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Segmentation Analysis Using K-Means Clustering Model with SPSS Case Study of Backpacker Jakarta Community Members

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KEYWORDS
Travel, Backpacker, K-means Clustering, Marketing Mix, 8P's

ABSTRACT
The development of the world of tourism is currently experiencing high growth. With repairs and increasing the quality of tourist spots, it has succeeded in encouraging and increasing public interest in visiting. Traveling at this time has also been carried out in various ways both by individuals and groups. One of the quite existing tourist groups in Jakarta is the Backpacker Jakarta Community (BPJ), which offers low-cost travel packages with the Backpacker pattern. In this study, the authors conducted a survey of BPJ's members/members by distributing questionnaires containing personal data and also regarding the interest of the members in the trips or trips they had participated in so far. From this process the researcher obtained feedback and analyzed the answers from 96 respondents, using the clustering method with K-means clustering analysis, and then determined 7 clusters to get an overview of the variations in the interest of BPJ's members. Of the 7 clusters, the researcher chose one of the potential clusters to develop travel tour package products, namely BPJ's Member Mountaineering Lover Cluster which contains quite young groups between 22-35 years old. Furthermore, the researcher determines the Value Proposition of the cluster to determine the strategic steps for the marketing mix strategy with the 8P.

1. Introduction

Interest in tourism is currently increasing, this can be caused by the entry of the post-pandemic era where people during the pandemic did not get the opportunity to travel freely for the sake of vacations and tours (Parmawati, Hardyansah, Pangestuti, & Hakim, 2022); (Nikmah, 2022). There are more and more varied ways for individuals and groups of people to travel, from those who like to travel using comfortable transportation and high-class facilities, to those who travel only on rides from public transportation modes to allocating funds (budgeting) (Hermansyah, Hamdan, Sidik, &

Wibowo, 2020). Traveling with friends, spouse or family does provide its benefits but the portion is for sharing in matters such as finances, accommodation, transportation, and even stories or experiences while traveling. On the other hand, traveling independently (solo traveling) can provide a different essence when compared to traveling with other people (Gama, Sudana, & Dewi, 2019); (Gustientiedina, Adiya, & Desnelita, 2019).

Various communities and travel organizations have started to emerge, one of which is Backpacker Jakarta (Puspitarini & Choesin, 2017). Jakarta Backpacker is the largest traveling community in Indonesia, 2022 6,110 Members have joined this community, consisting of 45 RTs and 14 Clubs including a Badminton Club, Futsal Club, Photography Club, Swimming Club, Mosque Exploration Club, Blogger, and Book Club, KTB Be the Light Club, Running Club, Basketball Club, History and Museum Club, Weekday Holiday Club, Talent Club (Music, Dance & Drama, etc.), Jakarta International Touring and Backpacker Club. Some of these clubs were created as a forum for channeling hobbies and developing the talents and interests of Jakarta backpacker members. The Jakarta Backpacker Community was established on April 5, 2013, and is based in Jakarta and its surroundings (Bogor, Tangerang, Bekasi, and Depok). This traveling activity coordinated by Backpacker Jakarta uses a Share cost (Joint) system in which all travel costs will be borne by the participating participants also at the end of the trip activity there will be detailed income and expenditure reports and the remaining funds will be informed in Jakarta backpackers group.

Online Value Proposition is a strategy for an organization to achieve its targets, detailed online value proposition (OVP) must be developed for the target audiences (Chaffey, 2020). By knowing what customers want and what customers avoid how the habits and characters of customers choose products or make decisions based on the persona of each individual who forms a group (Mulyono, Ndini, Kharisma, & Heikal, 2023). Using this method, organizational management, in this case the Jakarta Backpacker, can combine marketing strategies using the "8Ps" Marketing Mix Strategy to attract customers (Ramdhani, Hoyyi, & Mukid, 2015). What is needed to improve the marketing strategy and what needs to be eliminated or even started to be done to increase the number of customers and consumers participating in the program offered by Backpacker Jakarta?

In this study, the authors conducted a K-Means Clustering Model Segmentation Analysis with SPSS software on Jakarta Backpacker Members. Clustering is grouping objects based on information obtained from data that describes objects and their relationships. The goal is to unite an object in one group that has similarities with other objects but is different from objects from different groups. Doing this grouping can be used as material for observing into groups based on the observation variables. This method is often used in marketing to divide customers into various groups which is known as market segmentation.

Several methods are used for clustering, namely K-means clustering, fuzzy/C-means clustering, and hierarchical clustering (Suraya & Wijayanto, 2022); (Rahmati, 2021). K-Means Clustering is a method that uses the simplest algorithm that applies the "unsupervised learning" method where this method identifies problems in clusters and turns them into the entire dataset into K Clusters (Tavallali, Tavallali, & Singhal, 2021).

This study aims to discuss in-depth related to segmentation using the clustering model, develop the persona that emerges as a result of this clustering analysis, so that we can identify their needs, wants, and preferences, as well as develop online value propositions for existing target segments and develop marketing strategies" 8Ps" from the cluster results in the study.

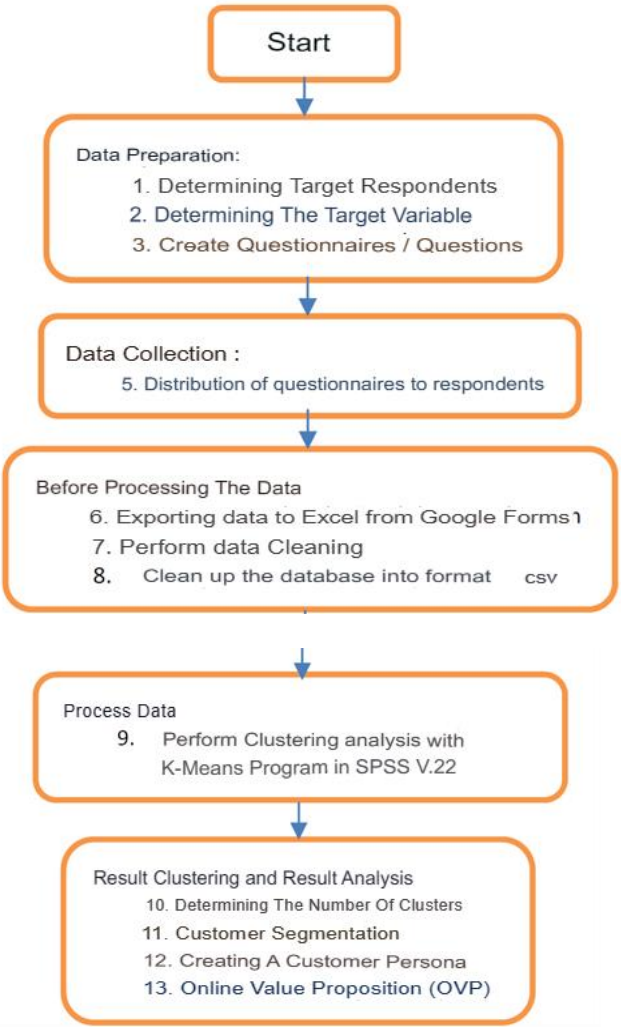
This study aims to understand in depth the profile and characteristics of Jakarta Backpacker members using K-Means cluster analysis. Thus, this research will help in identifying different segments within the community, aiming to develop personas that represent each segment of Jakarta Backpacker members. This persona will help in understanding the needs, wants, and preferences of each segment, thus enabling the development of a more targeted strategy, and Based on the results of cluster analysis, this study aims to develop a more effective marketing strategy using the "8Ps" framework (Product, Price, Place, Promotion, People, Process, Physical Evidence, and Performance). This strategy will help in attracting more participants and consumers into the programs offered by Backpacker Jakarta.

2. Materials and Methods

In this study, the authors present several research steps. Below is a flowchart illustrating the method used by the author to carry out research writing, as follows:

Diagram 1

Research Flow Chart



In the data preparation, the author created a questionnaire that was distributed and filled in to the respondents, in this case, the Backpacker Jakarta Members, then the data obtained was used as data to be studied by the author. The questionnaire contained questions that describe the background which includes variables that display the persona, and character of each respondent, preferences in choosing tourist destinations, and satisfaction with services and facilities from respondents by the object of research.

Data obtained through the form of "Google Forms" obtained as many as 96 respondents. In the early stages of data processing, the results of the questionnaire were exported in Microsoft Excel format, and then screening and data cleaning of data that could cause errors were then converted into CSV format as the basic input to the SPSS program.

In this study, data processing was carried out using the SPSS Version 25 program, using K-Means Analysis to obtain the final results and the number of clusters that would be formed from each of the collected respondents. After the cluster results appear, then an analysis of the cluster results is carried out starting from the analysis of persona, character, segmentation, and Online Value Proposition (OVP).

The next stage is to link the results with the 8Ps Marketing Mix strategy from one of the clusters that were the selected results from the previous analysis. In the marketing-mix strategy, the authors carry out an in-depth application of these results which determine Product, Price, Place, Promotion, People, Physical Evidence, Processes, and Partnerships. Where activities in marketing strategy must be evaluated, added, started, or ended to improve the marketing strategy of the company/organization in this study as a recommendation (Rahmawati, Sihwi, & Suryani, 2016).

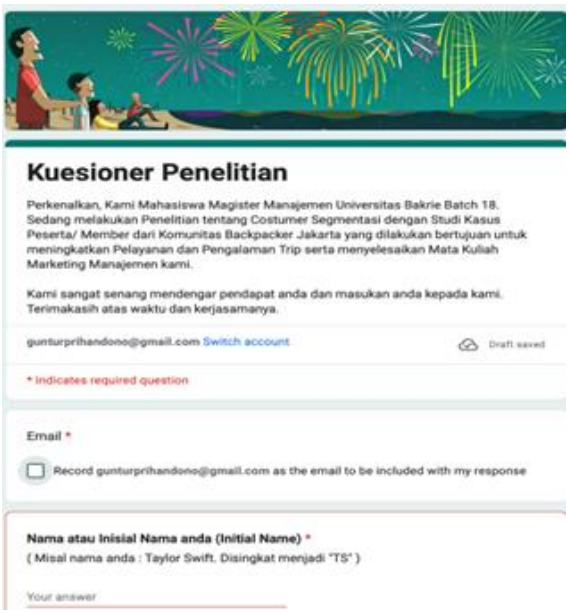
3. Result and Discussion

Efforts to Increase Economic Growth by Emphasizing Poverty Rates in West Sumatra Province

To be able to increase understanding of the cases under study and present them as suggestions in decision making which will later be addressed by the Jakarta backpacker daily management. So, this chapter will discuss the process of data preparation, data collection, data pre-processing, clustering results, analysis of clustering results, analysis of clustering results (customer segmentation, customer persona, and online value proposition), and marketing strategy (8P Marketing).

In this study, a questionnaire was prepared which was distributed to respondents who were members of the Jakarta Backpacker (BPJ) (Susanti, Supartini, & Semara, 2022). The list of questions that were distributed to the respondents included those related to the personal data and background

of the respondents including work. In addition, they asked about the frequency of trip participation, how much budget was set aside to take part in travel at BPJ, and how to get information on the various types of trips offered, by providing choices from various BPJ social media platforms, as well as member satisfaction with the performance of the Contact Person (CP) or Tour Leader in BPJ on every travel route taken. This questionnaire was distributed via broadcast to each BPJ Group Official Member using Google form. This questionnaire was distributed randomly and obtained feedback data from 96 members of Backpacker Jakarta.



Picture 1. Google form for questionnaire

Picture 2. Broadcast Questionnaire to Official Group Member

To maintain the privacy of each member's data and so that respondents can fill out the questionnaire without worrying, we inform the members' names to be able to write their initials. From the results of the questionnaire broadcast, the data collected was 96 people who had filled out the Google form.

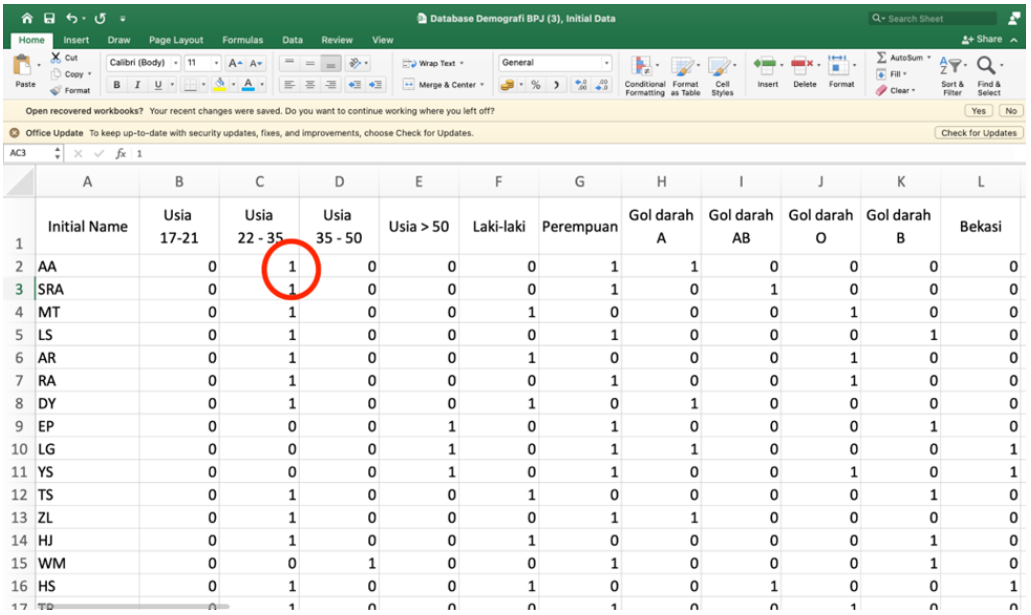
Inisial Nama anda	Umur	Jenis Kelamin	Golongan Darah	Domisili	Sumber Informasi Tentang BPJ	Tahun Bergabung di Backpacker Jakarta	Lebih Suka Ikut Jenis Trip Apa ?	Seberapa Pengaruh Peran CP dalam Perjalanan Trip ?	Pekerjaan	Intensitas Mengikuti Trip dalam satu tahu	Maximum Budget Per Trip (.000)
AA	22 - 35	Perempuan	A	Jakarta Pusat	Instagram	2022	Trip Gunung	Sangat Berpengaruh	PNS/TNI/POLRI	2 - 5	500 - 1000
SRA	22 - 35	Perempuan	AB	Tangerang	Facebook	2022	Gunung	Sangat Berpengaruh	Kesehatan / Guru	1	1000 - 1500
MT	22 - 35	Laki - Laki	O	Depok	Website	2022	Gunung	Sangat Berpengaruh	Karyawan Swasta	5 - 10	500
LS	22 - 35	Perempuan	B	Jakarta Barat	Podcast	2022	Gunung	Sangat Berpengaruh	Karyawan Swasta	>10	500 - 1000
AR	22 - 35	Laki - Laki	O	Jakarta Selatan	Tiktok	2017	One Day Trip	Cukup Berpengaruh	Wirausaha	2 - 5	500
RA	22 - 35	Perempuan	O	Lainnya	Twitter	2023	Gunung	Cukup Berpengaruh	Kesehatan / Guru	2 - 5	500
DY	22 - 35	Laki - Laki	A	Jakarta Barat	Youtube	2022	One Day Trip	Sangat Berpengaruh	Karyawan Swasta	5 - 10	500
EP	> 50	Perempuan	B	Jakarta Pusat	WA Group	2021	Trip Explore	Cukup Berpengaruh	Wirausaha	5 - 10	500
LG	> 50	Perempuan	A	Bekasi	Teman	2021	Trip Explore	Berpengaruh	Ibu Rumah Tangga	1	500 - 1000
YS	> 50	Perempuan	O	Bekasi	Facebook	2021	One Day Trip	Berpengaruh	Ibu Rumah Tangga	1	1000 - 1500
TS	22 - 35	Laki - Laki	B	Jakarta Selatan	Website	2019	Laut	Sangat Berpengaruh	PNS/TNI/POLRI	>10	1000 - 1500
ZL	22 - 35	Perempuan	A	Lainnya	Tiktok	2023	Trip Explore	Sangat Berpengaruh	Kesehatan / Guru	2 - 5	500 - 1000
HJ	22 - 35	Laki - Laki	B	Tangerang	Twitter	2022	Gunung	Sangat Berpengaruh	Karyawan Swasta	2 - 5	1000 - 1500
WM	35 - 50	Perempuan	B	Jakarta Selatan	Tiktok	2023	Trip Explore	Cukup Berpengaruh	Wirausaha	1	>1500
HS	22 - 35	Laki - Laki	AB	Bekasi	Twitter	2013	Gunung	Sangat Berpengaruh	Karyawan Swasta	>10	500
TR	22 - 35	Perempuan	O	Jakarta Barat	Instagram	2022	One Day Trip	Sangat Berpengaruh	Freelancer	2 - 5	500 - 1000
KG	17-21	Laki - Laki	O	Bekasi	Instagram	2022	City Tour	Cukup Berpengaruh	Pelajar	1	250 - 500
GS	22 - 35	Perempuan	A	Tangerang	Podcast	2017	Gunung	Berpengaruh	Ibu Rumah Tangga	5 - 10	500 - 1000
WP	22 - 35	Perempuan	O	Jakarta Timur	Tiktok	2022	Gunung	Berpengaruh	Karyawan Swasta	>10	1000 - 1500
AS	22 - 35	Laki - Laki	O	Lainnya	Twitter	2019	Gunung	Sangat Berpengaruh	Freelancer	2 - 5	500
AT	22 - 35	Perempuan	B	Jakarta Barat	Instagram	2020	One Day Trip	Sangat Berpengaruh	Kesehatan / Guru	>10	500 - 1000
ME	22 - 35	Perempuan	A	Bekasi	Facebook	2022	One Day Trip	Sangat Berpengaruh	Karyawan Swasta	2 - 5	1000 - 1500
PD	35 - 50	Laki - Laki	O	Jakarta Barat	Website	2021	Trip Explore	Cukup Berpengaruh	Wirausaha	2 - 5	1000 - 1500
LK	22 - 35	Perempuan	A	Jakarta Selatan	Instagram	2022	Laut	Berpengaruh	Freelancer	5 - 10	500 - 1000
RI	17-21	Perempuan	B	Lainnya	Twitter	2019	Trip Explore	Berpengaruh	Pelajar	5 - 10	500
JD	> 50	Perempuan	O	Jakarta Barat	Facebook	2023	Gunung	Cukup Berpengaruh	Wirausaha	>10	1000 - 1500
PH	22 - 35	Perempuan	O	Jakarta Selatan	Website	2022	One Day Trip	Cukup Berpengaruh	Wirausaha	5 - 10	>1500
FN	22 - 35	Perempuan	A	Lainnya	Instagram	2019	One Day Trip	Cukup Berpengaruh	Freelancer	5 - 10	500
OP	17-21	Perempuan	O	Jakarta Utara	Instagram	2020	One Day Trip	Sangat Berpengaruh	Pelajar	1	500
TC	> 50	Laki - Laki	B	Jakarta Selatan	Instagram	2022	Gunung	Cukup Berpengaruh	Wirausaha	1	500
DI	22 - 35	Perempuan	B	Bekasi	Podcast	2022	One Day Trip	Cukup Berpengaruh	Karyawan Swasta	2 - 5	500 - 1000
RW	35 - 50	Laki - Laki	O	Tangerang	Tiktok	2022	Gunung	Sangat Berpengaruh	Karyawan Swasta	>10	1000 - 1500
KL	22 - 35	Perempuan	O	Jakarta Timur	Twitter	2022	One Day Trip	Sangat Berpengaruh	Karyawan Swasta	2 - 5	>1500
GJ	22 - 35	Perempuan	O	Bekasi	Tiktok	2022	Trip Explore	Cukup Berpengaruh	PNS/TNI/POLRI	2 - 5	500 - 1000
EV	35 - 50	Perempuan	A	Bekasi	Twitter	2017	One Day Trip	Berpengaruh	Ibu Rumah Tangga	2 - 5	1000 - 1500
GB	22 - 35	Laki - Laki	A	Jakarta Selatan	Youtube	2023	City Tour	Berpengaruh	PNS/TNI/POLRI	>10	500 - 1000
TS	> 50	Perempuan	AB	Lainnya	Tiktok	2022	Gunung	Sangat Berpengaruh	Ibu Rumah Tangga	2 - 5	1000 - 1500
YF	22 - 35	Laki - Laki	A	Depok	Twitter	2021	Laut	Cukup Berpengaruh	PNS/TNI/POLRI	2 - 5	>1500
GW	22 - 35	Laki - Laki	O	Jakarta Barat	Youtube	2017	Trip Explore	Berpengaruh	Kesehatan / Guru	5 - 10	500 - 1000
RD	35 - 50	Perempuan	B	Jakarta Selatan	Instagram	2016	One Day Trip	Biasa Saja	Ibu Rumah Tangga	5 - 10	1000 - 1500
LJ	22 - 35	Laki - Laki	B	Lainnya	Facebook	2015	City Tour	Cukup Berpengaruh	Karyawan Swasta	>10	>1500
WU	22 - 35	Perempuan	A	Tangerang	Website	2018	Gunung	Berpengaruh	Wirausaha	5 - 10	500 - 1000
VF	17-21	Perempuan	O	Jakarta Selatan	Twitter	2017	Gunung	Berpengaruh	Pelajar	5 - 10	250 - 500
FR	> 50	Laki - Laki	A	Jakarta Barat	Instagram	2016	One Day Trip	Sangat Berpengaruh	Wirausaha	1	500 - 1000
QD	22 - 35	Perempuan	O	Jakarta Selatan	Instagram	2015	City Tour	Biasa Saja	Wirausaha	1	250 - 500
RO	22 - 35	Laki - Laki	O	Bekasi	Facebook	2014	Gunung	Cukup Berpengaruh	Karyawan Swasta	5 - 10	>1500
PX	22 - 35	Perempuan	B	Jakarta Selatan	Website	2013	Laut	Biasa Saja	Ibu Rumah Tangga	5 - 10	500 - 1000
GT	22 - 35	Laki - Laki	A	Lainnya	Podcast	2022	One Day Trip	Biasa Saja	Karyawan Swasta	>10	250 - 500
FR	22 - 35	Perempuan	O	Tangerang	Tiktok	2019	City Tour	Berpengaruh	Wirausaha	>10	>1500
KJ	22 - 35	Laki - Laki	B	Tangerang	Twitter	2020	One Day Trip	Berpengaruh	Kesehatan / Guru	2 - 5	>1500
LM	22 - 35	Perempuan	B	Jakarta Timur	Youtube	2021	Trip Explore	Cukup Berpengaruh	Karyawan Swasta	2 - 5	500 - 1000
MR	35 - 50	Perempuan	AB	Lainnya	WA Group	2019	Trip Explore	Cukup Berpengaruh	Ibu Rumah Tangga	1	250 - 500
VS	22 - 35	Laki - Laki	B	Jakarta Barat	Teman	2023	One Day Trip	Cukup Berpengaruh	Karyawan Swasta	2 - 5	250 - 500
NP	17-21	Perempuan	A	Bekasi	Instagram	2022	Laut	Sangat Berpengaruh	Pelajar	5 - 10	250 - 500
BY	> 50	Laki - Laki	O	Jakarta Barat	Twitter	2023	Trip Explore	Cukup Berpengaruh	Freelancer	5 - 10	>1500
VU	22 - 35	Laki - Laki	AB	Jakarta Pusat	Instagram	2013	Gunung	Cukup Berpengaruh	Freelancer	1	500
RD	22 - 35	Perempuan	O	Tangerang	Instagram	2022	City Tour	Sangat Berpengaruh	Freelancer	1	500
SW	17-21	Laki - Laki	O	Jakarta Selatan	Twitter	2022	Gunung	Sangat Berpengaruh	Pelajar	1	500
PT	> 50	Perempuan	B	Lainnya	Youtube	2022	One Day Trip	Berpengaruh	Wirausaha	1	500
RK	22 - 35	Laki - Laki	A	Tangerang	WA Group	2022	One Day Trip	Berpengaruh	PNS/TNI/POLRI	2 - 5	500 - 1000

Picture 3. Google form Database

DATA PROCESSING

From the questionnaire filling data in the form of a choice of statements, then the data is translated into numbers/nominal because it is for processing in SPSS, the stages are as follows:

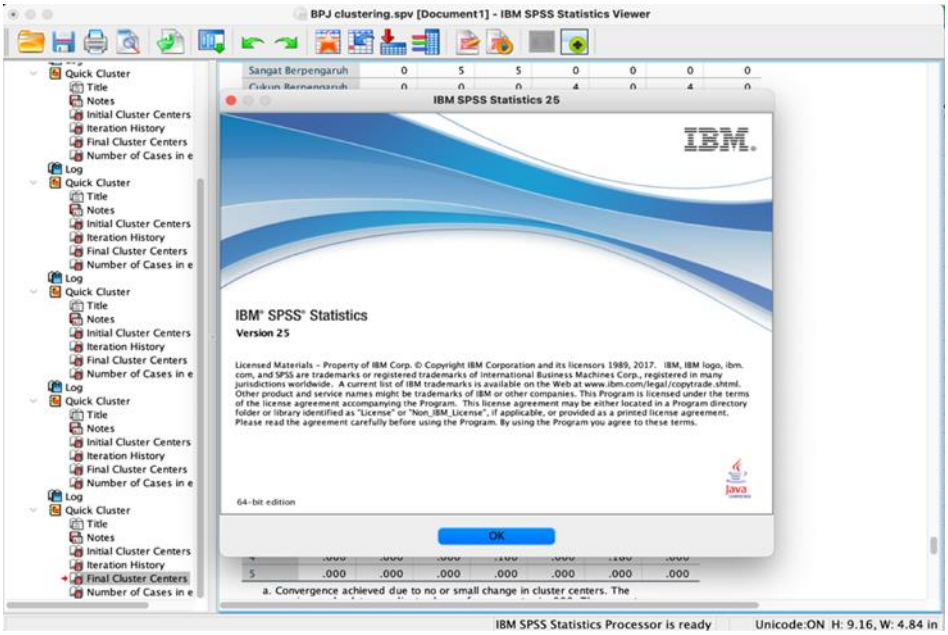
1. Data is processed in Excel by applying the number 1 to the selected answer choice and applying the number 0 to the statement that is not selected. For example, for an age statement, several choices of age ranges are given, and then for the selected age range, the Excel data is changed to number 1, while the other range options are 0.



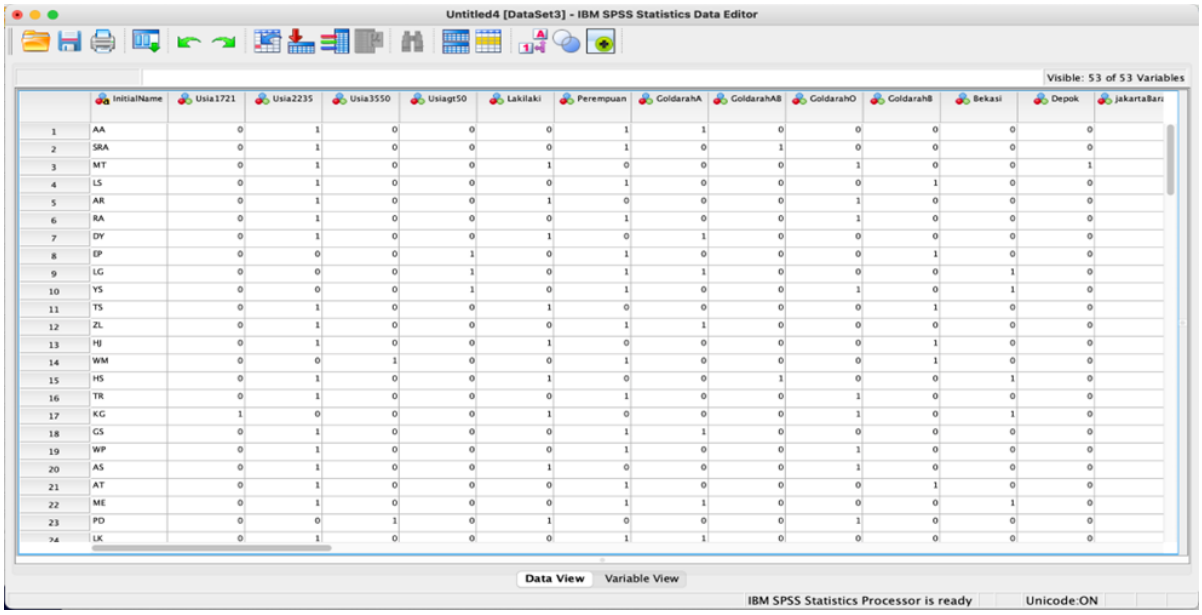
	A	B	C	D	E	F	G	H	I	J	K	L
1	Initial Name	Usia 17-21	Usia 22 - 35	Usia 35 - 50	Usia > 50	Laki-laki	Perempuan	Gol darah A	Gol darah AB	Gol darah O	Gol darah B	Bekasi
2	AA	0	1	0	0	0	1	1	0	0	0	0
3	SRA	0	1	0	0	0	1	0	1	0	0	0
4	MT	0	1	0	0	1	0	0	0	1	0	0
5	LS	0	1	0	0	0	1	0	0	0	1	0
6	AR	0	1	0	0	1	0	0	0	1	0	0
7	RA	0	1	0	0	0	1	0	0	1	0	0
8	DY	0	1	0	0	1	0	1	0	0	0	0
9	EP	0	0	0	1	0	1	0	0	0	1	0
10	LG	0	0	0	1	0	1	1	0	0	0	1
11	YS	0	0	0	1	0	1	0	0	1	0	1
12	TS	0	1	0	0	1	0	0	0	0	1	0
13	ZL	0	1	0	0	0	1	1	0	0	0	0
14	HJ	0	1	0	0	1	0	0	0	0	1	0
15	WM	0	0	1	0	0	1	0	0	0	1	0
16	HS	0	1	0	0	1	0	0	1	0	0	1

Picture 4. Preparing data on Excel for SPSS input

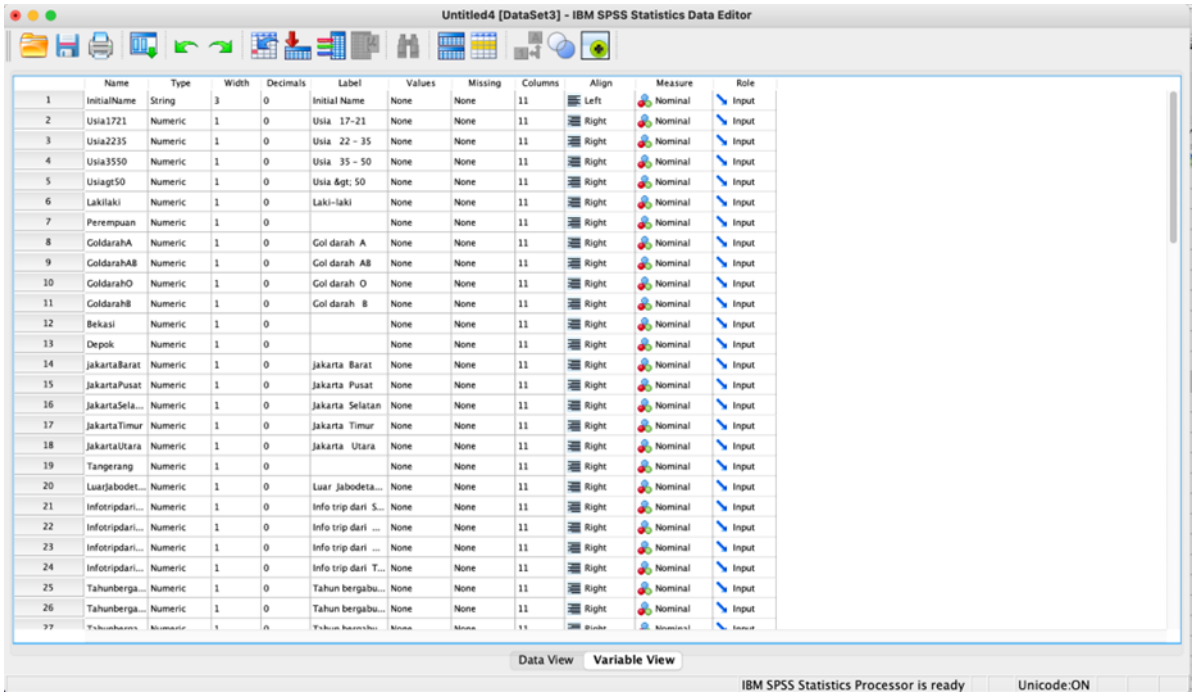
2. The next step is to save the Excel data using the "file Microsoft Excel comma separate values" format. This file in CSV format will later input the data in the SPP Version 25 program.



Picture 5. Program Version 25 of SPSS

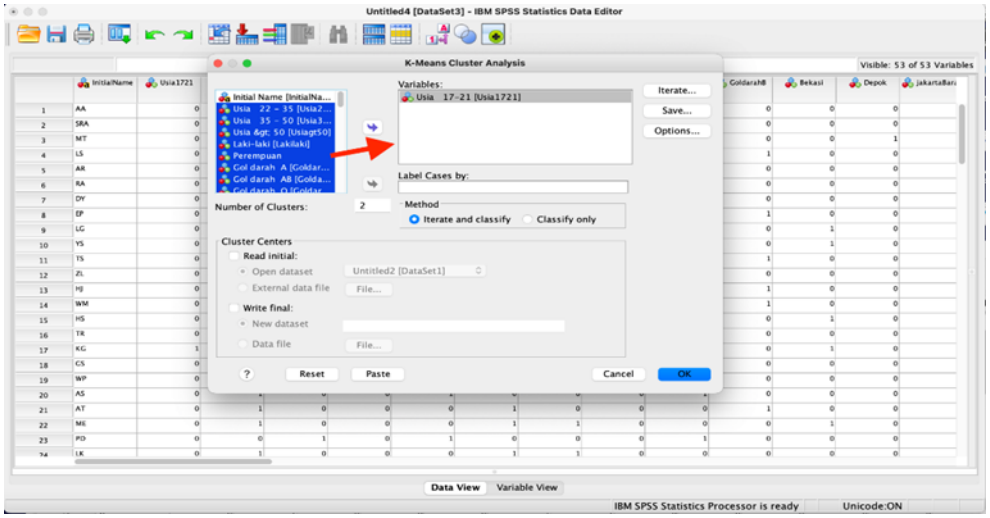


Picture 6. Data View in SPSS from Excel file



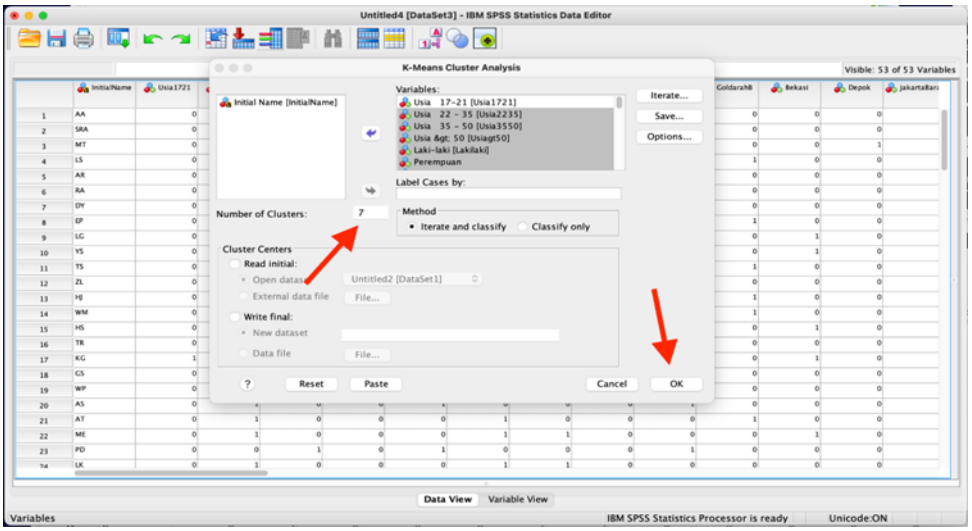
Picture 7. Variable View in SPSS from Excel File

3. The next step is to carry out the data clustering process in SPSS by first entering the "Analyze" menu, then entering "Classify" and entering the "K-Means Clustering" option, and the K-means cluster analysis menu will appear. Then the variables in the left box are moved to the right box (Pradana, Nurcahyo, & Saputro, 2021).



Picture 8. K-Means Cluster Analysis Menu

4. After the variable is moved to the right, then determine the number of clusters that will be formed in this study. In practice, this process can be done several times to determine the number of clusters and to find the final number of clustering data that matches the data collected. In this study, 7 clusters were determined to obtain the appropriate number of occurrences of data during clustering. Then press "OK" to continue the process in SPSS.



Picture 9. Clustreing Number Process in SPSS

5. From the processing in SPSS, some data on the number of each cluster and Iteration History (Logistic Regression Analysis) are formed at the output of processing results in SPSS

Number of Cases in each Cluster

Cluster	1	16.000
	2	15.000
	3	14.000
	4	15.000
	5	8.000
	6	14.000
	7	14.000
Valid		96.000
Missing		.000

Picture 10. The Number for Each Cluster

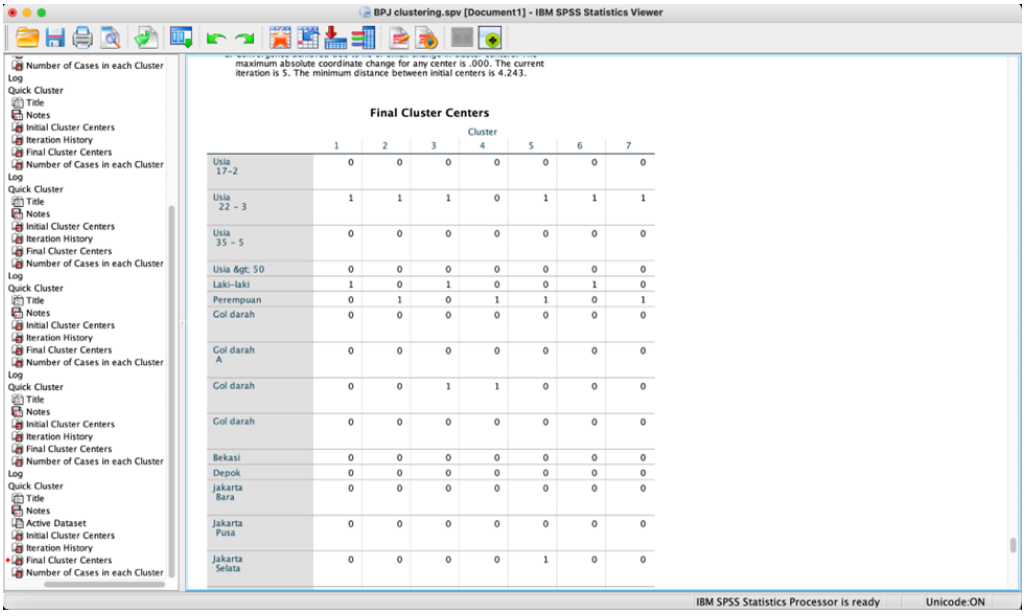
Iteration History[a]

	Change in Cluster Centers						
Iteration	1	2	3	4	5	6	7
1	2.248	2.560	2.304	2.331	2.499	2.392	2.089
2	.279	.000	.000	.205	.346	.205	.468
3	.000	.000	.000	.179	.000	.160	.000
4	.000	.000	.000	.166	.000	.180	.000
5	.000	.000	.000	.000	.000	.000	.000

a. Convergence achieved due to no or small change in cluster centers. The maximum absolute coordinate change for any center is .000. The current iteration is 5. The minimum distance between initial centers is 4.243.

Picture 11. Iteration History

6. From the final cluster data formed in SPSS, we export this data to an Excel file for the process of assessing each variable and then determine the persona for each cluster that is formed from each existing variable value.



Picture 12. Final Clustering

7. In this study, from the output of the SPSS Version 25 program, the researcher tried to export and break down the numbers for each cluster with the Microsoft Excel program as follows :

Final Cluster Centers							
	Cluster						
	1	2	3	4	5	6	7
	Member Baru BPJ	Member Baru BPJ Pecinta Onde Day Trip	Member BPJ Pecinta Gunung	Member BPJ Suka Trip Explore	Ibu Ibu suka Jalan	Prospektif Kostumer	Member BPJ Pecinta Laut
Kelompok Usia							
17-21	0.000	0.200	0.071	0.067	0.125	0.143	0.214
22 - 35	0.750	0.600	0.786	0.400	0.625	0.714	0.571
35 - 50	0.000	0.000	0.143	0.267	0.250	0.071	0.214
> 50	0.250	0.200	0.000	0.267	0.000	0.071	0.000
Jenis Kelamin							
L	0.625	0.333	0.571	0.200	0.125	0.714	0.143
P	0.375	0.667	0.429	0.800	0.875	0.286	0.857
Golongan Darah							
A	0.438	0.400	0.000	0.067	0.250	0.143	0.429
AB	0.063	0.133	0.143	0.067	0.000	0.071	0.000
O	0.188	0.200	0.500	0.533	0.375	0.429	0.357
B	0.313	0.267	0.357	0.333	0.375	0.357	0.214
Domisili							
BKS	0.188	0.333	0.071	0.000	0.000	0.357	0.071
DP	0.125	0.000	0.143	0.000	0.125	0.071	0.000
JB	0.188	0.267	0.143	0.200	0.125	0.286	0.214
JP	0.000	0.067	0.000	0.133	0.000	0.071	0.000
JS	0.125	0.067	0.214	0.400	0.500	0.071	0.214
JT	0.000	0.000	0.071	0.000	0.000	0.071	0.071
JU	0.000	0.067	0.000	0.000	0.000	0.000	0.000
TGR	0.188	0.067	0.286	0.000	0.125	0.000	0.286
lain	0.188	0.133	0.071	0.267	0.125	0.071	0.143
Mendapatkan Info trip BPJ darimana							
Sosmed	0.750	1.000	0.857	0.600	0.875	0.929	0.929
Whatsapp	0.125	0.000	0.000	0.200	0.000	0.000	0.000
Website	0.063	0.000	0.143	0.133	0.125	0.000	0.071
Teman	0.063	0.000	0.000	0.067	0.000	0.071	0.000
Tahun Bergabung di BPJ							
2013-2016	0.000	0.067	0.071	0.133	0.500	0.214	0.071
2017-2019	0.000	0.067	0.214	0.267	0.125	0.000	0.786
2020-2023	1.000	0.867	0.714	0.600	0.375	0.786	0.143
Jenis Trip yang pernah diikuti oleh Member							
CT	0.063	0.067	0.071	0.067	0.125	0.143	0.071
GN	0.125	0.200	0.714	0.267	0.125	0.286	0.429
Laut	0.063	0.067	0.071	0.000	0.250	0.071	0.143
ODT	0.500	0.600	0.071	0.333	0.500	0.143	0.071
TE	0.250	0.067	0.071	0.333	0.000	0.357	0.286
Peran Contact Person/Tour Leader pada saat trip berlangsung							
Sangat Berpengaruh	0.000	5.000	5.000	0.000	0.000	0.000	0.000
Cukup Berpengaruh	0.000	0.000	0.000	4.000	0.000	4.000	0.000
Berpengaruh	3.000	0.000	0.000	0.000	0.000	0.000	3.000
Biasa Saja	0.000	0.000	0.000	0.000	2.000	0.000	0.000
Kurang Berpengaruh	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pekerjaan							
Freelancer	0.188	0.200	0.214	0.067	0.000	0.143	0.000
IRT	0.188	0.067	0.071	0.067	0.375	0.000	0.143
KS	0.250	0.067	0.429	0.000	0.125	0.429	0.071
K/G	0.188	0.200	0.071	0.067	0.125	0.071	0.143
Pelajar	0.000	0.200	0.071	0.067	0.125	0.143	0.214
PNS/TNI/POLRI	0.125	0.067	0.071	0.000	0.000	0.214	0.000
Wirausaha	0.063	0.200	0.071	0.733	0.250	0.000	0.429
Berapa kali ikut trip dalam 1 tahun							
@1	0.188	0.333	0.214	0.267	0.125	0.214	0.071
2 - 5	0.313	0.467	0.357	0.333	0.250	0.429	0.214
5 - 10	0.313	0.133	0.143	0.267	0.375	0.214	0.500
>10	0.188	0.067	0.286	0.133	0.250	0.143	0.214
Berapa biaya yang dianggarkan untuk 1 kali trip							
250 - 500	0.125	0.067	0.000	0.067	0.500	0.214	0.143
@500	0.250	0.133	0.429	0.533	0.000	0.071	0.143
600 - 1000	0.438	0.667	0.071	0.000	0.375	0.357	0.214
1000 - 1500	0.125	0.133	0.357	0.200	0.125	0.071	0.214
>1500	0.063	0.000	0.143	0.200	0.000	0.286	0.286
	13	15	15	14	12	14	13

Picture 13. Details Output from K Means Clustering in Excel files

Clustering Result Analysis

After the clustering results are formed, the characteristics of each cluster are found, including the number of members of each cluster. From the values generated by each cluster against the existing variables, the authors found the personality and characteristics of each cluster, segmentation, and

online value proposition (OVP) of the cluster. The following is an assessment and analysis for each cluster:

Cluster 1: New Member of Backpacker Jakarta

a. The cluster consists of 13 people
b. This cluster consists of men (0.625) with the highest number compared to women
c. The most age group in this cluster is 22 - 35 years (0.750);
d. This cluster has the most blood type A (0.438) compared to other clusters;
e. In the range of 2020 - 2023 (1,000) many new members have joined the Jakarta backpacker community
f. According to BPJ members in this cluster, the role of the CP / Tour Leader is influential during the Trip activities (3,000) compared to other clusters;

Cluster 2: Members of Backpacker Jakarta Love One day trip

a. This cluster consists of 15 people;
b. This cluster is inversely proportional to the previous cluster, where there were more women (0.667) than men (0.333);
c. In this cluster, the most BPJ members come from the domicile of North Jakarta (0.067);
d. This cluster gets the most information about trip info from social media (1,000), compared to other platforms;
e. BPJ members in this cluster prefer one-day trips (0.600) to other types of trips;
f. According to BPJ members in this cluster, the role of CP or Tour Leader is very influential (5,000) during the trip activities;
g. As for the types of work of BPJ members in this cluster, the most were among health workers/teachers (0.200), compared to other types of work;
h. Often in a year BPJ members in this cluster take trips at least 1 time (0.333) even 2 - 5 times (0.467);
i. BPJ members in this cluster budget for 1 trip of 600k - 1,000k (0.667).

Cluster 3: Members Backpacker Jakarta Mountain Lover

a. This cluster consists of 15 people;
b. Most BPJ members in this cluster are in the age range of 22 - 35 years (0,786) compared to other clusters;
c. In this cluster there are more male BPJ members (0,571) than women;
d. In this cluster BPJ members have the most AB blood type (0,143) compared to other types of blood groups and the most in this cluster compared to other clusters;
e. Most of the domiciles in this cluster are from Tangerang (0,286), Depok (0,143) and East Jakarta (0,071);
f. BPJ members in this cluster get most BPJ trip information from the website (0.143) compared to other platforms;
g. In this cluster BPJ members are most interested in taking part in mountain trips (0,714) compared to other types of trips;
h. In this cluster BPJ members consider CP's role to be very influential (5,000) on trips;

i. This cluster is also a group that is quite well-off because it has prepared a large budget for travel

Cluster 4. Members of Backpacker Jakarta like to travel and explore

a. Cluster consists of 14 people;
b. This cluster is dominated by the 35 - 50 Years Age Group (0,267) and >50 Years old (0,267) compared to other clusters;
c. Clusters are dominated by women (0,800) and men (0,200);
d. The cluster with the most blood type O (0,533) compared to other clusters;
e. This cluster is the cluster with the most residents in Central Jakarta (0,133) compared to other clusters;
f. Boomers Cluster, get most information related to BPJ through Whatsapp (0,200) compared to other clusters;
g. Many joined this cluster in 2020 – 2023 (0,600), and the least joined in 2013 - 2016 (0,267);
h. The types of trips most attended by members in this cluster are One Day Trips (0,333) and Exploration Trips (0,333) then the least trips are Sea trips (0,000);
i. The role of the Contact Person in the Trip is Moderately Influential in the cluster (4,000);
j. Most jobs in the cluster are entrepreneurs (0,733) compared to other clusters;
k. In one year in this cluster most participants take 2 - 5 trips (0,333) and at least take >10 trips (0.13);
l. Most of the members in this cluster have budget for one trip of IDR 500,000.00 (0,533) compared to other clusters;

Cluster 5: Mothers Like to do trip

a. This cluster consists of 14 people;
b. The most age group in this cluster is in the age group 22 – 35 (0,625) and has no respondents aged >50 years;
c. This cluster has the most female members (0,875) compared to other clusters;
d. This cluster has the most blood type B (0,375) compared to other clusters;
e. Most of these clusters are domiciled in South Jakarta (0,500) compared to other clusters;
f. This cluster gets most of the information about Jakarta Backpackers from Social Media (0.875) and no respondents in this cluster get information from Friends (0);
g. This cluster has the most number of Jakarta backpackers joining in 2013 – 2016 (0,500) compared to other clusters;
h. The most types of trips participated in by this cluster were One Day Trips (0,500) and no Explore Trips (0).
i. This cluster thinks that the role of CT is considered normal during the trip (2,000);
j. Most of the work in this cluster is housewives (0,375) compared to other clusters.
k. In one year, the most trips this cluster takes are 3 - 5 trips (0,375) and at least 1 trip (0,125);
l. This cluster spends the most Budget in one trip of IDR 500,000,000 (0,500) compared to other clusters.

Cluster 6: Prospective Customer

a. Cluster consists of 4 people;
b. The most age group in this cluster is 22-35 years (0,714) and at least 35-50 (0.071) and > 50 (0.071);
c. This cluster has the most Male Gender (0,714) compared to other clusters;
d. The most blood group in this cluster is blood type O (0,429), and the least (0,071);
e. Most of these clusters are domiciled in Bekasi (0,357) than in West Jakarta (0,286) most of the other clusters;
f. The most information obtained about Jakarta Backpackers from Friends (0.71) compared to other clusters);
g. The most years joined in this cluster in 2020 - 2023 (0,786);
h. The types of trips that have been participated in by the most members in this cluster are City Tours (0,143) and Explore Trips (0,357) and the fewest trips to the sea (0,071);
i. The Role of CT in the Most Influential Trip (4) compared to other clusters;
j. This cluster has the most jobs as Private Employees (0,429) and PNS/TNI/POLRI (0,214) compared to other clusters and the fewest are IRT (0);
k. In one year the most trips are dominated by 2-5 trips (0.429) and at least > 10 times (0.143);
l. The maximum cost incurred by this cluster is 1,500,000.00 (0 286) and at least Rp. 500,000.00 compared to other clusters.

Cluster 7: Members of Backpacker Jakarta Sea Lovers

a. Cluster consists of 13 people;
b. Mostly female (0,857) and male (0,143);
c. The most blood type is A (0,429);
d. This cluster has the most domiciles in East Jakarta (0,071) than the other clusters;
e. Clusters get information about Jakarta Backpackers from (0.929) the highest and the lowest not from friends or Whatsapp (0);
f. Most have joined BPJ in 2017 - 2019 (0,786) more than other clusters;
g. This cluster chooses the sea the most (0,143) as a trip option than other clusters;
h. The role of CP in the trip is considered the most influential (3.00), compared to other clusters. The most jobs in this cluster are students (2.14) compared to other clusters;
i. This cluster is the cluster with the most trips every year up to 5 - 10 times (0,500) in comparison to production;
j. The budget for one trip in this cluster is more than IDR 1.500.000,00 with (0,286).

Marketing Strategy 8Ps - Marketing Mix

After analyzing and describing the characteristics of each of the persona clusters, the author conducts a detailed analysis to apply a marketing strategy with a marketing mix to the 8P elements which consist of Product, Price, Place, Promotion, People, Physical Evidence, Processes, and Partnerships, and determine what activities need to be developed or paid more attention to, terminated or must be initiated in one of the clusters chosen by the author based on the results of the previous analysis. In the case of the Jakarta Backpacker, the author chose the third cluster which is personified as the Mountain Lovers Cluster. This cluster was chosen with major considerations

because the dominant value in this group is members aged 22 - 35 years which is an age that is still energetic. In addition, this group spends quite a lot of money on each trip.

The following describes the strategy for each element of the marketing mix:

1. **Products**

   New strategies that can be started:

a. Starting Research for submitting Mountain Trips that are not widely known by climbers and have beautiful natural charms;
b. Adding a variety of outdoor activities such as climbing or rape to the trip itinerary to boost the adrenaline of the trip participants;
c. Conducting season sharing between trip team administrators, admins, and the CP/Tour Guide team regarding issues of new tourist destinations and increasing knowledge in dealing with risks or problems - problems that will or often occur during the trip;

2. **Price**

   New strategies that can be started:

a. Planning the price qualifications for members and non-members on each mountain trip according to location and distance so that participants who were previously non-members can switch to members;
b. Providing additional tourist destinations or additional facilities to support content and documentation for trip participants;

3. **Place**

a. Strategy to start: Collaborating with basecamp administrators at various mountaineering basecamps, as gathering points/resting spots for trip participants.
b. Strategies that can be developed: Maintaining basecamp locations that have been used previously.

4. **Promotions**

a. Strategies that can be developed: Utilizing Backpacker Jakarta's social media platforms;
b. Strategy to start: Inviting influencers or public figures to be invited to collaborate on mountain trips together by choosing mountain destinations that are still not visited by many climbers and have good and beautiful views, which then the results of both photo and video documentation can be used as promotional materials from the social media team BPJ;

5. **People**

a. Strategies that can be started: Start recruiting and adding CP/Tour Leaders to increase
b. Mountain trip capacity at BPJ; Conducting training for CP/Tour leaders related to first aid handling, as a provision for CP later when doing mountain trips if there are participants who experience pain;
c. Conduct photo and video editing training while on a trip, as a provision for CPs to capture moments during the mountain trip and the results of the documentation can be used as promotional material for the BPJ social media team;
d. Strategies that can be developed: Conducting season sharing between trip team administrators, admins, and the CP/Tour Guide team regarding issues of new tourist destinations and increasing knowledge in dealing with risks or problems - problems that will or often occur during the trip;
e. Carry out regular evaluations to refresh/refresher for CP BPJ mountain trips.

6. Physical Evidence

a. Strategies that can be started: Developing a design by generalizing the coloring by the BPJ tagline logo "XEDEKADE" and following the rules of each social media;
b. Making uniforms for the mountain CP team when carrying out or carrying a group trip as a differentiator and has its characteristics;
c. Making merchandise in the form of hangers, Jakarta Backpacker stickers, and BPJ t-shirts that have attractiveness and can be considered by trip participants as mementos where later the merchandise can be traded.

7. Process

Strategies that can be started: Planning and adding pick-up points at cluster-dominant domicile locations

8. Partnerships

Strategies that can be developed:

a. Cooperate with the best pick-up/transportation fleet
b. Collaborate with e-commerce agents such as tiket.com, and traveloka to get promos for discounted flight tickets;
c. Maintain good relations with providers of accommodation at activity locations;
d. Support government programs in promoting tourist destinations in Indonesia by collaborating on certain events.

This study succeeded in modeling the segmentation of Jakarta backpacker members using K-Means analysis in the SPSS Version 25 program. From the results of the analysis, the persona, characteristics, segmentation, and online value proposition (OVP) of each cluster formed were obtained. Based on the results of the analysis, 7 clusters were obtained, namely new BPJ members, BPJ members who love One Day Trips, BPJ members who love mountains, BPJ members who like trips to explore, mothers who like to travel, prospective customers, and BPJ members who love the sea. In this case, the researcher chose cluster 3, namely BPJ mountain lovers, to make detailed marketing strategies using the 8P marketing mix which includes Product, Price, Place, Promotion, People, Physical Evidence, Processes, and Partnership. Furthermore, from each element in the 8P marketing strategy, it is further explained which strategy will be initiated, which strategy will be developed, and which strategy will be maintained.

4. Conclusion

This study discusses segmentation using the K-Means clustering model with the case of Jakarta Backpackers. This research was conducted with the aim of understanding the profile and characteristics of Jakarta Backpacker members and developing more effective marketing strategies using the "8P" framework (Product, Price, Place, Promotion, People, Process, Physical Evidence, and Performance). The results showed that using the K-Means clustering method, researchers managed to identify 7 groups (clusters) that were different in terms of interests and preferences of Jakarta Backpacker members. One of the groups selected as a potential group is "BPJ's Member Mountaineering Lover Cluster" which consists of young age groups between 22-35 years. Next, determine the Value Proposition of this group to determine strategic steps in the marketing mix strategy with the 8Ps. It is hoped that this strategy will help attract more participants and consumers

to join the programs offered by Backpacker Jakarta. This research also explains the importance of developing Online Value Proposition (OVP) as a strategy to achieve organizational targets. In this case, researchers identify the needs, wants, and preferences of each segment of Jakarta Backpacker members to develop a more targeted marketing strategy.

Overall, this study provides in-depth insights into the segmentation of Jakarta Backpacker members using K-Means clustering analysis. This helps in identifying different segments within that community and developing personas that represent each segment. These personas help in understanding the needs, wants, and preferences of each segment, thus enabling the development of a more targeted strategy. In addition, this article highlights the importance of implementing an effective marketing strategy using the "8P" framework to increase participation and consumers in the programs offered by Backpacker Jakarta.

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