Characteristics of grocery and daily needs shopping in Greater Jakarta

L S Putranto¹, D B E Dharmowiyono² and, P Anggita¹

¹Universitas Tarumanagara, Department of Civil Engineering Jakarta 11440, Indonesia
²Universiti Teknologi Petronas, Department of Civil & Environmental Engineering, 32610 Seri Iskandar, Perak Darul Ridzuan, Malaysia

*leksmonop@ft.untar.ac.id

Abstract. Grocery shopping is an important routine activity. 125 respondents, were interviewed in Greater Jakarta. The collected data were analysed using mean difference t-tests and Pearson correlation analyses. These were to obtain the factors affecting daily grocery shopping location and transport mode. We also would like to observe whether product price, available payment method and type of shops were affecting shopping location. We also want to know what convenience factors affecting shopping location and the characteristics of purchase products. In general, purchased product, shop opening hours, availability of shopping list, transport mode, shop distance from home or office, convenience level, other purchased products besides grocery and availability of restaurant nearby the shop were significantly affecting the choice of shopping location. Keywords: characteristics, daily grocery shopping, Greater Jakarta

1. Introduction

Sun et al. in 2017 [1] stated that variability in shopping activity is a part of consumer behaviour analysis, e.g., in terms of shopping location and volume, etc. Therefore, according to Lotoski et al. in 2015 [2], individuals with lower social-economy levels chose a closer supermarket compared to an individual with a higher social-economic level.

According to Arredondo et al. in 2006 [3] and Larson et al. in 2006 [4], shopping companion can affect somebody’s shopping activity in terms of the purchased product, the choice of shopping location, the transport mode used. An example of a shopping companion is the children. When a child is joining the parent for shopping, the shopping volume might be doubled, and there were more purchased items requested by the children compared to other items.

A child at the beginning of consumer socialization (2-7 years old) might create more requests but might result in more purchase at the reflective, analytic stage (8-14 years old) as found by Buijzen & Valkenburg [5] in 2008 and Ward & Wackman [6] in 1972. Pettersson, Olsson, & Fjellstrom [7] in 2004 stated that older children involved more in decision making. Additionally, parents with higher incomes were more likely to purchase requested products, as found in Ebster et al. [8] in 2009. According to Lee et al. [9] in 2016 in Georgia most of the respondents (49%) went to supermarket/shopping center compared to smaller size full-service grocery shops (32.4%) and minimarkets (18.6%). It was reported that the reason to choose individual shops, i.e., the availability of various good quality fruits and vegetables (majority), nearby the residence (15.1%), clean (11.8%), the only place to get a particular food (11.6%), cheaper (9.9%), and suitable opening hours (9.9%) regardless the shop type.
2. Method

The research subject in this study was the primary individual in a household who conducted daily grocery shopping and responsible for providing daily grocery needs for the household. Respondents should reside within the Greater Jakarta. There were 125 respondents (56 of them directly interviewed, and 69 of them filled in online questionnaires). They were asked to fill the questionnaires regarding their general data and their shopping/shop characteristics. General data consists of gender, age, education attainment, job, ethnicity, religion, and number of household members, address, overall monthly expenses, percentage of expenses spent on groceries.

Shopping characteristics consist of shopping products, shopping lists, time & frequency of shopping, shopping location, shopping companion, transport mode used. Shopping product consists of groceries and daily needs. Groceries consist of fresh products and herbs. Daily needs consist of dry products, snacks, home cleaning products, toiletries, tissues, dairy products & baby foods, cosmetics, daily medicines, and appliances. Regarding the shopping list, respondents were asked to mention their attitude toward preparing the list/allocated budget before shopping, the level of detail of the list, their adherence to the list/budget, the effect of the shopping list to the shopping location. Regarding the time & frequency of shopping, the respondents were asked to mention whether they had any specified time to conduct groceries & daily needs shopping, whether they perceived that they had limited shopping time, their preferred time period of a shop opening time and whether this chosen period affect shopping location.

Regarding the shopping location, the respondents were asked to mention their preference for shop type. They also were asked to indicate whether they have a preference for individual shops owned by a particular establishment in a specific location. Regarding the shopping companion, the respondents were asked to indicate whether every shopping companion was entitled to propose what to buy, whether there were some rules regarding the purchase proposal, whether the shopping companion affect number of purchased products/shopping location and the relationship with the shopping companion. Regarding the transport mode for shopping, the respondents were asked to indicate the availability/number of private motorized vehicles owned and whether any of the vehicles were dedicated for the use of respondents, transport mode used for non-shopping daily activities, transport mode used for groceries and daily needs shopping, whether transport mode affect shopping location, whether number 7 type of purchased products/shopping day & time and shopping companion affect transport mode used for shopping.

Shops’ characteristics consist of shop location, product price, level of convenience, additional activities and facilities, the effect of same ethnicity/religion to shop choice, and online shopping. Regarding shop location, the respondents were asked to indicate whether the distance of the shop from the home or the office affects shopping location, the longest shopping distance acceptable, the name of the shop, and the reason for willing to travel such distance to shop. Regarding product price, the respondents were asked to indicate whether product price affects shopping location, whether they were willing to keep traveling to get the lowest price, and whether their income affects product price. Regarding convenience level, the respondents were asked to indicate whether convenience level affect their shopping location, whether service quality/cleanliness/clear product labels/eligibility to pay by respectively/availability of feasible parking spaces were part of convenience criteria that affect their shopping location. Regarding additional activities and facilities, respondents were asked to indicate whether they were also intended to purchase other products, whether additional sopping needs affect shopping location, whether the availability of culinary facilities affect shopping location, and whether the availability of entertainment facilities nearby affect shopping location. Regarding effect of same ethnicity/religion, respondents were asked to indicate whether they have ever traveled for shopping in a specific shop based on same ethnicity/religion with the shop owner and if the answer was yes whether the reason was due to availability of the required product/product knowledge of the shop...
attendants/ warm shop environment? Another item in this section was whether the same ethnicity/ religion affects shopping location. The final part of this questionnaire was regarding the effect of online shopping to direct travel to the shops. Regarding this matter, the respondents were asked to indicate whether they have ever been shopping online for obtaining groceries and other daily needs. If their answer was yes, they should also mention whether they shop online through online shop based on the website or through online motorcycle delivery. They were also asked to indicate whether they perceived that online shopping was essential and whether online shopping changes their travel pattern for groceries and daily needs shopping. They were also asked to detail their purchased product online using a similar list that has been detailed previously in this paper for groceries, daily needs, and other needs.

Except for specific items, the responses represent the degree of agreement from 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree). Series one sample mean difference with 2.5 (the departure from disagree to agree) t-tests were conducted (significant level of 0.05) to help to answer the research questions. At the later part of the results, we will report some significant (at 0.05 level) meaningful correlations between pairs of individual variables.

3. Profile of the Respondents
We were not able to find references regarding the gender proportion of people responsible for executing the daily grocery shopping in Indonesia. However, in the U.S.A., according to a survey conducted by the Hartman Group in 2017, 76% of the people carrying out daily grocery shopping were female. We tried to approach that gender proportion and ended up with 84% (104 female respondents). Although we do not have any basis that in Indonesia, the gender proportion was around that number, considering Indonesian culture that encourages females to execute domestic tasks such as daily grocery shopping, we believe that the resulted gender proportion was appropriate. 96% of respondents were from 21 to 60 years old and distributed almost evenly into age groups of 21-30, 31-40, 41-50, and 51-60 years old, respectively. More than 66% (83 respondents) were at least got a bachelor's degree from the university. The expenditures of more than 66% (83 respondents) were less than 8 million rupiahs (about USD 571) monthly. A significant ethnicity proportion was resulted. 30 respondents (24%) were Indonesian Chinese as the majority of students where the third author studying was belong to these ethnicities. 34 respondents (27%) were from North Sumatra, as the third author was originated from this area. 50 respondents (40%) were originated from Java island representing the majority of the Indonesian population, while 11 respondents were from other ethnicities. This paper was prepared using data collected by the third author for her undergraduate final thesis. Most of the respondents (74 people or about 59%) came from the Christian/ Catholic background).

Most of the respondents (52 people or about 42%) were private employees. Due to the gender proportion specified for this research, it can be understood that quite several housewives (36 respondents or 29%) were on the sample. More than 58% of respondents (73 people) came from households with 2-3 members representing the new generation who prefer to limit the number of children in the family.

4. Results
To concentrate on aspects affected shopping location and transport mode for shopping travel, most parts of this chapter will only report significantly affecting aspects. Purchased product (3.14), shop opening hours (2.86), availability of shopping list (2.77), transport mode (2.83), shop distance from home or office (2.97), convenience level (3.08), other purchased products besides grocery (2.86) and
availability of restaurant nearby the shop (2.78) were significantly affecting the choice of shopping location ($\alpha<0.001$). The availability of cinemas/game centres nearby the shops (2.29) or ethnicity/religious background of the shop's owners (1.71) were not considered important by the respondents. Number (3.13) and type (3.03) of purchases products were affecting the mode of transport used for shopping trips ($\alpha<0.001$).

The respondents were significantly willing to visit several different locations to find the lowest price (3.03 with $\alpha<0.001$). Therefore, product price (3.06) was significantly affecting their shopping location ($\alpha<0.001$). Service quality (3.07), shop cleanliness (3.17), availability of appropriate product labels (2.85), and availability of appropriate parking facilities (2.93) were significantly affecting the choice of shopping location ($\alpha<0.001$). The availability of the method of payment by cash (2.74; $\alpha=0.001$) and debit card (2.86; $\alpha<0.001$) was affecting the choice of shopping location. This consideration was not valid for shopping location, which only allows payment by credit card or digital wallet.

Although, as stated before, the ethnic background of the shop owner was considered not crucial by most respondents as a factor for choosing a shopping location. From 17 respondents who considered this was an important factor, they explained their preference was due to the availability of the required product (2.88; $\alpha=0.038$), the appropriate knowledge of a specific product (2.94; $\alpha=0.001$), the warm service provided (2.94; $\alpha=0.001$). Similarly, it also happens for the religious background of the shop owner. From 14 respondents who considered this was an important factor, they explained their preference was due to the availability of the required product (3.07; $\alpha=0.001$), the appropriate knowledge of a specific product (3.14; $\alpha=0.001$), the warm service provided (2.93; $\alpha=0.005$).

Respondents were mostly purchased fresh products such as vegetables, fishes, fruits and red/white meats (3.13), spices (2.80), body soap/shampoo (3.00), and tissue (2.89) in their daily grocery shopping ($\alpha<0.001$). We also found that the respondents rarely bought non-grocery products along with their daily grocery shopping. From 50 respondents who claimed that they were conducting online shopping, they said that the availability of online shopping changed their behaviour of daily grocery shopping (2.76; $\alpha=0.021$) although when they were asked to indicate in detail, the result was rather confusing because none of the lists of products were purchased significantly above average. In general, the respondents did not prepare a shopping list before their daily grocery shopping and, therefore, might buy something which was not expecting before. Consequently, they did not strictly arrange a budget for daily grocery shopping. It might be due to the relatively low expenses that should be disbursed for daily grocery shopping. Compared to other choices of shopping locations, the respondents claimed that they prefer to go to the supermarket (2.74; $\alpha=0.002$). The respondents prefer to use online motorcycle taxis to travel for their daily activities (2.70; $\alpha=0.033$) except for daily grocery shopping. As they need to bring their purchased products, they tend to use the car for daily grocery shopping, although the mean value was below 2.5 (2.37).

The younger the age of the respondents, their shopping location was more affected by the level of convenience of the shop ($r=-0.162; \alpha=0.036$), the availability of culinary facilities surrounding the shops ($r=0.165; \alpha=0.033$), and the availability of entertainment facilities surrounding the shops ($r=0.354; \alpha<0.001$). The older the age of the respondents, their shopping location was more affected by the same ethnicity ($r=0.215; \alpha=0.008$) and religion ($r=0.201; \alpha=0.012$) between them and the shop owners.

Respondents with less monthly expenses (as a proxy of wealth) were more likely to travel longer from shop to shop to get the cheapest price ($r=-0.190; \alpha=0.017$). The price of the product purchased by the respondents with less monthly expenses was more likely to be affected by the monthly expenses ($r=-0.205; \alpha=0.011$).
Compare to older respondents, younger respondents were more likely to be affected by shop service quality when choosing a shopping location ($r=-0.213; \alpha=0.009$). The respondents with more monthly expenses (as a proxy of wealth) were more likely to be affected by shop cleanliness to choose shopping locations ($r=-0.209; \alpha=0.010$). Younger respondents were more likely to choose a shopping location, which allows them to pay using digital wallets ($r=-0.355; \alpha=0.001$).

Female respondents were more likely to purchase fresh products compare to male respondents ($r=-0.222; \alpha<0.006$). Male respondents were more likely to purchase dried products ($r=0.258; \alpha=0.002$), snacks ($r=0.206; \alpha=0.011$) and appliances ($r=0.230; \alpha=0.005$) compare to female respondents. Older respondents were more likely to purchase fresh products ($r=0.232; \alpha=0.005$), and spices ($r=0.215; \alpha=0.008$) compare to the younger respondents. Younger respondents were more likely to purchase dried products ($r=0.288; \alpha=0.001$), snacks ($r=-0.347; \alpha<0.001$), milk & baby food ($r=-0.296; \alpha<0.001$), and cosmetics ($r=0.258; \alpha=0.002$) compare to older respondents. Respondents with higher education attainment were more likely to purchase dried products ($r=0.219; \alpha=0.007$) and snacks ($r=0.186; \alpha=0.002$) compare with respondents with lower higher education attainment. Respondents with more monthly expenses (as a proxy of wealth) were more likely to purchase fresh products ($r=0.210; \alpha=0.009$) and tissues ($r=0.163; \alpha=0.034$) compare to respondents with lower monthly expenses. Regarding the shopping lists and budget, males were more likely to be committed to the prepared shopping list ($r=0.156; \alpha=0.041$) and allocated budget ($r=0.170; \alpha=0.029$) compare to females.

Older respondents were more likely to shop at traditional market ($r=0.258; \alpha=0.002$) compare to younger respondents. Respondents with higher education attainment were more likely to shop at modern markets such as supermarket ($r=0.277; \alpha=0.003$), hypermaket ($r=0.244; \alpha=0.003$) and mall ($r=0.276; \alpha=0.001$) compare to respondents with lower education attainment. Similar results also applicable for respondents with higher monthly expenses (as a proxy of wealth). They were more likely shop at modern markets such as supermarket ($r=0.176; \alpha=0.025$), hypermaket ($r=0.267; \alpha=0.001$) and mall ($r=0.265; \alpha=0.001$) compare to respondents with lower monthly expenses.

Males were more likely to ride private motorcycle as their mode of transport for daily activities ($r=0.205; \alpha=0.011$) compare to females. Similar results were found regarding the males use of private motorcycle for daily shopping ($r=0.180; \alpha=0.022$). For daily activities, younger respondents were more likely to walk ($r=0.178; \alpha=0.023$), ride private motorcycle ($r=-0.244; \alpha=0.003$) and ride motorcycle taxi ($r=-0.3777; \alpha<0.001$) compare to older respondents. For daily shopping, younger respondents were more likely to ride private motorcycle ($r=-0.217; \alpha=0.008$) and ride motorcycle taxi ($r=-0.299; \alpha<0.001$) compare to older respondents. For daily activities, the lower the monthly expenses (as the proxy of wealth) of the respondents the more likely they walk ($r=-0.244; \alpha=0.003$, ride private motorcycle ($r=-0.244; \alpha=0.003$), ride public transport ($r=-0.244; \alpha=0.003$ and ride motorcycle taxi ($r=-0.244; \alpha=0.003$) compare to the respondents with more monthly expenses. For daily shopping, the lower the monthly expenses, the more likely they use private car ($r=0.496; \alpha<0.001$) compare to respondents with less monthly expenses.

Males were more likely to buy books ($r=0.168; \alpha=0.030$) along with daily grocery shopping compare to females. Younger respondents were more likely to purchase electronic appliances ($r=-0.160; \alpha=0.037$) compare to older respondents. Christian/ Catholic respondents were more likely to purchase musical instruments ($r=0.189; \alpha=0.017$) along with daily grocery shopping compare to respondents from other background. The higher the monthly expenses (as the proxy of wealth) of the respondents the more likely they purchase fashion ($r=0.144; \alpha=0.054$), household appliances ($r=0.168; \alpha=0.030$).
and electronic appliances ($r=0.259; \alpha=0.002$) compare to the respondents with lower monthly expenses.

Chinese respondents were more likely to shop online ($r=0.282; \alpha=0.001$) compare to respondents from other background. Somehow, the less the number of household members the more likely the respondents to shop online ($r=-0.372; \alpha=0.004$). Female respondents were more likely to purchase cleaning products ($r=-0.270; \alpha=0.029$) and cosmetics ($r=-0.291; \alpha=0.020$) compare to male respondents. Younger respondents were more likely to shop online to purchase dried products ($r=-0.283; \alpha=0.023$) compare to older respondents. Older respondents were more likely to shop online to purchase snacks ($r=0.428; \alpha=0.001$) compare to younger respondents. Chinese respondents were more likely to purchase cosmetics ($r=0.244; \alpha=0.044$) compare to other ethnicity background. Younger respondents were more likely purchase fashion products online ($r=-0.270; \alpha=0.029$) compare to older respondents.

5. Conclusions

Choice of shopping locations was affected by the transport mode used and the the shop distance from home or office. The number and type of purchased products were affecting the mode of transport used for shopping trips. Therefore, to help loyal customiers who purchased many products which sometimes difficult to handle, the grocery shops might provide free delivery to the their addresses. The delivery service will also help the less wealthy respondents who put affordable price as the main criteria for choosing shopping locations. Less wealthy respondents tend to walk or ride motorcycle taxi for daily shopping, whilst the whealtier respondents tend to use private car.

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