THE INFLUENCE OF DESTINATION LOCATION FACTOR AND TRANSPORTATION SYSTEM FACTOR TO CHOICE THE SHOPPING LOCATION

Judiantono Tonny[1]

Abstract: *Work trip is not flexible trip as like shopping trip where are the travel destination has choice characteristic. In the urban area, the shopping trip is one of the biggest trip generation, and a push factor of urban sprawl, thus if we control this trip type will gives us positive effect to decrease the environmental impact of the transportation. The variation of the facilities, type of goods, quality of the products, and the action attraction which offered by a shopping centre will become as attraction factors, it difference with the work trip. The knowledge of this shopper attitude to percept the attributes of a shopping centre or retail centre will become importance to understand why they choose that shopping centre, so it will attract the shopper to trip from their origin to that shopping centre not to the other.*

Through household trip role research in Bandung by home interview and Multi-Criteria Analysis (AHP) methods can reach to understand the sensitivity of the transport system attributes and shopping centre location attributes to the individual shopper attributes, thus it can make easier to understand the relationship between land use and transportation in order to control the shopping trip to reach efficiency and effectivity the shopping centre services.

As result of this study, it appears for daily and non daily shopping, the travel cost (x_{11}) and travel time (x_{12}) attributes of transport system factor, and the satisfaction level (x_{28}) dan level of services attributes (x_{22}) of the shopping centre location factor, become to the most dominant attributes in shopping centre choice for all age and wage group.

This research implication is the shopping centre plan in Bandung and the others cities as well, not only base on the accessibility and services scale, but also must be planned base on the socio-economic characteristic of the citizen as the consummers.

Keywords: *Shopping Centre, Transport system factors, Shopping location factors, Individual Factors.*

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[1]   Urban and Regional Planning Program, Faculty of Engineering, Bandung Islamic University, Jl.Tamansari 1 Bandung. *E-mail: tjudiantono@yahoo.com*

1. INTRODUCTION

1.1 Background

As we know, the area of a city can be divide on centre area, midle area and periphery area (Alonso, 1964). The shopping centre usually exist on trade area at centre region, meanwhile the residence area commonly exist on the periphery region. Regarding with the exessive development of the city in horizontal term, it causes the people journey for trade purpose trip will become more length (SITRAMP, 2002).

Some country experience show that the spreading of shopping centre to new sub centre or commonly call as the desentralization of the shopping centre (retail centre) were not success fully at all, moreover if it be done unplan and unsupported by good transportation system. When the spreading of the shopping centres are uncontrol, it will push the acceleration of the urban sprawl occured, or spreading the city activity which it causes the urban space chaosly, and raise many problem, exspecially on social, economic, environment and people health. Mackett (1994) has said, there are 3 causes of that phenomena, which are:

1. The increasing of the private car uses,

2. the changing of travel pattern, and

3. the spreading of urban activity.

In deed this shopping centre desentralization, the commonly approach used is the accessibility and service scale approach. This approach prefer to transportation planning system integration and the planning of shopping centre desentralization, which often forget not only by transportation planner, but also by shopping centre planner or land use planner. It accured cause still any dicotomize between transportation planner and shopping centre planner in the shopping centre desentralization plan. Nevertheles *planning* can become tools to control land use which will give effect to the existention, speed and direction of the development.

The study of shopping place choice commonly focus to the shopping process, where a shopper will do step choice as like: *Product category → brand → retail store/center/area* (Engel *et. al.*, 1990), and others only depend to *product category* (Hisrich *et. al.*, 1972). While many transpotation studies only concentrate on traveller attitude toward to transportation mode alternative, modal choice, and traveller needs on work trip which applied to shopping trip which clearly difference type (Bhat, 1998). About this situation, the experties and decision makers have long knowing the differentiation of shopping trip and the work trip.

Ibrahim dan McGoldrick (2003) have mentioned, there are 4 (four) main sub system which work in relation with shopping behaviour in an area. The first sub system is retail facility with main participans are planner, developer and retailer. The interaction

among the actors relate to the scale, form and location of the retail facility which already exist for the shoppers in an area. Secondly is the transportation system which connected the shoppers to that reail facility. The main actors in this case are transportation planner, transportation operator and developer. The transportation system characteristic will give effect to the shopper mobility, ofcourse in the next will give impact to the retail centre choice too. The next component is shopping situation regarding to the parameters or shopping trip condition, which definite as the weighting importance choice factors of shopping location.

This phenomena is interesting for furthure study, as like how is the choice of the destination location of the shopping trip has decided, what are factors and variables will influence to the deciding of the shopping location?, how big this factors and variables influences to the choice of shopping location?, Is it different between the choice of location for daily needs and non daily needs, How big the influence of individual factors to the choice decision of the shopping location , etc. So we can mention, at least there are 3 factors which will influence the choice of shopping location, there are the destination location factor, the transportation system factor, and the individual factor of the shopper. In diagramatic in can figures as like Figure 1.

So that the choice of retail store/center/area or shopping centre still needs more investigate cause it is an important thing in shopping behavior study. Many researcher not to investigate the detai of the shopper and the disagregat structure of the attitudinal shopping trip berbelanja. The attitude which influences to the behavior, is important thing to explore the factors, variables and attitude issue of the shopper. If it related with the effort to increase public transportation uses, it is important to more undestanding the attitude and behavior of the shopper in attitudinal transportation mode/travel attributes for shopping trip, so the utilisation of the resources will be more effective (*The Economist Newspaper Limited*, 1998).
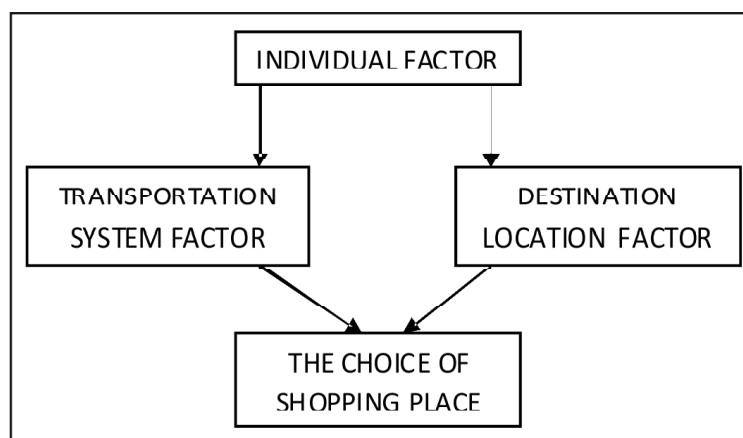

Figure 1: The shopping place choice model

All the above describes the importance to research of the shoping location factors/ attributes and transportation system attributes to understand the travel pattern for shopping trip or the others trip with choice characteristic. The phenomena study like this needs to disappear bias specification which causes not effectively the former studies have been done. Comprehension to the factors which influential to the trend of that trip is important for transportation planner in forecasting the direction of the trip, demand forecasting and preparation of the transportation system infrastructure which it needs for supporting this trip. Such also for the spatial planner must be know this comprehension for distribution plan and alocation of the urban infrastructure appropriate and sharp with the citizen as object which will be deserve (efficientcy and effectiveness of the services). So that this research is needs to fulfill the lack between that specific area (retail area and transportation system area), that is firstly the factors or attributes which sigfinaly influencing to the choice of the shopping centre, and secondly, the implication of the shopper perception to that attributes on the shopping centre arrangement.

1.2 Problem Identification

Base on the above problem description, the questions for this research are:

1. What is factors fluenting to the choice of the shopping location and shopping trip?
2. How is the relation of the individual factor to the attributes of the transportation system factor?
3. How is the relation of the shopper individul factor to the attributes of the shopping location destination?
4. What is the relation implication of the shopper individual factor to that attributes on the shopping centre plan?

1.3 Research Objectives

This research aim to investigate the relation of the shopper individual factor to the transportation sysem attributes, and the attributes of the shopping location destination in the choice of daily and non daily shopping location, and the measuring method of that. This comprehension is important as base for shopping centre (retail) alocation, and basic strategy to improve the transportation system for shopping trip.

1.4 Scope of the Research

Inline with the problem and research objectives which has mentioned, so scope of this research are:

1. To identificate the factors which influencial to choice the shopping location.

2. To identify the attributes of the factors which influential to the choice of the shopping location.

3. Measuring the shopper perception to the attributes of the factors which influential to the choice of the daily and non daity shoping location.

Base on that shopper perception, then deed analytical relation between individual factors of the shopper with the attributes of the factors which influential to the choice of the daily and non daily shopping location.

1.5 Research contribution

Through this research, be hoped can give contribution to add comprehension about the relation of the factors and attribute which influentila to the choice of the shopping location. This comprehension is important to understand the attitude and behavior of the shopper in attitudinal the attributes of transportation system and the attributes of shopping location, which it is important to predict the direction of the trip, demand forecasting and preparing transportation system infrastructure which it need to suppoert that shopping trip, so that the utilisation of the resources can be more effectively.

This comprehension of the relation is also importance for urban planner and shopping centre planner as a base when plan the distribution and placement the urban infrastructure which appropriate, and sharp to the citizen target which will be deserved (efficiency and effectiveness of the services)

Thus this research will help to fulfill the lack between that two plan area, that is the shopping or retail centre planning and the transportation system planning, which still often dicotomize.

2. THEORITICAL REVIEW

2.1 The Shopping Centre

Dawson dan Lord (1985) define that "*shopping centre*" as a group of activity which be designed, planned, build, own and manage as a unit. That facilities are (Northern dan Haskoll, 1977):

1. Service trade area: office, barber, salon etc.

2. Net selling floor area for convenience goods: retail area for daily needs as like food, stationery etc.

3. Net selling area for comparison goods: retail area for non daily needs as like household equipment, fashion goods etc.

4. Complement activities area, as like cinema, theater, ammusement, etc.

5. Accomodating area, as like WC, toilet, park, warehouse, parking area etc.
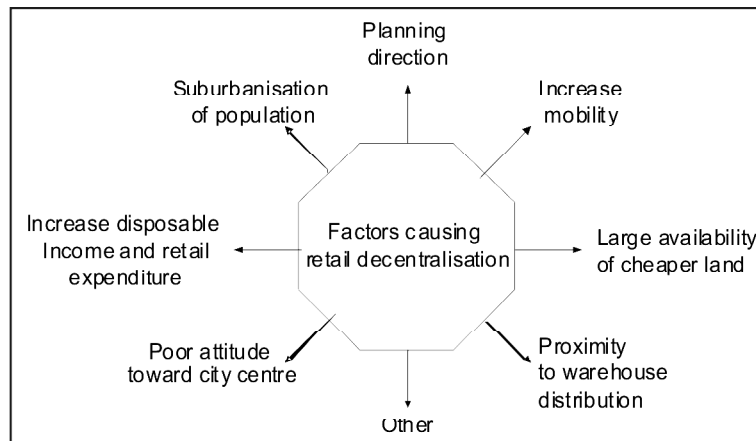
Figure 2: Factors causing retail decentralization

2.2 Shopping Centre Planning

Retail decentralization occure at all country even in the develope and undevelope country, only timing and intencity variate among one country ant the others. In the decentralization process of that retail facilitation, there are some typical causes (Ibrahim dan McGoldrick, 2003), that is (Figure 2).

2.3 Transportation Planning for Shopping Trip

Transportaion planning covering the issue of traffic generation location, population distribution and distribution of the transportation facilities. In relation with transportation planning, the transportation policy is defined as:

"the process of regulating and controlling the provision to facilitate the efficient operation of the economic, social and political life of the country at the lowest social cost (Tolley and Turton, 1995)".

So that the transportation planning can be meaned as an effort to meet the optimal capacity of the transport and efficient operation equal with trip generation which representative of the activity pattern and geographical needs.

2.4 Behavior of Shopping Location Choice and Transportation Choice

One of the behavior consumer model is what has known by Engel, Kollat and Blackwell (1968), which revised at 1978 (Chisnall, 1985; Ben Akiva and Lerman, 1985). According to this model, a choice can see as an outcome of the secuential decision making process which covered as below:

1. Problem recognition
2. Search

3. Alternative evaluation

4. Purchase

5. Outcome

Some experties have said, in the buying process, a shopper will choice step as like:

Product category → *brand* → *ritel store/center/area* (Engel *et. al.*, 1990) and transportation mode (Ibrahim dan McGoldrick, 2003), apart of experties said depend on the *product category* (Hisrich *et. al.*, 1972). Thus the choice of the *retail store/center/area* or shopping centre is the important thing in the field of *shopping behavior*.

The prediction of demand transportation is the important element of the transportation system analysis. The demnad of transportation services is the derive demand from the daily individual activity and group also to fulfill they needs, causes of that the study to that demand transportation services can not be separate from the study of *travel behavior*. There are two dominant approaches, that is:

1. Study focus on the people behavior, it envelope to the study of people behavior on the trip between their origin to their destination location (Hanson dan Schwab, 1995).

2. Study about decision making process and the choice of the trip which manifestation to the behavior in spatial (Ben Akiva dan Lerman, 1985; Ortuzar dan Willumsen, 1994).
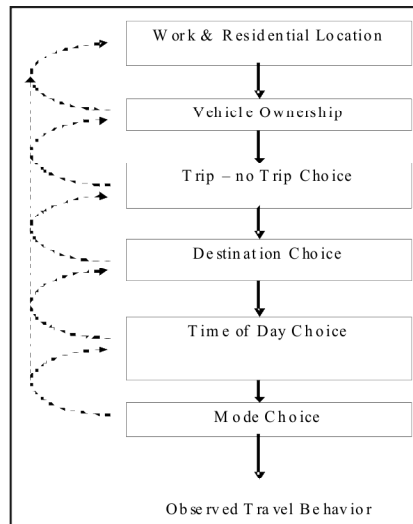

Figure 3: Decision sequence
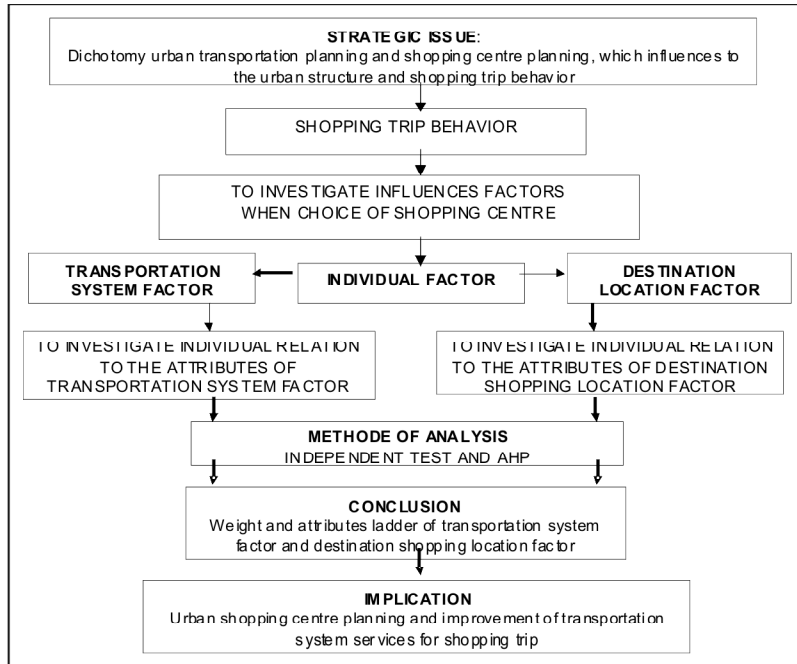
3. METHODOLOGY

3.1 Reasearch Approach

Figure 4: Research approach
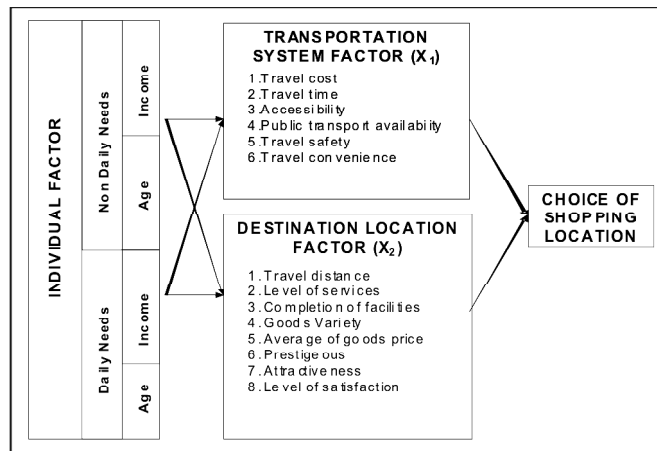
3.2 Research Framework

Figure 5: Research framework
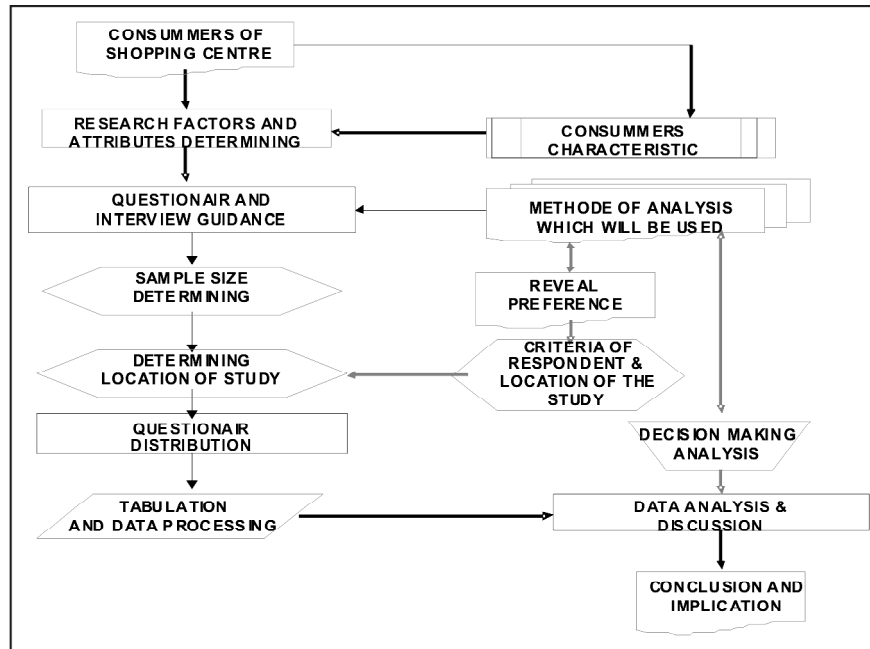
3.3 Research Steps

Figure 6: Research steps

3.4 Research Factors and Attributes

There are 3 factors in this research which will investigate their relationship, that is shopping location factor, transportation system factor and individual factor of the shopper, which consist of age category, income and shopping characteristic to fulfill daily needs or non daily needs. The shopping location factor consist of:

1.	Travel distance;	2.	Level of services;
3.	Completion of facilities;	4.	Variety of goods;
5.	Average goods prize;	6.	Prestige;
7.	Attractiveness; and	8.	Level of satisfaction.

Transportation system factor, consist of:

1.	user cost;	2.	travel time;
3.	reliability;	4.	feasibility;
5.	safety and security; and	6.	convenience.

Meanwhile the individual factor of the shopper is categorized base on the characteristic of the consumer of shopping centre which differentiate by attributes as below:

1. Age, classified by less than (<) 20 years old, age between 20-40 years and age more than (>) 40 years.

2. *income*, classified by income < 1 million rupiahs/ month, income 1-2 million rupiahs/month and income > 2 million rupiahs/ month.

3. Shopping characteristic, classified by daily shopping needs, and non daily shopping needs.

3.5 Sample Size

The sample size which needed for this research determine by formula:

$$n = \frac{(Z_{\alpha/2})^2}{4e^2} \qquad\qquad ...(\text{III}.1)$$

Where:

$$n = \text{sample size}$$

$$\alpha = \text{Confience level}$$

$$e = \text{accepted error size}$$

For $e = 0{,}02$ and $\alpha = 0{,}05$, needs 2.401 samples

For $e = 0{,}05$ and $\alpha = 0{,}05$, needs 384 samples

In this research will distribute 443 questionairs or 18,54% from the sample size which needs for $e = 0{,}02$ and $\alpha = 0{,}05$. This sample size has over than sample size needed for $e = 0{,}05$ and $\alpha = 0{,}05$, and this size can be regarded enough to fulfill sample prerequisite (Surakhmad, 1985).

3.6 Research Population and Sample

This research location is Kecamatan Sumur Bandung, with citizen as research population. Causes what will be researched is the people trip from home to the shopping centre, so the sample withdrawl will deed through home interview. Sample withdrawl method is *Stratified Random Sampling* with age as the sampling unit. The age group of the Kecamatan Sumur Bandung citizen classified to 3 categories, that is age group less than (<) 20 years old, age group between 20–39 years old and age group more than (>) 40 years old.

Kecamatan Sumur Bandung consist 4 Kelurahan, that is Kelurahan Braga, Kebonpisang, Merdeka and Babakan Ciamis. The questionair distribute in proposional alocation method, base on formula:

$$n_i = \frac{N_i}{N} n \qquad\qquad ...(\text{III}.2)$$

Where:

$$n_i = \text{Sample size stratum } i$$

$$N = \text{Population size}$$

$$n = \text{Whole sample size}$$

$$N_i = \text{Population size at stratum } i$$

So that result as like at Table 1 as below:

Table 1
Questionair distribution base on age category of popuation at each Kelurahan in Kec.Sumur Bandung, Kota Bandung (Year 2008)

No.	Kelurahan	< 20		20 – 39		≥ 40		Total
		L	P	L	P	L	P	
1.	Braga	14	13	15	13	13	12	79
2.	Kebon Pisang	25	24	27	25	23	23	146
3.	Merdeka	19	18	21	19	18	17	113
4.	Babakan Ciamis	18	17	20	18	17	16	106
	Total	76	72	83	74	70	68	443

3.7 Questionair distribution

3.7.1 Questionair distribution criteria

1. Qustionair distribute in *stratified sampling* method, with distribution of questioner as like show in Tabel 1. The questionair distribution determine base on the measurement result on the amount of population for each kelurahan in kecamatan which is research location.

2. Questionair fill in by directly interview deed by a surveyor.

3. The aim of this questionair distribution is to get characteristic image of the shopping centre visitor.

4. Causes of the characteristic of this research is *revealed preference* so that choice of shopping centre which often visit by responder not only limited to the shopping centre which exist locate in kecamatan Sumur Bandung, but also the responder can choice from all shopping centre which exist in kota Bandung. But for analysis fluently only 2 shopping centres with the most respondent will be analized next.

3.7.2 Responder Criteria

1. Age > 18 yers or has have family.
2. Work or student, no unemployed.
3. Rutine visit to Shopping centre to fulfill daily and non daily needs.

Daily needs is household needs, which fill by shopping with interval time at least once a week. Meanwhile non daily needs is the needs which fill by shopping with interval time at least more than once a month.

4.   ANALYSIS AND RESULT

4.1 Common Behavior of the Responden in Shopping

Base on the above description, we can conclude the common behavior of the responden, that is as below:

The responden tend to live at the location near to their work place (< 2 Km) even for work time relative shortly. Eventhough the respondent dependency to the car ownership is veri high, it draw the public transport services still limited, or image view about using private car is cheaper, more practice, convenience and more prestigeous then using public transport. This condition almost accure at all any age category, income category, category of distance from work place, and category of family size. More big the amount of family size, will more big also the dependency to the private car. Their behavior relationship with the work trip, is different with the trip for shopping daily and non daily needs.

The responden who live from work place less than (<) 2 Km and have income at least 2 millions rupiahs/ month will more often do the activity of shopping daily and non daily needs. Age, income, car ownership and distance to work place is not relate with the amount of visiting for shopping daily and non daily needs, that also no relation between distance to work place and distance to shopping place for non daily needs with the amount of visting for shopping of non daily needs. But there is relationship between the distance to work place with the amount of visiting per month for shopping of daily needs.

4.2 Individual Factor and Transportation System Factor in the Choice of Shopping Location

4.2.1 *The choice of shopping location for daily needs*

Looked at to the choice of shopping location base on transportation system factor as shown at Table 2 and Figure 7, has occured shift the shopping location, that is for age group < 20 years tend to choice Pasar Kosambi, meanwhile for age group 20-40 years tend to choice Yogya Sunda and for age group > 40 years prefer to choice BIP. For that three age groups the attribute of transportation system which become choice consideration is: travel cost, travel tim, accessibility to reach, travel convenience, travel safety and the availability of the public transport as the last attribute.

Table 2
Conclusion of Transportation system attributes for shopping of daily needs base on age group

X1 Transportation system factor	$< 20^{th}$		$20 - 40^{th}$		$> 40^{th}$	
Number of Respondent	30		27		40	
Attributes:	Pasar Kosambi	Yogya Sunda	BIP	Yogya Sunda	BIP	Pasar Kosambi
X11 Travel cost	0,200	0,196	0,193	0,204	0,205	0,191
X12 Travel time	0,103	0,102	0,100	0,106	0,106	0,100
X13 Accessibiity	0,096	0,091	0,093	0,095	0,097	0,090
X14 Public transport availability	0,029	0,028	0,028	0,029	0,030	0,028
X15 Travel safety	0,033	0,034	0,033	0,034	0,035	0,032
X16 Travel convenience	0,044	0,042	0,042	0,044	0,044	0,041
	0,506	0,494	0,488	0,512	0,517	0,483

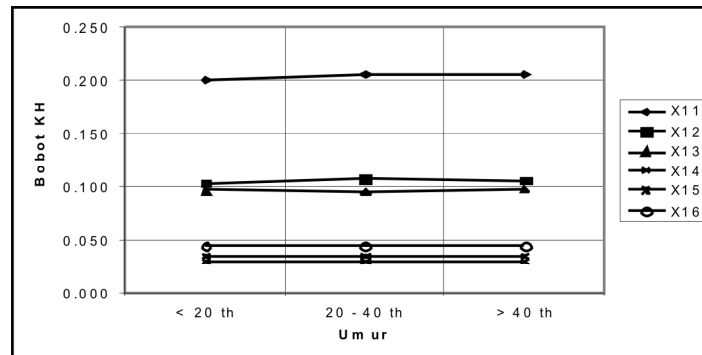*Source:* Result of analysis, 2009

Figure 7: Transportation system factor for shopping of daily needs, base on age group

If looked to the income group for shopping of daily needs as shown by Table 3 and Figure 8, the income group < 1 million rupiah/month will tend to choice Pasar Kosambi, meanwhile for income group 1 -2 million rupiahs/ month, and income group > 2 million rupiahs/month tend to choice the same shopping centre that is Yogya Sunda.

For shopping of daily needs, in fact each income group shown the same ladder for the transportation system attributes, that is travel cost, travel time, accessibility to reach, travel conveience, travel safety and the availability of the public transport.

For shopping of daily needs, as well for age group also for income group shown the same attributes, that is travel cost, travel time, accessibility to reach, travel convenience, travel safety and the availability of public transportation. It shown that the availability of public transport to shopping centre is not to become priority again when somebody considering what transportation will be used to visit shopping centre.

Table 3
Conclusion of transportation system attributes for shopping of daily needs base on age group

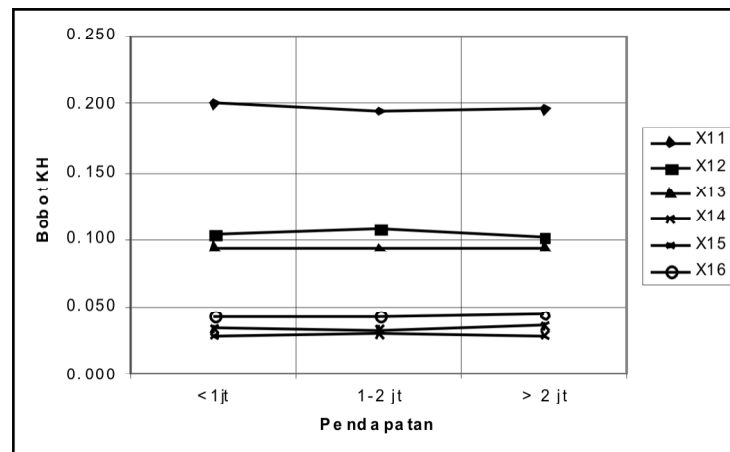| X1 Transportation system factor	< 1jt			1-2 jt		1-2 jt
Number of Respondent	32			34		12
Attributes:	Pasar Kosambi	Yogya Sunda	BIP	Yogya Sunda	BIP	Pasar Kosambi
X11 Travel cost	0,200	0,197	0,195	0,201	0,200	0,196
X12 Travel time	0,103	0,103	0,107	0,099	0,104	0,102
X13 Accessibiity	0,095	0,092	0,094	0,093	0,093	0,095
X14 Public transport availability	0,028	0,029	0,030	0,028	0,028	0,029
X15 Travel safety	0,034	0,033	0,033	0,034	0,032	0,035
X16 Travel convenience	0,043	0,043	0,043	0,042	0,042	0,044
	0,503	0,497	0,503	0,497	0.499	0,501

Source: Result of analysis, 2009

Figure 8: Transportation System Factor for shopping of daily needs base on income group

This condition relate with discussion in point IV.1 which shown the height of car ownership and the dependency of respondent to the private car in this area. Although the ladder of transportation system factor is same but the choice of shopping location is difference, as well base on age group even for income group. That is show there are different perception about the size of that attributes when valueing the choice of shopping location, so it result different choice and causes the direction of the trip also different.

4.2.2 Shopping location choice for non daily needs

If looksed at the attributes of transportation system factor in the Table 4 and Figure 9, it shown that shopping to fill non daily needs, as well for age group < 20 years, also for 20-40 years and > 40 years tend to choice BIP comparing with the others shopping

Table 4 Conclusion of the attributes of transportation system for shopping non daily needs base on age group

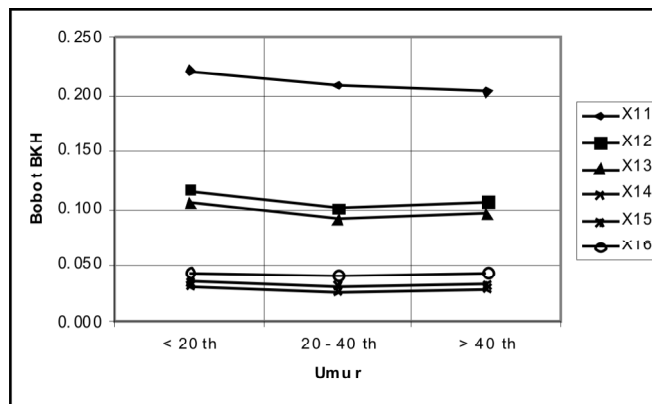| *X1 Transportation system factor*	$< 20^{th}$		$20 - 40^{th}$		$20 - 40^{th}$	
Number of Respondent	30		46		40	
Attributes:	*BIP*	*BSM*	*BIP*	*Ciwalk*	*BIP*	*Ciwalk*
X11 Travel cost	0,221	0,175	0,209	0,188	0,203	0,193
X12 Travel time	0,116	0,090	0,101	0,105	0,107	0,099
X13 Accessibiity	0,105	0,082	0,091	0,097	0,096	0,091
X14 Public transport availability	0,032	0,026	0,027	0,031	0,029	0,029
X15 Travel safety	0,035	0,032	0,032	0,035	0,033	0,034
X16 Travel convenience	0,044	0,041	0,041	0,044	0,043	0,043
	0,554	0,446	0,501	0,499	0,510	0,490

Source: Result of analysis, 2009

Figure 9: Transportation system factor for shopping of non daily needs base on age group

centre. The attributes of transportation system which very influencing to any age group in fact is same, that is travel cost, travel time and accessibility o reach. The next attributes is travel convenience, travel safety, and public transport availability.

For shopping of non daily needs, each income group shown tend different choosen. For income < 1 million rupiah/month, the choice is Ciwalk (Cihampelas Walk), meanwhile the income group 1–2 million rupiahs/month the choice is BIP, and for income group > 2 million rupiahs the choice is BSM. Looked at choice alternatives in fact Ciwalk and BSM become choosen, whereas as well BSM and Ciwalk both are the shopping centre which exist at the outside of the study area (Kecamatan Sumur Bandung).

If looked at the ladder of the attributes of transportation syastem which influenceing to the choice of shopping for non daily needs by income group, it shown the different of ladder, that is for income group < 1 million rupiah/ month and income

Table 5
Conclusion of the attributes of transportation system for shopping of non daily needs base on income group

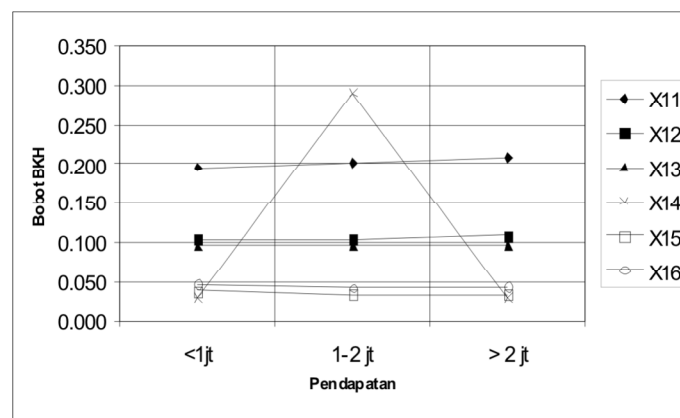| X1 Transportation system factor	< 1jt		1-2 jt		> 2 jt	
Number of Respondent	33		38		7	
Attributes:	BIP	Ciwalk	BIP	Ciwalk	BSM	Ciwalk
X11 Travel cost	0,200	0,196	0,201	0,195	0,208	0,019
X12 Travel time	0,103	0,103	0,104	0,101	0,108	0,098
X13 Accessibiity	0,094	0,094	0,096	0,091	0,096	0,091
X14 Public transport availability	0,028	0,030	0,290	0,028	0,029	0,029
X15 Travel safety	0,030	0,037	0,034	0,034	0,034	0,033
X16 Travel convenience	0,039	0,047	0,042	0,043	0,043	0,042
	0,494	0,506	0,507	0,493	0,518	0,482

Source: Result of analysis, 2009

Figure 10: Transpotation system factor for shopping of non daily needs ase on income group

group > 2 million rupiah/ month the ladder is travel cost, travel time, accessibility, travel convenience, travel safety and public transport availability. Meanwhile for the income group 1–2 million rupiahs/ month the ladder attributes of the transportation system is travel cost, travel time, accessibility, travel convenience and travel safety.

Alhough for the income group < 1 million rupiah/month and income group > 2 million rupiahs/month have same ladder attributes on transportation system to shopping location of non daily needs, but the shopping location is difference. It shown there are differentiation on perception of that attributes value when valueing choicing location, and it evidence that the differention on perception causes diffent choosen of shopping location, which finally also gives different shopping trip direction for non daily needs.

4.3 Individual Factor and Destination Location Factor on Shopping Location Choice

4.3.1 *The choice of location for shopping of daily needs*

If looked at the attributes of destination location base on age group, as shown by Table 6, the ladder of attributes is level of satisfaction, level of services, average of goods price, variety of goods, attractiveness, completion of facilities, prestigeous, and distance from residence. So that the level of satisfaction attributes become main consideration of he location factor for each age group when choice shopping centre which will be visited. Meanwhile distance from residence and prestigeous of that shopping centre become the latest consideration in the choice of shopping centre which will be visited. Figure 11 gives clearly image about shift and ladder of attributes of

Table 6
Conclusion of attributes of destination location for shopping of daily needs base on age group

X 2 Destination location Factor	< 20th		20 - 40th		> 40th	
Number of Respondent	30		27		40	
Attributes:	Pasar Kosambi	Yogya Sunda	BIP	Yogya Sunda	BIP	Pasar Kosambi
X21 Travel distance	0,017	0,017	0,016	0,017	0,017	0,016
X22 Level of services	0,098	0,113	0,102	0,109	0,110	0,101
X23 Completion of facilities	0,033	0,032	0,032	0,033	0,033	0,031
X24 Variety of goods	0,062	0,055	0,057	0,059	0,056	0,060
X25 Average of goods price	0,080	0,076	0,075	0,080	0,082	0,073
X26 Prestigeous	0,023	0,020	0,021	0,022	0,022	0,021
X27 Attractiveness	0,043	0,038	0,040	0,042	0,040	0,040
X28 Level of satisfaction	0,160	0,135	0,145	0,150	0,151	0,144
	0,515	0,485	0,488	0,512	0,514	0,486

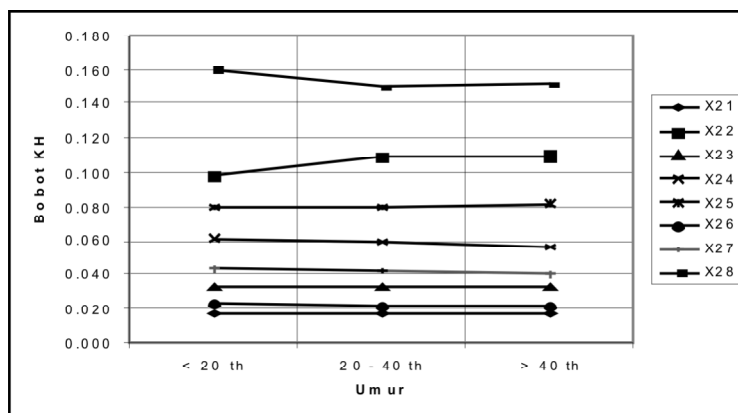*Source:* Result of analysis, 2009

Figure 11: Destination location factor for shopping of daily needs base on age group

destination location factor for each age group in fulfill shopping of daily needs. If looked at CI and CR index of the decision choice of shopping centre which will be visited by any age group shown index value 0.00, it means the decision choice is consintent.

Meanwhile base on the income group, the ladder attributes of the destination location factor which become consideration any income group when choice shopping location, is: level of satisfaction, level of services, average of goods price, variety of goods, attractiveness, completion of the facilities, prestigeous and the latest is travel distance attribute.

For both categories, that age and income, in fact the travel distance attribute reach the smallest value of influence, so that can be concluded that, althaough that shopping

Table 7
Conclusion attributes of destination location for shopping of daily needs base on income group

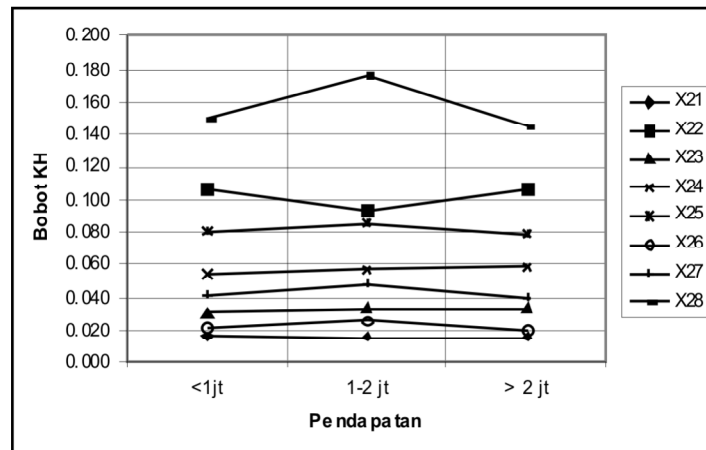| X 2 Destination location Factor	< 1jt		1-2 jt		> 2 jt	
Attributes:	Pasar Kosambi	Yogya Sunda	BIP	Yogya Sunda	BIP	Pasar Kosambi
X21 Travel distance	0,017	0,016	0,017	0,016	0,017	0,016
X22 Level of services	0,107	0,103	0,118	0,093	0,103	0,107
X23 Completion of facilities	0,031	0,034	0,032	0,033	0,032	0,033
X24 Variety of goods	0,054	0,063	0,060	0,057	0,058	0,058
X25 Average of goods price	0,081	0,075	0,069	0,086	0,076	0,079
X26 Prestigeous	0,022	0,021	0,017	0,026	0,022	0,021
X27 Attractiveness	0,042	0,040	0,033	0,048	0,041	0,040
X28 Level of satisfaction	0,150	0,145	0,118	0,177	0,150	0,145
	0,504	0,496	0,464	0,536	0,500	0,500

Source: Result of analysis, 2009

Figure 12: Destination location factor for shopping of daily needs base on income group

location close to their residence area, it is not become the choosen destination for shopping of daily needs by shopper, because what will become main consideration is the level of satisfaction and level of services.

As well base on age group and income group, the ladder atributes of destination location factor shown the same series, that is level of satisfaction, level of services, average of goods price, variety of goods, attractiveness, completion of the facilities, prestigeous and the latest is travel distance attribute, but has resulted difference on the choosen shopping location for any age group and income group. It shown there are different perception on the value of attributes of destination location factor so it gives result the difference choosen shopping location, and finally it gives also different trip direction.

4.3.2 Choice location for shopping of non daily needs

The ammount of respondent base on age group for shopping of non daily needs is 30 respondens for age group < 20 years old, 46 respondens for age 20 – 40 years old, and 40 respondent for age group > 40 years old. As result analysis for attributes of destination location factor, as can be seen at Table 8, it shown the age group < 20 years old tend to visit BSM shopping centre, meanwhile for age group 20 – 40 years old tend to choice BIP as the choosen shopping centre for shopping of non daily needs.

Base on age group, the ladder attributes of the destination location shown the same, that is: level of satisfaction, level of services, average of goods price, variety of goods, atractiveness, completion of facilities, prestigeous and travel distance. Also that with the ladder attributes of destination location factor if looked from income group shown the same ladder attributes with the age group, as we seen at Table 9 and Figure 14.

Table 8
Conclusion destinaton location attributes for shopping of non daily needs base on age group

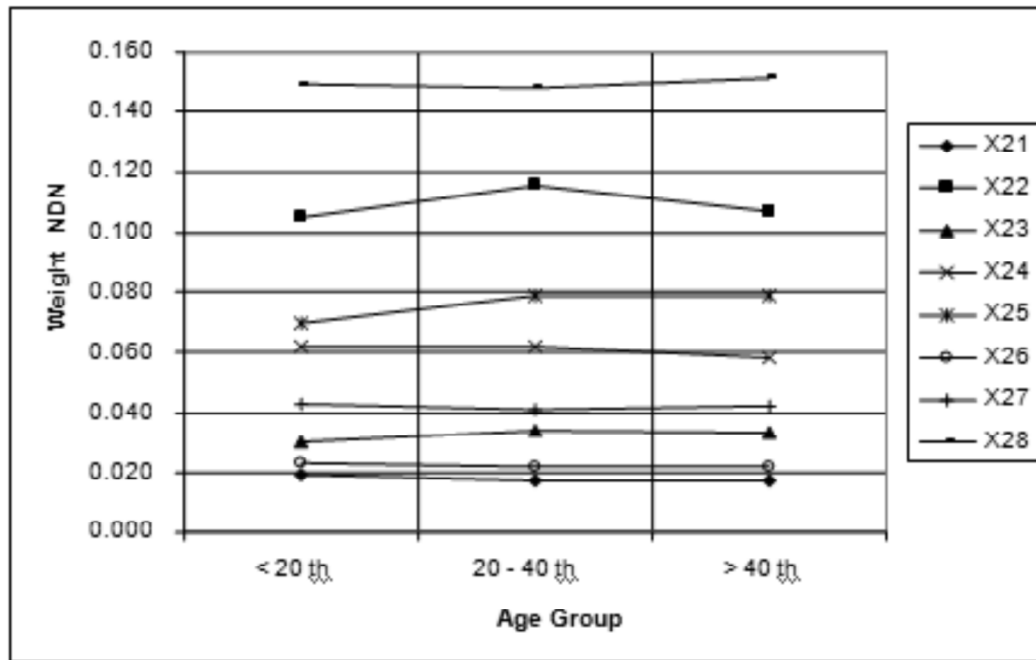| X 2 *Destination location Factor*	< 20 th		20 - 40 th		20 - 40 th	
Attributes:	BIP	BSM	BIP	Ciwalk	BIP	Ciwalk
X21 Travel distance	0,015	0,019	0,017	0,016	0,017	0,016
X22 Level of services	0,105	0,105	0,115	0,096	0,107	0,104
X23 Completion of facilities	0,034	0,030	0,034	0,030	0,033	0,032
X24 Variety of goods	0,055	0,062	0,062	0,055	0,058	0,059
X25 Average of goods price	0,085	0,700	0,079	0,076	0,079	0,076
X26 Prestigeous	0,020	0,023	0,022	0,021	0,022	0,021
X27 Attractiveness	0,039	0,043	0,041	0,040	0,042	0,040
X28 Level of satisfaction	0,146	0,149	0,148	0,146	0,151	0,143
	0,498	0,502	0,519	0,481	0,508	0,492

Source: Result of analysis, 2009

Figure 13: Destination location factor for shopping of non daily needs base on age group

Table 9
Conclusion of destination location attributes for shopping of non daily needs base on income group

X 2 Destination location Factor	<1jt		1-2 jt		1-2 jt	
Number of Respondent	*BIP*	*BSM*	*BIP*	*Ciwalk*	*BIP*	*Ciwalk*
Attributes:	*0,017*	*0,016*	*0,017*	*0,017*	*0,017*	*0,017*
X21 Travel distance	0,110	0,101	0,111	0,100	0,108	0,103
X22 Level of services	0,032	0,032	0,034	0,031	0,032	0,032
X23 Completion of facilities	0,058	0,059	0,056	0,061	0,058	0,059
X24 Variety of goods	0,077	0,078	0,078	0,077	0,078	0,077
X25 Average of goods price	0,021	0,022	0,022	0,021	0,022	0,021
X26 Prestigeous	0,040	0,041	0,042	0,040	0,041	0,040
X27 Attractiveness	0,146	0,149	0,148	0,147	0,149	0,145
	0,502	0,498	0,507	0,493	0,505	0,495

Source: Result of analysis, 2009

Although the ladder attributes of destination location factor for choose shopping location of non daily needs base on age group and income group has same result, but the choose location is difference. It shown there are different perception on that attributes looked by age group and income group, so it result choose different shopping location, and it causes the shopping trip direction is also difference.
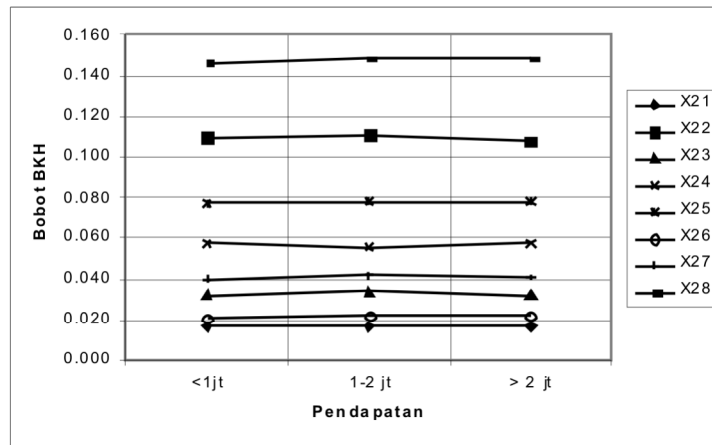
Figure 14: Destination location factor for shopping of non daily needs base on income group

4.4 The Comparation of Choice Location for Shopping of Daily and Non-daily Needs Base on Age and Income Group

If we compare between the choosen location for shopping of daily and non daily needs, shown that the ladder attributes of the transportation system factor and destination location factor for age group is same, but the location of shopping centre which become choosen is different. For the age group < 20 years old, the ladder of attributes is same, but the location of shopping centre to fulfill daily needs is Pasar Kosambi, meanwhile to fulfill non daily needs, the location of shopping location is BIP. For the age group 20 – 40 years old, the choosen for shopping of daily needs is Yogya Sunda, meanwhile for shopping of non daily needs is BIP. For age group > 40 years old, the choosen shopping location of daily needs and non daily needs is BIP. So that it can be concluded that shopping centre as same as level with BIP has power attractiveness to any age group since age group < 20 years old till > 40 years old, as well for shopping of daily needs and also for non daily needs.

For income category, if compare between choosen location for shopping of daily needs and non daily needs, shown that attribute ladder of transportation system factor for income group < 1 million rupiah/ month with the income group > 2 million rupiahs/ month, is same but the location of shopping centre which become choosen is different, even for income group > 2 million rupiah/month, the location of shopping centre has choosen exist at the out of border study area. For income group between 1-2 million rupiahs/ month, the ladder attributes of transportation system is different, so the choosen destination shopping location also different, that is the shopping centre location to fulfill daily needs is Yogya Sunda, meanwhile for non daily needs is BIP.

The ladder atrributes of the destination location factor for each income group is same, but the shopping centre location which become choosen is different, where for shopping of daily needs, the choosen location base on destination location is Pasar Kosambi and Yogya Sunda which both location relatively closed each other, while for shopping of non daily needs, the choosen location is BIP and BSM which exist at the out of border study area.

So it can be concluded that the shopping centre as same level with BSM has strength attraction to any income group, especially for income group >2 million rupiahs/ month, because of that the placemnet or permission for shopping centre as same level with BSM and BIP have to considerate this condition, cause it will generate strengthness traffic flow at any income group and offcourse it needs supported by good transportation system in order not to raise traffic and supporting transportation problem.

The sensitivity attributes of the transportation system factor and destination location factor to the individual factor (age, income and the shopping characteristic of daily and non daily needs) can be seen at Figure 15, Figure 16, Figure 17 and Figure 18 as below:
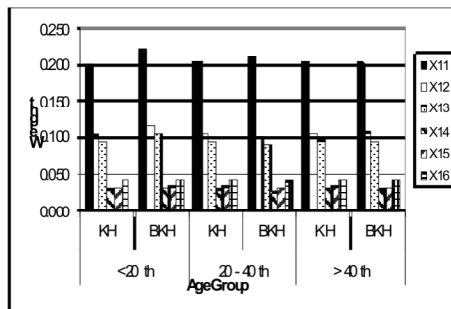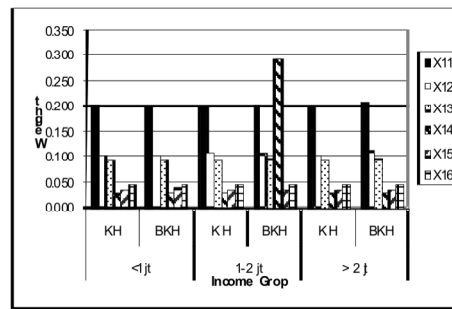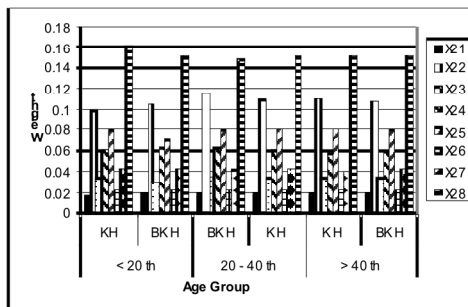

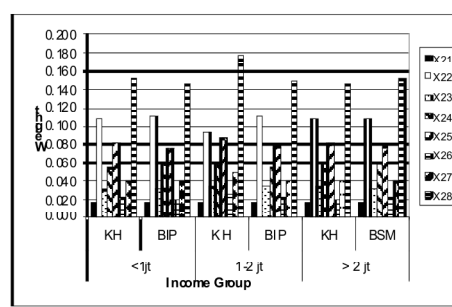**Figure 15**

Figure 16

Figure 17

Figure 18

5. CONCLUSION, IMPLICATION AND RECOMENDATION

5.1 Conclusion

1. Transportation system factor, destination location factor and individual factor are very influence to choice shopping location of daily needs and non daily needs.

2. This influences occure because there are different perception on the attributes of transportation system factor, and destination location factor seen from age group and income group. So although the attribtes ladder is same, but causes there are different perception as shown by weight value on decision choice of shopping location, it has resulted is difference choice on shopping location. As consequences is occuring different direction on shopping trip, appropriate with age group and income group and shopping for daily and non daily needs.

3. The services improvement of a shopping centre which attent to the attributes of both factors will attract arriving from all age group and income group to that shopping centre, which push improvemnet on the ammount trip to that shopping centre.

4. For transportation system factor, the travel cost and travel time attributes are the dominant attributes on choice shopping location. Meanwhile for destination location, the dominant attribute is level of satisfaction and level of services. Thus the preparing or improving services through combination of travel cost, travel time, level of satisfaction and level of services, will become the best strategy to make that shopping centre as the first priority will be choose by any age group and income group, as well shopping for daily needs and non daily needs.

5. The availability of public transport and travel distance actually not dominant attributes as determinant of a shopper decision when choice destination shopping location of daily needs and non daily needs, and it contrary with the model of accessibility which we all understand.The choice of a shopper to the shopping location, especially for shopping non daily needs not only just trade off between utility and disutility between location and transportation system but also there are perception factor to that choosen shopping centre location, whose more determine in that choice decision.

6. To decrease private car uses when visiting shopping location, and replace with public transportation option, must attent to the attributes ladder of transportation system factor as a result of this study, that is travel cost, travel time, accessibility to reach, travel convenience, travel safety and public transport availability. This ladder is difference with Richardson B.C (2006) has concluded.

7. Measuring process and analytical influences of the transportation system factor, destination location factor and individual factor to the choice of this shopping location as a generic method which can used and developed more over to measure and destination location analysis with choice characteristic, as like choice to health centre, market, fuel pump, recreation location, shops, sport centre and other social trip. The conclusion of measuring esult and that analytical fluently can used as base for planning and controlling destination location of a trip with choice characteristic.

5.2 Implication

1. The shopping centre planning for kota Bandung must be attent to the transportation factor, destination location factor and individual factor to reach efficiency and effectiveness of that shopping centre services.

2. Inline with Thorpe (1974), Dawson (1982), and result of this study, shown that government intervention in the shopping centre planning through categorization as like retail outlet, hypermarket and superstores is note enough just based on accessibility and services scale consideration, but also have to based on the variation of the shopping location attributes and transportation system attributes, and consideration of the target citizen group which will become their consummer (age, income, shopping of daily needs or non daily needs).

3. As soon aas possible to make services standar of urban facilities which considerate the attribute ladder of the transportation system factor, destination location factor and individual factor.

5.3 Recommendation for next study

1. Inline with the research road map which has composed by Ben Akiva (1975), it still wide open for transportation field reseach in relation with travel behavior and phenomena research as like the development of the attributes or research varibles, urban–sub urban location, public transportation services option, type of services facility etc.

2. Study abut sensitivity of the shopping location to the attributes of transportation factors, shopping place and individual factor for periphery area (sub urban), rural area and also for any city size

3. Study ITS and TDM strategy must be done to follow up the conclusion of this study

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