

# Multi-Criteria Decision Analysis Report

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## Car Selection Problem Analysis

### 1. Dataset Description

We analyzed a set of 10 small city cars available for sale within 100 km of Koziegłowy, with prices under 40,000 PLN. The data comes from [OTOMOTO](#), where we scraped listings for cars that might suit a PUT student's needs. We narrowed down from 50 initial listings to 10 representative options to keep our analysis manageable.

Our *totally fictional* buyer is a student living in Koziegłowy, Wielkopolskie - who needs a reliable city car that balances cost, age, mileage, and performance. Since they're a student, practical considerations outweigh aesthetics or comfort - they want the best value for money and maybe a bit of engine power to impress friends.

Specifically, the dataset comprises the first 50 listings from [this exact url](#)

Not all available scraped data was used for the MCDA in the end. Still, it is present in the dataset for reference.

#### Full dataset

title	subtitle	price	currency	year	mileage_km	fuel_type	gearbox	location	seller_type	price_evaluation	url
Renault Clio 0.9 Energy TCe Limited	898 cm3 - 90 KM - Salon Polska, Pierwszy właściciel, bezwypadkowy i bezkolizyjny	39500	PLN	2017	60098	Benzyna	Manualna	Rawicz (Wielkopolskie)	Prywatny sprzedawca	Powyżej średniej	https://clio-sa-bezwyp
Dacia Sandero Stepway TCe 90 (S&S) Essential	898 cm3 - 90 KM	39360	PLN	2019	65900	Benzyna	Manualna	Dobrcz (Kujawsko-pomorskie)	Prywatny sprzedawca	W granicach średniej	https://sander
...											

#### MCDA dataset

title	price (4,700-39,500 PLN) [2] ↓	year (2000-2019) [2] ↑	mileage_km (49,459-374,000 km) [3] ↓	engine_size_cm3 (875-1,798 cm³) [1] ↑	power_hp (60-160 HP) [1] ↑
Renault Clio 0.9 Energy TCe Limited	39500	2017	60098	898	90
Renault Megane 1.4 RN 16V	4700	2001	173117	1390	95
Dacia Sandero Stepway TCe 90 (S&S) Essential	39360	2019	65900	898	90
Mitsubishi Space Star	26000	2017	82000	1193	80
Nissan Micra	16500	2011	177491	1198	80
Ford KA	19300	2014	139990	1242	69
Alfa Romeo Mito 0.9 TwinAir Progression	7800	2009	232000	875	85
Fiat 500 1.2 8V Anniversario	13900	2012	93000	1242	69
Kia Picanto	36900	2018	56213	998	67
Audi A3	22500	2000	374000	1798	160

Mileage was given the highest weight (3) since it directly impacts reliability and future maintenance costs. Price and year were also important (weight 2 each), while engine size and power were less critical (weight 1 each).