A Hybrid Data Mining Model for Indonesian Telematics SMEs Classifications

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Abstract. The power of information technology and communication (telematics) is one of the vital forces for every country. In the Industrial Revolution 4.0 era, the development of telematics was one of the priorities of the Indonesian government nawacitas. The development of the field of telematics in Indonesia for a decade is inseparable from the role of SMEs. The role of telematics SMEs in the strength of national development can be mapped through the optimization of National Economic Census data (Susenas). The detailed 2016 Susenas data has not been released by BPS. Therefore, this research still uses 2006 Susenas data. The 2016 Susenas recapitalization shows that Indonesian telematics has a very large power, consisting of 2.6 million players. This great strength needs to be optimized to have high competitiveness so as to be able to support Indonesia's development. The purpose of this study was to conduct hybrid data mining modeling to be used as a decision model in mapping the classification of Indonesian telematics SMEs. The classification map includes the feasibility of assistance for the empowerment of Indonesian telematics SMEs, business prospects and development plans for Indonesian telematics SMEs. The hybrid data mining model with K-Medoids & C4.5 technique shows better performance compared to other models, , with an average accuracy rate of 71.87%. This model validation test also involves K-fold cross validations.

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	Thickness			Separation energies	
Nucleus	(mg cm^{-2})	Composition	γ, n (MeV)	γ, 2n (MeV)	
¹⁸¹ Ta	19.3±0.1 ^b	Natural	7.6	14.2	
²⁰⁸ Pb	$3.8 \pm 0.8^{\circ}$	99% enriched	7.4	14.1	
²⁰⁹ Bi	2.6±0.01°	Natural	7.5	14.4	

Table 1. A table with headings spanning two columns and containing notes^a.

^aNotes are referenced using alpha superscripts.

^bSelf-supporting.

^cDeposited over Al backing.

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References

- [1] Strite S and Morkoc H 1992 J. Vac. Sci. Technol. B 10 1237
- [2] Nakamura S, Senoh M, Nagahama S, Iwase N, Yamada T, Matsushita T, Kiyoku H and Sugimoto Y 1996 Japan. J. Appl. Phys. 35 L74
- [3] Kunze K 2003 T-duality and Penrose limits of spatially homogeneous and inhomogeneouscosmologies *Phys. Rev.* D **68** 063517 (*Preprint* gr-qc/0303038)
- [4] MilsonR,ColeyA,PravdaVandPravdovaA2004 Alignment and algebraically special tensors*Preprint* gr-qc/0401010
- [5] Horowitz G T and Maldacena J 2004 The black hole final state J. High Energy Phys. JHEP02(2004)008
- [6] Sze S M 1969 Physics of Semiconductor Devices (New York: Wiley–Interscience)
- [7] Szytula A and Leciejewicz J 1989 *Handbook on the Physics and Chemistry of Rare Earths* vol 12, edK A Gschneidner Jr and L Erwin (Amsterdam: Elsevier) p 133