Abstract: At a time when many public park and recreational programs are required by local governments to be financially self-sustaining, it is critical for planners to design a new development with the end-user in mind. Feasibility studies often either do not examine user preferences or use Likert-type surveys to investigate features in isolation without evaluating trade-offs from financial and finite space limitations. This study used stated preference choice method (SPCM) to inform the initial design of an off-road vehicle (ORV) park. The park was developed near Detroit, Michigan, a metropolitan area with many registered ORVs, but few places to legally use them. The SPCM examined trade-offs among desired features and helped planners ensure publicly funded investments resulted in a successful park. Researchers mailed a survey with choice sets to 3935 registered ORV users and 2083 completed surveys were returned (53%). Additional survey items also allowed researchers to create preference models for specific segments of users (i.e., serious ORV enthusiasts/casual users; residents/visitors; or users of different ORV types). The findings informed the design of the park by revealing preferences for segments, allowing planners to design the park for specific markets. The park’s initial success suggests a study in the design stage of development offers utility, though park managers have noticed unanticipated user segments that influence preferences for park features. The findings based on segments also suggest planners should be cautious when designing to an average user. Implications of this study are helpful to planners of any capital-intensive land-use project, especially in the public sector.

Keywords: stated preference choice method; Detroit; park planning; ORV; trade-offs; preferences; motorized recreation

1. Introduction

Outdoor recreation is an important contributor to people’s well-being and quality of life [1–3]. In heavily populated areas, municipal parks frequently host outdoor recreation [4,5]. As recreational trends evolve, new uses and new demands for use can put stress on municipal parks that were not planned for these uses and use levels. Park administrators are challenged to mitigate these stresses by providing adequate space, infrastructure, and services to meet nearby residents’ recreation preferences [6]. They must do this in an environment that demands fiscal responsibility of local politicians and civic entities. This paper describes how researchers and administrators successfully navigated this terrain to develop an activity-specific park, through recreationist-focused inquiry on tradeoffs among proposed park amenities.
1.1. Park and Recreation Benefits

Recreation programs can enhance the social, environmental, and economic benefits of parks on communities, such as improving community members’ physical and mental health or improving a community’s natural environment (e.g., [7–10]). For policy makers, the economic impacts of parks and recreation are of high importance, as they consider allocating tax dollars to pay for parks [11]. Many policy makers want to know that capital expenditures for parks and public recreation facilities will offer a positive return on investment (ROI). Many researchers have correspondingly investigated this topic, to assist in policy decision-making. Notable findings include parks delivering positive economic benefits via park user spending (e.g., [12]), tourism attraction (e.g., [13]), amenity migration [14], and increased property values (e.g., [15]). For local governments in the US, property value increases are particularly relevant to the ROI: property taxes support 74% of their general funds [16].

1.2. Park planning for New Recreation Uses

Parks support dynamic recreation activities. Over time, broad categories of activities differentiate into multiple types [17] and individuals change preferences and levels of specialization [6,18]. For example, general off-road vehicle (ORV) recreation has differentiated into all-terrain vehicle (ATV), motorcycle, full sized, and side by sides. Committed ORV recreationists may develop interests and expertise within one of these. Increased visibility of a park can also shift recreation-specific uses and users, highlighting the need to provide broad appeal across audiences (e.g., locals, visitors) and specific interest points within each audience. Therefore, planners must ensure investments made to parks and recreation match these evolving diversifications, preferences, and audiences.

Though public parks and recreation facilities can have positive economic impacts, they must still match user preferences or risk going unused. Thus, policy makers scrutinize each investment, understanding that its success or failure could influence the next election or millage vote. For local politicians, planners, and park administrators, significant pressure exists to use taxpayer funds efficiently and economically when planning new park projects [19]. Planning a new park therefore requires considerations such as its features, amenities, and policies [20]. Poorly planned parks may not generate as much activity as those designed with end-users in mind.

Therefore, parks often conduct a feasibility study before developing a new attraction [21]. These generally assess whether a project can succeed in the current and predicted economic climate and specifically in meeting residents’ needs [22]. Many focus on whether the project can be successful, without attending to specific features or potential users’ preferences. Where preferences have been examined, research design often limits the findings’ utility. Planners typically do not study user preferences with the necessary scientific rigor [2] and even rigorous research requires recreationists to disjointedly reveal their preferences using Likert scales and item-by-item approaches [23]. Such studies offer limited management implications, as recreationists’ ratings for favorable/preferred items often exceed planners’ budget and space constraints. These studies neglect measures forcing the kinds of trade-offs and prioritizations that projects require [23].

Additionally, many studies of preferences focus on existing facilities (e.g., [24]) or general assessments for new projects, rather than potential audience segments’ preferences for new facilities’ specific features, amenities, and policies (e.g., [25]). Once developed, it may often be difficult, impractical, or cost-prohibitive to make changes to better appeal to a potential audience if the initial design missed the mark. When a study evaluates user preferences for potential features and amenities of a new facility, it typically includes the aforementioned Likert items that present managerial challenges [23].

1.3. Off-Road Vehicle Park Planning in Michigan

This paper presents research related to the initial planning of an ORV county park in Michigan, US. ORV use in the US, and associated managerial challenges, have increased dramatically in recent decades [26]. Smith et al. [27] address the impacts of this rapid
growth: “As OHV use continues to grow and diversify, recreation resource managers will experience more acute difficulties in providing opportunities for these users to achieve desired outcomes while simultaneously minimizing potential impacts.”

The Bureau of Land Management [28] provides several reasons for the increase in ORV popularity, including population growth, aging population, technological advancements, and a rising public interest in unconfined outdoor recreation. Michigan exemplifies this growth trend and is an established ORV destination. In 2020, for example, Michigan sold 204,000 ORV licenses [29], and offered over 10,000 miles of ORV trails. In the most recent study of ORV use in Michigan, visitors made over 200,000 distinct trips to use their ORVs in Michigan [30].

The largest percentage of registered ORV owners reside in the densely populated southeast Michigan, but most of the trails available for ORV use are located hours away, in rural northern Michigan. The large distance between this concentration of ORV users and planned ORV use landscapes has resulted in sites of illegal ORV use around southeast Michigan [31].

The Michigan Department of Natural Resources (DNR) has been working to develop legal, public ORV use opportunities in southeast Michigan. In 2012, the DNR and Oakland County Parks and Recreation (OCPR) began co-developing an ORV park on an old gravel mining operation—the state would fund the land purchase, and the county would develop, own, and operate the park. Oakland County is adjacent to Detroit and has a population of 1.3 million (about 13% of Michigan’s population), making it second only to Wayne County (home of Detroit). It also has the most registered ORV users out of Michigan’s 83 counties. The county’s extensive park system is nationally recognized, with an annual operating budget of USD 34 million [32].

The proposed park, while serving the needs of the many ORV users, was not supported by all county residents. Many were concerned about the sound and dust an ORV park would generate. The county’s government officials and policy makers were interested in the potential economic benefits, but were also concerned about the potential for a large and contentious development to become financially burdensome. Oakland County governance pressured OCPR administrators to ensure that all parks were financially self-sustaining. This pressure caused park administrators to enquire about research to inform the park’s design, ensuring it would generate high use levels by multiple audiences. Park planners also wanted to know whether specific user groups (i.e., serious ORV enthusiasts/casual users; residents/visitors; or those who use ATVs, full-sized vehicles, or off-road motorcycles) differed in their park design preferences. If they did, then OCPR, DNR, and Oakland County could internally discuss which groups to prioritize in design decisions.

### 1.4. Stated Preference Choice Method

This study used the stated preference choice method (SPCM) to investigate user group preferences for features, amenities, and policies that would inform the park’s initial design. SPCM is commonly used to understand relationships between contextual characteristics and consumer purchase behavior and evaluate user preferences for destinations and attractions [33,34]. SPCM is rooted in random utility maximization theory: individuals make choices to maximize utility [35] and, given a set of choices, consumers will select the one with maximum perceived utility [36].

In SPCM, respondents make several choices between hypothetical combinations of attribute levels for a product. These relate the relative importance of those attribute levels and trade-offs in consumers’ decision making [23]. SPCM identifies users’ preferences for trade-offs collectively [23] and is considered a major improvement in understanding the multi-attribute preferences of site users and recreationists [23,35].

SPCM is a long-recognized tool to inform park infrastructure needs (e.g., [33,37]). For example, Campagnaro et al. [38] explored perceived safety preferences for green spaces in Padua, Italy, by showing respondents modified images of different green scenarios. Another typical use of SPCM is to examine a site’s social carrying capacity overall and by user group, to correspondingly inform managerial decisions [39,40].
Applications of SPCM to user preferences have occurred mostly in the context of existing places (e.g., [23,41]). These studies are important, but existing investments, budgets, and expectations of repeat visitors may limit managers’ ability to implement major changes recommended. Employing SPCM to inform potential development could aid in design decisions matching use-goals and user group preferences, though apparently few studies have used it in this planning context. This study addresses this gap, using an ORV park and its users as a setting.

2. Methods
2.1. Location of ORV Park and Landscape Setting

The study ORV park is in Holly (Oakland County), Michigan, 52 miles (84 km) northwest from downtown Detroit (Figure 1). It was in the planning stage at the time of the research and was subsequently built on land of mixed use and landscapes: legacy and active sand and gravel mining operations, wooded areas, and open expanses. This landscape diversity is both appealing to and accommodating of all types of ORVs, including full-size vehicles, side-by-sides, all-terrain vehicles, and motorcycles.

Figure 1. Location of the Holly Oaks off-road vehicle park—Michigan, USA.

2.2. Focus Groups

Researchers first conducted three focus group interviews with 19 people over a six-week period. Focus group participants included ORV users and representatives of ORV-related businesses, residents and non-residents of Oakland County, and users of different types of ORVs. The focus groups discussions informed the study design encompassing potential features and amenities, ORV-specific lingo, and wording for the invitation for survey participation. Focus group participants also provided survey instrument critique, validation, and piloting and review of associated communications (e.g., invitation, completion reminders).
2.3. Study Sample

The study population was people who purchased Michigan ORV permits during the previous year. The DNR provided a full list of this population and researchers drew a stratified random sample from this list, based on four geographic strata: residents of Oakland County, adjacent Michigan counties, non-adjacent Michigan counties within a three-hour drive, and non-adjacent non-Michigan (but still US) counties within a three-hour drive. Each stratum included 1008 people, for a total sample size of 4032. OCPR previously determined that most park users would be locals (i.e., county residents and residents of the seven adjacent counties) and visitors from beyond these counties but within a three-hour drive. These groups’ preferences were vital in OCPR’s planning, to ensure the park met locals’ preferences and enticed visitors to travel to and spend money in the park and its surrounding community. The sampling design thus reflected these definitions and priorities.

The sample was contacted using a modified Dillman method [42] for contacting via postal mail: a pre-notice, invitation, reminder, and final contact.

Survey respondents were largely male (92.3%), white (97.9%), tended to have less education than a four-year degree (75.0%), and were most commonly in the USD 40-80,000 income bracket (38.6%). The age of respondents ranged from 18–86 years (SD = 12.97). The majority indicated they live in small towns or rural locales, while a little over one third live in suburbs. Respondents indicated that they had used ORVs recreationally for as many as 55 years (mean = 16.2). Regarding recreation specialization, almost half of respondents (47.4%) indicated that they are “active” ORV users, 35.3% “casual,” and 17.3% “committed.” Oakland County residents accounted for 28.7% of respondents.

2.4. Survey Design and Identification of Attributes

The survey included items on user demographics, ORV experience and use (e.g., types of vehicles used, years of experience, frequency of use, trips taken), and stated preference choice sets. The attributes and levels for the choice sets were developed from managerial considerations, focus group discussions, and SPCM literature review.

Figure 2 lists the attributes and their levels, which can be generally categorized as park elements, amenities, staffing, and price. Park elements include “Trail usage,” or whether a trail is open to all ORVs or dedicated to certain types, and “Variety of park features,” or the park’s selection of specialized terrain (e.g., rocks, mud pits, hills, off-camber terrain). Amenity attributes included the presence/absence of a vehicle wash station with high pressure hose and types of restrooms ranging in level from basic pit toilets to facilities with showers and flush toilets. Though the focus groups emphasized that users would self-enforce rules and thus limit the need for park staffing to regulate use and sanction users, OCPR requested broader input on this and thus it was included as a staffing attribute. This staffing, combined with the considerations of the park elements’ and amenities’ levels, would certainly impact the price of admission and users’ willingness to pay. “Daily entry fee” is correspondingly included as the price attribute.

2.5. Recreation Specialization

Recreation specialization is a multidimensional construct of activity involvement based upon an individual’s behavior, knowledge, skill development, and commitment to the activity [43]. It has been used as a collective measure to understand the motivation and behavior of recreationists in a variety of settings (see [44], for comprehensive lists). To account for the multidimensionality of recreation specialization, researchers have often taken a multiple indicator approach: several survey items are grouped to categorize recreationists as casual, active, or committed [45]. This method of measurement consumes valuable survey space, as up to 24 items are used to determine specialization [46]. From this space constraint and respondent burden realization came the development and refinement of a single-item specialization classification approach. In this, respondents read descriptions
of recreationists at each specialization level and select the one that best describes them (e.g., [45,47,48]). This study used this single-item approach to classify ORV users (Figure 3).

Figure 2. Attributes and levels used in the stated preference choice models.

Figure 3. Recreation specialization levels of ORV users utilized, with descriptions presented to respondents for self-selection of single specialization level.

2.6. Experimental Design

A sequential orthogonal factorial design was used to generate choice sets for a convenience sample pilot study of 42 ORV users in the study area. This pilot study provided parameter estimates then used to generate choice sets with an efficient fractional factorial design using Ngene software. Researchers generated 36 choice sets, which were divided among nine otherwise identical surveys (each with four of the choice sets). Each choice set presented respondents with two hypothetical parks offering different combinations of attributes and attribute levels (Figure 4). For each of the four choice sets presented, respondents chose either one of the two parks or neither.
among nine otherwise identical surveys (each with four of the choice sets). Each choice set presented respondents with two hypothetical parks offering different combinations of attributes and attribute levels (Figure 4). For each of the four choice sets presented, respondents chose either one of the two parks or neither.

Figure 4. Sample choice set.

2.7. Model

SPCM is based on the assumption that individuals taking into account the relative importance of various factors are more likely to choose the option that maximizes these factors’ personal utility. Using SPCM, researchers can ask individuals to make choices about hypothetical park designs with different levels of attributes. According to random utility theory, the utility function can be decomposed into the deterministic and random error components [35]. Utility cannot be estimated directly, due to the random error component encapsulating the effect of unobserved factors on an individual’s choice. Thus, the probability of choice results is used. The indirect utility function of an ORV user across the choice of park “j” can be presented as:

$$U_j = V_j(A) + \varepsilon_j = A\beta + \varepsilon_j$$

where $U_j$ is the utility of choosing ORV park j, $V_j$ is a deterministic component of utility, A is a vector of observed variables relating to alternative j, $\beta$ is a vector of random coefficients, and $\varepsilon_j$ reflects an unobservable error component of utility.

The deterministic utility (V) is assumed to be observed by the researchers, while the random error component ($\varepsilon$) indicates the utility explained by attributes unobserved. Thus, due to the presence of the random error component, the probability that an ORV user chooses park j over alternative i in the choice set M is used:

$$P(i|j \in M) = P(V_i(A) - V_j(A) > \varepsilon_j - \varepsilon_i)$$

This probability depends on the assumption that the error terms ($\varepsilon_j - \varepsilon_i$) are independently and identically distributed (IID) Type 1 extreme values, (the Gumbel distri-
The probability of choosing ORV park \( i \) is given by the following conditional logit model:

\[
P(i | i \in M) = \frac{\exp(V_i)}{\sum_{j=M} \exp(V_j)}
\]

where \( M \) is the set of all park design scenarios included. This model exhibits the independence of irrelevant alternatives (IIA) property, which requires that for a specific individual, the ratio of the probabilities only depends on the two alternatives not being compared on any of the other alternatives [49]. To assess the effectiveness of the proposals based on the reflected changes in the attribute levels of park features and amenities, implicit prices can be calculated once the model is estimated. Therefore, the willingness to pay to use an ORV park given the specific attribute level for each option can be measured to inform the benefits gain or loss. Hanemann [50] suggested that the computation of implicit prices is given by the following:

\[
\frac{1}{\hat{\beta}_{fee}} (V_0 - V_1)
\]

where \( V_0 \) denotes the utility from the initial condition of an ORV park, and \( V_1 \) indicates the utility from the new scenario with the adjusted levels of attributes. Moreover, the attributes can be altered to reflect possible preferences for park design scenarios. Each scenario’s probability of selection was estimated in accordance with Bateman et al. and Blamey et al. [51,52].

3. Results

Of the 4032 surveys mailed to registered ORV users, 97 were returned as undeliverable and 2083 were completed for a 52.9% response rate. Incomplete choice model responses rendered a small number (\( n = 48, 2.3\% \)) of surveys as unusable, but all other items could tolerate variable response rates and retain inclusion (e.g., skipped demographics). Respondents, were largely male (92.3%), white (97.9%), tended to have less education than a four-year degree (75.0%), and were most commonly in the USD 40-80,000 income bracket (38.6%). The average age of respondents was 48.2 years and the majority indicated they live in small towns or rural locales, while a little over one third live in suburbs. Respondents indicated that they had used ORVs recreationally for as many as 55 years (mean = 16.2). Regarding recreation specialization, almost half of respondents (47.4%) indicated that they are “active” ORV users, 35.3% “casual,” and 17.3% “committed.” Oakland County residents accounted for 28.7% of respondents.

The conditional logit model was used to create several preference models for the ORV user groups important to park planners. In these, coefficients and implicit prices for conditional logit model are listed and an alternative specific constant (ASC) was added to represent the unobserved attributes that were not part of the model [53]. For the qualitative attributes, dummy variables were used to help with interpretation of the coefficients.

In the pooled model of all respondents (Table 1), all main coefficients were significant at \( \alpha = 0.05 \) except for “restrooms with showers,” which was not significant in any of the models. Although the implicit prices vary among the different models, the signs of the significant coefficients (positive and negative) are identical for each attribute level in all of the models. This suggests that different ORV user groups do not have conflicting preferences for the examined attributes. However, the differences in implicit prices show that there is variation in the magnitude of those preferences among user groups.

The signs of the coefficients for attributes in the models indicate the direction of user preferences. Respondents prefer trails that are dedicated to their specific type of vehicle (negative coefficient for mixed trail use), while trails that can be used by all vehicle types are considerably less preferred (positive coefficient for dedicated use trails). Similarly, coefficients indicate that respondents prefer a large variety of park features and place less value on a park with little variety of features. Respondents are willing to pay more for a
park with enough staff to enforce the rules and for a park with a vehicle wash station but are willing to pay less for a park that has only porta-potties for restroom facilities.

Table 1. Summary of choice model findings for all respondents (n = 2035).

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level</th>
<th>Coefficients</th>
<th>Implicit Value ($)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC</td>
<td></td>
<td>−3.2716 (0.166)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trails</td>
<td>Mixed Motorized</td>
<td>−0.2590 * (0.034)</td>
<td>−2.34</td>
<td>4.15</td>
</tr>
<tr>
<td></td>
<td>Dedicated Use</td>
<td>0.2009 * (0.033)</td>
<td>1.81</td>
<td></td>
</tr>
<tr>
<td>Park Features</td>
<td>Large Variety</td>
<td>0.2427 * (0.031)</td>
<td>2.19</td>
<td>2.83</td>
</tr>
<tr>
<td></td>
<td>Little Variety</td>
<td>−0.0715 * (0.030)</td>
<td>−0.64</td>
<td></td>
</tr>
<tr>
<td>Staff to Enforce Rules</td>
<td>Yes</td>
<td>0.1594 * (0.027)</td>
<td>1.44</td>
<td>2.88</td>
</tr>
<tr>
<td>Vehicle Wash Station</td>
<td>Yes</td>
<td>0.1897 * (0.031)</td>
<td>1.71</td>
<td>3.42</td>
</tr>
<tr>
<td>Restrooms</td>
<td>Porta-potties</td>
<td>−0.2984 * (0.033)</td>
<td>−2.69</td>
<td>5.07</td>
</tr>
<tr>
<td></td>
<td>Restrooms w/showers</td>
<td>0.2634</td>
<td>2.38</td>
<td></td>
</tr>
<tr>
<td>Daily Fee</td>
<td></td>
<td>−0.1107 * (0.011)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Indicates statistical significance at the 0.05 level.; (Standard error).

Next, Table 2 details coefficients and implicit prices by recreation specialization (casual, active, and committed ORV users). The main coefficients are significant for all three models with the exception of “restrooms with showers” for all models and “porta-potties” for the committed ORV users. The sign of the significant coefficients for all three models are the same, which shows some consistency of preference among the three groups. However, the implicit prices show differences in the strength of those preferences regarding trail usage and park feature variety. The value of the preferred attribute levels and the devaluing of the less preferred attribute levels are more extreme for the committed users, showing stronger levels of preference for the most specialized ORV users. For example, the range between the implicit prices for dedicated-use trails and a trail shared by all vehicle types is USD 8.07 for committed users, whereas it is only USD 4.28 for casual users and USD 3.25 for active users.

Participants were asked to identify the type of ORV they most commonly use. Most respondents indicated they primarily use either ATV, off-road motorcycle, side-by-side, or full-sized vehicles. Some respondents indicated another primary vehicle type, but these were too few to create additional vehicle type categories in the model. Table 3 shows the coefficients and implicit prices for the four conditional logit models created based on vehicle type. With the exception of “restroom with showers,” which again was not significant in any model, all of the main coefficients were significant for the ATV and full-sized vehicle users. The attribute “staff to enforce rules” was not significant for motorcycle users. Only one attribute (large variety of park features) was significant in the side-by-side model. The signs of all significant coefficients again show consistency of preference among users of different vehicle types and the implicit prices show differences in magnitude of those preferences. The implicit prices for ATV users were closest to those of all respondents, which is expected as the largest respondent group (55%). Full-sized vehicle users were willing to pay more than others for a large variety of features and a wash station. The implicit prices for motorcycle users show stronger levels of preference for trail usage. They indicate a willingness to pay USD $6.01 more for a park with dedicated-use trails but would pay USD 4.89 less for a park with shared trails. This represents a range of USD 10.90, compared to ranges of USD 4.34 for ATV users and USD 2.99 for full-sized vehicle users.
**Table 2.** Summary of choice model findings by recreation specialization level.

| Attribute | Level | Casual ($n = 655$) | | Active ($n = 878$) | | Committed ($n = 321$) | |
|-----------|-------|---------------------|----------------------|---------------------|----------------------|----------------------|
|           |       | Coefficients | Implicit Value ($) | Range     | Coefficients | Implicit Value ($) | Range     | Coefficients | Implicit Value ($) | Range     |
| ASC       |       | $-2.87231$ (0.283) | $-3.5671$ (0.242) | $-3.2477$ (0.433) |       |       |       |       |       |       |
| Trails    |       | $-0.2245 *$ (0.059) | $-2.11$ | 4.28 | $-0.2501 *$ (0.050) | $-2.11$ | 3.25 | $-0.3811 *$ (0.093) | $-4.17$ | 8.07 |
|           | Mixed Motorized Use | $0.2308 *$ (0.057) | 2.17 |       | $0.1353 *$ (0.048) | 1.14 |       | $0.3565 *$ (0.088) | 3.90 |       |
| Park Features |       | $0.1393 *$ (0.054) | 1.31 | 2.39 | $0.2771 *$ (0.046) | 2.34 | 3.95 | $0.3723 *$ (0.085) | 4.07 | 6.88 |
|           | Large Variety | $-0.1351 *$ (0.049) | $-1.08$ | $-0.1678 *$ (0.040) | $-1.61$ |       | $-0.3483 *$ (0.047) | $-2.81$ |       |
| Staff to Enforce Rules |       | $0.2225 *$ (0.047) | 2.09 | 4.18 | $0.1639 *$ (0.040) | 1.38 | 2.76 | $0.0000 *$ (0.052) | 0.00 | 0.00 |
| Vehicle Wash Station |       | $0.1216 *$ (0.054) | 1.14 | 2.28 | $0.2457 *$ (0.046) | 2.08 | 4.10 | $0.1914 *$ (0.046) | 1.68 | 3.36 |
| Restrooms |       | $-0.2798 *$ (0.056) | $-2.63$ | 5.53 | $-0.3369 *$ (0.048) | $-2.85$ | 6.04 | $-0.1420$ (0.057) | $-1.55$ | 3.51 |
|           | Porta-potties | $0.3086$ | 2.90 |       | $0.3777$ |       |       | $0.1790$ (0.052) | 1.96 |       |
|           | Restrooms w/showers | $-0.0877 *$ (0.044) | $-0.74$ | 2.54 | $0.2156 *$ (0.079) | $-2.34$ | 5.12 | $-0.2786 *$ (0.085) | $-4.41$ | 6.84 |
| Daily Fee |       | $-0.1065 *$ (0.047) | $-0.1184 *$ (0.047) | $-0.0915 *$ (0.029) |       |       |       |       |       |       |

* Indicates statistical significance at the 0.05 level.; (Standard error).

**Table 3.** Summary of choice model findings by vehicle type.

| Attribute | Level | ATV ($n = 1124$) | Motorcycle ($n = 328$) | Full-Sized ($n = 258$) | Side x Side ($n = 151$) | |
|-----------|-------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|           |       | Coefficients | Implicit Value ($) | Range     | Coefficients | Implicit Value ($) | Range     | Coefficients | Implicit Value ($) | Range     |
| ASC       |       | $-3.2106$ (0.245) | $-2.6987$ (0.424) | $-0.2485$ (0.483) | $-2.2303$ (0.667) |       |       |       |       |       |       |
| Trails    |       | $-0.2284 *$ (0.051) | $-2.35$ | 4.34 | $-0.4497 *$ (0.086) | $-4.89$ | 10.90 | $-0.0938 *$ (0.104) | $-2.17$ | 9.58 |
|           | Mixed Motorized Use | $0.2355 *$ (0.048) | 1.99 |       | $0.5529 *$ (0.085) | 6.01 |       | $0.1547$ (0.096) | 0.82 |       |
| Park Features |       | $0.2154 *$ (0.046) | 1.80 | 2.54 | $0.0759 *$ (0.073) | 2.34 | 5.12 | $-0.2286 *$ (0.088) | $-2.43$ | 6.84 |
|           | Large Variety | $-0.0877 *$ (0.044) | $-0.74$ | 2.54 | $-0.2357 *$ (0.073) | $-2.78$ |       | $-0.2286 *$ (0.088) | $-2.43$ | 6.84 |
| Staff to Enforce Rules |       | $0.1668 *$ (0.040) | 1.41 | 2.82 | $0.0558$ (0.069) | 1.22 | 2.07 | $0.2372 *$ (0.080) | 4.14 | 14.4 |
| Vehicle Wash Station |       | $0.1989 *$ (0.047) | 1.68 | 3.36 | $0.0002 *$ (0.091) | 0.00 | 0.00 | $-0.2931 *$ (0.093) | 2.55 | 5.10 |
| Restrooms |       | $0.3513 *$ (0.048) | $-2.96$ | 5.59 | $-0.2255 *$ (0.082) | $-2.45$ | 2.90 | $-0.0766 *$ (0.098) | $-2.45$ | 5.56 |
|           | Porta-potties | $0.3115$ | 2.63 |       | $0.0486$ | 0.45 |       | $-0.1147$ | 3.11 |       |
|           | Restrooms w/showers | $-0.0919 *$ (0.028) | $-0.2485 *$ (0.032) | $-0.0349$ (0.044) |       |       |       |       |       |       |

* Indicates statistical significance at the 0.05 level.; (Standard error).
Table 4 shows the coefficients and implicit prices for two models based on county residency: Oakland County or other counties. OCPR was interested in knowing if residents, who would have less distance to travel and may likely use the park more often, have different preferences than those who may travel further to the park less frequently, but provide the economic benefit of visitor spending at Oakland County businesses. All of the main coefficients were significant in both models. Although the implicit prices are similar for both groups, residents showed a greater preference for a variety of features than non-residents, perhaps reflecting that they might use the park more frequently and would therefore appreciate a greater variety of features.

Table 4. Summary of choice model findings for residents and non-residents.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level</th>
<th>Residents (n = 585)</th>
<th></th>
<th>Non-Residents (n = 1450)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients</td>
<td>Implicit Value ($)</td>
<td>Range</td>
<td>Coefficients</td>
<td>Implicit Value ($)</td>
</tr>
<tr>
<td>ASC</td>
<td>−3.2346 (0.231)</td>
<td>3.2946 (0.41)</td>
<td></td>
<td>−0.2645 (0.049)</td>
<td>2.27 (0.48)</td>
</tr>
<tr>
<td>Trails</td>
<td>Mixed Motorized</td>
<td>−0.2493 * (0.049)</td>
<td>−2.39</td>
<td>4.00</td>
<td>−0.2645 * (0.049)</td>
</tr>
<tr>
<td></td>
<td>Dedicated Use</td>
<td>0.1677 * (0.046)</td>
<td>1.61</td>
<td></td>
<td>0.2345 * (0.048)</td>
</tr>
<tr>
<td>Park Features</td>
<td>Large Variety</td>
<td>0.2682 * (0.044)</td>
<td>2.58</td>
<td>4.63</td>
<td>0.2149 * (0.046)</td>
</tr>
<tr>
<td></td>
<td>Little Variety</td>
<td>−0.2132 * (0.0416)</td>
<td>−0.205</td>
<td>2.94</td>
<td>−0.1274 * (0.043)</td>
</tr>
<tr>
<td>Staff to Enforce</td>
<td>Yes</td>
<td>0.1968 * (0.038)</td>
<td>1.89</td>
<td>3.78</td>
<td>0.1203 * (0.040)</td>
</tr>
<tr>
<td>Rules</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Wash</td>
<td>Yes</td>
<td>0.1832 * (0.045)</td>
<td>1.76</td>
<td>3.52</td>
<td>0.1931 * (0.046)</td>
</tr>
<tr>
<td>Station</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restrooms</td>
<td>Porta-potties</td>
<td>−0.2720 * (0.046)</td>
<td>−2.61</td>
<td>5.39</td>
<td>−0.3253 * (0.047)</td>
</tr>
<tr>
<td></td>
<td>Restrooms w/showers</td>
<td>0.2893</td>
<td>2.78</td>
<td></td>
<td>0.4130</td>
</tr>
<tr>
<td>Daily Fee</td>
<td>−0.1041161 * (0.016)</td>
<td></td>
<td></td>
<td>−0.1165 * (0.016)</td>
<td></td>
</tr>
</tbody>
</table>

* Indicates statistical significance at the 0.05 level.; (Standard error).

4. Discussion

This study was conducted at the request of planners from a county park system that was in the early phases of developing a new ORV park. Planners wanted data about potential users to inform decisions about the design of this park. Although there were many supporters of a new ORV park, many others were strongly opposed. Adding to the political nature of this park were pressures from county government leaders to ensure it would be financially self-sustaining. These factors put pressure on park planners to ensure the park would sustain enough interest and demand at prices that would at least cover operating expenses. Additionally, park planners wanted data segmented by user groups, to explore differences in design preferences and take a more thoughtful approach to designing the park with specific user groups in mind.

Financial constraints and finite space at the proposed park site forced design limits on the new park’s development. These limits required a research design examining user preferences, while still accounting for inherent trade-offs: investment in some features/amenities would necessitate denial of others. The SPCM is appropriate for this context as it examines...
subjects’ valuation of various features and amenities of a hypothetical park, while forcing trade-offs between attribute levels.

Our approach and findings highlight why detailed information at this stage of park planning is crucial to both sophisticated research methods and on-the-ground practicality. This discussion focuses on three key, interrelated points stemming from the data presented and the subsequent use of these data by OCPR. First, our advice to park planning to include specific, diverse features appears to have resulted in initial success in the park development and early years of operation. Second, the segmented approach to examining findings allowed us to consider the preferences of specific groups and compare those results to the average. There are no average ORV recreationists, and we need robust methods and analyses to parse differences that averages obscure and that focus/advisory groups alone may not surface. Third, in the time since this study was conducted, park planners and managers have noticed unanticipated user segmentations whose preferences have a greater impact on park design. The following elaborates on each of these three main points.

4.1. Informing Park Design

Figure 5 summarizes the range of implicit values between the lowest and highest levels of each attribute for all respondents and by user group segmentation. Plotting the differences between these levels for each attribute depicts the perceived attractiveness of enhanced versus lower levels of attributes. It also allows for a relative comparison of where there is more or less congruence among perceptions by different user groups. Looking across the attributes and user groups highlights descriptive patterns for particular user group delineations, specific user groups, and attribute comparisons. A few key observations about these data are noted below.

Overall, all users prefer trails in the park to be of mostly dedicated use, but motorcyclists and committed users especially value this feature (at least twice as much as the other user types), while the full-size vehicle users have the least pronounced preference (i.e., most ambivalence).

As for the variety of park features, all users overall prefer a large variety, with the importance of this feature (and a willingness to pay for it) most clearly pronounced by side-by-side users, followed then by committed users, full-size users, and motorcyclists. It is of least importance to casual and non-resident users.

The vehicle wash option is particularly important to side-by-side users (who are willing to pay almost three times more than the average respondent for a park equipped with such a feature), followed by full-size users. Motorcyclists, conversely, do not place any value in this feature, and casual users place the second least. Overall, all users feel strongly about having modern restroom facilities with flush toilets. This feature is most valued by non-resident visitors and the active users.

Lastly, the presence of staff to enforce rules is most valued by side-by-side users, followed by full-size users and casual users. It is of lesser value to motorcyclists and non-residents and not of any value to committed users. The overall preference for staff to enforce rules was an especially informative finding for the park planners, as the focus group participants had emphasized that the park system could save operating costs on staffing because ORV riders have a strong culture of rule self-enforcement. This result underscores the importance of using multiple methods to obtain user preferences when informing design.
4.2. Potential Issues with Designing to the Average

This study—and the resulting planning and design of the ORV park—speaks to the importance of matching research design to the complexity of park planning. In this work, we used a more sensitive and integrated method (SPCM, with attributes examined in tandem) than the single-item Likert scale responses (attributes examined in isolation), attempting to capture the reality of park planning choices. Similarly, we have presented information not just on the average responses to the attributes in the SPCM, but also detailing the preferences of specific segments of the likely user groups. Capturing these subtleties of recreation preferences at the park planning stage provides nuanced utility for park managers, particularly in deciding which features, and diversity of features, to prioritize. Examining these trade-offs in both a multi-attribute way and by specific user groups provides greater opportunity to create a suite of ORV park features that meet the preferences of actual diverse users rather than a hypothetical average ORV recreationist. In this way, the planning process has a greater chance of success financially and socially.

As depicted in Figure 5, the preferences of all respondents combined (i.e., the sample average) appear near the middle of each attribute column, but some user segments vary significantly from these midpoints. A park designed for the “average user” might result in a park that is less appealing to all users. Identifying differences among user segments can
help planners to consider, and make informed decisions about, groups to whom the park should be targeted. In this case, however, the user group that responded in the greatest number, ATV users (n = 1124 or 60.4%), are very close to the average, and might therefore be satisfied with a park designed to the average user’s preferences. However, here too, caution must be taken when interpreting such results.

Naturally, the vehicle types with the highest number of responses will be closer to the overall average, because of their influence on the average. However, we do not know whether these respondents are truly the largest user group in the likely user population or if some other factor could be responsible for the relatively high number of responses from this segment. For instance, researchers were pleasantly surprised by the overall response rate of 52.9%, which was higher than expected for a relatively long and unsolicited questionnaire sent to a random sample by mail.

When researchers reported study findings to the OCPR and DNR, a number of focus group participants were present, as they are also part of a DNR ORV advisory group. When we reported the high survey response rate, we learned that the various ORV clubs in the state encouraged members to complete the survey if they received one. Many ORV users belong to clubs that align with their vehicle type (e.g., clubs for motorcycle riders, jeeps, or ATV users). These clubs were aware of the potential ORV park and therefore wanted to influence the design of the park. It is possible that some of these clubs have higher membership numbers, did a better job communicating about the survey to their members, or more effectively harnessed related issues and enthusiasm into strong participation. If so, these factors might explain higher numbers of respondents for certain ORV types. It is equally possible that response rates per vehicle type segment match perfectly with the population, but the caution in interpreting the results is similar to that of the focus groups.

Planning studies are an important tool in designing a park that will be enjoyed and used by residents and visitors. However, if a particular vehicle user group is overrepresented in the survey, results might skew toward that group, potentially influencing a park design that favors a minority of users. This work spotlighted that planning consideration in nuanced and actionable ways.

4.3. Unanticipated User Segments

Researchers decided to examine segments of ORV users based on vehicle type after the focus groups revealed that preferences for the studied features and amenities vary by vehicle type. This segmentation approach is further supported by the literature (e.g., [54,55]). As results of the present study show, there were indeed preference differences based on vehicle type. For example, motorcyclists had much stronger preferences for dedicated use trails and side-by-side users showed stronger preferences for a high variety of park features.

Although the park has only been operational for a short time, and that entire time within the COVID-19 pandemic, park managers have noted that the actual differences in preferences seem to be based less on vehicle type and more on riding styles. For example, some park users prefer sections that allow for unidirectional travel and higher speed, whereas others prefer obstacles and off-camber sections that require a slower more technical approach. Reports from park managers suggest these styles are not correlated to vehicle type.

Park administrators also report that feedback from park users through focus groups, evaluations, letters, and conversations have indicated that park users appreciate that the park was designed for users who have different riding/driving styles. Many ORV users visit the park with others (e.g., family members, friends, or ORV club members). However, not all members of these groups have the same riding/driving style. In fact, the park’s proximity to the Detroit metropolitan region, with its high population density, almost ensures that groups visiting the park will have diversity of styles, abilities, and commitment. Therefore, a park that accommodates different riding styles can allow group members to use the park in the way that they most prefer while still socializing with a diversity of others. So impactful was this observation, that when OCPR developed a new
section of the park, it intentionally designed it so that users who have different styles of riding/driving would have a better chance of encountering each other at various times during their visit. Future studies that segment ORV users might consider doing so based on riding/driving style preferences. Obviously, understanding more about user riding style preferences would provide valuable insights to the initial design of an ORV park.

Similar to riding style, OCPR has realized the importance of the segmentation by recreation specialization. It is common for experienced and committed participants in any recreational activities, particularly ones in which club membership is common as with ORV use, to invite less committed people into their activity. Therefore, if the park planners are informed about preferences of different specialization levels and allow these preferences to inform park design, groups visiting the park with diverse levels of recreation specialization will find something for everyone. Again, positive feedback to OCPR from users indicates that in addition to different riding styles, groups of people of different ability levels can all find something to challenge themselves at this park.

4.4. Limitations

Although this study offers important contributions to park design (e.g., eliciting park preferences from potential users, doing so before the design stage, gathering information about specific attributes, and forcing trade-offs among those attributes), it is important to understand that the stated preference method is inherently a hypothetical experiment. Participants do not have to demonstrate their valuation of park features (e.g., make actual purchase decision), but merely choose from mixes of park attributes at certain prices without financial consequences.

Because the study was related to the development of a potential park that would likely be developed based on their responses, it is possible that responses were influenced by strategic behavior. In fact, the relatively high response rate could be an indication that users encouraged other like-minded users to complete the survey if they were sampled.

Additionally, despite using a segmentation approach to better understand different groups of users (e.g., locals, ATV users, committed users), the study method treats each group of respondents in those categories as a single population with homogeneous preferences. However, users within each group likely have different preferences.

From the perspective of understanding ORV users, another major limitation of this study is that is asked users specifically about their preferences for an ORV park. Since there are few ORV parks, especially in the region where the study was conducted, users might not have truly known their preferences if their experience has been limited to using ORVs on farms, on the vast network of trails throughout northern Michigan, or on public lands in the western US. Finally, as our sample was limited to people who had registered their ORVs in Michigan, results of this study cannot be generalized to other regions.

5. Conclusions

In general, preemptively identifying preferences of potential users can help ensure a more successful outcome for creating a park or any attraction—be it in Midwest region of the US, or elsewhere. A “consumer-informed” approach to design is more likely to result in a park that is used and reused, thereby reducing the risk to investors, planners, and host communities of possible park locations.

This study can serve as a research model for other landscape and urban attractions that are in the planning stages and offers insights to interpreting any research of consumers. Using the stated preference choice model to inform the design of public capital projects increases the likelihood of the researchers capturing the realistic preference trade-offs inherent in such projects. Taking a segmentation approach to analysis can provide planners with information to help them design an attraction to a thoughtfully targeted group, while offsetting the risk of designing an attraction that is not fully embraced by any segment because it was designed to a non-existent average user. Designing an attraction that attracts and retains users will consequently lead to a more successful project, decreasing
the demand on tax revenues to subsidize operating costs while increasing the likelihood of support for future worthwhile projects.

**Author Contributions:** Conceptualization, D.M. and J.N.; funding acquisition, D.M. and J.N.; methodology, D.M. and J.S.; software, J.S. and D.M.; validation, J.S. and D.M.; formal analysis, J.S. and D.M.; investigation, D.M. and J.S.; data curation, J.S.; writing—original draft preparation, D.M., T.A.I., E.E.P., J.S. and J.N.; writing—review and editing, D.M., E.E.P., T.A.I. and J.S.; project administration, D.M.; All authors have read and agreed to the published version of the manuscript.

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**Institutional Review Board Statement:** All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of Michigan State University (Project identification code: IRB#X12-1176).

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**Conflicts of Interest:** The authors declare no conflict of interest.

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