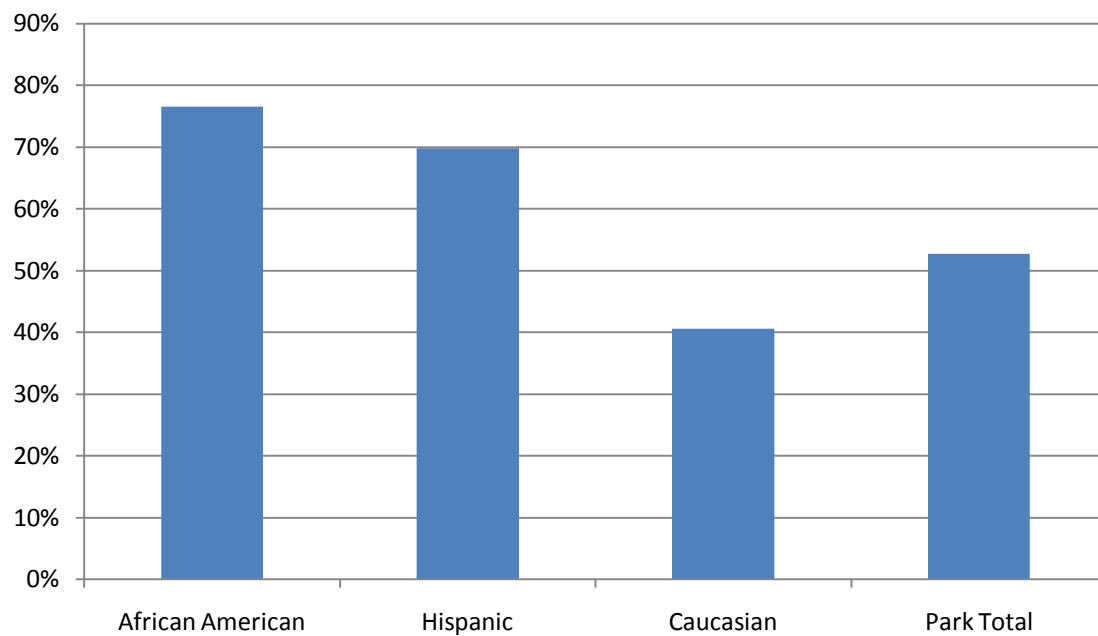


Figure A.15. Percentage of Respondents Visiting the Cameron Park with Family Members by Ethnicity

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