

Investigating the Influence of Gender on Barriers towards Effective Public Participation for Land Use Planning in Malaysia

Amirulikhshan Zolkafli

School of Government,

College of Law, Government and International Studies,

Universiti Utara Malaysia

Corresponding author: amirulikhshan@uum.edu.my

ABSTRACT

Scholars have identified factors like lack of knowledge, lack of effort from the authorities, public's attitude, trust issues and exclusion from participation process as the common barriers to effective public participation. The purpose of this study was to examine from the gender context, its impact on the barriers to public participation. An integrated web-based Participatory mapping and text-based survey was administered in Perlis, Malaysia. The results indicate that gender does not influence barrier in public participation for land use planning. Only the results on exclusion from participation process indicate that male have positive impact compared to female respondents. These are important findings for developing countries with historically low levels of public participation and low public awareness and knowledge of planning.

Keywords: *Participatory GIS, gender, land use planning, public participation.*

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INTRODUCTION

Public participation has been touted to have significantly benefit individuals, communities, and society. As for the authorities, public participation enables them to make decisions that meet the stakeholders' needs and gain support from the public (Churchman & Sadan, 2004). Assessing the publics' knowledge, attitudes, and behaviors toward public participation is crucial as such information can be used to provide a scientific basis for constituting public participation policy and improving the decision-making system.

Support and direct involvement from the public in the decision-making process is essential to ensure a successful planning outcome (Maidin, 2011). It also helps to broaden public awareness of government planning initiatives and provide opportunities for the public to be part of the decision-making process (Fonseca, 1995), which would demonstrate a high degree of democracy within a government system where the voice of the people is vital and unavoidable (Maidin, 2011). To assist in this democratic process, geographers, planners, and community organizations began to adopt GIS technology for local decision-making processes (Ganapati, 2010, p. 449). Technology advancement in the form of Participatory GIS (PGIS) has emerged as a set of tools and methods for gathering quality information from the general public to increase the effectiveness of public participation in land use planning (Zolkafli, Brown, & Liu, 2017). To a certain extent, it helps to reduce the limitations and barriers pertaining to the traditional public participation approach.

Barriers to Public Participation in Land Use Planning

Though efforts to increase public participation is spreading rapidly, there were significant evidence that this effort is not successful (King et al., 1998). Petts (2003) argued that it has still been subject to considerable controversy even though scholars have widely discussed the importance public participation and its advantages. There are various factors that act as barriers to effective participation. Scholars have classified barriers to public participation into three groups namely individual, legislative, and structural barriers (Petts, 2003; Creighton, 2005).

Individual barriers are constraints associated to a personal perception regarding the issue or the proposed project. Time and cost factors were frequently cited together since the process usually involves many parties and stakeholders. This requires a large amount of money and ample allocated time. Thus, spending the time on public participation is costly. This is a significant factor in circumstances where the organizers, either the government or the project proponent, have insufficient funding to support their activities. Generally, well-educated people are more likely than poorly educated people to take part in public participation processes. In particular, when the participation process is relevant to technical and specific issues, well-educated people usually take more responsibility to become involved and make more contributions to the process (Beierle & Konisky, 1999).

Institutional settings are synonym to structural barriers where different countries with various systems provides different types of opportunities for

the public to participate with certain countries define public participation process in a different way. For example, in Australia the public were given opportunities to support or oppose decisions that have environmental impact (Wood, 1993; Gross, 2007). However, the Turkish government has a strong centralist institution and its administration does not promote public feedback or two-way communication with the public (Tosun, 2006). Dukeshire and Thurlow (2002) argued that the absence of “learning mechanism” within the government could result from the lack of communication opportunity for both government and rural communities which evidently causing frustration for both parties.

Legislative barriers are constraints relevant to legislative framework and guidelines on how to administer public participation. Unclear wording and procedures add to ambiguity to legislation related to public participation which scholars have criticized as the cause for authorities’ failure to provide effective public involvement programs (Maidin, 2011). Okello et al. (2009) articulated similar argument that inconsistent legal frameworks create confusion amongst the implementers, which leads to difficulties with interpretation and poor practice.

The authorities and developers is seeking to legitimize their actions by establishing more direct and accountable public participation with the public. However, not all parties have recognized the benefits of participation while some view it as a threat to their authority (Churchman & Sadan, 2004; Tang et al., 2008). Brown (2012) claimed that the authorities think that lay public are not competent to take part in the decision-making process due to the complexity of the problems and having no formal knowledge. The authorities also believed that with relevant education, they have the ability to make subjective decision while normal people may make an objective decision based their personal interest (Churchman & Sadan, 2004).

Evidence from previous studies indicates low levels of public involvement in land use planning in Malaysia. A study of participation between 2001 and 2009 showed that only 1 to 12% of the residents visited the Local Plan exhibition and 1 to 8% of the residents visited the Structure Plan exhibition (Town and Country Planning, 2009). A recent study reported that less than 40% of respondents were involved in any development plans or improvements in service delivery by local authorities with on 35% were involved in public hearings for local plans (Muhammad et al., 2015).

Findings from a recent study by Zolkafli, Liu and Brown (2017) revealed general consistency between lay and expert knowledge regarding the barriers

to effective participation. Both planners and the public agreed that current participation techniques used by the planning authorities were ineffective, and failed to increase public awareness and engagement with the planning process. Survey data from the public also point to the existence of an indifferent public attitude toward the planning process underpinned by a belief that planning authorities do not put sufficient effort into engaging the public. Most of the planners acknowledged that the current public participation process needed to improve to provide more opportunities for the public to influence the decision-making process. For its part, the public wanted the planning authorities to provide more information about land use planning. Results from the study by were consistent with the studies by Tosun (2000) and Marzuki et al. (2012) wherein public participation processes in developing countries face structural and operational problems, making it challenging for local residents to effectively communicate their knowledge in the planning process.

These studies have implied that the public participation for land use planning has not been effective due to the lack of detailed information, lack of public awareness, limited government initiatives to promote effective participation (Omar & Leh, 2009) vague legislation and loose enforcement of public participation (Maidin, 2011; Marzuki, Hay, & James, 2012) contribute to structural and operational shortcomings of the public participation process (Dola & Mijan, 2006; Marzuki et al., 2012; Kawasmila & Songorwa, 2009). This suggest that the existing participation approach was merely “tokenism” (Arnstein, 1969), as it is often regarded as a one-way communication approach. In this study, the researcher argue that the demographic factor like different gender contribute to different level of participation process that is passive and non-spatial in nature. Further, little research has been done to demystify the gender influence different types of barriers to effective participation.

Previous Studies on Demographic and Gender Factors

In environmental context, the effects of demographic factors on environmental attitudes have been empirically examined since the 1970s. Environmental attitude has been associated with various variables such as age, gender, income, education, and political ideology (Goksen et al., 2001; Struch et al. 2002). The literature suggests that age and education were two of the most important explanatory variables related to environmental attitudes. They pointed out that education was typically positively associated with

environmental attitudes. Environmental knowledge and education were closely associated with each other. An understanding of modern environmental issues requires a high level of environmental knowledge, and the likelihood of high environmental knowledge is correlated with a high level of education (Inglehart 1995; Arcury 1990). Early studies also indicated that gender, residence, income, and political tendency were predictors of environmental attitudes (Buttel & Flinn 1978). Many investigations discussed the effect of gender on environmental attitudes. However, the corresponding findings were inconsistent and even contradictory. Studies indicated that women were more concerned about the environment than men “due to biospheric orientation” (Diamond & Orenstein, 1990).

In planning context, national and regional planners tend to ignore the importance of the demographic characteristics and their influence on regional economies (Disanayaka & Kaluthantri, 2007). They further stated that information on peoples’ behavioral pattern is primarily determined by their demographic characteristics. In accommodating all the individuals of a city, planners have to have comprehensive knowledge of demographic characteristics of the city population.

This paper analyzes the barriers to public participation based on study by Zolkafli, Liu and Brown (2017). The barriers to public participation was evaluated in terms of five aspects: public’s attitude, lack of knowledge, lack of effort, trust issues and exclusion from participation process. There were no prior specific studies undertaken to investigate the whether or not gender have influence barriers to public participation for land use planning.

METHODS

Study Area

The study was conducted in the northern state of Malaysia, Perlis. The state is surrounded by Thailand in the north, Kedah in the south, whilst its western coastline is bordered by the Straits of Malacca. The estimated population in 2013 was 244,000 inhabitants with Average Annual Growth Rate (AAGR) of 1.99%, which is lower than the national rate of 2.1%. Perlis’ ethnic composition shows The *Bumiputera* (Malays and other indigenous people) represented the majority of 197,130 people (85.2%) of the total population of 231,370 in 2008. This was followed by the Chinese were 22,440 people (9.7%), Others

as many as 5,780 people (2.5%), while the remaining percentages of 1.3% consists of Indians and foreigners (Town and Country Planning Department, 2009). Overall, the land use is divided into built-up and non-built up areas. High density area include municipal land use activities such as business and services, residential, industrial and community facilities, while non-built-up are forest, agriculture, water bodies and so on (See Figure 1). Current land use in the study area is dominated by agricultural land use area of 54,560.10 hectares, followed by forestry land use area of 12,179.10 hectares (Town and Country Planning Department, 2009).

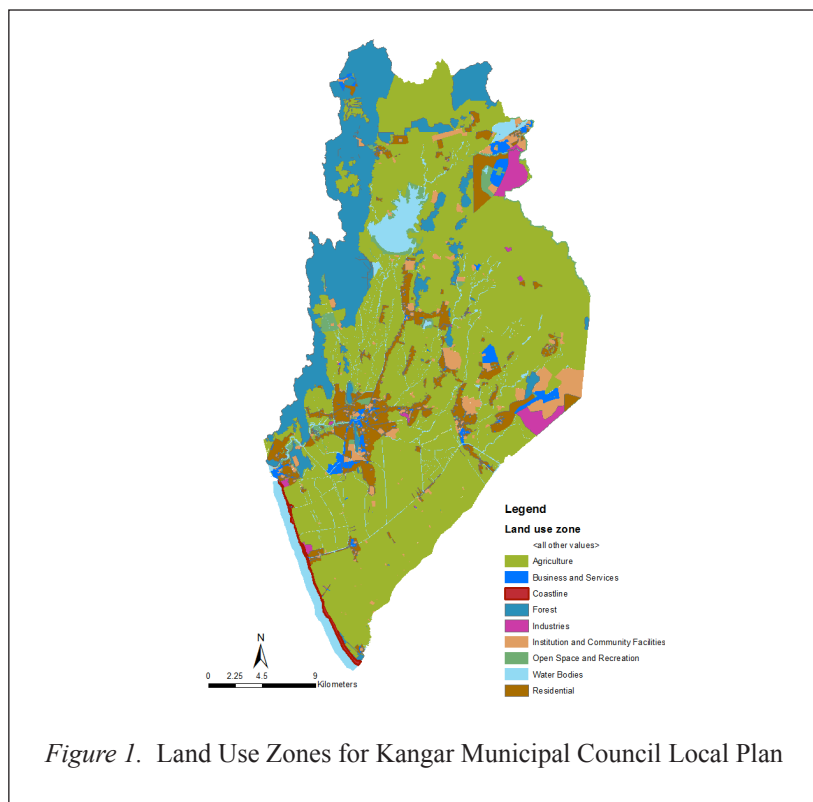


Figure 1. Land Use Zones for Kangar Municipal Council Local Plan

The state of Perlis falls under the jurisdiction of only one local authority, which is Kangar Local Council (MPK). The development plan for the state is based on the local council's draft plan, *Draf Rancangan Tempatan Majlis Perbandaran Kangar* or Kangar Municipal Council Local Plan Draft. The Local Plan Draft covers the entire state of Perlis with an area of 819.31 square kilometers or 81,931.20 hectares. It is a unique and interesting situation since

it is the only case where one local council that controls the development of the whole state. This is due to the fact that Perlis is the smallest state in Malaysia. The local plan area consists of 12 settlement centers with 22 parishes and 265 villages. The population of Perlis in 1991 was 183,824 people or represent 1.0% of the total population of Malaysia. In 2000, census data shows that the population of Perlis rose to 198,288 people and the percentage of the country's total to 0.8% (Town and Country Planning Department, 2011).

Data Collection Procedure

All respondents were recruited through a non-probability, purposive sampling technique methods. Data was collected from two different sampling groups, which we call facilitated and self-administered groups. Facilitated represent respondents that PGIS study participants were recruited by the researcher and completed the internet-based PGIS survey in the presence of the researcher. One-on-one experience with the researcher to complete the survey while non-facilitated represents PGIS study participants completed an internet-based survey online without any direct interaction with the researcher. Facilitated PGIS was considered an appropriate method given that a web-based spatial survey is considered a novelty in the study area and administering the survey face-to-face allowed the researcher to explain, monitor, and provide technical assistance, especially during the mapping component of the survey. Facilitated PGIS participants were the respondent who partially or fully completed the survey individually without a face-to-face meeting with the researcher. This is to add an overall perspective of the quality of PGIS data based on different types of sampling method. The participation in the study was limited to the public and individuals over the age of eighteen.

These people were selected as it was expected that they had special interest in development and land use of the region. The respondents were limited to the public over the age of eighteen. The respondents were contacted face-to-face at multiple locations in the study area. Surveying was conducted in the span of 4 months, between August and November 2014. The nature of the study was briefly described and the visitors were asked if they would voluntarily participate in the study. If they agreed, they were provided with a one-page information sheet that described the study and were provided an access code to the website.

The fact that an integrated web-based spatial survey is considered a novelty approach and low computer literacy in the study area, face-to-face approach was considered most appropriate. Administering the survey face-

to-face enables the researcher to explain, monitor and properly guide the respondent throughout the survey especially the mapping activity. This method of recruitment also enables the researcher to obtain detailed and rich information, in which respondents add further comments to the points mapped during the mapping activity or before completing the survey. Using this survey approach ensures clear understanding of the mapping instruction and the survey questions and a high completion rate of responses to the survey questions. Lastly, a face-to-face survey allows the researcher to be more actively involved in data collection.

In total, there were 292 people out of 400 interview attempts participated in the interview. Table below shows the number of survey conducted for the study by gender and ethnicity. Since gender ratio is 50:50, 200 interview attempts were allocated for both male and female. A total of 150 male compared to 134 female participated in the study. 360 interview attempts were allocated for Malay and 40 attempts for non-Malay respondent. A total of 76 refusals recorded from the Malay public and a 100 percent of non-Malay public refuse to participate in the study.

To increase the sample size, the researcher used social media as a recruitment alternative. A Facebook post was created on 17 September 2014 containing information about the study, the respondent's criteria and the website address. Interested and eligible respondents visited the PGIS website and request an access code without having been explicitly made contacted with the researcher. In total, there were 45 Facebook users attempted to access the website but only 22 respondents fully completed the study and 10 manage partial completion of the study.

Data Analysis

Multiple survey questions were developed to assess elements of public's attitude ($n = 1$), lack of knowledge ($n = 2$), lack of effort ($n = 1$), trust issues ($n=2$) and exclusion from participation process ($n=1$). The survey questions appear in Table 2. The results of each question were analyzed by gender (male vs. female) using the Mann–Whitney U statistic to test the following hypotheses:

H_1 : there is no difference in public's attitude between male and female

H_2 : there is no difference in lack of knowledge between male and female

H_3 : there is no difference in lack of effort between male and female

H_4 : there is no difference in trust issues between male and female

H₅0: there is no difference in exclusion from participation process between male and female

RESULTS

Characteristics of Respondents

A total of 316 individual participated in the study with 292 facilitated respondents and 24 self-administered respondents. The age of respondents ranges from 18 to 67 years with 165 (52%) male and 151 (48%) female respondents.

Barriers to Public Participation by Gender

This study assessed publics' attitude, lack of knowledge, lack of effort, trust issues and exclusion from participation process by gender (male vs. female) using the non-parametric Mann–Whitney U test (see Table 1). A large majority of male and female participants (ranging from 75% to 85%) agreed or strongly agreed that majority of the public do not participate in land use planning because of their “do not care” attitude, leading to a low participation level (see Table 1). There were no statistically significant differences in the survey question by gender, thus the hypothesis (H₁0) that the publics' attitude differs between male and female is not supported. The difference in gender did not influence public's attitude that acts as one of the barriers to public participation. As a conclusion, gender factor does not influence the public's attitude towards land use planning outcomes.

Both male and female participants agreed or strongly agreed (ranging from 73% to 93%) that the majority of the public think that land use planning is too technical and hard to comprehend the subject matter was relatively easy to use, but there were no statistically significant differences in all survey questions related to lack of knowledge (see Table 1). Thus, the hypothesis (H₂0) that there is no significant difference in lack of knowledge between the male and female is not rejected. As a conclusion, gender factor does not influence lack of knowledge among general public.

There was strong or very strong agreement by the majority of participants (ranging from 91% to 93%) that the authorities do not try hard enough to get the public to participate in land use planning. Thus, the hypothesis (H₃0) of no difference in the lack of effort from the authorities between male and

female is not rejected. As a conclusion, gender does not influence general public perception that the authorities lack effort in public participation.

The majority of male and female participants agreed or strongly agreed (ranging from 88% to 99%) that majority are confident that the general public can provide useful information and that the planning authorities are able to come out with a good land use plan (see Table 1). Thus, the hypothesis (H_40) that there is no significant difference in trust issues between male and female is not rejected. The face-to-face support provided in the facilitated PGIS process resulted in stronger participant perceptions that the website was easier to use than those who undertook the PGIS mapping on their own. As a conclusion, gender does not influence trust issues among the general public. There was strong or very strong agreement by the majority of participants (ranging from 81% to 92%) that land use planning should not be done by authorities without public participation. There was statistically significant differences ($p \leq 0.05$) in responses between male and female participants on the survey item that stated “Land use planning should be done by authorities without public participation without public participation” (see Table 1). Thus, the hypothesis (H_50) of no difference in exclusion from participation process. As a conclusion, male respondents have positive effects on the perceived exclusion from participation process.

Table 2

Barriers to Public Participation by Gender (Male Versus Female).

Survey Item	Male (N=165)			Female (N=148)			Mann Whitney U statistics	P value
	%Agree or Strongly Agree	Mean ^a	SD	%Agree or Strongly Agree	Mean ^a	SD		
Public's attitude (H1o)								
• People do not participate in land use planning process because they do not care about land use planning outcomes.	84.8	4.02	.848	75.0	3.89	.873	10827.0	.068

(continued)

Survey Item	Male (N=165)			Female (N=148)			Mann Whitney U statistics	P value
	%Agree or Strongly Agree	Mean ^a	SD	%Agree or Strongly Agree	Mean ^a	SD		
Lack of knowledge (H2o)	73.0	3.88	.840	75.7	3.94	.792	11727.0	.645
• People do not participate in land use planning because it is too technical.	89.6	4.15	.750	83.2	4.05	.878	11512.5	.380
• The authorities do not think the general public has enough knowledge to make good land use decisions.								
Lack of effort(H3o)								
• The authorities do not try hard enough to get the public to participate in land use planning.	92.7	4.3	.714	91.2	4.26	.660	11267.5	.220
Trust issues(H4o)								
• I trust the general public to make good decisions about future land use.	97.6	4.34	.548	99.3	4.32	.485	11522.5	.652
• I trust the planning authorities to make good land use decisions.	88.4	4.12	.699	92.5	4.16	.731	11468.0	.386

(continued)

Survey Item	Male (N=165)			Female (N=148)			Mann Whitney U statistics	P value
	%Agree or Strongly Agree	Mean ^a	SD	%Agree or Strongly Agree	Mean ^a	SD		
Exclusion from participation process (H5o)	91.5	4.34*	.927	80.8	3.99*	1.139	9849.5	.003
• Land use planning should be done by authorities without public participation without public participation.*								

^a Means are based on a five-point likert scale with response as follows: '1' - strongly disagree; '2' - disagree; '3' - Neither agree nor disagree; '4' - agree; '5' - strongly agree

* The survey item has been reverse coded for analysis

CONCLUSION

This study examines the influence of gender on publics' perception related to challenges in implementing effective public participation for land use planning. The findings revealed that there were no significant differences in attitude, knowledge, effort and trust among male and female respondents. The outcome from this study indicated that there is a need towards introducing plausible strategies to enhance the level of understanding and awareness on public participation regardless of the gender of the general public. An improved and well-structured participation mechanism(s) that tackles the different gender preferences is recommended to increase the level of public engagement in land use planning. Both male and female will equally benefit from effective public participation from the beginning through until the end of the planning process. It could help to (1) reduce strong opposition since the public were involved at the initial stage of the planning process; (2) enhance the trust and credibility of the authority, and (3) resolve conflict and lessen any potential dispute from the public. A legitimate public participation process has the potential to effectively resolve conflict in every context in a non-violent way. This study demonstrated that the general public, regardless

of their gender had the capacity to contribute more to land use decision support, but the effort needed to engage them (method of recruitment) is an important consideration in the use of the method. This study has major implication particularly towards designing future educational programs that can increase the participation level among general public. Apart from educating the public, these program in such a way to train and upgrade the professionalism, mainly among the local authorities and planners in, who would be able to educate the public on ways to effective participation for land use planning in Malaysia.

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