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WhiteWater Courses, Economic Impact, and Public Perceptions in Bowling Green Kentucky

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Introduction and Literature Review

In an era where scarce resources often dictate changes in services and the need for transparency and accountability of public monies becomes paramount, the ability to secure additional resources that translates into better services for a community becomes a beacon of hope. The essence of parks and recreation is the ability to serve the public. While there are best practices in how best to serve the needs of the public, one common sense approach suggests utilizing existing physical resources while simultaneously gauging the needs [perceptions] of the constituency (Jordan, DeGraaf, & DeGraaf, 2005). Implied in this approach is the ability to foreshadow changing interests and separate emerging trends from short lived fads. This differentiation between trends and fads becomes essential for parks and recreation professionals have a fiduciary responsibility that includes an ideal of exceeding the public’s expectations.

For recreationalists, Kentucky is a tourist destination with paddle sports being a natural draw. With over 114 navigable river miles the state is uniquely positioned to respond and exceed the needs of paddle sport enthusiasts. One particular draw for paddle sport enthusiasts are whitewater elements within the navigable rivers. Bowling Green, KY, the fourth largest city in Kentucky at nearly 60,000 people, is uniquely positioned to capitalize on an existing physical resource. Nestled just off a major north south interstate, flowing through Bowling Green is the meandering Barren River; a river prime for white water due to existing physical features. With close proximity to several major metropolitan areas (Nashville, TN; Louisville, & Lexington KY), Bowling Green is uniquely positioned to capture a large untapped audience; white water enthusiasts.

The benefits of enhanced river recreation on a region are significant. The economic benefits through direct, indirect, and induced effects are well established (Cordell, Bergstrom, Ashley, & Karish, 1990). Direct effects include the day to day spending tourists or participants of particular feature infuse into a local economy. Indirect benefits include the secondary purchases businesses make to meet the needs of their clientele. Finally, the induced effect if a regional draw includes enhancing the incomes of local residents and their subsequent spending in the local economy.

There are also indirect benefits of river recreation that may not immediately translate into an economic boom – the repositioning of parks and recreation. One of these benefits includes the repositioning of parks and recreation in the community. “Positioning refers to the place that parks and recreation occupies in the minds of elected officials, … business, … and the general public relative to their perception of other services that are vying for public tax dollars” (Crompton, 1999). Elected official and business leaders are often challenged to make difficult decisions that will benefit individual and community interests. While parks and recreation appears to be well positioned to meet and exceed community needs, historically, the industry lacks political clout (Glyptis, 1989) and is often at the mercy of elected officials who view other public entities as being more important. With grassroots support, parks and recreation may be repositioned to be competitive with other essential services within a community (e.g. fire, police).

While the long held belief that the mission of municipal parks and recreation is to address community challenges and enhance overall quality (e.g. beautification, social ills), for successful repositioning, parks and recreation must also be seen as a force for contributing to economic development of a community. A white water course would: attract tourists, participants and spectators alike; attract businesses that view community vitality and progressive parks and recreation as a selling point for relocation to the community of Bowling Green; enhance real-estate values through the increase of green space accompanying a white water course; possibly expand retail sales and equipment by catering to the needs of participants (e.g. equipment) and spectators (e.g. food); and possibly help in stimulating urban rejuvenation due to the proximity of historical downtown Bowling Green to the white water course. Parks and recreation plays a vital role in any community and with intention, can be highly influential when examined from a directed and indirect benefits perspective.

While repositioning may be a natural result of a successful endeavor where economic sustainability is achieved or surpassed (e.g. expansion of programs to meet a particular need), assessing the economic impact, public perception, and viability of prospective initiative (e.g. white water course) can be daunting. A natural starting point becomes the examination of previous work used to discern the economic impact of river recreation on local economics. Valuation of ecosystems is challenging and perhaps “controversial because of the potential importance such values may have in influencing public opinion and policy decisions” (Loomis, Kent, Strange, Fausch, & Covich, 2000, p. 103). Yet, there is substantive work that demonstrates that the river recreation industry contributes to the “economic output, income and employment in the, respective regions” (Helvoigt, Neculae, Josephson, & Charlton, 2008, p. 10 see also Cordell, Bergstrom, Ashley, & Karish, 1990).

Helvoigt et al summarize research on the economic impact of commercial whitewater rafting suggesting that whitewater recreation “provides a positive stimulus to the local economics through direct, indirect and induced economic effects” (p. 12). For example, in a study to determine the economic effects of river recreation on local economies, Cordell and colleagues found that visitor spending positively stimulated community growth (1990). Adjusted for inflation and reported in 2009 dollars, Cordell and colleagues reported that river recreation resulted in total gross output of between $4.2 and $21.7 million. For a complete understanding, the output range resulted in total income of between $1.94and $9.05 million while employment in the region increased by 20.5 percent. The economic indicators are derived from river recreation were from three National park Service sites in Delaware and West Virginia.

While the economic impact of river recreation appears promising for total output, income, and employment opportunities, the research may not completely capture the complexity associated with determining river recreation influences. Yet challenges remain in determining a comprehensive economic impact. Sims (2002) suggests that many river recreation studies underestimate total impact due to inadequate measurement of throughputs of a destination (e.g. economic impact in a state as tourists drive to river recreation destination) or the influence of local private users. In an attempt to ascertain a more comprehensive look of economic impact due to river recreation, English and Bowker (1996) estimated statewide economic benefits. Total output, adjusted for 2009 dollars, for a five river region covering six states ranged from $3.11 to $21.73 million. Income from services offered ranged from $1.72 to $8.12 million.

In a similar study by Hjerpe & Kim (2007), the focus of their research was on the economic impact of river recreation (guided trips) at the state level. The findings suggest that state multipliers (total impact expected from given economic activity) will be significantly larger than local multipliers.

While first used to estimate the value of quality change in automobiles (Griliches, 1968 as cited in Kulshreshtha & Gillies, 1993), the hedonic property valuation method has been widely used to determine the value of environmental amenities (e.g. water resources) that influence property values. The hedonic property method “isolates the property value differential paid by a household for having a home [near resources]” (Loomis, Kent, Strange, Fausch, & Covich, 2000). Utilizing this method to determine economic impact of water resources in a community, Kulshreshtha and Gillies (1993) found that the value of aesthetic amenities of a water source (e.g. river) in an urban setting resulted in significant increases in property values and approximately 10% of economic contribution could be associated with the water source.

Research on the direct and indirect benefits of river recreation suggests that local and state economies are significantly influenced (Helvoigt, Neculae, Josephon, & Charlton, 2008; Sims, 2002). In a regional economic impact study conducted for whitewater recreation in a west coast state, the findings state that the industry provides a positive stimulus to the local economics through direct, indirect, and induced economic effects (Helvoigt, Neculae, Josephon, & Charlton, 2008, p. 12).

Purpose of the Study

The purpose of this study was to estimate the economic impact that out of town visitors would have on the Bowling Green area economy while visiting a proposed whitewater course on the Barren River. A second objective of the study was to determine the public’s perception of the proposed whitewater facility on the Barren River in the city of Bowling Green.

Methodology

*Definition of terms*

In order to provide clarification and understanding with regards to the results of the economic impact analysis the following terms are defined. The following definitions were paraphrased from the MGM 2 user manual developed by Stynes et. Al. (2000).

**Multipliers:** capture the secondary spending that takes place as a result of visitors spending in a community. They represent the amount of times money is spent over and over again before leaving the community.

**Direct economic effect:** represents the first round of spending realized within a community. Typically the business that sells directly to the visitor.

**Total effects:** the direct, indirect, and induced effects totaled.

**Indirect effect:** changes in sales which are linked, indirectly, to the support of services provided directly to visitors. i.e. increased sales in produce to a sub shop that sells food to visitors at the whitewater park.

**Induced effect:** money spent by employees of business that directly deal with visitors to the area. i.e. the sub deli manager earns his check and then spends his money locally on gas, utilities, groceries, etc.

**Sales:** the total dollar value of services or goods sold to visitors to the area.

**Personal income:** wages, salary and income realized by workers and businesses as a result of visitors.

**Jobs:** is the number of jobs needed in order to produce adequate goods and services to visitors.

**Value added:** is the total contribution of a business’s income and taxes to the locality.

*Economic Impact Estimation Model*

*MGM2 Estimation Program.*

The researchers decided to utilize the Money Generation Model 2 (MGM2) short form in estimating the direct and total economic effects of visits to the proposed facility. The MGM2 model was developed by Ken Hornback, Daniel Stynes, and Dennis Propst at Michigan State University. A full detailed explanation and free downloads of the program can be retrieved from the following web address; <http://web4.canr.msu.edu/MGM2/> . The MGM2 Excel program was designed to estimate the impact of users within the National Park Systems in the United States. The developers of the program (Stynes et. Al. 2000) view the economic impact equation as “Economic impacts = Number of Visitors \* Average spending per visitor \* Economic multiplier.” (p.4). Multipliers utilized within the software program were developed using several recognized sources. Those sources include the Regional Input-Output Modeling System II (RIMS II) and the IMPLAN input-output model (Loomis & Walsh, 1997). Since Mammoth Cave National Park in located less than 30 miles north of the city of Bowling Green and multipliers for the region exist within the short form of the MGM2 model the decision was made to adapt the program to predict the economic effects of possible participants visiting the Bowling Green area to utilize the proposed whitewater park.

*Whitewater User Estimates.*

American Whitewater, which is a nonprofit boating organization, was contacted in order to determine the number of actual whitewater boaters within a 450 mile radius of the Bowling Green area. Its central mission is to “to conserve and restore America's whitewater resources and to enhance opportunities to enjoy them safely.” (p.1). Additionally, the organization advocates for the protection and preservation of waterways for the future enjoyment of the boating community (American Whitewater 2009). According to the American Whitewater database there are over 2700 whitewater boaters that live within a 450 mile radius of Bowling Green, Kentucky. The researchers choose a radius of 450 miles as that would be within a seven hour drive of the proposed whitewater venue. It is estimated that these 2700 boaters could potentially visit the course on average of three times per year. This would equal 8100 visits to the Bowling Green area who would most likely spend one and a half nights in local accommodations. No attempt was made to determine local visits as local visits are considered switch users which do not represent an infusion of money from outside the community.

*Data Analysis.*

The Money Generation Model 2 (MGM2) short form was utilized to determine the economic impact effects of future visitors to the proposed whitewater course on the Barren River in Bowling Green, Kentucky.

*Whitewater Public Perception Study*

*Instrumentation.*

Utilizing a panel of experts within the Kinesiology, Recreation and Sport department at Western Kentucky University a series of questions were developed to ascertain the public’s perceptions of a proposed whitewater park to be located on a section of the Barren River which runs through the city of Bowling Green. Once the questions were developed the questions were given to a group of citizens to determine readability and content appropriateness. Changes were made to questions in order to provide clarification. The average time to take the survey was five minutes. Since this was an opinion survey no validity or reliability data was collected or analyzed.

*Selection of subjects.*

The data was collected using two different sampling methods. First, a random interview sampling method was used. Volunteers collected the data at various sites across the Bowling Green area during the summer of 2006. Secondly, an e-mail was sent out to all employees of Western Kentucky University asking for voluntary participation in the study. The total sample from both methods equaled 218 individuals representing a range of individuals from across the community. Table 2 outlines the distribution of respondents by zip code.

*Data analysis.*

Descriptive statistics of the public perception data were generated using Statistical Package for the Social Sciences (SPSS). Percentages of responses were generated in table and chart format in order to provide an overview of the public’s response to the proposed whitewater course in the City of Bowling Green, Kentucky.

Results

*Economic Impact*

Table 1 presents the direct and total effects of visitors future spending in the Bowling Green area should a whitewater course be built.

(insert table 1 about here)

*Public Perception of Need*

Table 2 presents a sample of the Bowling Green areas constituency regarding the proposed whitewater course. (insert table 2 about here)

Discussion & Recommendations

As the data analysis and table demonstrates the possible economic infusion of money is positive to the community. This is consistent with prior research related to whitewater courses and rivers in general (Cordell, Bergstrom, Ashley, & Karish, 1990; Helvoigt, Neculae, Josephson, & Charlton, 2008; English and Bowker 1996; Hjerpe & Kim 2007; Kulshreshtha and Gillies 1993; Sims, 2002). While this study has outlined the possible infusion of outside money to the Bowling Green area no information about special event planning was undertaken. River festivals occur across the United States yearly and several provide a major economic effect on local areas. Further investigation should be undertaken to ascertain the effects such special events would have on the local economy.

The data on the public’s perception of the need for whitewater course on the Barren river is overwhelmingly positive. It is recommended that a follow up study be conducted every 2 years in order to provide longitudinal data reflective of the public’s positive embrace of establishing a whitewater course on the Barren river as part of the downtown revitalization and improvement plan. It is further recommended to include the cost of constructing the river in the next round of bonds to be sold as part of the Tax Increment Finance district plan for downtown Bowling Green.

Both the economic impact analysis and the public perception study supports the construction efforts. The U.S. Army Corps of Engineers has given a soft commitment to pay for one half the cost of the construction of the course. The total cost for the course was estimated between 5 to 6 million dollars. The economic infusion of new dollars into Bowling Green on a yearly basis could possibly equal over 240 thousand dollars and create an additional 4.7 jobs.

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| --- | --- | --- | --- | --- | --- |
| Table 1. Direct and Total Effects of Visitor Spending | | | |  |  |
|  | Visitor segments | | | |  |
|  | Local | NL-Day | Motel | Camp | Total |
| **Spending captured** | $ - | $ - | $ 153.74 | $ 13.73 | $ 167.47 |
|  |  |  |  |  |  |
| **Direct Economic effects** |  |  |  |  |  |
| Sales ($000's) | $ - | $ - | $ 153.74 | $ 13.73 | $ 167.47 |
| Personal Income ($000's) | $ - | $ - | $ 54.48 | $ 4.86 | $ 59.34 |
| Jobs | - | - | 3.43 | 0.31 | 3.74 |
| Value added ($000's) | $ - | $ - | $ 82.55 | $ 7.37 | $ 89.92 |
|  |  |  |  |  |  |
| **Total Economic Effects** |  |  |  |  |  |
| Sales ($000's) | $ - | $ - | $ 222.92 | $ 19.90 | $ 242.83 |
| Personal Income ($000's) | $ - | $ - | $ 79.56 | $ 7.10 | $ 86.67 |
| Jobs | - | - | 4.32 | 0.39 | 4.70 |
| Value added ($000's) | $ - | $ - | $ 125.91 | $ 11.24 | $ 137.15 |

Table 2 public perception responses to proposed whitewater course

|  |  |  |
| --- | --- | --- |
| Question | Response | Response |
| Are You A Resident of Warren County? | 96.3% yes | 3.7% no |
| What Zip Code Do You Live In?  42101  42103  42104 | 44.5%  22.5%  33% |  |
| Are You Male or Female?  Male  Female | 52.3%  47.7% |  |
| What Age Group Do You Belong In?  18 to 25  26 to 40  41 & Older | 15.1%  36.2%  48.6% |  |
| Have You Heard About Possible Whitewater Course Coming to Bowling Green? | 76.6% yes | 23.4% no |
| Are You Interested in A Whitewater Course in Bowling Green? | 72% yes | 28% no |
| Would you Support The Whitewater Course in Bowling Green if it Produced A Positive Economic Impact? | 87.2% yes | 12.8% no |
| If Outside Funding Helped Build The Course Would you Support the Whitewater Course? | 83% yes | 17% no |
| Would you Support the Whitewater Course if it Improved Fishing Opportunities? | 74.3% yes | 25.7% no |
| Would you Support the Whitewater Course if it was Used to Train EMS Personnel? | 88.1% yes | 11.9% no |
| Would you Support the Whitewater Course if it better utilized the closed Landfill? | 85.8% yes | 14.2% no |