
Application of Data Mining Method Using Association Rules Apriori To Shopping Cart Analysis On Sale Transactions (Case Study Alfamidi Burnt Stone)

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Abstract-Also Often data mining is called knowledge discovery in databases (KDD), ie activities include the collection, historical use of data to find regularities, patterns or relationships in data sets with a large size. The company may be interested to know if some groups consistently goods items purchased together. This study analyzes the transaction of data information retrieval from the sale of skin care and hair care using data mining algorithms priori Alfamidi Burnt Stones with the highest support value is 8% and the highest value is 5% confidence

Keywords: Data mining, a priori algorithm.

1. Introduction

Data mining is the process of learning the techniques of computer processing (machine learning) for analyzing and extracting knowledge (knowledge) automatically. Data mining is often also called knowledge discovery in databases (KDD), the activity is the collection, use historical data to provide regularity, patterns or relationships in large data sets. The end result of data mining can be used to improve decision making in the future. One area of application of data mining is the important PT.Alfamidi. If the goods are not suitable placement may lead to irregular levels of consumers to spend a lot of waktu, then from that data mining can be applied in order to change the decision that will come.

2. Theory

2.1 Data Mining

Data mining is mengekstrasikan knowledge from large data sets, data mining is a combined technique of data analysis methods sustained by algorithms in processing large amounts of data.

2.2 Apriori algorithm

Priori algorithm is a kind of association rules in data mining. Besides a priori, which included agolongan pad is the method of Generalized Rule Induction and Hash Algorithm Based. That is a rule that states the association between some of the attributes which is often called affinity analysis or market basket analysis. The rules of association which is a data mining technique can find the rules of associative between a combination of items.

Several stages in the association analysis.

a. High frequency pattern analysis

looking for a combination of items that meet the minimum requirements. with the formula

$$\text{Support } A = \frac{\text{Jumlah transaksi mengandung } A}{\text{Total transaksi}}$$

While the two or more itemsets obtained by the formula:

$$\text{Support } A,B = \frac{\text{Jumlah transaksi mengandung } A \text{ dan } B}{\text{Total transaksi}}$$

b. The formation of associative rules

Finding association rules that meet the minimum requirements for confidence by calculating confidence associative rules AB. by the formula:

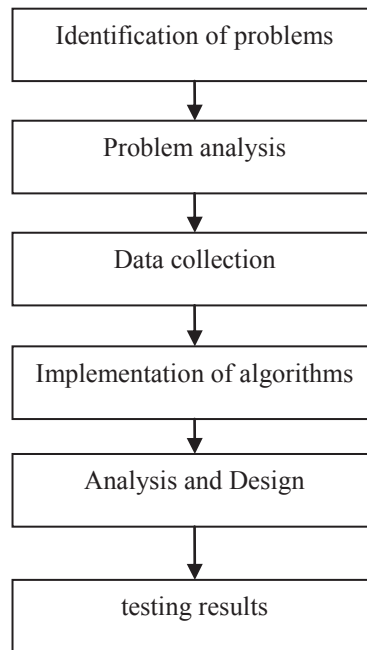
$$\text{Confidence } P \ B|A =$$

$$\frac{\text{Jumlah transaksi mengandung A dan B}}{\text{Jumlah transaksi mengandung A}}$$

Of the process of formation of association rules it will obtain the confidence value of each item set, and then set the minimum value to gain confidence association rules.

3. Research methods

Methodology is a framework in conducting research. The framework of the study are:



Picture 1. Framework Research

4. Analysis and Design

In this study, the data was analyzed transaction data in January 2018 against 25 transaction data consists of 50 items.

Table 1.
List of skin care products

No.	Product code	Product name
1	A01	Ponds Pw pr.WHT 100ml
2	A02	Ponds Pw.bt 100 ml
3	A03	Ponds pw nght 20 ml
4	A04	Ponds oily pw day 20 ml
5	A05	Ponds plmb wht. Bs 20 ml
6	A06	Ponds mge pwd mm 50 ml
7	A07	Shinzui kirei 110 ml
8	A08	SBN Shinzui knsh 85g
9	A09	Shinzui b / c mats 450g
10	A10	Lfebuoy MLD CR 60G
11	A11	Lifebuoy 450g bw LMN
12	A12	Lc Grnier crm yuzu 20 ml
13	A13	Grnier M. cool foam 50ml
14	A14	Pnk mc.cln Grnier 125g
15	A15	Grnier anco fight 100g
16	A16	Grnier cur / w day 20g

No.	Product code	Product name
17	A17	Grnier cur / w fm 50ml
18	A18	Grnier men w + o / c 100ml
19	A19	Fair & lovely f.fm 50ml
20	A20	F & lovely m.vit crm 50ml
21	A21	Vienna p.off mask 15ml
22	A22	Marina ntr.fresh 200ml
23	A23	Wardah w.scrf fw 100ml
24	A24	Nivea r / on ext / wht 50ml
25	A25	Biore b.foam jsmw 250ml

Source: Research (2019)

Table 2.
List of hair care products

No.	Product code	Product name
26	B1	Sunslk black shp 170 ml
27	B2	Sunslk black shp 340 ml
23	B3	Sunslk shp soft and s 70 ml
29	B4	Cnd Sunslk blk 170 ml
30	B5	170 ml soft cnd Sunslk
31	B6	Sunslk re hijb shp 170 ml
32	B7	Ssc shp 135ml Pantene
33	B8	Pantene shp ant / D 170 ml
34	B9	Pantene shp hr / fl 70 ml
35	B10	Pantene ssc shp 150 ml
36	B11	Pantene cdtmr TDC 135 ml
37	B12	Emeron hbl w. mul 250 ml
38	B13	Trsemme shp dc & P 170 ml
39	B14	F & N hijb frs mid 100ml
40	B15	Nature p / rmb rntk 140 ml
41	B16	Lifebuoy shp a / d 70
42	B17	Lifebuoy shp a / d 170 ml
43	B18	Lifebuoy soft shp 70 ml
44	B19	m / z hair eng RYL 30 g
45	B20	H.vit ellipse k / sil 65g
46	B21	Dove r / on shp 40 ml
47	B22	Rejoice 3in1 170 shp
48	B23	Serasoft shp d / trtmn 170 ml
49	B23	Clear shp D / 150 ml
50	B25	Clear shp a / d 320 ml

a. Pattern Frequency 1 item

Given the value of the support of at least 8% of 25 transactions and then do a search on a support value of each item with the formula. Support the value of an item obtained by the following formula.

$$\text{Support A} = \frac{\text{Jumlah transaksi mengandung A}}{\text{Total transaksi}}$$

Support Ponds Pw pr.WHT 100ml

$$= \frac{4}{25} \times 100\% = 16\%$$

Table 3.
Support 1-itemset meet

No.	Product code	Name Product	amount	value Support
1	A01	Ponds Pw pr.WHT 100ml	4/25 = 0:16	16%
2	A03	Ponds Pw night 20 ml	2/25 = 0:08	8%
3	A13	Grnier M. cool foam 50ml	2/25 = 0:08	8%
4	A15	Grnier anco fight 100g	2/25 = 0:08	8%
5	A16	Grnier cur / w day 20g	2/25 = 0:08	8%
6	A24	Nivea r / on ext / wht 50ml	2/25 = 0:08	8%
7	B1	Sunslk black shp 170 ml	2/25 = 0:08	4%
8	B7	Ssc shp 135 ml Pantene	3/25 = 0:12	12%

