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Implementation of Profile Matching Method for E-Wallet Selection Recommendations in Indonesia

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ABSTRACT

The development of e-wallet adoption in Indonesia accompanied by a diversity of features and service quality triggers user confusion in determining the most suitable application. This study develops a Decision Support System (SKS) to recommend the best e-wallet objectively. Using Profile Matching, the research compares the actual profile of each e-wallet against the ideal profile based on 5 criteria and 15 sub-criteria. Data obtained from 30 respondents. The process includes GAP mapping, weight conversion, Core Factor-Secondary Factor clustering, total value calculation per criteria, and then weighted aggregation for ranking. The final recommendation places DANA as the best alternative (3.86), followed by GoPay (3.80) and OVO (3.72). These results show that Profile Matching effectively handles multi-criteria decision-making in the consumer fintech space and provides consistent, transparent and replicable evaluation. The findings provide practical benefits for users in choosing an e-wallet as well as academic contributions in the form of structured application of decision-making methods in the context of digital payments. Further research is recommended to expand the sample, add criteria (cost, customer service, privacy), conduct a test of comparison methods, perform sensitivity tests, and integrate behavioral data to improve external validity and accuracy of recommendations

1. Introduction

The development of digital technology has driven major changes in various sectors, especially in terms of financial transactions. One innovation that is growing rapidly is the use of electronic wallets (e-wallets), which makes it easy for users to make digital transactions without the need for cash(Esawe, 2022; Humairoh & Annas, 2023; Sudipa, Asana, et al., 2023) . In Indonesia, e-wallets such as DANA, GoPay, OVO, ShopeePay, LinkAja, and Sakuku are increasingly popular because they offer convenience and comfort in transactions. This rapid growth also creates challenges, namely the large number of e-wallet options available. Each e-wallet offers different features, ranging from interface appearance, ease of use, to the level of transaction security. Users are often confused in choosing the e-wallet that best suits their needs. Factors such as ease of use, security, and feature benefits greatly influence user preferences in choosing an e-wallet application (Michell et al., 2022; Widjojo, 2020; Wijaya et al., 2023).

To overcome this, a Decision Support System (DSS) is needed that can help users choose the e-wallet that best suits their needs objectively and measurably. Decision Support Systems have been widely used in various fields to help the decision-making process involving many criteria(Maulidah et al., 2024; Muni et al., 2024; Putri et al., 2024; Sudipa, Widiantari, et al., 2024; Sugiarta et al.,

2025; Wahidin et al., 2024) . In this context, DSS can help e-wallet users compare applications based on criteria such as convenience, features, and security.

The method used in this research is Profile Matching. The Profile Matching method works by matching the profile of the object under study (in this case e-wallet) with the expected standard profile. This method is effective in evaluating several choices based on the difference (GAP) between the actual value and the ideal value of each predetermined criterion(Ahmad et al., 2023; Mahendra, Hariyono, et al., 2023) . Profile Matching is very useful in helping users choose the right service based on preferences and needs(Mahendra, Wardoyo, et al., 2023; Sudipa, Wardoyo, et al., 2023) . This research aims to create a decision-making model that can provide recommendations for the best e-wallets in Indonesia based on the Profile Matching method. Some e-wallets that will be analyzed in this study include DANA, GoPay, OVO, ShopeePay, LinkAja, and Sakuku, with evaluation criteria that focus on ease of use and security. Thus, this research is expected to provide useful guidance for users in choosing the most suitable e-wallet for their daily transaction needs.

2. Literature Review

(Sandhiyasa et al., 2025) emphasizes the importance of user experience, ease of use, and transaction security as determinants of adoption. Meanwhile,(Savitri et al., 2025) identifies transaction speed and the breadth of the merchant network as dominant factors. From a decision support system perspective, an analytical approach is needed that can assist consumers in comparing e-wallet alternatives objectively based on relevant criteria. The Profile Matching method is known as one of the effective approaches in decision support systems, because it is able to compare ideal profiles with actual profiles to determine the best alternative. This method has previously been widely applied, including in the employee selection process(Mahendra, Tampubolon, et al., 2023; Sarwandi et al., 2023) , determining creditworthiness(Sudipa & Sudiani, 2019) , to product recommendations(Sudipa, Prananda, et al., 2024; Wijaya et al., 2022; Wiratama et al., 2022) . Its application to e-wallet selection is considered relevant because it can accommodate various assessment criteria such as features, promotions, transaction costs, security, and user convenience. Thus, research related to the implementation of the Profile Matching method in the selection of e-wallets in Indonesia provides a dual contribution: practically helping consumers make e-wallet choices that suit their needs, and academically enriching the literature on the application of decision-making methods in the fintech field, especially in the context of digital payment systems in Indonesia.

3. Research Methods

Profile Matching Method

Profile matching is a very important process in HR management where the competencies (abilities) required by a position are first determined. These competencies or abilities must be able to be fulfilled by the holder or prospective holder of the position. In the profile matching process, it is basically a process of comparing individual competencies to job competencies so that the difference in competencies can be known (also called Gap)(Sudipa, Kharisma, et al., 2023) , the smaller the resulting gap, the greater the weight of the value, which means that it has a greater chance for employees who occupy the position. The following are the stages and formulation of calculations with the Profile Matching method (Maulidah et al., 2024).

1. Assessment Aspects.
   The first step that must be done is to determine the aspects of assessment on the core factor (main factor) and secondary factor (second factor).
2. Competency GAP Mapping
   Competency GAP is the difference between the criteria that a person has and the desired criteria. The competency GAP formula is:
   GAP = Criteria Value - Minimum Value
3. Weighting

If the GAP mapping has been completed, the results of the mapping are given a weighted value according to the benchmark GAP value weight table, as shown in table 1.

Table 1 . Weighting Value

Difference	Weighted Value	Description
0	5	No Difference (Competence as required)
1	4,5	Individual competence exceeds 1 level/level
-1	4	Individual competencies lack 1 level
2	3,5	Individual competence excess of 2 levels/levels
-2	3	Individual competence lacking 2 levels/levels
3	2,5	Individual competence excess 3 levels/levels
-3	2	Individual competence 3 levels/levels short
4	1,5	Individual competence excess 4 levels/levels
-4	1	Individual competencies over 4 levels/levels

4. Calculation and grouping of Core Factor and Secondary Factor.
   After the weight of the GAP value is determined, it is divided into 2 groups, namely Core Factor and Secondary Factor.
   a) Core factor (Main Factor)
      Core factors are aspects (competencies) that stand out / are most needed. To calculate the core factor, the formula is used:

$$NCF = \frac{\sum INC}{\sum IC} \qquad (1)$$

      Description:
      NSF = Average value of SF
      NS = Total number of SF values
      IS = Number of SF items

   b) Secondary Factor (Supporting factor)
      Secondary factors are items other than aspects that are on the core factor. To calculate the secondary factor, the formula is used:

$$NSF \frac{\sum \mathrm{NS}}{\sum IS} \qquad (2)$$

      Description:
      NSF = Average SF value
      NS = Total number of SF values
      IS = Number of SF items
5. Calculation of Total Value
   To calculate the total score, the formula used is:
   (x)%NCF (aspect) + (x)%NSF (aspect) = Ntotal (aspect)
   Description:

NCF (aspect) = average value of core factors.
NSF (aspect) = average value of secondary factors.
N (aspect) = total value of the aspect
(x)% = inputted percent value

6. Calculation of Ranking Value
   To determine the ranking refers to the calculation results using the formula as follows:
   Rank = (x)%Ns
   Description:
   Ns = aspect value
   (x)% = inputted percent value

4. Results and Discussions

This research focuses on the assessment of respondents regarding *e-wallets*. A total of 30 respondents related to the selection of the best *e-wallet*. Based on data from respondents, there are 5 criteria and 15 assessment subcriteria.

Table 2. Assessment Criteria and Subcriteria

No	Criteria	Subcriteria	Subcriteria Name
C1	Ease	SC1	Display
		SC2	Registration Process
		SC3	Balance Top-Up
		SC4	Payment Process
C2	Security	SC5	Personal Data Protection
		SC6	Transaction Verification
		SC7	Online Transaction Security
C3	Service Availability	SC8	Merchant Coverage
		SC9	Bill Payment Service
		SC10	Connectivity with Other Platforms
		SC11	Ease of Balance Withdrawal
C4	Promotions and Incentives	SC12	Discounts and Cashback
		SC13	Promos for Specific Merchants
C5	Application Performance	SC14	Application Speed
		SC15	Application Stability

As a result of distributing respondents' questionnaires, there are 7 selected alternative e-wallets.

Table 3. Alternative

Alternative	Alternative Name
A1	DANA
A2	GOPAY
A3	OVO
A4	Spay
A5	LinkAja
A6	Sakuku
A7	Flip

Alternative value on each Criterion

Based on the respondent's assessment using a scale of 1 to 5, each alternative on each criterion, and derived into sub-criteria values which are then given an assessment.

Table 4. Respondent Assessment Results

Alternative	Criteria														
	C1				C2			C3				C4		C5	
	SC1	SC2	SC3	SC4	SC5	SC6	SC7	SC8	SC9	SC10	SC11	SC12	SC13	SC14	SC15
DANA	4	4	3	4	3	3	3	3	4	4	3	3	4	3	4
Gopay	4	4	3	4	3	2	4	2	4	4	3	3	4	3	4
Ovo	2	3	3	3	2	3	4	3	3	2	4	3	2	3	4
Spay	4	4	4	4	3	3	4	3	4	4	4	3	5	2	3
LinkAja	3	3	2	4	4	2	4	3	4	4	3	2	4	3	3
Sakuku	3	3	2	2	3	3	3	2	2	2	2	3	2	2	2
Flip	3	4	3	3	3	3	3	2	4	4	3	3	4	3	3

Competency GAP Mapping

GAP is a comparison between the e-wallet value and the standard value to meet the appropriate competencies. The ideal value is determined as the minimum value of the assessment.

Table 5. GAP Value

Alternative	**Criteria**														
	C1				C2			C3				C4		C5	
	SC1	SC2	SC3	SC4	SC5	SC6	SC7	SC8	SC9	SC10	SC11	SC12	SC13	SC14	SC15
DANA	4	4	3	4	3	3	3	3	4	4	3	3	4	3	4
Gopay	4	4	3	4	3	2	4	2	4	4	3	3	4	3	4
Ovo	2	3	3	3	2	3	4	3	3	2	4	3	2	3	4
Spay	4	4	4	4	3	3	4	3	4	4	4	3	5	2	3
LinkAja	3	3	2	4	4	2	4	3	4	4	3	2	4	3	3
Sakuku	3	3	2	2	3	3	3	2	2	2	2	3	2	2	2
Flip	3	4	3	3	3	3	3	2	4	4	3	3	4	3	3
Ideal score	**5**	**5**	**5**	**5**	**5**	**4**	**5**	**4**	**2**	**3**	**5**	**4**	**3**	**4**	**5**
DANA	-1	-1	-2	-1	-2	-1	-2	-1	2	1	-2	-1	1	-1	-1
Gopay	-1	-1	-2	-1	-2	-2	-1	-2	2	1	-2	-1	1	-1	-1
Ovo	-3	-2	-2	-2	-3	-1	-1	-1	1	-1	-1	-1	-1	-1	-1
Spay	-1	-1	-1	-1	-1	-1	-1	-1	2	1	-1	-1	2	-2	-2
LinkAja	-2	-2	-3	-1	-2	-2	-1	-1	2	1	-2	-2	1	-1	-2
Sakuku	-2	-2	-3	-3	-2	-1	-2	-2	0	-1	-3	-1	-1	-2	-3
Flip	-2	-1	-2	-2	-2	-1	-2	-2	2	1	-2	-1	1	-1	-2

Conversion of Weighting Value

After getting the GAP value for each e-wallet, each e-wallet will be given a weight according to the weighting benchmark.

Table 6. Weighting Value

Alternative	**Criteria**														
	C1				C2			C3				C4		C5	
	SC1	SC2	SC3	SC4	SC5	SC6	SC7	SC8	SC9	SC10	SC11	SC12	SC13	SC14	SC15
DANA	4	4	3	4	3	3	3	3	4	4	3	3	4	3	4
Gopay	4	4	3	4	3	2	4	2	4	4	3	3	4	3	4
Ovo	2	3	3	3	2	3	4	3	3	2	4	3	2	3	4
Spay	4	4	4	4	3	3	4	3	4	4	4	3	5	2	3
LinkAja	3	3	2	4	4	2	4	3	4	4	3	2	4	3	3
Sakuku	3	3	2	2	3	3	3	2	2	2	2	3	2	2	2
Flip	3	4	3	3	3	3	3	2	4	4	3	3	4	3	3
Weight Value Conversion															
DANA	4	4	3	4	3	4	3	4	3,5	4,5	3	4	4,5	4	4
Gopay	4	4	3	4	3	3	4	3	3,5	4,5	3	4	4,5	4	4
Ovo	2	3	3	3	2	4	4	4	4,5	4	4	4	4	4	4
Spay	4	4	4	4	3	4	4	4	3,5	4,5	4	4	3,5	3	3

LinkAja	3	3	2	4	4	3	4	4	3,5	4,5	3	3	4,5	4	3
Sakuku	3	3	2	2	3	4	3	3	5	4	2	4	4	3	2
Flip	3	4	3	3	3	4	3	3	3,5	4,5	3	4	4,5	4	3

Calculation and grouping of Core Factor and Secondary Factor.

After the weight of the GAP value is determined, it is divided into 2 groups, namely Core Factor and Secondary Factor.

1). Core factor (Main Factor)

For the sample calculation of the core factor, the author took a sample of three e-wallets, namely DANA, GOPAY, and OVO.

Core factor criteria Convenience:

DANA: **NFC** $= \frac{4+4+4}{3}$**=4**

GOPAY: **NFC** $= \frac{4+4+4}{3}$**=4**

OVO: **NFC** $= \frac{2+3+3}{3}$**=2,6**

Core factor Security criteria:

DANA: **NFC** $= \frac{3+3}{2}$**=3**

GOPAY: **NFC** $= \frac{3+4}{2}$**=3,5**

OVO: **NFC** $= \frac{2+4}{2}$**=3**

Service Availability criteria core factor:

DANA: **NFC** $= \frac{4+3,5}{2}$**=3,75**

GOPAY: **NFC** $= \frac{3+3,5}{2}$**=3,25**

OVO: **NFC** $= \frac{4+4,5}{2}$**=4,24**

Promotion and Incentives criteria core factor:

DANA: **NFC** $= \frac{4,5}{1}$**=4,5**

GOPAY: **NFC** $= \frac{4,5}{1}$**=4,5**

OVO: **NFC** $= \frac{4}{1}$**=4**

Application Performance criteria core factor:

DANA: **NFC** $= \frac{4}{1}$**=4**

GOPAY: **NFC** $= \frac{4}{1}$**=4**

OVO: **NFC** $= \frac{4}{1}$**=4**

2). Secondary Factor (Supporting factors)

For the sample calculation of the core factor, the author took a sample of three e-wallets, namely DANA, GOPAY, and OVO.

Secondary Factor criteria Convenience:

DANA: **NSF** $= \frac{4}{1}$**=4**

GOPAY: **NSF** $= \frac{4}{1}$**=4**

OVO: **NSF** $= \frac{3}{1}$**=3**

Secondary Factor Security criteria:

DANA: **NSF** $= \frac{4}{1}$**=4**

GOPAY: **NSF** $= \frac{3}{1}$**=3**

OVO: **NSF** $= \frac{4}{1}$**=4**

Secondary Factor criteria Service Availability:

DANA: **NSF** $= \frac{4,5+3}{2}$**=3,75**

GOPAY: **NSF** $= \frac{4,5+3}{2}$**=3,75**

OVO: **NSF** $= \frac{4+4}{2}$**=4**

Secondary Factor criteria Promotion and Incentives:

DANA: **NSF** $= \frac{4}{1}$**=4**

GOPAY: **NSF** $= \frac{4}{1}$**=4**

OVO: **NSF** $= \frac{4}{1}$**=4**

Secondary Factor application performance criteria:

DANA: **NSF** $= \frac{4}{1}$**=4**

GOPAY: **NSF** $= \frac{4}{1}$**=4**

OVO: **NSF** $= \frac{4}{1}$**=4**

Table 7. Core Factor (CF) and Secondary Factor (SF)

Alternative	**C1**		**C2**		**C3**		**C4**		**C5**	
	CF	SF	CF	SF	CF	SF	CF	SF	CF	SF
DANA	4	4	3	4	3,75	3,75	4,5	4	4	4
Gopay	4	4	3,5	3	3,25	3,75	4,5	4	4	4
Ovo	2,666667	3	3	4	4,25	4	4	4	4	4
Spay	4	4	3,5	4	3,75	4,25	3,5	4	3	3
LinkAja	3,333333	3	4	3	3,75	3,75	4,5	3	4	3
Sakuku	2,666667	3	3	4	4	3	4	4	3	2
Flip	3,333333	4	3	4	3,25	3,75	4,5	4	4	3

Total Value Calculation

After knowing the value of the Core Factor and Secondary Factor, the next step is to calculate the total value of the two aspects. The formula for Total Value is The percent value determined for the core factor is 60% and the secondary factor is 40%.

Ease Criteria:

DANA: N = (60%*4)+(40%*4) =2.4+1.6= 4.0
GOPAY: N =(60%*4)+(40%*4) =2,4+1,6 =4,0
OVO: N =(60%*2.7)+(40%*3) =1.6+1.2 =2.8

Security Criteria:
DANA: N =(60%*3)+(40%*4) =1,8+1,6 =3,4
GOPAY: N =(60%*3,5)+(40%*3) =2,1+1,2 =3,3
OVO: N =(60%*3)+(40%*4) =1.8+1.6 =3.4

Service Availability Criteria:
DANA: N =(60%*3,75)+(40%*3,75) =2,25+1,5=3,8
GOPAY: N =(60%*3.25)+(40%*3.75)= 1.95+1.5 =3.5
OVO: N = (60%*4.25)+(40%*4) =2.55+1.6 =4.2

Promotion and Incentive Criteria
DANA: N =(60%*4,5)+(40%*4) =2,7+1,6 =4,3
GOPAY: N =(60%*4,5)+(40%*4) =2,7+1,6 =4,3
OVO: N =(60%*4)+(40%*4) =2.4+1.6 =4.0

Application Performance Criteria
DANA: N =(60%*4)+(40%*4) =2,4+1,6 =4,0
GOPAY: N =(60%*4)+(40%*4) =2,4+1,6 =4,0
OVO: N =(60%*4)+(40%*4)=2.4+1.6 =4.0

Table 8. Total Value Calculation

Alternative	KM	KA	KL	PI	KP
DANA	4	3,4	3,8	4,3	4
Gopay	4	3,3	3,5	4,3	4
Ovo	2,8	3,4	4,2	4,0	4
Spay	4	3,7	4	3,7	3
LinkAja	3,2	3,6	3,8	3,9	3,6
Sakuku	2,8	3,4	3,6	4	2,6
Flip	3,6	3,4	3,5	4,3	3,6

Determination of Ranking Value

The percentage that has been determined for the convenience aspect is 10%, the security aspect is 30%, the Service Availability aspect is 10%, the Promotion and Incentive aspect is 20%, the Application Performance aspect is 30%.

1. DANA

   HA = (10% x 4.0)+(30% x 3.4)+(10% x 3.8)+(20% x 4.3)+(30% x 4.0)

   HA = 0.4 + 1.02+0.38+0.86+1.2 = 3.86

2. GOPAY

   HA = (10% x 4.0)+(30% x 3.3)+(10% x 3.5)+(20% x 4.3)+(30% x 4.0)

   HA = 0.4 + 0.99+0.35+0.86+1.2 = 3.80

3. OVO

   HA = (10% x 2.8)+(30% x 3.4)+(10% x 4.2)+(20% x 4.0)+(30% x 4.0)

   HA = 0.28 + 1.02+0.42+0.8+1.2 = 3.72

4. Spay

   HA = (10% x 4.0)+(30% x 3.7)+(10% x 4.0)+(20% x 3.7)+(30% x 3.0)

   HA = 0.4 + 1.11+0.4+0.74+0.9 = 3.55

5. Aja Link

   HA = (10% x 3.2)+(30% x 3.6)+(10% x 3.8)+(20% x 3.9)+(30% x 3.6)

   HA = 0.32 + 1.08+0.38+0.78+1.08 = 3.64

6. Sakuku

   HA = (10% x 2.8)+(30% x 3.4)+(10% x 3.6)+(20% x 4.0)+(30% x 2.6)

   HA = 0.28 + 1.02+0.36+0.8+0.78 = 3.24

7. Flip

   HA = (10% x 3.6)+(30% x 3.4)+(10% x 3.5)+(20% x 4.3)+(30% x 3.6)

   HA = 0.36 + 1.02+0.35+0.86+1.08 = 3.67

Table 9. Final Ranking **Score**

Alternative	KM	KA	KL	PI	KP	Final Score	Rank
DANA	4	3,4	3,8	4,3	4	**3,86**	**1**
Gopay	4	3,3	3,5	4,3	4	**3,80**	**2**
Ovo	2,8	3,4	4,2	4,0	4	**3,72**	**3**
Spay	4	3,7	4	3,7	3	**3,55**	**6**
LinkAja	3,2	3,6	3,8	3,9	3,6	**3,64**	**5**
Sakuku	2,8	3,4	3,6	4	2,6	**3,24**	**7**
Flip	3,6	3,4	3,5	4,3	3,6	**3,67**	**4**

Based on the ranking results, there are results, namely DANA alternatives as the best alternative with a value of 3.86, then there are alternative e-wallet Gopay with a value of 3.80, and e-wallet Ovo with a value of 3.72. From these results, it can be conveyed that the research findings, namely the profile matching model, can be used in determining the best e-wallet with multiple criteria and multiple sub-criteria.

5. Conclusion

This research responds to the confusion of users in choosing a digital wallet (e-wallet) in the midst of many alternatives and various features. By designing a Decision Support System (SDM) based on the Profile Matching method, this study offers a more objective, measurable, and transparent assessment solution. Based on 30 respondents' assessment of 5 criteria (Convenience, Security, Service Availability, Promotion & Incentives, and Application Performance) and 15 sub-criteria, the SPK calculates the difference (GAP) between the actual profile of each e-wallet and the ideal profile, then aggregates it through the Core Factor and Secondary Factor weights. The final result shows DANA as the best alternative (score 3.86), followed by GoPay (3.80) and OVO (3.72). This finding confirms that Profile Matching is effective for multi-criteria decision making in the consumer fintech context. The proposed solution-Profile Matching-based PR provides practical guidance for users in determining e-wallets according to their needs while providing a consistent evaluation framework for researchers and practitioners. Future research is recommended to (1) enlarge and diversify the sample to be representative; (2) enrich the criteria—for example, transaction costs, customer service reliability, regulatory compliance, and privacy; (3) compare or combine other methods (AHP/ANP, TOPSIS, MAUT, or machine learning) and conduct weight sensitivity tests; (4) integrate actual behavioral data (transaction logs) and usability testing (UX testing) for external validation; and (5) develop an adaptive and explainable SPK application prototype so that recommendations are easily understood by users

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