International Journal of Engineering & Technology, 7 (3.30) (2018) 535-538

International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET

Research paper

Factors Influencing Consumer Preferences for Locally Produced Food: a Comparison between Traditional and Modern Markets

Poppy Arsil[*1], Kusmantoro Eddy Sularso[2], Altri Mulyani[3]

[1,2,3]*Faculty of Agriculture, Universitas Jenderal Soedirman, Purwokerto, Indonesia*
**Corresponding author E-mail: poppy74arsil@gmail.com*

Abstract

Traditional and modern markets are both potential distribution channels for the distribution of locally produced food in Indonesia. The aim of the current study is to gain insight into consumer preferences for locally produced food when shopping at both markets. A total of 300 respondents were interviewed using stratified purposive sampling in traditional markets and supermarkets in Banyumas regency. Factor analysis was used to group consumer towards their preferences for local food. The overall KMO values were 0.746 for consumers who shopped in traditional markets and 0.835 for those who purchased locally produced food in modern markets, with a significance level of 0.000 for both segments of consumers. All individual MSAs also emerged as over 0.06. The results show that consumer preferences for locally grown products are very similar in both markets. Five factors were found considerably to influence consumer preferences in both markets, namely habit, food quality, product availability, the tendency to support local food, and the availability of information and knowledge. What makes the difference between markets is that supermarket shoppers have enthusiasm and proud eating local food product. The total variance for the six factors was 64.245% and 65.705% for traditional and modern markets, respectively.

Keywords: *local food, preference, supermarket, traditional market.*

1. Introduction

According to the Republic of Indonesia's constitution number 18 of the year 2012, food is defined as everything derived from agricultural products as well as any plantation, forestry products, fisheries, farms, and seafood, pre-processed or processed for the purpose of human consumption. This also includes additional ingredients, raw materials and other materials used in the process of preparing, processing, and/or making food or drink. In addition, locally produced food is linked to localisation, that is, a shorter chain of food distribution from producers to consumers. Henseleit (1) commented that locally produced food is fresh produce grown in surroundings neighborhood areas that take into account local cultures. This statement was then supported by (2), who interviewed local food consumers in Indonesia and stated that local food is that which is fresh and locally grown, and cultivated in the countryside, particularly in the neighboring district or province.

Consumer preferences can be defined as an individual's tendency, or lack thereof, to consume or use a product or service. Consumer choice indicates an individual's preference of a choice variety of products (3). Therefore, consumer preference can be seen as a person's predisposition in selecting particular goods that they perceive as enjoyable. Certain factors have been reported to influence consumer preferences towards locally produced food, such as quality, price, degree of support for the local economy and farmers, product origin, and food safety (1-2,4-7). Such local food is believed to be higher quality compared to non-local food. It is also fresher, tastier and more nutritious than nationally distributed or imported food, as local food has a short distribution chain (2,5,7-8). Some consumers also believe that local food is inexpensive and can, therefore, afford it for their daily consumption (8). By purchasing local food, consumers can also support the local economy and farmers (9). Locally produced food has also been seen as carrying greater assurance for the consumer as to where it originated from (6). Finally, some researchers have reported that locally produced food has a positive relationship with food safety (1).

Traditional and modern markets are two important distribution channels for local food in Indonesia. The traditional market is a market built and managed by the government, private individuals and enterprises in the form of shops, kiosks and stalls. Such a market is self-help or managed by small or medium sized enterprises, whereby consumers can bargain during the process of selling and buying. In contrast, modern markets prioritize the convenience of shopping services and are run by modern management, with strong capital investment and the products equipped with a fixed price tag. This type of market includes minimarkets, supermarkets, department stores and hypermarkets (Regulation of the Minister of Industry and Trade of the Republic of Indonesia, No. 420/MPP/Kep/10/1997).

To date, there exist very few studies that have investigated local food preferences, particularly among shoppers who purchase local food at different distribution channels, such as traditional and modern markets. Moreover, previous studies have tended to report consumer preferences for locally produced food in developed countries such as the USA and European countries (5,10-14), with little research focusing on consumer preferences in developing countries like Indonesia (e.g. (15)). In light of these gaps, the aim of the current study is to investigate consumers' preferences for local food at traditional and modern markets in Banyumas regency, located in the western area of central Java province. The mod-

ern markets sampled consisted of 22 units of department stores and plazas in 2007, while the traditional markets totalled 21 units managed by local government and spread out over 27 sub-districts in Banyumas regency. Typical commodities commonly found at the markets are rice, corn, cassava, soybeans, nuts and green beans (16). Factor analysis was used to form fewer numbers of factors from a large number of variables. It is hoped that the findings of this study can contribute to strengthening marketing strategies promoting locally produced food.

2. Methodology

2.1 Data Collection

This research was conducted from November 2016 to February 2017 in Banyumas regency, Central Java, Indonesia. Three hundred respondents were selected using stratified purposive sampling (17). The strata here referred to the particular type of market. Respondents were approached at six main traditional and modern markets in the study area, and asked whether they bought local food at these markets. Prior to the survey, we organized a focus group discussion (FGD) in order to obtain further information and knowledge regarding consumer preferences towards local food when shopping at these markets. A questionnaire was then designed based on the FGD results and literature reviews related to the topic (5-6, 11, 13). A pre-test questionnaire was carried out with 15 respondents to ensure that the questionnaire was easy to understand. Some sentences were changed and shortened to make the questions clearer. A five point Likert scale was used in this study, ranging from 1 (strongly disagree) to 5 (strongly agree).

2.2 Data Analysis

The data obtained in this study were analysed using factor analysis, a technique commonly applied to simplify several variables into a smaller number of factors. The reduction or simplification factors was here conducted by considering the interdependence of several variables (18-19). The data were analysed using SPSS 21.
The steps involved in factor analysis are as follows. 1) Checking data suitability for factor analysis using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (MSA) and Bartlett's test. Generally, KMO values over 0.5 that are significant (Sig. < 0.05) when subjected to the Bartlett test are suitable for factor analysis. 2) Grouping a number of variables selected into one or several factors using principal component analysis. 3) Rotating to clarify whether the factors formed are already significantly different to the other factors using the Varimax method. 4) Naming the newly formed factors (18).

3. Results

3.1 Respondent Demographics

The traditional and modern markets chosen for this study were those markets which sold fresh food. Table 1 shows the characteristics of 300 respondents who participated in the study.

Table 1: Characteristics of respondents shopping at traditional and modern markets

Characteristics	Traditional Market (N=150)		Modern Market (N=150)	
	∑Person	Percentage	∑Person	Percentage
Gender				
Male	31	10	27	9
Female	269	90	273	91
Age (years)				
20-30	70	23	100	33*
31-40	102	34	85	28
41-50	69	23	66	22
51-60	43	14	37	12
≥ 61	16	5	12	4
Education				
Primary school	58	19	5	2*
Junior high school	52	17	16	5*
Senior high school	104	35	126	42
Diploma	27	9	57	19*
Undergraduate	55	18	87	29*
Masters degree and above	4	1	9	3
Occupation				
Civil servant	19	6	32	11*
Entrepreneur	97	32	81	27
Housewife	122	41	118	39
Student	2	1	27	9*
Employee at private business	60	20	42	14
Marital Status				
Married	250	83	229	76
Widowed	17	6	14	5
Single	33	11	57	19
Ethnic group				
Java	283	94	273	91
Non-Java	17	6	27	9
Income per month (million IDR)				
≤ 3	251	84	143	48*
≤ 6	40	13	100	33*
≤ 9	3	1	18	6*
≤ 12	4	1	16	5
> 12	2	1	23	8*
Grew up on a farm				
Yes	170	57	98	33*
No	130	43	202	67*
Meal cost per week (000 IDR)				
≤200	103	34	73	24*
>200 – ≤400	140	47	110	37*
>400 – ≤600	42	14	77	26*
>600 – ≤800	10	3	21	7
≥800	5	2	19	6

*significant at 0.05 confidence level using a nomograph (20, p. 297).

Note: Percentage may not total 100 due to rounding up/down.

In general, the respondents who shopped in the modern markets were younger, had obtained a higher level of education and higher income, and spent more money on food per week than those who shopped in traditional markets. In terms of place of origin and occupation, most respondents had not grown up on a farm and were either students or working as civil servants.

3.2 Traditional Markets

Data from 300 respondents were analyzed by using SPSS 21. Following this, the Kaiser-Meyer-Oikin (KMO) value was obtained, 0,746. The KMO values for traditional markets were found to be higher than 0.5, indicating that factor analysis was an accurate approach to employ in this research. The significance value obtained from the Barletts test was 0.000, suggesting that there exists a correlation between the variables.
The next stage involved checking the Anti Image Matrices in order to glean the relationships between the variables, using an MSA (Measures of Sampling Adequacy) value. The MSA value needs to be greater than or equal to 0.5 (≥ 0.5). If the MSA value is higher than or equal to 0.5, this indicates the presence of a close relationship between the variables. Variables that had an MSA value that was greater than or equal to 0.5 were then included in the next step of the analysis, which involved the extraction and rotation of the group variables into several factors. The selected factors were those with an eigen value of 1.
Based on this extraction and rotation analysis, the results show that there are eight factors pertaining to traditional markets which

represent variables with an eigen value above 1. The number of factors showing relate to a number of grouping variables because of similarity characteristics. Table 2 provides a summary of the eight factors and the 22 variables that constitute them.

Table 2: Consumer preference factors for traditional markets

Variable	Factor Loading	Mean and SD	Newly constructed factors
Every family member consumes local food	0.747	4.07±0.56	Habit and availability
It is the family tradition to consume local food	0.730	4.01±0.53	
Easy to buy (traditional markets, supermarkets, shops, and stalls can be found near the home or office)	0.719	4.13±0.56	
Available throughout the year	0.685	4.04±0.59	
Variance explained (%)			20.498
Healthier	0.785	4.19±0.61	Food quality and healthier
Good quality	0.757	4.21±0.55	
Higher nutritional value	0.696	4.05±0.55	
Variance explained			10.617
Fresher	0.726	4.29±0.53	Fresh and natural
Natural	0.702	4.25±0.57	
Unique taste	0.553	4.03±0.55	
Variance explained (%)			8.516
Local food knowledge obtained from formal education (school) or informal sources (internet, newspaper, friends).	0.811	3.55±0.79	Information and knowledge
Local food knowledge obtained from goverment activities such as bazars, expos and empowerment of local communities	0.726	3.44±0.81	
Local food knowledge obtained from TV or another mass media	0.581	3.77±0.66	
Variance explained			6.192
Support for local food	0.814	3.89±0.61	Support local food
Support for the local economy	0.799	3.96±0.64	
Variance explained (%)			5.171
No packaging	0.785	3.79±0.74	Packaging and food appearance
Color and form are more interesting	0.626	3.82±0.75	
Variance explained (%)			4.790
Cheaper	0.650	3.83±0.78	Cheaper and local origin
Assurance of product authenticity	0.579	3.97±0.60	
Variance explained (%)			4.567
I don't care where the food was grown and produced	0.719	3.49±1.03	Awareness and food security
Easy to identify from the logo	0.603	2.67±1.03	
No pesticide used	0.500	3.43±1.01	
Variance explained (%)			3.895
Total variance (%)			64.245

3.3 Modern Markets

Using a similar data analysis, the Kaiser-Meyer-Oikin (KMO) value for modern markets was found to be 0,835, confirming the validity of conducting a factor analysis. The significance value obtained from the Barletts test for modern markets was 0.000. The factors pertaining to modern markets are shown in Table 3.

Table 3: Consumer preference factors for modern markets

Variable	Factor Loading	Mean and Standard deviation	Newly constructed factors
Higher nutritional value	0.822	4.23±0.72	Food quality
Healthier	0.819	4.27±0.79	
Natural	0.781	4.19±0.74	
Fresher	0.756	4.22±0.69	
Good quality	0.725	3.99±0.89	
Good taste	0.567	3.89±0.79	
Variance explained (%)			16.854
Assurance of product authenticity	0.774	4.09±0.62	Availability of product and authenticity
Available throughout the year	0.770	3.93±0.78	
Easy to buy (traditional markets, supermarkets, shops, and stalls can be found near the home or office)	0.638	4.14±0.61	
Cheaper	0.600	4.30±0.56	
Unique taste	0.529	4.18±0.59	
Variance explained (%)			11.682
Support for local food	0.839	3.97±0.76	Support local
Ethnocentrism	0.742	4.02±0.73	
Support for the local economy	0.730	4.15±0.65	
Variance explained (%)			9.396
Quick and easy to process	0.726	3.86±0.79	Habit and experience
It is the family tradition to consume local food	0.690	3.91±0.72	
Every family member consumes local food	0.651	3.95±0.79	
Variance explained (%)			9.022
Local food knowledge obtained from TV or another media	0.770	3.77±0.75	Information and knowledge
Local food knowledge obtained from goverment activities such as bazars, expos and empowerment of local communities	0.730	3.7±0.76	
Easy to identify from the logo	0.539	3.75±0.73	
Variance explained (%)			7.684
No packaging	0.882	3.74±0.89	Packaging and experience
Past experience	0.569	3.83±0.71	
Variance explained			6.270
I don't care where the food was grown and produced	0.778	2.62±1.04	Awareness
Variance explained (%)			4.797
Total variance explained (%)			65.705

4. Discussion

Habit and food availability emerged as important dimensions for traditional market shoppers, and explained 20.498 of the total variance. Respondents agreed that eating local food was a daily consumption habit in their family; as local food is easy to find in traditional markets, this family consideration, therefore, meant they preferred to buy local food at these markets. The second and third factors might be related to food quality. Respondents agreed that local food in traditional markets is of good quality in terms of freshness, nutritional value and taste. The availability of information and knowledge about local food were identified as a fourth factor. Specifically, the main sources of information were found to come from formal and informal education (loading factor 0.811), followed by government activities (loading factor 0.776). Support for local food in principle was also positively correlated to consumer preference.

Food quality was the first dimension identified among modern market shoppers. Respondents preferred to buy local food at modern markets due to the perceived higher food quality (the variance explained 16.854%). A second factor might be termed product availability and authenticity, consisting of five sub-variables. Principled support for local food was identified as the third dimension, related to support for the local economy as well as ethnocentrism.

It would appear that preferences for local food are quite similar among traditional and modern market shoppers in terms of the key factors emerging; namely, "habit", "food quality", "product availability", "support for local food", "information and knowledge", "packaging", "local origin", and "awareness".

Habit was found to be more important among traditional market shoppers than modern market shoppers. As local food has a long history within the communities that typically use raw ingredients

in cooking traditional, local food, , the role of local food is important in their daily culture. Indeed, this factor pertaining to tradition is unique among Banyumas shoppers, as it has not been reported in previous similar studies This dimension understandably emerged because Indonesian people have a strong link with traditional food culture.

In terms of food quality, local food was believed to be fresher, more natural, and healthier, with higher nutritional value compared to non-local food. This is relevant in light of previous research reporting that local food tends to be of good quality and appearance (2, 5, 7). Freshness, food quality and nutritional value, as well as taste, were also seen to be more important factors among modern market shoppers compared to traditional market shoppers. A similar finding was reported in a study in the UK, that local food is tastier, safer and more nutritious (21).

Mosser et al. (22) reviewed publication with respect to organic and local fruits and vegetables. They reported that the aspect of availability was an attribute that had not yet been investigated in East Asia. In our study, availability emerges as an important dimension affecting local food preferences in both markets. Respondents believed that local food was easy to buy and available throughout the year, as well as priced more cheaply compared to non-local food. This finding is similar to that of (15), who reported that availability was also an important factor affecting local food preferences in urban and rural areas.

"Support for local food" comprised two similar sub-factors for shoppers in both markets in the current study: 1) support for local food, and 2) support for the local economy. However, shoppers at modern markets also mentioned ethnocentrism, in the sense that they were proud to consume local food.

The difference between traditional and modern markets is that shoppers at modern markets were found to highlight ethnocentrism and also to focus on the food processing experience, in that local food is quick and easy to process and cook. The total variance explained for traditional and modern market shoppers was 64.245 and 65.705%, respectively, indicating an acceptable level of validity of this research (18).

5. Conclusions

The determinant factors for local food preferences for shoppers at traditional and modern markets emerged as quite similar in terms of "habit", "food quality", "product availability", "support for local food", and "information and knowledge". The key difference between the markets was that consumers at modern markets were more aware of ethnocentrism. A limitation of this study is that only one regency was surveyed. Therefore, the results cannot be generalised to local food consumers across the whole of Java Island. The factors yielded can, however, can be used for marketing campaigns to promote local food in both markets by considering consumer habits, product availability, food quality, and support for local food. Likewise, our results show that local food promotion can be undertaken through both formal and informal education, mass media and government activities.

Acknowledgement

This study was funded by the Directorate General of Higher Education, under the scheme of "Unggulan Perguruan Tinggi" (Contract no 068/SP2H/LD/DRPM/IV/2017).

References

[1] M. Henseleit, S. Kubitzki, R. Teuber, Determinants of consumer preferences for regional food in determinants of consumer preferences for regional food, The 105th EAAE Seminar, International Marketing and International Trade of Quality Food Products Bologna (2007), Bologna, Italy.

[2] P. Arsil, E. Li, J. Bruwer, Perspectives on consumer perceptions of local foods: A view from Indonesia, Journal of International Food & Agribusiness Marketing, 26, 2, (2014a), 107-124.

[3] P. Kotler, Marketing Management: Analysis, Planning, Implementation and Control, Englewood Cliffs, Prentice-Hall, New Jersey, 1994.

[4] P. Arsil, E. Li, J. Bruwer, Using means-end chain analysis to reveal consumers' motivation for buying local foods: An exploratory study, Gajah Mada International Journal of Business, 18, 3, (2016), 285-300.

[5] C. Brown, Consumers' preferences for locally produced food: A study in southeast Missouri, American Journal of Alternative Agriculture, 18, 4, (2003), 213-224.

[6] J. Gallons, U.C. Toensmeyer, J.R. Bacon, C.L. German, An analysis of consumer characteristics concerning direct marketing of fresh produce in Delaware: A case study, Journal of Food Distribution Research, 28, 1, (1997).

[7] A.S. Kezis, T. Gwebu, S.R. Peavey, H. Cheng, A study of consumers at a small farmers' market in Maine: Results from a 1995 survey, Journal of Food Distribution Research, 29, 1, (1998), 91-99.

[8] P. Arsil, E. Li, J. Bruwer, G. Lyons, Exploring consumer motivations towards buying local fresh food products: A means-end chain approach, British Food Journal, 116, 10, (2014b), 1533-1549.

[9] J. Smithers, J. Lamarche, A.E. Joseph, Unpacking the terms of engagement with local food at the farmers' Market: Insights from Ontario, Journal of Rural Studies, 24, 3, (2008), 337-350.

[10] A.O. Adelaja, R.G. Brumfield, K. Lininger, Product differentiation and state promotion of farm produce: an analysis of Jersey fresh tomato, Journal of Food Distribution Research, 21, 1, (1990), 73-85.

[11] C.M. Bruhn, P.M. Vossen, E. Chapman, S. Vaupel, Consumer attitudes toward locally grown produce, California Agriculture, 46, (1992), 13-16.

[12] K. Darby, M.T. Batte, S. Ernst, B. Roe, Decomposing local: A conjoint analysis of locally produced foods, American Journal of Agricultural Economics, 90, 2, (2008), 476-486.

[13] J.B. Dunne, K.J. Chambers, K.J. Giombolini, S.A. Schlegel, What does 'local' mean in the grocery store? Multiplicity in food retailers' perspectives on sourcing and marketing local foods, Renewable Agriculture and Food Systems, 26, 1, (2011), 46-59.

[14] R. Feagan, D. Morris, K. Krug, Niagara region farmers' markets: local food systems and sustainability considerations, Local Environment: The International Journal of Justice and Sustainability, 9, 3, (2004), 235-254.

[15] P. Arsil, M. Brindal, K.E. Sularso, A. Mulyani, Determinants of consumers' preferences for local food: A comparison study from urban and rural areas in Indonesia, Journal of Business & Retail Management Research, 13, (in press).

[16] Badan Pusat Statistik Kabupaten Banyumas, Banyumas dalam Angka, Badan Perencanaan Pembangunan Daerah Kabupaten Banyumas, Purwokerto, 2014.

[17] D.A. Aaker, V. Kumar, G.S. Day, Marketing research, John Wiley & Sons, Inc, New York, 2004.

[18] J.F. Hair Jr., W.C. Black, B.J. Babin, R.E. Anderson, Multivariate Data Analysis, 7th Edition, Upper Saddle River, Prentice Hall, 2009.

[19] P.J. Allen, K. Bennett, PASW statistics by SPSS: A practical guide version 18.0, Cengage Learning, South Melbourne, 2010.

[20] A.N. Oppenheim, Questionnaire design, interviewing and attitude measurement, Pinter Publisher Limited, London, 1992.

[21] G. Seyfang, Consuming values and contested cultures: A critical analysis of the UK strategy for sustainable consumption and production, Review of Social Economy, 62, 3, (2004), 323-338.

[22] R. Mosser, R. Raffaelli, D. Thilmany-McFadden, Consumer preferences for fruits and vegetables with credence-based attributes: A review, International Food and Agribusiness Management Review, 14, 2, (2011), 121-142.