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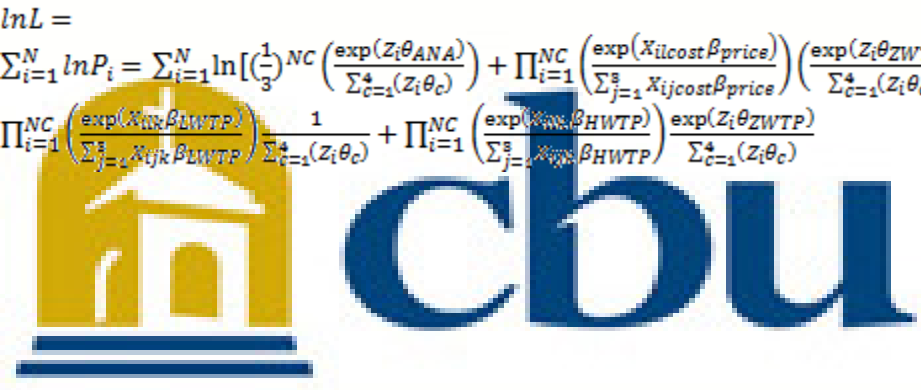
**THE HETEROGENEITY OF RESIDENTS' PREFERENCE OVER A WIDE ARRAY OF SERVICES,  
PROVIDED BY A MASTER PLANNED COMMUNITY (MPC)**

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***Selected Paper prepared for presentation at the 2017 Agricultural & Applied Economics Association  
Annual Meeting, Chicago, Illinois, July 30-August 1***

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# The Heterogeneity of Residents' Preference Over a Wide Array of Services, Provided by a Master Planned Community (MPC)

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## 1. Introduction

A. Urban sprawl has occurred over 90 years in the US (Brueckner, 2000).

B. Known causes of urban sprawl include recent population and economic growth, along with lack of affordable housing in cities, demand for larger living spaces, advances in transportation, changes in people's preferences for lifestyle, just to name a few (Bhatta, 2010).

C. Regional urban scientists and policy makers are well aware that this continual growth cannot be supported solely by limited land and capital resources in the Metropolitan areas. If urban expansion is inevitable, then the second best solution is to promote smart growth, in a way that minimizes social and environmental concerns while still maximizing the benefits associated with it.

D. There is a growing body of literature on master planned communities. One body of studies explores the function of master planned communities as a regulator of urban sprawl (Rosenblatt et al, 2009; Tian et al, 2016), while another body of literature investigates the type, the pattern, or the characteristics of master planned communities (Cervero, 1995; Stumer & Siembieda, 2012). While such information is important both for understanding and managing urban sprawl, it is not sufficient. To determine the optimal effort to commit to developing more effective and sustainable urban development, it is necessary to assess and understand the relative importance of MPC driven attributes as perceived by residents.

## 2. Methodology

- A. The study utilizes discrete choice method (McFadden, 1974) – to explore residents' preferences of a packages of services provided by MPC
- B. Latent class model with attribute non-attendance (Yoo and Ready, 2014) is estimated to explore the impact of socio-economic characteristics and attitude toward MPC on residents' preferences for services provided by MPC.
- C. We estimate three class model – (1) Attribute non-attendance class, (2) Low WTP class, and (3) High WTP class.
- D. The log-likelihood function for LCM (Yoo and Ready, 2014) is expressed as follows:

$$LnL = \sum_{i=1}^N \ln\left[\left(\frac{1}{3}\right)^{NC} \left(\frac{\exp(Z_i Y_{ANA})}{\sum_{c=1}^4 (Z_i Y_c)}\right) + \prod_{i=1}^{NC} \left(\frac{\exp(X_{ilk} \beta_{LWTP})}{\sum_{j=1}^s X_{ijk} \beta_{LWTP}}\right) \left(\frac{1}{\sum_{c=1}^4 (Z_i Y_c)}\right) + \prod_{i=1}^{NC} \left(\frac{\exp(X_{ilk} \beta_{HWTP})}{\sum_{j=1}^s X_{ijk} \beta_{HWTP}}\right) \left(\frac{\exp(Z_i Y_{HWTP})}{\sum_{c=1}^4 (Z_i Y_c)}\right)\right]$$

## 3. Survey Questionnaire

Scenario 1: Please select your preferred type of community among three options, and check the box in "my preferred option"

Attribute/Service	Conventional Communities	Master Planned Communities A	Master Planned Communities B
<b>Access to Natural Park and Its Amenities:</b>	There is no natural park within a 1 mile radius of your house	A natural park exists within a 1 mile radius of your house, which has the following mix of amenities Jogging trails – Yes Kids Playground – Yes Lake – No	A natural park exists within a 1 mile radius of your house, which has the following mix of amenities Jogging trails – No Kids Playground – Yes Lake – No
<b>Access to HOA Community</b>	No HOA community	There is a HOA community within 1 mile radius of your house, which has the following mix of amenities. Swimming pool – Yes Fitness center – No Clubhouse – No	There is a HOA community within 1 mile radius of your house, which has the following mix of amenities. Swimming pool – Yes Fitness center – Yes Clubhouse – Yes
<b>Landscape Aesthetics:</b>	Less than 10% of green space within 1 mile radius of your home that is well maintained	Between 51-70% of green space within 1 mile radius of your home that is well maintained	Less than 10% of green space within 1 mile radius of your home that is well maintained
<b>Social Gatherings:</b>	No HOA- sponsored social events	More than 5 HOA- sponsored social events a year	3-4 HOA- sponsored social events a year
<b>Supplemental Property Taxes</b>	Your household would pay \$10 more/month	Your household would pay \$30 more/month	Your household would pay \$120 more/month
<b>My Preferred Option</b>			

Attribute	Description	Level	Baseline Level
Access to Natural Park & Amenity	Mix of amenities within a 1 mile radius of your house	4 levels	There is no natural park within a 1 mile radius of your house
Access to HOA community	Mix of amenities within 1 mile radius of your house	4 levels	No HOA community
Landscape Aesthetic	Percentage of green space within 1 mile radius of your home that is well maintained	4 levels	Less than 10% of green space within 1 mile radius of your home that is well maintained
Social Gatherings	Number of HOA- sponsored events a year	4 levels	No HOA- sponsored social events
Supplemental Property Taxes	The amount of supplemental property taxes a household pay a month	5 levels	Your household would pay \$10 more/month

## 4. Result

Variable	MNL Model	3-Class LCM	
		Low Willingness Pay Class (LWTP)	High Willingness Pay Class (HWTP)
Access to Natural Park & Amenity			
Access to HOA Community			
Landscape Aesthetic			
Social Gathering			
Property Taxes			
Attitudinal & Demographic Characteristics			
Log-likelihood			

## 6. Conclusion

## 7. Reference

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