

Segmentation of Cinema Audiences: An Empirical Finding from Indonesia

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ABSTRACT

The swift changes that undergo in present-day society are leading to an increasing personalization in consumer behavior patterns. This effect seems to be a particularly well-reflected cinema in a shopping center. As one of the main characteristics of the market is its heterogeneity. However, there is distinct segment of consumers which have different characteristics, behaviors, and needs. Therefore, analyzing each segment of consumer is needed to develop better services that are targeted for a specific segment. This research used values and lifestyle to segment the consumer of cinema audiences since the classical socio-demographics characteristics are not sufficient for the analysis of consumer behavior. Two-stage cluster analysis were used to perform market segmentation. Results showed that there are four segments of cinema audiences, i.e., solitary, apathetic, enthusiastic, and social group. The ANOVA test confirmed that the four segments were appropriate since it created more differentiated and consistent clusters. This research could contribute to the theoretical and empirical literature on consumer segmentation where different marketing strategies could be generated for each segment.

CCS Concepts

• Information systems application→Data mining→Clustering

Keywords

Cinema audiences; clustering; k-means; segmentation.

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1. INTRODUCTION

The cinema exhibition sector in Indonesia has undergone significant changes in the last five years. Until December 2017, there are 263 theatres with 1,412 screens. This number increased sharply compared to the last record in August 2012 which only 145 cinemas with 609 screens or it increased about 132 percent [1]. It is recorded that the number of viewers in 2017 reached 42.7 million people—it has grown dramatically compared to the last two years which is 16 million people [2]. It means that the competition is fierce. This has led the companies to pay more attention to the consumers' needs and wants.

In order to do so, the firms have to realize that market is heterogeneous, but there are “distinct” groups—or segment—of consumers which have different characteristics, behaviors, and needs who might require separate services or even marketing mix to be served [3]. Thus, analyzing demand by segmenting the cinema consumers would allow for the design of more efficient marketing strategies. Once the market is segmented, the firm could target which segment it can be served best and set the competitive positioning for the particular service [3].

Market segmentation is widely used as it can help marketers, to develop better products and services that are targeted for a specific segment of customer [4]; see for example: [5, 6] used segmentation for identifying the particularities of shopping centers; [7, 8] utilized market segmentation in tourism sector; [9] for ecological products; while [10] for internet shoppers.

One of the most important decisions when segmenting a market is determining the most useful variable that will be used to identify different groups of consumers. Some studies used socio-demographic characteristics [11, 12]; while others used benefits sought variable [13]; motivation [14, 15]; and attitudes [16]. This research tried to utilize values and lifestyle as they are notable for their usefulness in the identification of consumer groups. In addition, socio-demographic characteristics are not sufficient for the analysis of consumer behavior [11] since they can have different behaviors. Such attempt has been conducted to segment a market of cinema consumers in Spain [17]. However, this paper sought to extend the scope of the previous study by conducting the

research in Indonesia. Different consumers' values and lifestyle between two countries, could aid the generalization of values and lifestyle as variables for segmenting cinema audiences.

The paper is structured as follows. In the following section, the research method of this paper is introduced. The result of the case study is discussed in the third section. Finally, the conclusion and future research direction will be presented in the fourth section.

2. RESEARCH METHOD

The objective of this research is to perform a market segmentation in order to identify different groups of cinema audiences in accordance with their values and lifestyle. A total of twenty-eight items related to values and lifestyle are used in this study in which they are adapted from [17, 18]. A survey was conducted in Semarang, a capital city of Central Java Province, to accomplish the aforementioned goal. We believe that such kind of business is potential since it is represented by the number of cinemas in this city (there are six cinemas there).

The questionnaire being used in this survey had two sections that consisted of personal information of the respondents at the first section and the main part of the questionnaire as twenty-eight questions related to values and lifestyles at the upcoming section. In the first section, the information that have to be submitted are the name of the respondents, age, gender, marital status, educational status, and employment status. The questions at the second section examined values and lifestyle of the respondents on a seven-point Likert scale which are divided into two subsections: seventeen questions related to values and eleven questions for the lifestyles. The respondents are asked to indicate their agreement or their disagreement towards the corresponding question. Score of 1 indicated strong disagreement while score of 7 referred to the strong agreement.

Clustering method consists of hierarchical clustering which begins by grouping object one by one based on similarities or distances and non-hierarchical clustering which begins by dividing observations into some predetermined number of clusters based on a priori. To do segmentation, we used two-stage cluster analysis which is the combination of hierarchical clustering and non-hierarchical clustering. Ward's method of hierarchical clustering [19] was used to obtain the number of clusters. It is used to determine the starting point and number of groups that do not exist yet based on a priori. After the number of optimal clusters was formed, a *k-means* cluster analysis [20], which is non-hierarchical method, was performed to differentiate and specify the characteristics for each cluster by determining the relationship of variables, i.e., values and lifestyle. The farther the distance between one to another group of the clusters, the greater variant characteristics among groups, whereas the internal group consisted of identical characteristics that were alike.

3. RESULT

This study is a survey-based research which employed questionnaires to be fulfilled by respondents. As stated in the previous section, this research was conducted in Semarang which has six cinemas, each is located in the shopping center. We performed an on-site interview as well as an online questionnaire to collect the data. The on-site interview was conducted in a particular cinema where people are approached at first and asked to participate in the survey. After administering the survey, we gained 326 valid answers from the respondents. The profile of the respondents is depicted in Table 1.

Table 1. Profile of the respondents

Variables	Categories	Percentage
Gender	Male	35.28
	Female	64.72
Age	Under 15	0
	15 – 24	76.69
	25 – 34	6.75
	35 – 44	6.44
	45 – 54	7.67
	55 – 64	2.45
	Over 64	0
Marital status	Single	80.37
	Married	19.63
	Separated/Divorced	0
Educational background	Elementary school	0.30
	Primary studies	3.07
	Secondary studies	60.43
	University level	36.20
Employment status	Employee	15.95
	Self-employed	3.68
	Unemployed	0.31
	Freelancer	1.84
	Student	72.39

The survey shows that the respondents were mostly female (64,72% for female and the rest of it for male). Furthermore, more than 75% of the sample was between 15 and 24 years old. On the other side, the marital status group was mostly coming from single status with the majority percentage of 80,37%. The overall profile shows that 72,39% of the respondents were students.

As mentioned in the previous section, Ward's method was used in the first stage to find the optimal number of clusters; then, the non-hierarchical *k-means* clustering procedure was applied to explore the cluster solution. The optimal number of clusters was found to be four as they have the greatest differences among the groups. The data were processed using IBM SPSS 25.

Validation procedure using ANOVA test shows that the four groups were the best solution which it created more differentiated and consistent clusters. The largest group member was Group 4 (29.8%), followed by Group 1 and Group 3 (24.8%) and the last is Group 2 (20.6%); see Table 2 for the detail as well as the ANOVA test result. Note that the differences were statistically significant since all of *p-value* (sig.) are 0.000.

The characteristics of the four groups based on the consumers' values and lifestyle are as follows. Group 1 is called solitary. This group has 81 respondents who are predominantly above average in all item questions, except in walking around neighborhood or nearby park; visit a gym at least three times a week; enjoy social life with friends and neighbors; take time to take care of the elderly; grow vegetables or fruits in your garden; cook at home for leisure; spend time caring for children by doing activities with them and likes to watch sports on TV. This group is the only group who likes eating in the restaurant. Based on the cinema attendance, the members of Group 1 are the most regular cinema consumers. They are quite active people but individualistic. The characteristics of the member of this group are they do not like doing activities that involve relating to others and do not like sport, but they like art and have an environmental concern. The members of this group are typically female (64.20%), between 15

Table 2. Segmentation of cinema audiences based on their values and lifestyle

	Variables and item questions	Sig.	Group 1 24.8%	Group 2 20.6%	Group 3 24.8%	Group 4 29.8%	Total 100.0%
Values	Attends cultural events, concerts and art exhibitions	0.00	4.81	3.67	4.78	3.61	4.21
	Read business and professional news and magazines	0.00	4.36	3.07	4.69	3.55	3.94
	Stroll through neighbor-hood or nearby park	0.00	4.58	3.3	5.77	4.96	4.73
	Visit a gym at least three times a week	0.00	2.26	1.72	3.75	2.07	2.46
	Recycle glass, paper or plastic at home	0.00	3.8	2.51	4.7	3.16	3.57
	Is informed about the latest technological advances	0.00	5.57	4.91	5.59	4.69	5.18
	Enjoy social life with friends and neighbors	0.00	5.35	4.37	6.01	5.87	5.47
	Take time to take care of the elder	0.00	4.35	2.42	5.73	5.1	4.52
	Take classes to learn new language skills	0.00	4.02	2.67	4.37	3.4	3.65
	Use internet, e-mail, and personal computer at home	0.00	6.73	5.07	5.16	5.95	5.77
	Go to the cinema or theatre at least once a month	0.00	5.31	4.04	4.36	3.22	4.19
	Work as a volunteer organizing activities for young people or other groups	0.00	5.14	3.39	5.12	4.26	4.51
	Collaborate with charitable causes and with non-profit organizations	0.00	5.21	2.78	4.78	3.72	4.16
	Grow vegetables or fruits in the garden	0.00	2.85	1.99	4.48	3.26	3.20
	Cook at home for leisure	0.00	3.83	2.76	5.53	5.11	4.41
	Spend time caring for children by doing activities with them	0.00	4.28	3.48	6.58	5.48	5.04
	Take care of and play with pets	0.00	4.41	2.64	4.56	2.87	3.63
Lifestyle	Play sports frequently	0.00	4.27	3.18	5.31	4.06	4.24
	Likes to watch sports on TV	0.00	3.52	2.37	4.95	3.59	3.66
	Enjoy vacation outside your home at least once a year	0.00	5.88	5.04	6.06	5.85	5.74
	Time off is dedicated to enjoying at home	0.00	5.02	5.87	4.36	3.76	4.66
	Attends events in private leisure clubs	0.00	3.28	2.24	5.05	2.62	3.31
	Spend time on activities such as painting, writing or playing an instrument	0.00	4.8	3.09	4.8	2.88	3.88
	Enjoy doing do-it-yourself jobs with wood, metal, glass, etc.	0.00	3.62	2.55	5.15	2.7	3.51
	Read magazines about nature, wildlife or the environment	0.00	4.36	2.48	4.94	3.25	3.79
	Participates actively in the care of the environment	0.00	4.36	2.42	5.01	3.88	3.98
	Eat in bars (fast food and home delivery) at least twice a week	0.00	3.95	2.63	2.99	2.8	3.10

Table 3. Classification of the different groups according to socio-demographic variables

Variables	Categories	Group 1	Group 2	Group 3	Group 4	Total
		24.8%	20.6%	24.8%	29.8%	100.0%
Gender (χ^2 : 2.213; $p > 0.1$)	Male	35.80%	32.84%	41.98%	30.93%	35.28%
	Female	64.20%	67.16%	58.02%	69.07%	64.72%
	Under 15	-	-	-	-	0.00%
	15 – 24	85.19%	71.64%	74.07%	75.26%	76.69%
Age (χ^2 : 10.173; $p > 0.1$)	25 – 34	3.70%	7.46%	7.41%	8.25%	6.75%
	35 – 44	2.47%	8.96%	8.64%	6.19%	6.44%
	45 – 54	7.41%	10.45%	4.94%	8.25%	7.67%
	55 – 64	1.23%	1.49%	4.94%	2.06%	2.45%
	Over 64	-	-	-	-	0.00%
Marital status (χ^2 : 5.52; $p > 0.1$)	Single	87.65%	74.63%	75.31%	82.47%	80.37%
	Married	12.35%	25.37%	24.69%	17.53%	19.63%
	Separated/divorced	-	-	-	-	0.00%
	Elementary school	-	-	-	1.03%	0.31%
Educational level (χ^2 : 9.421; $p > 0.1$)	Primary studies	2.47%	2.99%	3.70%	3.09%	3.07%
	Secondary studies	72.84%	53.73%	55.56%	58.76%	60.43%
	University level	24.69%	43.28%	40.74%	37.11%	36.20%
	Employee	11.11%	25.37%	13.58%	15.46%	15.95%
Employment status (χ^2 : 19.720; $p > 0.1$)	Self-employed	2.47%	-	4.94%	6.19%	3.68%
	Unemployed	-	-	-	1.03%	0.31%
	Freelancer	1.23%	1.49%	2.47%	2.06%	1.84%
	Student	81.48%	64.18%	71.60%	71.13%	72.39%
	Retired	-	-	1.23%	-	0.31%
	Housewife	3.70%	8.96%	6.17%	4.12%	5.52%

and 24 years old (85.19%), unmarried (87.65%), and student (81.48%).

Group 2 is called apathetic. It contains 67 respondents with the characteristics which are below average in all item questions, except time off dedicated to enjoying in their home. This is the only group that is below the average in item question enjoying vacation outside their home at least once a year. The members of the group are apathetic who act independently and like to spend their time at home. However, in this case, the majority of the members in this group are female (67.16%), between 15 and 24 years old (71.64%), unmarried (74.63%), which have secondary education (53.73%), and student (64.18%).

Group 3 is called enthusiastic. The 81 respondents in this cluster are above average in all item questions, but they are below average in use internet, e-mail, personal computer at home; time off is dedicated to enjoying in their home and eating in the restaurant at least twice a week. This is the only group that is above average in visit a gym at least three times a week; play sports frequently; likes to watch sports on TV; and attends events in private leisure clubs. The members of the group are active individuals who like doing sports, outdoor activities, activities that involve relating to others and art. In terms of socio-demographic characteristics, this group is predominantly female (58.02%), between 15 and 24 years old (74.07%), and unmarried (75.31%). They typically are enrolled in secondary education (55.56%), and those who are student (71.60%).

Group 4 is social. This last cluster consists of 97 respondents who are mostly below average in all item questions, except stroll through neighborhood or nearby park; enjoy social life with friends and neighbors; take time to take care of the elderly; use internet, e-mail, computer at home, grow vegetables or fruits in the garden; cook at home for leisure; spend time caring for children by doing activities with them; and enjoy vacation outside their home at least once a year. This group has some opposite characteristics from Group 1. Based on cinema attendance, this group is less regular cinema audience. They are active people and have great social concerns but not the environmental concerns. They do not like doing sport, outdoor activities, and art. They are called social since they like to spend their time on activities that involve relating to others. In terms of socio-demographic characteristics, this group is dominated by female (69.07%), between 15 and 24 years old (75.26%), and unmarried (82.47%). They typically are enrolled in secondary education (58.76%) and student (71.13%).

After segmenting the cinema audiences based on their values and lifestyles, additional information could be added based on the sociodemographic variable of individuals, i.e., gender, age, marital status, education level, and employment status. The existence of an association between those socio-demographics variables and the group was identified by means of the chi-square independence test, confirming the existence of an association between both gender and marital status and the group (see Table 3 for the detail).

Based on Table 3, we can see that the gender of individuals has a greater number of female than male (64.72%). Group 2 and Group 4 have the predominance of female (67.16% and 69.07% respectively). The highest portion of individuals age is represented by between 15 and 24 years old (the total is 76.69%) and there are no individuals under 15 years old and over 64 years old. Group 3 presents the greatest number of between 55-64 years old (10.45%). Based on marital status, the number of single reflects a high prevalence (80.37%). It is quite similar across the four group. Group 2 and Group 3 has the highest percentage of married (25.37% and 24.69%). There is no separated/divorced in all group. In terms of educational level, it can be noted that the highest proportion is secondary studies and university level (96.63%). Group 4 is the only group that consists of elementary studies (1.04%); Group 1 has the greatest percentage of secondary studies (72.84%); Group 3 presents the highest proportion of primary studies (3.70%); while Group 2 has the greatest percentage of university level (41.79%). It is quite similar to all educational level across the four group. The majority according to the employment status is student (72.39%) following is employee (15.95%). Group 4 is the only group that consists of unemployed (1.03%) and presents the highest proportion of self-employed; Group 3 is the only group consist of retired (1.22%) and has the greatest percentage of freelancer (2.44%); while Group 2 is the only group that does not consist of self-employee and presents the highest proportion of housewife (8.96%).

4. CONCLUSION AND FUTURE RESEARCH DIRECTIONS

The objective of this study was to determine the segment of cinema audiences based on values and lifestyle. Based on the theoretical perspective, this research was aimed to give such contribution to the related literature of segmentation study especially for segmenting cinema audiences. The result of the study utterly stated that based on the values and lifestyle variables of the cinema audiences, there are four variant groups that could specify human behavior types, i.e., solitary group, apathetic group, enthusiastic group, and the social group. The first group is the regular attendee of the cinema; the members are considered as an individualistic person, do not like sport, doing social activities, but they like art and have an environmental concern. The members of the second group are considered as apathetic who act independently and like to spend their time at home. Group 3 consists of people who are active, like doing sports, art, and outdoors activities. The last group, i.e., social group consists of members who like to spend their time on activities that involve relating to others.

Several recommendations could be addressed to managers as well as businessmen that run their business in shopping centers, the location of the cinemas. Establishing the strategical plan based on customers segmentation is considered as essential [21, 22]. A more diverse lifestyle information is necessary to spread the good impact on business actors so that the suitable recreational facilitation can be built whereby this also suits for the existing customers at the proper area. According to the result of this study, Group 1 (solitary), Group 2 (apathetic), and Group 3 (enthusiastic), are more likely to go to the cinema; hence, businesses could work with them in terms of customer loyalty, cinema attendance, and increasing the consumption of other activities. They should use this opportunity since there is a way bigger possibility for the groups to do other activities inside the shopping center, such as doing shopping, eating at restaurant, etc.

Finally, the limitations of this study are twofold. Firstly, it is related to the selected variables, i.e., values and lifestyle. For the upcoming research, more variables have to be considered, such as motivation, attitudes, and other relevant variables. The second limitation is related to the area (geographical condition) of this research, i.e., the study was conducted in Semarang, Indonesia. Therefore, to make a generalization, the upcoming research should broaden and expand the research area.

5. REFERENCES

- [1] International Design School. 2018. *Jumlah layar bioskop masih menjadi masalah dunia perfilman indonesia reference*. Retrieved May 29, 2018, from <https://idseducation.com/articles/jumlah-layar-bioskop-masih-menjadi-masalah-dunia-perfilmman-indonesia/>
- [2] Setiawan, T. S. 2018. *Jumlah Penonton Bioskop Indonesia Capai 42,7 Juta pada 2017*. Retrieved May 29, 2018, from <https://entertainment.kompas.com/read/2018/02/28/162919310/jumlah-penonton-bioskop-indonesia-capai-427-juta-pada-2017>
- [3] Kotler, P., Armstrong, G., and Wong, V. 1996. *Principles of Marketing*. Prentice Hall, London.
- [4] Gonz áez-Hern ández, E. M. and Orozco-G ómez, M. 2012. A Segmentation of Mexican Consumers Based on Shopping Centre Attractiveness. *Int. J. Retail Dist. Manag.*, 40, 10, 759–777.
- [5] El-Adly, M. I. 2007. Shopping malls attractiveness: a segmentation approach. *Int. J. Retail Dist. M.*, 35, 11, 936–950.
- [6] Gilboa, S. 2009. A segmentation study of Israeli mall customers. *J. Retailing and Consumer Services*, 16, 2 (March 2009), 135–144.
- [7] Cho, M., Bonn, M. A., and Brymer, R. A. 2017. A Constraint-Based Approach to Wine Tourism Market Segmentation. *J. Hosp. Tour. Res.*, 41, 4, 415–444 (June 2014).
- [8] Iversen, N. M., Hem, L. E., and Mehmetoglu, M. 2016. Lifestyle segmentation of tourists seeking nature-based experiences: the role of cultural values and travel motives. *J. Travel. Tour. Mark.*, 33, sup1 (Sept. 2014), 38–66.
- [9] Barr, S., Shaw, G., Coles, T. and Prillwitz, J. 2010. ‘A holiday is a holiday’: practicing sustainability, home and away. *J. Transp. Geogr.*, 18, 3 (May. 2010), 474–481.
- [10] Minako, F. S., Ulkhaq, M. M., ‘Sa Nu, D., Pratiwi, A. R., and Akshintia, P. Y. 2019. Clustering Internet Shoppers: An Empirical Finding from Indonesia. In *Proceedings of the 2019 5th International Conference on E-business and Mobile Commerce* (May, 2019). ICEMC ’19. ACM, New York, 35–39. DOI= <https://10.1145/3332324.3332325>
- [11] Fraj, E. and Martinez, E. 2006. Environmental values and lifestyles as determining factors of ecological consumer behaviour: an empirical analysis. *J. Cons. Mar.*, 23, 3, 133–144.
- [12] Jain, S. K. and Kaur, G. 2006. Role of Socio-Demographics in Segmenting and Profiling Green Consumers. *J. Int. Cons. Mark.*, 18, 3, 107–146.
- [13] Cuadrado, Manuel and Frasset, Marta. 1999. Segmentation of Cinema Audiences: An Exploratory Study Applied to Young Consumers. *J. Cul. Eco.*, 1999, 23, 4 (Nov. 1999),

257-267.

- [14] Fung, C. K. and Jim, C. Y. 2015. Segmentation by motivation of Hong Kong Global Geopark visitors in relation to sustainable nature-based tourism. *Int. J. Sus. Dev. World.*, 22, 1 (Jan. 2015), 76-88.
- [15] Guttentag, D., Smith, S., Potwarka, L., and Havitz, M. 2017. Why Tourists Choose Airbnb: A Motivation-Based Segmentation Study. *J. Travel. Res.*, 57, 3 (April 2017), 342-359.
- [16] Abeelee, M. V., Antheunis, M. L., and Schouten, A. P. 2014. Me, myself and my mobile: A segmentation of youths based on their attitudes towards the mobile phone as a status instrument. *Telemat. Inform.*, 31, 2 (May 2014), 194-208.
- [17] Díaz, A., Gómez, M., Molina, A., and Santos, J. 2018. A segmentation study of cinema consumers based on values and lifestyle. *J. Retailing and Consumer Services*, 41, 79-89.
- [18] Green, G. T., Cordell, H. K., Betz, G. J., and Distefano, C. 2006. Construction and Validation of the National Survey on Recreation and the Environment's Lifestyles Scale. *J. Leis. Res.*, 38, 4, 513-535.
- [19] Eszergár-Kiss, D. and Caesar, B. 2017. Definition of user groups applying Ward's method. *Transp. Res. Proc.*, 22, 25-34.
- [20] Capó, M., Pérez, A., and Lozano, J. A. 2017. An efficient approximation to the K-means clustering for massive data. *Knowl-Based Syst.*, 117, 56-69.
- [21] Griva, A., Bardaki, C., Pramataris, K., and Papakiriakopoulos, D. 2018. Retail business analytics: Customer visit segmentation using market basket data. *Expert Syst. Appl.*, 100, 1-16.
- [22] Kabadayi, S. and Paksoy, B. A segmentation of Turkish consumers based on their motives to visit shopping centers. *Int. Review Retail. Distrib. Consum. Res.*, 26, 4, 456-476.