

# Factor Influencing Public Participation in Urban Agriculture in Malaysia

Golnaz Rezai, Mad Nasir Shamsudin, Zainalabidin Mohamed and Juwaidah Sharifuddin

**Abstract**— As population grows, the need to provide more jobs and food are becoming more complex both economically and physically. Urban agriculture has drawn much attention in Malaysia to tackle problems caused by population growth, urbanization and food scarcity. This interest in urban agriculture in the country has set the scene to explore factors influencing public involvement in it. To gather information for this study a total of 640 households were interviewed via a structured questionnaire. Exploratory factor analysis was carried out and the results show that society recognition, attitude and the social impact of urban agriculture are the top three considerations for individuals participating in urban agricultural activities.

**Keywords**—urban agriculture, public participation, exploratory factor analysis, Malaysia

## I. Introduction

A food system approaches to food security challenges as a result of urbanizations [4] and in a face of an increasing urban poverty, population and unemployment rate urban agriculture may have a role in addressing urban food insecurity problems [15]. Urban agriculture is defined as the production of crops and livestock beyond strictly for home consumption or educational purpose within urban areas [11]. In Malaysia, the urban population growth will reach to 75% by the year of 2020 [12] and [7] and the country has faced an annual percentage increase in the cost of imported food and beverages from RM 12.69 million (2003) to RM 23.37 million (2007) [1]. Therefore can be no doubt that urban agriculture can play a key role in the livelihood strategies of urban households in Malaysia. However the public understanding of the importance of urban agriculture has brought with it the reason

to explore the factor affecting public participation in urban agriculture in Malaysia.

### A. *The Social, Economic and Health Impact of Urban Agriculture*

Urban agriculture can go beyond the scope of “growing food” [6]. From being classified as a hobby it can create entrepreneurial traits [18]. Moving beyond beautifications, urban agriculture can create self-reliance, self-esteem and career and education opportunities for youth [12] and [10].

One distinction that is often made in literature is to the extent which urban agriculture can be an effective way to secure and access to food [5]; [9] and [3]. Particularly in developing countries, there is a close connection between urban agriculture activities and food and water security [12]; and [2]. Urban agriculture can increase the accessibility of the household to a larger number of nutritionally rich foods such as fresh fruits, vegetables and meat [16] which can also develop healthy and varied diet [5]. There are also evidences that by expanding the market urban agriculture can be a source of income for the dwellers by reducing food expenditure and adding value to their lands [8] and [11].

Despite the concern about positive impacts of urban agriculture, there is also a need to study factors affecting public participation in order to lead the policies to encourage Malaysian involvement in urban agriculture. Given a paucity of research, this study was conducted to uncover the factors influencing public participation in urban agriculture in Malaysia.

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## II. Methodology

A survey was conducted in Klang Valley in 2014, where 640 respondents were interviewed via structured questionnaire to determine the influential factors that cause their participation in urban agricultural activities. The households in Klang Valley were interviewed face to face and selected systematically and randomly in 2 stages. In the first stage, from the list of district in Klang Valley, the 5 most populated one were selected and after that in each district the cities were randomly selected. Finally in each residential area the households were selected based on the sampling interval.

The questionnaire was purposely designed based on the research objectives and it was divided into 2 sections. The first part of the questionnaire included the statements measuring the respondents' knowledge, attitudes and values about urban agriculture using a seven-point scale (ranging from 1-7) where 1= strongly disagree and 7= strongly agree. Finally relevant socio-demographic variables such as ethnic group, age, gender, residential area, marital status and income level were asked in the second part. To accomplish the objectives of the study, internal reliability consistency of multi-items including knowledge, attitude, and values were measured using Cronbach's alpha. Further the descriptive analysis followed by factor analysis were employed to group the set of variables into major latent factors that influence public participation in urban agricultural activities.

## III. Results and Discussion

The Cronbach's alpha value for the statements from the first section of questionnaire was 0.829 and it shows that there is internal consistency among the questionnaire's items.

Table I presents the socio-demographic profile of the respondents. Majority of the respondents are from urban area (62.9%, 403) and more than 50% of respondents are female (58.9%, 377). In term of race, 40% of respondents are Malay, followed by 34% Chinese, Indian 19.6% and other races are 6.4%. Most of the respondents (76.9%) have received tertiary education and are married (61.2%). The majority of the respondents interviewed between 26- 35 year old (39.1%, 250) with the income level RM 3001- RM4500 (46.6%, 297).

TABLE I. SOCIO-DEMOGRAPHIC PROFILE OF RESPONDENTS (N=640)

Characteristic	Frequency	Percentage
<b>Residential area</b>		
Urban	403	62.9
Suburb	237	37.1
<b>Gender</b>		
Male	263	41.1
Female	377	58.9
<b>Race</b>		
Malay	256	40
Chinese	218	34
Indian	126	19.6
Others	40	6.4

<b>Education level</b>		
Primary	30	4.7
Secondary	101	15.8
Tertiary	509	79.6
<b>Marital Status</b>		
Single	249	38.8
Married	391	61.2
<b>Age</b>		
Below 25	53	9.6
26-35	250	39.1
36-45	148	23.1
46 and above	189	28.2
<b>Household Size</b>		
1 to 3	110	17.3
4 to 5	341	53.3
Above 6	189	29.3
<b>Income (RM)</b>		
Below 1500	21	3.3
1501-3000	262	40.9
3001-4500	297	46.4
Above 4500	60	9.3

Next, exploratory factor analysis was carried out to identify underlying factors influencing public participation in urban agriculture in Malaysia. Kaiser-Meyer-Olkin value was 0.922, exceeding the recommended value of 0.60 (Kaiser, 1974) and Bartlett's Test of Sphericity achieved statistical significance ( $p = 0.000$ ) indicating the factor analysis is appropriate for this study. Principle component analysis with varimax and promax rotation method was conducted on the 35 statements relating the factors influencing their participation in urban agriculture. The factor analysis identifies six latent factors which explain the urban agriculture participation dimensions among Malaysians in Klang Valley. The six factors account 73.215% of the total variance (Table II). The results of factor analysis show that the participation in urban agriculture is characterized by 6 factors: society recognition, attitude, social impact, economic impact, health impact of urban agriculture and knowledge. Each factor collects a number of items indicating the respondents' general attitude, moral belief and knowledge. A high score on the first factor (society recognition) indicates that the influences from the society place high level of importance on respondents' involvement in urban agricultural activities. Respondents' attitude plays a robust role in their participation in urban agriculture. As depicted in Table 2, the social, economic and health values of urban agriculture are rated as the dimensions of participation in urban agriculture. Results of this study revealed that society recognition, respondents' attitude and knowledge along with the values of urban agriculture influence respondents' involvement in this activity.

TABLE II. DIMENSIONS OF PUBLIC PARTICIPATION IN URBAN AGRICULTURE

Items	Factor Loading					
	F1	F2	F3	F4	F5	F6
<b>Society Recognition</b>						
My social cycle encourage me to practice urban agriculture.	0.788					
Most of the people who are important to me, believe that urban agriculture is essential.	0.787					
The society will see me as a better person, if I practice urban agriculture.	0.780					
Urban agriculture can develop social interaction.	0.760					
People who are important to me think that I should get involved in urban agriculture.	0.758					
Variance Explained	31.542					
<b>Attitude</b>						
Practicing urban agriculture will make me get closer to the tradition.		0.853				
Practicing urban agriculture is pleasant.		0.842				
I believe in practicing urban agriculture as a hobby.		0.814				
To me, urban agriculture is easy to practice.		0.758				
Variance Explained		11.292				
<b>Social Impact (Values)</b>						
Urban agriculture is a good response to food and water scarcity.			0.851			
Urban agriculture can increase food security level.			0.840			
Urban agriculture is an effective way to access food.			0.805			
Urban agriculture is involved in urban poverty reduction.			0.736			
Variance Explained			10.170			
<b>Economic Impact</b>						
Urban agriculture can create more job opportunities.				0.892		
Urban agriculture can build an innovation driven economy.				0.860		
Urban agriculture can reduce cost of importing fresh food.				0.755		
Variance Explained				9.349		
<b>Health Impact</b>						
Urban agriculture can enhance healthy eating.					0.822	
Home-based product consumption is healthier.					0.808	
Variance Explained					5.715	
<b>Knowledge</b>						
I think I am comparatively well-informed about urban agriculture						0.872
Though I have not practiced urban agriculture, I am a quasi-expert regarding this activity						0.755
Variance Explained						5.147
<b>Total percentage of variance</b>						73.215

#### iv. Conclusion

The aim of this study was to identify the key factors that influence public involvement in urban agricultural activities in Malaysia. Overall six underlying factors have been identified to explain the different dimensions of individual participation in urban agriculture. These factors, which are closely consistent with the past studies, are society recognition, attitude, social impact, economic impact, health impact and knowledge. The social, economic and health impacts of urban agriculture are in line with previous research by [12], [5], [16] and [8] and the role of attitude and knowledge are supported by [17] and [18].

The current research has extended the literature by demonstrating the role of society's participation in urban agriculture. The ways respondents' social cycle view and judge them will directly influence their involvement in urban agricultural activities. This study reveals that urban agriculture portrays several opportunities such as employment, income, and health and food security in Malaysia. Therefore deeper insight into the social, economic and health impact of urban agriculture can build a strong and convincing purpose for Malaysians to get more involved in it.

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