ProBCA Taxonomy of MADM Methods for Ranking

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Abbreviation	Full Name	Year	Top-Level Description	Type Count	1. Problem Specification					2. Criteria Definition							3. Preference Aggregation				
					1.1: Task Facilitated	1.2: Output Format	1.3: Ambiguity Presence	1.4: Relative Thresholds	1.5: Resource Required	2.1: Criteria Count	2.2: Criteria Importance	2.3: Weights Basis	2.4: Weights Format	2.5: Definition Procedure	2.6: Criteria Dependency	2.7: Criteria Hierarchy	3.1: Options Count	3.2: Attribute Nature	3.3: Rating Format	3.4: Rating Procedure	3.5: Method of Aggregation
ACUTA	Analytic Center UTA	2010	A UTA-based aggregation-disaggregation type approach: allows to automatically deduce the preference model from a subset of considered alternatives. Employs Linear Programming to solve the value functions graphically represented as a polyhedron.	1	Ranking	Point Values	N/A	Option Ratings	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
AIM	Aspiration-level Interactive Model	1992	Developed to aid problems that feature 2+ conflicting objectives. Derives the total level of aspiration by combining the aspiration levels of individual criteria to identify the non-dominated alternatives.	1	Ranking	Point Values	N/A	Option Ratings	Reasonable	Unlimited	Weighted	Subjective	Point Value	Reference	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Programming
AIR	Aggregation of Individual Rankings	2012	A GDM enrichment to the CBR method that allows aggregation of preferences into non-strict rankings by conjunctive elimination. Several GDM methods are used simultaneously to derive final ranking as an average. Particularly useful to select or recommend among a set of action options.	1	Ranking	Order	Option Ratings	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Hierarchical	≤ 25	Any	Order	Comparison	Programming
AIRM	Aggregated Indices Randomization Method	1908	Aggregates probabilistic, incomplete and imprecise data from the various experts to derive the probabilistic ranking for the most important attributes of the involved solution alternatives. Does not use explicit criteria, but distinguishes between information sources using credibility rating.	1	Ranking	Order	Option Ratings	N/A	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Ratio	Probability	Programming
AMAST	Advanced Multi-Attribute Scoring Technique	1989	A MAUT-based method dedicated to ranking the solution options based on performances against multiple criteria. Originally introduced as part of the RFP process for Purchasing functions, but can be used on its own. Involves ratio weighing, functional utility scoring, and indifference thresholds. Suitable for dealing with a very large number of variables.	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Subjective	Point Value	Assignment	Interacting	Hierarchical	Unlimited	Nominal	Point Value	Direct Rating	Functional
ANP-F (FANP)	Fuzzy ANP	2003	ANP basis with the fuzzy expression of criteria weights.	1	Ranking	Point Values	Option Ratings	N/A	Heavy	≤ 25	Weighted	Objective	Ratio	Options-based	Interacting	Hierarchical	≤ 25	Nominal	Ratio	Comparison	Functional
APIM	Aggregated Preference Indices Method	2008	Extension to AIM using Bayesian randomization models implemented through "immunocomputing" to evaluate the alternatives with non-numeric, uncertain, and incomplete information.	1	Ranking	Distribution	Preference Model	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Order	Assignment	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Programming
ARAMIS	Aggregation and Ranking of Alternatives near the Multi-attribute	2008	A simpler alternative to TOPSIS-like methods. Expert judgements (may be contradictory, diverse, non-compromising) of the solution performances against the criteria are stored in sets, which are then ordered in accordance with similarity to hypothetical best and worst solution.	2	Ranking	Order	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
ARAS	Additive Ratio Assessment	2010	Involves simple operations on the decision matrix where criteria weights are used as scalar multiplicators. The matrix values are normalised against a common scale. No pairwise comparison is involved and thus, a large number of criteria and options can be processed.	8	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
ARAS-F (FARAS)	Fuzzy ARAS	2010	An improvement to ARAS using Fuzzy numbers to deal with uncertain decision information due to subjectivity, hesitation, or multiple opinions.	1	Ranking	Point Values	Both	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Distribution	Assignment	Independent	Flat only	Unlimited	Measurable	Distribution	Direct Rating	Functional
ARAS-G (GARAS)	Grey ARAS	2010	An improvement to ARAS using Grey numbers approach to deal with uncertain decision information expressed as min/max bounds.	1	Ranking	Point Values	Both	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Interval	Assignment	Independent	Flat only	Unlimited	Measurable	Interval	Direct Rating	Functional
ARAS-H	Hierarchical ARAS	2021	An adaptation of the ARAS method for problems involving hierarchical criteria.	1	Ranking	Point Values	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Functional
ARGUS	Achieving Respect for Grades by Using ordinal Scales	1994	Uses ordinally represented qualitative preferences. Uses 5 preference relations to compare the alternatives. Criteria weights are based on a 5-score system. Constructs an outranking-based preference graph. Outperforms other outranking methods by using interval or ratio scales.	1	Ranking	Order	N/A	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Order	Assignment	Independent	Flat only	Unlimited	Any	Order	Comparison	Programming
ARIADNE	Alternative Ranking Interactive Aid based on DomiNance structural information Elicitation	1984	Uses graph theory algorithms to specify the structural model for a decision situation using relevant information (parameters, scores, etc.) rather than have it spontaneously adjusted by the DM. Allows setting the desired precision for the parameter and outcome (ranking) values in an iterative process.	1	Ranking	Order	Both	Both	Reasonable	≤ 25	Weighted	Subjective	Interval	Assignment	Independent	Hierarchical	Unlimited	Measurable	Interval	Probability	Functional
ASPID	Analysis and Synthesis of Parameters under the Information Deficiency	1996	An AHP-like method developed specifically for policy evaluation, which implies uncertainty. Contrary to AHP (which involves subjective criteria weights), criteria importance is derived mathematically based on the equality or inequality of importance among the criteria.	1	Ranking	Distribution	Preference Model	N/A	Heavy	≤ 25	Weighted	Subjective	Distribution	Probability	Independent	Flat only	Unlimited	Measurable	Ratio	Probability	Functional
ASTRIDA	Advanced STRategic Intelligent Decision Aid	1989	Built upon MAUD & ZAPROS, represents a practical application of the Dominance Search Theory to model the decision process. Facilitates problem structuring and choice between alternatives based on the decision maker's preferences expressed in natural language. Does not require limiting the number of considered alternatives since not all pairwise comparisons have to be made, some may be omitted based on the available information. Also called PARK (foreign transliteration) or PACOM (Pairwise Comparison).	1	Ranking	Order	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Abstract	Order	Comparison	Programming
BCR	Benefit-to-Cost Ratio	2021	Similar to CBA, but requires that all criteria are already expressed in monetary terms (or other common scale) and includes the process for deriving criteria weights.	1	Ranking	Point Values	N/A	N/A	Light	≤ 25	Weighted	Subjective	Order	Comparison	Independent	Flat only	Unlimited	Any	Point Value	Direct Rating	Functional
BDA	Bayesian Decision Analysis	1971	Allows ranking the solution alternatives to a particular problem in accordance with its effectiveness w.r.t. some particular criterion e.g. costs.	1	Ranking	Distribution	Option Ratings	N/A	Reasonable	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Ratio	Probability	Programming
BGM	Brown-Gibson Model	1972	Uses the measures of critical, objective, and subjective factors within a compound formula to reflect both objective and subjective evaluations on individual parameters simultaneously.	1	Ranking	Point Values	N/A	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Functional
CA (II)	Cloud Aggregation	2014	A linguistic assessment scale is used to transform any linguistic term into a cloud of linguistic variables and further into numerical assessment values for Group DM. Includes DM competence weighting.	1	Ranking	Order	Option Ratings	N/A	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Nominal	Point Value	Direct Rating	Programming
CAM	Consensus Analysis Model	2007	A qualitative ranking method that uses comparative assessments provided by multiple stakeholders in linguistic terms. Measures the degree of consensus between stakeholders.	1	Ranking	Order	Both	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Ratio	Assignment	Independent	Hierarchical	Unlimited	Nominal	Point Value	Direct Rating	Functional
CBA	Cost-Benefit Analysis	1848	Not formally a MCDA method, but performs an equivalent function by evaluating the alternatives against two attribute dimensions: any negative aspects associated with an alternative are expressed in monetary terms as costs; while its positive aspects represent the utility components and may be expressed in either monetary terms or the original measured units.	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Interacting	Flat only	Unlimited	Any	Point Value	Direct Rating	Functional
CBR	Case-Based Reasoning	2008	Uses intelligent analysis of historical data to rank the existing solutions or help to derive the new ones based on the measure of similarity.	1	Ranking	Order	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Any	Ratio	Reference	Functional
CCA	Convex Cone Approach	1984	An interactive method that applies an Optimisation technique (convex cones) to solve discrete selection problems with ill-defined preferences. It is used to derive a suitable preference function by comparing the solution alternatives among each other.	1	Ranking	Order	Option Ratings	Option Ratings	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
CCDM	Capacities-based Criteria Dependence Models	2019	A method for ranking option performances using integral approaches for problems involving a hierarchy of interactive criteria and incomplete preference information from the DM.	1	Ranking	Point Values	Preference Model	N/A	Heavy	≤ 25	Weighted	Pre-determined	Point Value	Assignment	Interacting	Hierarchical	Unlimited	Any	Distribution	Probability	Programming
CM	Conjunctive Method	1964	One of the earliest MCDM methods: alternatives are rejected/deprioritised in accordance with passing the minimum criteria thresholds.	2	Ranking	Order	N/A	Option Ratings	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
CMCDA	Constructivist MCDA	2021	A simple method for ranking a large number of options on many criteria in the presence of multiple stakeholders.	1	Ranking	Point Values	Preference Model	N/A	Light	Unlimited	Weighted	Subjective	Point Value	Assignment	Independent	Hierarchical	Unlimited	Any	Point Value	Direct Rating	Functional
COCOSO	Grey COCOSO	2019	A compromise-seeking method based on a combination of WSM and WPM	8	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
COCOSO-G	COmbined COmpromise Solution	2019	An extension to CoCoSo with Grey Numbers to account for multiple expert opinions on the alternative ranks in a GDM setting.	2	Ranking	Point Values	Option Ratings	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Interval	Direct Rating	Functional
CODAS	COmbinative Distance-based Assessment	2016	A simple method similar to other well-known distance-based approaches, but allows specifying the Indifference threshold to compare highly dissimilar options.	1	Ranking	Point Values	N/A	Option Ratings	Light	Unlimited	Weighted	Pre-determined	Ratio	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
COMET	Characteristic Objects METhod	2015	Uses the distance from the nearest characteristic objects and their value by determining the domain and Fuzzy Sets. Uses triangle fuzzy numbers to represent alternative affiliations to linguistic values of criteria for pairwise comparison.	1	Ranking	Point Values	Option Ratings	N/A	Reasonable	≤ 25	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	≤ 25	Any	Point Value	Comparison	Separation
COPRAS	Heavy Proportional Assessment	1996	An improvement to SAW method that features the consideration of the maximising and minimising criteria influences to improve applicability and precision.	1	Ranking	Point Values	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
COPRAS-G	Grey-number COPRAS	2008	COPRAS method enhanced with Grey Relations to cater for imprecise data on attribute performances.	2	Ranking	Point Values	Option Ratings	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Interval	Direct Rating	Functional
COSIMA	COmpoSIte Model for Assessment	2007	A hybrid method for assessing the Total Rate of Return for the considered alternatives based on a scaled combination of CBA (monetary criteria) and MCDA (for deriving option utilities based on DMs preferences).	1	Ranking	Distribution	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Interacting	Flat only	Unlimited	Any	Point Value	Probability	Programming
CP	Compromise Programming	1973	A post-processing method for MODM tasks once the Pareto set of efficient options is identified. Defines the best solution as the one positioned the shortest distance from an ideal point in the absence of additional criteria. Uses Taylor expansion of utility value in the vicinity of the ideal point.	2	Ranking	Point Values	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
CUT	Concave UTility	2014	An interactive procedure for choosing form a set of discrete objects when the DM's preferences adhere to a concave value function.	1	Ranking	Order	N/A	N/A	Heavy	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Nominal	Order	Reference	Programming
DCE	Discrete Choice Experiments	2005	A method for inferring probabilistic criteria weights based on hypothetical outcome scenarios from multiple DMs using non-interactive, pre-defined surveys.	1	Ranking	Order	Preference Model	N/A	Light	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Any	Order	Comparison	Programming
DEA	Data Envelopment Analysis	1987	A nonparametric iterative programming technique for evaluating the relative efficiencies of decision units with common input and output terms using historical data and a hypothetical aggregating criterion. Typically used for retrospective monitoring and control applications, but also offers benefits if applied as an MCDA tool despite not originally coming from the MCDA domain.	1	Ranking	Point Values	N/A	Criteria Influence	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
DELTA	N/A (custom name)	1998	A tool for choosing the available action (represented as solution options) based on the probability (represented as thresholds) of possible consequences (represented as criteria).	1	Ranking	Intervals	Option Ratings	Option Ratings	Heavy	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Measurable	Interval	Probability	Separation
DEX	Decision Expert	1990	A language-based method that organises qualitative attributes hierarchically. Implemented using dedicated software only.	1	Ranking	Order	Option Ratings	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Hierarchical	Unlimited	Any	Point Value	Direct Rating	Programming
DIER-BCS	Dependence-based Interval-valued Evidential Reasoning combined with Balanced Score Card	2012	Dedicated to analysing the alternatives with dependent criteria of both quantitative and qualitative nature under uncertainty with minimum loss of precision.	1	Ranking	Order	Option Ratings	Option Ratings	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Interacting	Hierarchical	≤ 25	Measurable	Interval	Direct Rating	Programming
DM	Disjunctive Methods	1964	One of the earliest MCDM methods: the better alternatives are those exhibiting the higher scores on any single criterion.	2	Ranking	Order	N/A	Option Ratings	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
DNMA	Double Normalization-based Multiple Aggregation	2019	A comprehensive algorithm to derive the ranking of solutions based on benefit, cost, and target elements of the decision. Accepts both qualitative & quantitative criteria using probabilistic means of assessing linguistic terms. Involves 2 normalisation tools and 3 aggregation techniques.	1	Ranking	Point Values	N/A	N/A	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Any	Point Value	Probability	Separation
DRAPE	Deep Ranking Analysis by Power Eigenvectors	2019	Ranks the alternatives using pre-defined tournament table rules. Offers high-precision ranking in complex setups with incomplete data.	1	Ranking	Order	N/A	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Any	Order	Comparison	Functional
DRPM	Double Reference Point Method	2018	A detailed method dedicated to assessing geographical performance indicators (e.g. sustainability) in complex GDM problem settings.	1	Ranking	Intervals	Preference Model	Both	Heavy	Unlimited	Weighted	Subjective	Point Value	Assignment	Interacting	Hierarchical	Unlimited	Measurable	Distribution	Direct Rating	Programming
DST	Dempster Shafer Theory	2011	An analytical discipline that can be used to rank the alternatives in GDM settings using TOPSIS-like process to produce probabilistic ranking value using judgements from multiple DMs. Although a specific method is proposed in the source, no name is assigned so the discipline title is used.	1	Ranking	Distribution	Both	N/A	Reasonable	Unlimited	Weighted	Subjective	Distribution	Assignment	Independent	Flat only	Unlimited	Measurable	Distribution	Direct Rating	Separation
EBA	Elimination by Aspects	1972	Eliminates options one by one by outranking against each criterion in the order of probabilistic discrimination power until the single winning option remains.	1	Ranking	Order	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Point Value	Probability	Programming
ELECTRE GKMS	ELECTRE extension with ROR	2011	ELECTRE extension with Robust Ordinal Regression that uses ordered reference alternatives as baseline information for deriving preferences. A complex, yet highly flexible, versatile, and precise method for building preference models.	1	Ranking	Order	N/A	Both	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	≤ 25	Measurable	Order	Reference	Programming
ELECTRE II	ELECTRE version 2	1971	The first version of a ranking ELECTRE method, adapted from ELECTRE I method used for choice problematic. Uses the concordance and discordance indices to transform a partial order into a complete order. These reflect the portion of criteria in which one alternative is at least as good (within the indifference threshold), or better than (outside of threshold), the other.	1	Ranking	Order	N/A	Both	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	≤ 25	Measurable	Order	Comparison	Functional
ELECTRE III	ELECTRE version 3	1978	An improvement to ELECTRE II allowing to solve ranking problems with imprecise or imperfect knowledge using pseudo-criteria.	1	Ranking	Order	Option Ratings	Both	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	≤ 25	Measurable	Order	Comparison	Functional
ELECTRE IV	ELECTRE version 4	1982	A simplification of the ELECTRE III method with unweighted criteria that replaces it with relative coefficients for the performance evaluation credibility.	1	Ranking	Order	Option Ratings	Both	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Measurable	Order	Comparison	Functional
ELECTRE SS	ELECTRE III with Stochastic Scoring	2007	ELECTRE III method that accounts for uncertainties in criteria importance weights.	1	Ranking	Order	Both	Both	Reasonable	Unlimited	Weighted	Subjective	Distribution	Probability	Independent	Flat only	≤ 25	Measurable	Order	Comparison	Functional
EPISSURE	N/A (Foreign Transliteration)	2010	Evaluates the relative order of complex alternatives (e.g. projects, companies) in terms of non-financial (i.e. purely qualitative) hierarchical indicators provided in linguistic terms. Involves a hybrid step using ELECTRE TRI method (excluded from this list) to sort the options into performance groups.	1	Ranking	Order	N/A	Both	Heavy	≤ 25	Weighted	Pre-determined	Point Value	Assignment	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Programming
ER	Evidential Reasoning	1994	A generic, evidence-based approach to problems with quantitative & qualitative criteria under uncertainties, such as ignorance or randomness.	1	Ranking	Point Values	Option Ratings	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Probability	Functional
ES	Even Swaps	1998	The clean form of conjoint analysis where the preference intervals are used to make trade-offs when evaluating the alternatives against each other. Uses "bartering" approach i.e. thinking about one criterion in terms of the other criteria.	4	Ranking	Order	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Point Value	Direct Rating	Programming
EVAMIX	EVAluation with MIXed data	1983	The algebraic sum of two dominance indexes (one for ordinal evaluations and one for cardinal) represents a single performance value to measure the dominance between each pair of alternatives.	1	Ranking	Point Values	N/A	N/A	Reasonable	Unlimited	Weighted	Objective	Point Value	Probability	Independent	Flat only	Unlimited	Any	Point Value	Direct Rating	Separation
EXPROM	EXtension of the PROMethee	2019	Dedicated to evaluating and ranking the alternatives more accurately than PROMETHEE methods. EXPROM I assesses the entering & leaving flows to produce a partial ranking. EXPROM II yields the net flow in the form of the final value and yields a full ranking of alternatives.	1	Ranking	Order	N/A	Option Ratings	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Comparison	Functional
FANMA	N/A (custom name)	2002	A simple approach to ranking project or action alternatives that have a common basis e.g. a geographical context (e.g. selecting what to do with the available wated from 3 rivers).	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Ratio	Assignment	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Functional
FDMM	Forced Decision-Making Matrix	2015	The first version of the pairwise comparison matrix where the relative performances between the options are assessed as either 0 or 1, and then calculated in a WSM-like approach. A rough, but easy to implement method.	1	Ranking	Point Values	N/A	N/A	Light	≤ 25	Weighted	Subjective	Order	Comparison	Independent	Flat only	≤ 25	Measurable	Ratio	Comparison	Functional
FITradeoff-R	Flexible and Interactive Tradeoff for Ranking	2019	A software-based method for iterative ordering of alternatives based on incomplete preference information expressed through partial preorder of the hypothetical outcomes.	1	Ranking	Order	Preference Model	Option Ratings	Reasonable	≤ 25	Weighted	Pre-determined	Order	Assignment	Interacting	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
FMEA	Failure Modes and Effects Analysis	1949	Although not a formal MCDA method itself, it is widely used across the industries to evaluate the risk levels based on both qualitative and quantitative aspects of a product or action. Uses a pre-defined criteria categories (failure modes), Scoring values (severity), and importance weights (likelihood) that are used to describe the system (product, action) for the evaluation.	1	Ranking	Order	N/A	Both	Light	Unlimited	Weighted	Pre-determined	Ratio	Assignment	Independent	Hierarchical	Unlimited	Nominal	Point Value	Direct Rating	Functional
FPC	Fuzzy Pairwise Comparison	1989	A fuzzy version of the Pairwise Comparison method dedicated to accounting for uncertainties in defining optimal criteria weights.	1	Ranking	Point Values	Both	N/A	Reasonable	≤ 25	Weighted	Subjective	Point Value	Assignment	Independent	Flat only	≤ 25	Measurable	Ratio	Comparison	Functional
FUCA	Faire Un Choix Adéquat ("Make an adequate choice" from French)	2011	A very simple method for ranking the Pareto front of equivalent alternatives. Each alternative is ranked based on its performance Scoring within each criterion (top rank for best Scoring, bottom rank for weakest performance). Then, weighted sum is calculated for each alternative based on option rank and performance Scoring for all criteria.	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Order	Comparison	Functional
FWA	Fuzzy weighted average	2008	A thorough method for dealing with uncertain preference information to derive the fuzzy utility bounds for each alternatives with consideration of the DM's preference for the strictness of criteria weighting.	1	Ranking	Intervals	Both	N/A	Heavy	Unlimited	Weighted	Pre-determined	Interval	Assignment	Independent	Flat only	Unlimited	Measurable	Interval	Direct Rating	Programming
GAIA	Geometrical Analysis for Interactive Aid	2009	A visualisation technique for MCDA problems that provides a graphical view of criteria, data points, and decision axes. Uses PCA method in its operation and represents a sensitivity analysis technique for PROMETHEE outputs, thus providing a clearer view on the resultant ranking.	1	Ranking	Point Values	N/A	Option Ratings	Heavy	≤ 25	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
GMCR	Graph Model for Conflict Resolution	1997	A thorough method for inferring option scoring from subjective preference information expressed in immeasurable linguistic form (e.g. Yes/No answers) against many criteria. Uses mathematical Graph theory approach to infer ranking output.	1	Ranking	Point Values	Option Ratings	N/A	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Interacting	Flat only	Unlimited	Abstract	Order	Comparison	Programming
GRA	Grey Relational Analysis	1998	Employs Grey System Theory to model incomplete or multiple information. Combines the use of other methods (AHP, TOPSIS) and accounts for DM competence by weighting their opinions.	1	Ranking	Point Values	Option Ratings	N/A	Light	≤ 25	Weighted	Subjective	Point Value	Comparison	Independent	Hierarchical	Unlimited	Measurable	Point Value	Reference	Separation
GRIP	Generalized Regression with Intensities of Preference	2009	An efficient (i.e. less effort-consuming) evolution of UTA GMS allowing the DM to provide preference information on compatible criteria only and not considering all criteria jointly, which leads to the derivation of a partial order.	1	Ranking	Point Values	N/A	Option Ratings	Heavy	Unlimited	Weighted	Subjective	Order	Comparison	Independent	Flat only	≤ 25	Measurable	Order	Comparison	Programming
GTMA	Graph theory and matrix analysis	2007	An analytical discipline dedicated to complex problems with dependence among the criteria. Considers multiple qualitative and quantitative attributes simultaneously. Requires fewer operations than other methods offering similar capability at a cost of omitting uncertainties and probability. Although a specific method is proposed in the source, no name is assigned so the discipline title is used.	1	Ranking	Point Values	N/A	N/A	Reasonable	≤ 25	Weighted	Subjective	Ratio	Comparison	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
HAW	Hierarchical Additive Method	1981	A combination of SAW and AHP for problems characterised with criteria hierarchy.	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Ratio	Assignment	Independent	Hierarchical	≤ 25	Measurable	Ratio	Comparison	Functional
HDT	Hasse Diagram Technique	1952	A partial-ordering method capable of dealing with incomparability among the alternatives (i.e., where some criteria do not apply to all alternatives). A relatively complex method; however, capable of considering a large number of alternatives against many criteria.	1	Ranking	Order	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Order	Comparison	Programming
HEIM	Hypothetical Equivalents and Inequivalents Method	2005	A precise, mathematically robust, and yet relatively simple method for determining criteria weights using a hypothetical reference of equivalent weights.	1	Ranking	Point Values	N/A	Criteria Influence	Reasonable	≤ 25	Weighted	Objective	Ratio	Options-based	Independent	Flat only	≤ 25	Measurable	Point Value	Direct Rating	Programming
HGDM	Hierarchical Group Decision-Making	2020	A subjective method for ranking projects (described with qualitative & quantitative criteria) in large GDM settings where the group DMs represent a hierarchical structure (e.g. corporate departments). Includes the rating of DM competence.	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Subjective	Ratio	Comparison	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Functional
HIA	Hierarchical Interactive Approach	1986	A simple approach for dealing with a large number of hierarchical quantitative or qualitative criteria. Each criterion is evaluated individually at the lowest level. This is then used to construct a general correlation matrix describing criteria interdependencies and derive their weights.	1	Ranking	Point Values	N/A	N/A	Heavy	Unlimited	Weighted	Subjective	Point Value	Assignment	Interacting	Hierarchical	Unlimited	Any	Order	Comparison	Separation
HSMAA	Hierarchical Stochastic Multicriteria Acceptability Analysis	2020	An adaptation of SMAA to hierarchical criteria structure; produces probability-based rankings using Monte-Carlo simulation.	1	Ranking	Distribution	Preference Model	N/A	Heavy	≤ 25	Weighted	Subjective	Distribution	Probability	Independent	Hierarchical	≤ 25	Measurable	Distribution	Probability	Programming
HT	Hierarchical Tradeoffs	1981	Makes the alternatives equivalent in all attributes except those interrelated by tradeoffs, then allows to outrank the alternatives against each of the interdependent criteria using a graphical representation.	1	Ranking	Order	N/A	N/A	Reasonable	≤ 25	Weighted	Pre-determined	Order	Assignment	Interacting	Flat only	Unlimited	Any	Point Value	Direct Rating	Programming
IAMS	Integral Aided Material Selection	2013	A combination of QFD to assess the importance of criteria, and VIKOR to perform a robust ranking and selection of options.	1	Ranking	Point Values	Preference Model	N/A	Reasonable	≤ 25	Weighted	Subjective	Ratio	Comparison	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
IDCR	Interactive Design Characteristics Ranking	2002	Used to prioritise the technical characteristics based on the weighted customer design requirements of a product at the early design stages. Dedicated for application after QFD/HQ has been used to elicit design characteristic weights.	1	Ranking	Order	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Abstract	Order	Comparison	Programming
IDRA	Intercriteria Decision Rule Approach	1997	A pairwise comparison method that relies on a mixed utility function to consider criteria weights & compromises. Determines the preferences using decision rule reliability scores.	1	Ranking	Order	Preference Model	N/A	Heavy	Unlimited	Weighted	Subjective	Point Value	Comparison	Interacting	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
IOWA	Induced Ordered Weighted Average	1999	OWA extension that orders criteria using a dedicated ordering value instead of using performance rating magnitudes. This allows a more direct implementation of the desired value function shape.	1	Ranking	Point Values	N/A	N/A	Heavy	Unlimited	Weighted	Subjective	Ratio	Reference	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
IPS/IPV	Inner Product Space / Inner Product of Vectors	2011	Not a formal MCDA method, originates from engineering/technical applications concerned with characterising data clouds. Is an evolution to PCA, but designed to deal with highly inconsistent data clouds featuring multiple outliers.	1	Ranking	Point Values	N/A	Option Ratings	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
IROR	Imprecise Robust Ordinal Regression	2012	ROR extension to deal with uncertain alternative Scoring.	1	Ranking	Order	Option Ratings	N/A	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Any	Interval	Direct Rating	Programming
LAM	Linear Assignment Method	1977	Uses attribute weights and attribute-wise ranking of each alternative to derive the overall ranking using a linear compensatory process.	1	Ranking	Order	N/A	N/A	Reasonable	≤ 25	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	≤ 25	Any	Order	Comparison	Programming

LAM-F (FLAM)	Fuzzy LAM	2013	A fuzzy extension to LAM for dealing with imprecise (interval) information on both criteria weights and Option Ratings.	1	Ranking	Order	Both	N/A	Heavy	≤ 25	Weighted	Subjective	Interval	Assignment	Independent	Flat only	≤ 25	Nominal	Point Value	Direct Rating	Programming
LFA	Loss Function Approach	2016	Calculates the total loss value for each alternative by combining the individual attribute losses. Uses linear, quadratic, or cubic functions on a 0-1 scale to allow for adjustable output precision depending on the scale of the option performance values (e.g. a cubic function amplifies small differences).	2	Ranking	Point Values	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
LINMAP	Linear Programming technique for Multidimensional Analysis of	1973	A linear programming procedure based on conjoint analysis to rank the ordered information. Assesses the weights and locates the ideal solution to identify the alternative closest to it.	1	Ranking	Order	N/A	N/A	Reasonable	≤ 25	Weighted	Objective	Point Value	Options-based	Independent	Flat only	≤ 25	Any	Order	Comparison	Separation
LM	Lexicographic Method	1993	Compares all options against the most important criterion first based on criteria ordering by importance as part of the input data. Compares and outranks the options against the most important criteria in the order of decreasing importance until only one alternative is left.	1	Ranking	Order	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Order	Assignment	Independent	Flat only	Unlimited	Any	Order	Comparison	Programming
LOWA	Linguistic OWA	1996	OWA extension that uses convex linguistic lables to define preference values.	2	Ranking	Point Values	Option Ratings	N/A	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Nominal	Point Value	Direct Rating	Functional
MABAC	Multi-Attribute Border Approximation Area Comparison	2015	The method calculates the values of criteria functions for each alternative and then evaluates the distance between the total criteria value for each alternative and the approximation area border. The ranking is based on this distance, with the farthest option representing the most preferred solution. Proposed as having better precision than more basic distance-based methods.	1	Ranking	Point Values	Both	N/A	Reasonable	≤ 25	Weighted	Objective	Point Value	Options-based	Interacting	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
MACBETH	Measuring Attractiveness by a categorical Based Evaluation Technique	1990	A simplified method similar to the AHP that uses pairwise comparisons to evaluate both the criteria and options. Linguistically defined qualitative performance evaluations are used to generate 7 possible numerical scores against weighted criteria.	1	Ranking	Point Values	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Order	Assignment	Independent	Hierarchical	≤ 25	Any	Order	Comparison	Functional
MAGIQ	Multi-Attribute Global Inference of Quality	2005	Based on a hierarchical decomposition of comparison attributes and a Scoring assignment using rank order centroids.	1	Ranking	Point Values	N/A	N/A	Light	≤ 25	Weighted	Pre-determined	Order	Assignment	Independent	Hierarchical	≤ 25	Any	Order	Comparison	Functional
MAPPACC	Multicriteria Analysis of Preferences by Pairwise Actions and Criterion Comparisons	1986	Uses qualitative performance measures translated into numerical representation, and quantitative criteria weighing for pairwise comparison; both normalised on a 0-1 scale.	1	Ranking	Order	N/A	Option Ratings	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Interacting	Flat only	Unlimited	Measurable	Order	Comparison	Programming
MARCOS	Measurement Alternatives and Ranking according to COmpromise Solution	2020	Uses distance measurement from the best/worst known solution to construct a utility function. A simple method allowing to operate on a large number of criteria and options.	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Hierarchical	Unlimited	Measurable	Point Value	Comparison	Separation
MARE	Multi-Attribute Range Evaluations	2014	Represents the suitability of solution options as utility ranges against the identified criteria instead of providing precise ranks or specific utility values. Works by performing a global sensitivity analysis, that is considering multiple criteria at a time rather than one by one.	1	Ranking	Distribution	Option Ratings	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Distribution	Direct Rating	Functional
MARICA	MultiAttributive Ideal-Real Comparative Analysis	2021	Derives the performance of each option by measuring the difference between the hypothetical ideal and empirical performance Scoring for each criterion and summing these gaps to inform option rankings. Similar to MARCOS, but only uses 1 reference point.	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Objective	Point Value	Options-based	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
MARS	Measuring Attractiveness near Reference Situations	2014	An indirect method combining ZAPROS & MACBETH. Allows the elicitation of DM's preferences using pairwise comparisons of alternatives. Produces numerical scores for each alternative to enable ranking.	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Measurable	Ratio	Comparison	Functional
MAUD	Multi-Attribute Utility Decomposition	1982	A VDA approach that applies the minimum difference method to specify the differences & similarities between the alternatives. Expresses the decision criteria as attribute poles.	1	Ranking	Point Values	N/A	N/A	Light	≤ 25	Weighted	Subjective	Point Value	Reference	Independent	Flat only	≤ 25	Nominal	Ratio	Comparison	Functional
MaxiMax	MaxiMax	1968	Based on the strongest link principle: prioritises an alternative that has the highest Scoring of its highest-performing criterion as opposed to other alternatives. Suitable for the situations where solution performance is driven by a single criterion demonstrating the strongest performance.	4	Ranking	Order	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Point Value	Direct Rating	Programming
MaxiMin	MaxiMin	1944	Based on the weakest link principle: prioritises an alternative that has the highest Scoring of its lowest-performing criterion as opposed to other alternatives. Suitable for the situations where solution performance is driven by a single criterion demonstrating the weakest performance.	4	Ranking	Order	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Point Value	Direct Rating	Programming
MCCPI	Multiple Criteria Correlation Preference Information	2015	A method for ordering the alternatives in situations requiring the evaluation of relative criteria importance (weights) and interaction.	1	Ranking	Intervals	N/A	N/A	Heavy	≤ 25	Weighted	Subjective	Point Value	Comparison	Interacting	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
MCM	Meaningful Compensation Method	1972	ELECTRE special case based on ill-defined criteria substitution rates (e.g. strongly conflicting DM opinions only allowing the definition of min-max boundaries and no compromise).	1	Ranking	Order	Preference Model	Both	Reasonable	≤ 25	Weighted	Subjective	Interval	Assignment	Independent	Flat only	≤ 25	Measurable	Order	Comparison	Functional
MCQA	Multi-Criteria Q-Analysis	1977	Works by expressing the alternatives on a 2D plane and ranking in accordance with separation from the ideal point. Offers the procedure to translate option Scoring against multiple criteria into 2D expression by outranking.	1	Ranking	Order	N/A	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Interacting	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
MELCHIOR	N/A (Foreign Transliteration)	1984	An extension to the ELECTRE IV method using Graph Theory, which sets an ordinal relationship between pseudo-criteria. Preference aggregation is achieved by testing concordance and the lack of discordance.	1	Ranking	Order	N/A	Option Ratings	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Any	Order	Comparison	Programming
MEW	Multiplicative Exponential Weighting	1987	A Light method similar to SAW that uses multiplication instead of addition. Allows exaggerating the distinction between alternatives that otherwise rank indistinguishably close to each other.	8	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
MiniMax	MiniMax	1944	The reverse of the MaxiMin method representing the weakest link principle: eliminates alternatives that perform lowest on their highest-performing criteria. Suitable for the situations where solutions are outranked if they perform weak in high-importance criteria.	4	Ranking	Order	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Point Value	Direct Rating	Programming
MIVES	Modelo Integrado de Valor para Estructuras Sostenibles	2010	A procedure for structuring complex MCDM problems and assessing options in terms of value that uses both cardinal evaluations and dominance relations. Uses multi-stakeholder workshops to gather input information and translates it into objective problem setup parameters. Allows choosing an appropriate value function to represent DM preference behaviour.	1	Ranking	Point Values	Option Ratings	N/A	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Hierarchical	Unlimited	Measurable	Interval	Direct Rating	Functional
ML-FDM	Multi-Level Fuzzy Decision Maps	2015	An extension to FDM (II) for dealing with multi-level criteria hierarchy that allows deriving the ranking of alternatives.	1	Ranking	Point Values	N/A	Criteria Influence	Reasonable	≤ 25	Weighted	Subjective	Ratio	Comparison	Interacting	Hierarchical	≤ 25	Nominal	Ratio	Direct Rating	Functional
MMASSI	Methodologia Multicriterio para Apoio a Selecao de Sistemas de Informacao	2003	Similar to the AHP but avoids the use of Pairwise Comparisons by using pre-defined set of option performance scores, allowing to cover an exhaustive set of generic factors.	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Subjective	Ratio	Reference	Independent	Flat only	Unlimited	Nominal	Point Value	Direct Rating	Functional
MMCDM	Markovian MCDM	2008	A Group DM algorithm based on a steady-state Markov chain from pairwise comparisons to produce a ranking vector. Offers a relatively quick evaluation of very large amounts of alternatives, with little information requirements. Involves weighting both the criteria and DM competence evaluation.	1	Ranking	Distribution	Both	N/A	Reasonable	≤ 25	Weighted	Pre-determined	Ratio	Assignment	Independent	Flat only	≤ 25	Any	Ratio	Probability	Programming
MOORA	Multi Objective Optimization by Ratio Analysis	2006	A simple method for ranking the alternative options, which is based on the principles borrowed from the Multi-Objective Optimisation (MODM) domain.	8	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
MSIP	Multidimensional Scaling with Ideal Point	1964	DM opinions for preference order on the alternatives are used to represent them as points in space, which are then compared against the ideal solution point. The judgements on criteria are converted into two dimensions reflecting Similarity and Dissimilarity.	1	Ranking	Order	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Measurable	Ratio	Comparison	Separation
MULTIMOORA	Multiplicative MOORA	2010	A version of MOORA that uses multiplicative value function mixed with the reference-point approach to offer a higher precision of results.	3	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
MUSA	Multicriteria Satisfaction Analysis	2002	A preference disaggregation method used to assess satisfaction utility functions to retrieve a global satisfaction criterion consistent with customer preferences. Helps to identify the performance of alternatives (e.g. customers) against relevant criteria (e.g. customer satisfaction dimensions).	1	Ranking	Distribution	Option Ratings	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Ratio	Assignment	Independent	Flat only	Unlimited	Nominal	Point Value	Direct Rating	Programming
MUSA-INT	Interactive MUSA	2014	An evolution of UTA-GMS-INT that involves dependent criteria to allow the definition of groups using reference user/customer profiles.	1	Ranking	Order	Option Ratings	N/A	Heavy	Unlimited	Equivalent	N/A	N/A	N/A	Interacting	Flat only	Unlimited	Nominal	Point Value	Direct Rating	Programming
MZM	Martel & Zaras Method	1990	Dedicated to problems where option performances against each attribute are uncertain and provided in the form of probability distributions. Uses stochastic dominance to derive partial preferences based on concordance and discordance indexes retrieved using the ELECTRE method.	1	Ranking	Order	N/A	Both	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	≤ 25	Any	Distribution	Probability	Programming
NAFIM	Non-Additive Fuzzy Integral Method	2008	An implementaton of non-additive development of the Sugeno integral for problems involving uncertainties e.g. linguistic variables.	1	Ranking	Point Values	Both	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Functional
NAIADE	Novel Approach to Imprecise Assessment and Decision Environments	1995	Establishes pairwise outranking relations on fuzzy alternatives. Offers 6 distinct preference relations to remove the requirement for the DM to define performance thresholds.	1	Ranking	Point Values	Option Ratings	Option Ratings	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Point Value	Comparison	Functional
NAROR	Non-Additive Robust Ordinal Regression	2010	A detailed method for determining the relative order of preference for complex alternatives that are characterised by the interdependent criteria with uncertain weights.	1	Ranking	Order	Both	N/A	Heavy	≤ 25	Weighted	Subjective	Order	Reference	Interacting	Flat only	≤ 25	Any	Order	Reference	Programming
NDEA	Slack-Based Measure DEA	2013	A method for ranking objective (measurable) alternatives w.r.t. DMs preferences expressed by a set of complex, hierarchical, but unweighted criteria.	1	Ranking	Order	Both	N/A	Heavy	Unlimited	Weighted	Pre-determined	Ratio	Assignment	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Programming
NEAT	New Easy Approach to Fuzzy PROMETHEE	2021	An efficient (less effort-consuming), user-friendly approach to applying Fuzzy PROMETHEE method.	1	Ranking	Intervals	Both	Option Ratings	Heavy	Unlimited	Weighted	Subjective	Point Value	Assignment	Independent	Flat only	Unlimited	Any	Point Value	Direct Rating	Programming
NMUTA (UTA-NM)	Non-monotonic UTA	1995	Derives the order of priority for quantitative alternatives in cases where the preferred performance values are not strictly defined and are instead represented by a range.	1	Ranking	Point Values	N/A	Option Ratings	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Measurable	Ratio	Comparison	Programming
NNCI	Noncompensatory, Nonlinear Composite Indicators	2009	Derives a ranking order for a set of alternatives characterised by the quantitative (measurable) criteria exhibiting equivalent importance and uncertain performance Scoring.	1	Ranking	Order	Option Ratings	Option Ratings	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	≤ 25	Measurable	Ratio	Comparison	Programming
NSFDSS	Non Structural Fuzzy Decision Support System	2002	Applies relative fuzzy set theory using linguistic variables rather than quantitative. Implemented in 3 steps: decomposition, comparative judgment, and synthesis of priorities.	1	Ranking	Point Values	Option Ratings	N/A	Light	≤ 25	Weighted	Subjective	Order	Comparison	Independent	Hierarchical	≤ 25	Any	Order	Comparison	Programming
OPA	Ordinal Priority Approach	2019	A method for ranking a set of discrete solution alternatives in GDM setting, which also considers DM competence differences.	1	Ranking	Point Values	Both	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Order	Assignment	Independent	Hierarchical	Unlimited	Any	Order	Comparison	Programming
ORESTE	Organisation, Rangement Et Synthese De Donnes Relationelles	1980	Uses ordinal evaluations of alternatives and importance-based criteria ranking. The distance function is used to derive a complete ranking of alternatives based on preference/indifference relations. Allows incomparability by aggregating a global ranking.	1	Ranking	Order	Option Ratings	Option Ratings	Heavy	Unlimited	Weighted	Subjective	Point Value	Assignment	Independent	Flat only	Unlimited	Any	Order	Comparison	Separation
ORME	Office Scoring Methodology	2002	A combination of PCA and ELECTRE that requires agglomerating the many criteria into 2 or 3 main ("principal") axes. These axes are independent and are analysed using 2D or 3D PCA; but the criteria within each axis may be dependent on each other.	1	Ranking	Point Values	Option Ratings	Both	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Interacting	Flat only	Unlimited	Measurable	Order	Reference	Functional
OWA	Ordered Weighted Average	1993	A family of aggregation approaches that allows adjusting the shape of the value function by selecting criteria weights appropriately. The criteria weights are ordered in accordance with option Ratings, but specific weight values/ratios are selected by the DM to reflect the desired preference behaviour.	1	Ranking	Point Values	N/A	N/A	Heavy	Unlimited	Weighted	Subjective	Ratio	Options-based	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
OWG	Ordered Weighted Geometric	2001	An evolution of OWA with Fuzzy Sets that uses 3 types of information about option performances from the DM: preference orderings, utility functions, and fuzzy preference relations. The nature of accepted information requires updating the analytical basis to use the Geometric Mean instead of averaging.	1	Ranking	Point Values	Both	N/A	Heavy	Unlimited	Weighted	Subjective	Ratio	Options-based	Independent	Flat only	Unlimited	Measurable	Order	Comparison	Functional
OWGA	Ordered Weighted Geometric Average	2002	An OWG-based aggregation method that uses the max & min performance values of each criterion to set its importance weighting values.	1	Ranking	Point Values	Both	N/A	Heavy	Unlimited	Weighted	Subjective	Ratio	Options-based	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
PAIRS	Preference Assessment by Imprecise Ratio Statements	1992	An interactive method based on the value trees with imprecise preference statements and interval-based criteria weights. Uses Linear Programming to derive dominance relations. Originally implemented as a computer program; requires expertise to implement independently.	1	Ranking	Intervals	Both	N/A	Heavy	≤ 25	Weighted	Subjective	Interval	Comparison	Independent	Hierarchical	Unlimited	Measurable	Interval	Direct Rating	Functional
PAMSSEM	Procédure d'Agrégation Multicritère de type Surclassement de Synthèse pour Evaluations Mixtes	1996	A hybrid of ELECTRE III, NAIADE I & PROMETHEE I. Uses fuzzy evaluations and concordance/discordance indexes for preference aggregation to determine preference relations between the alternatives. PAMSSEM I allows for incomparability of alternatives to form a partial preorder. PAMSSEM II resolves incomparability into a total order.	1	Ranking	Point Values	Both	Both	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Comparison	Programming
PAPRIKA	Potentially All Pairwise Rankings of all possible Alternatives	2008	A survey-based statistical technique for determining the subjective valuation of the different solution attributes based on conjoint analysis. Users express their preferences on the relative importance of criteria/attributes by pairwise comparison of the alternative options.	1	Ranking	Order	N/A	N/A	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Order	Comparison	Programming
PCA	Principal Component Analysis	1988	A multivariate statistical technique demonstrated to be an effective standalone ranking method (not originally a formal MCDA method). Used for complex information pre-processing by breaking it down into criteria (principal decision components).	1	Ranking	Point Values	N/A	N/A	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Separation
PDM	Pugh Decision Matrix	1981	A qualitative technique capable of ranking the options based on all factors relevant for a particular DP. As opposed to the Decision Matrix tool used in the other methods, serves an effective standalone MCDA method capable of deriving recommendations at low effort.	1	Ranking	Order	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Any	Order	Comparison	Programming
PHSS	Plithogenic HyperSoft Set	2020	Plithogenic logic is a new mathematical approach representing the generalisation of the four existing approaches for dealing with sets of different accuracy levels: Crisp, Fuzzy, Intuitionistic fuzzy and Neutrosophic. Used in MCDA operations as a universal preference aggregation approach. Offers supreme flexibility for dealing with data at highly varying levels of accuracy.	1	Ranking	Point Values	Option Ratings	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
PIV	Proximity Index Value	2018	Specifically proposed to minimise the issue of Rank Reversal. Relies on the measure of solution proximity to the best available or ideal possible solution. Introduces the Proximity Index Value and processes it against the value & weight of each criterion considering. The overall Proximity Value for each alternative is then derived and used for ranking.	3	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
PLVF	Piecewise Linear Value Functions	2018	Piecewise linear value functions offer a simpler alternative to non-linear value functions to derive reliable utility values to rank the options. The precision of this approach competes with non-linear value functions while requiring a level of effort comparable to using linear ones.	1	Ranking	Point Values	N/A	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
PPARC	Preference Programming through Approximate Ratio Comparisons	1995	A relatively simple method for dealing with uncertain weighting of hierarchical criteria (e.g. in a GDM setting) that offers progressive development of the result before all pairwise assessments are done, thus reducing the workload burden on the DM.	1	Ranking	Intervals	Both	N/A	Heavy	≤ 25	Weighted	Subjective	Interval	Comparison	Independent	Hierarchical	≤ 25	Nominal	Interval	Comparison	Programming
PP-IOI	Preference Programming with Incomplete Ordinal Information	2013	A Preference Programming-type method that uses ordinal information to reflect both the criteria weights and the performance Scoring of alternatives in GDM settings.	1	Ranking	Order	Option Ratings	Both	Heavy	≤ 25	Weighted	Subjective	Order	Reference	Independent	Flat only	Unlimited	Any	Interval	Comparison	Programming
PRAGMA	Preference Ranking Global Frequencies in Multicriteria Analysis	1988	The analytical component of the MAPPAC method that derives a global ranking of alternatives based on their "action profiles" (graphically represented commensurable behaviour) against selected criteria (partial profile) or all criteria (full profile), where the behaviour of the different alternatives may differ significantly.	1	Ranking	Order	N/A	Option Ratings	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
PREFCALC	PREFerence CALCulator	1990	A UTA extension enabling the DM to directly react on the shape of the Value Functions derived. Includes the classical aggregation phase to estimate model parameters directly, and the disaggregation phase to express DM's holistic judgments.	1	Ranking	Order	N/A	Option Ratings	Heavy	≤ 25	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Comparison	Separation
PRIAM	Programme utilisant l'Intelligence Artificielle en Multicritere (French)	1986	An interactive, unstructured method based on an AI-like searching tree software to narrow down the set of available alternatives to a feasible subset by series of pairwise comparisons. Represents a ranking method at its core, but extends to a Selection task by the consideration of incomparability between alternatives ("I don't know" user statements)	1	Ranking	Order	Option Ratings	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Measurable	Order	Comparison	Programming
PRIME	Preference Ratios in Multiattribute Evaluations	2001	Used to analyse the incomplete information in multi-attribute weighting models. Involves constructing an imprecise preference model from imprecise ratio judgements. Ranks the options based on the dominance structures and the decision rules using holistic comparisons.	1	Ranking	Order	Option Ratings	Criteria Influence	Heavy	Unlimited	Weighted	Pre-determined	Ratio	Assignment	Independent	Hierarchical	Unlimited	Any	Order	Comparison	Programming
PROMETHEE GKS	PROMETHEE ROR extension	2012	A Robust Ordinal Regression -based extension to the classical PROMETHEE methods. Allows using the desired ordering of reference alternatives as the baseline information for deriving preferences.	1	Ranking	Order	N/A	N/A	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Reference	Programming
PROMETHEE I	Preference Ranking Organization Method for Enrichment of Evaluations I	1984	Uses outranking based on 6 preference thresholds and Concordance and Discordance preference indicators. Produces partial ranking of alternatives, which allows for incomparability. Partial ranking implies that additional evaluation effort is required to retrieve a clear view of the prioritised alternatives, but allows to exclude poorly performing options.	2	Ranking	Order	N/A	Option Ratings	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Comparison	Functional
PROMETHEE I-F	Fuzzy PROMETHEE I	2017	A PROMETHEE I basis with fuzzy representation of uncertain preference information.	2	Ranking	Order	Both	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Interval	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Comparison	Functional
PROMETHEE II	PROMETHEE II	1985	An extension of PROMETHEE I that offers a complete ordering of alternatives by resolving incomparabilities using the aggregation of entering and leaving flows.	2	Ranking	Order	N/A	Option Ratings	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Comparison	Functional
PROMETHEE II-F	Fuzzy PROMETHEE II	2017	APROMETHEE II basis with fuzzy representation of uncertain preference information.	2	Ranking	Order	Both	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Interval	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Comparison	Functional
PROMETHEE III	PROMETHEE III	2002	Produces an interval order of option priorities to emphasize indifference relations and distinguish it from incomparability. This is achieved by allowing for option performance overlaps when deriving an interval order of preferences, which effectively accounts for uncertainty in the evaluation of alternative performances. Accounts for risks in the form of uncertain performance scoring.	1	Ranking	Order	N/A	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Comparison	Functional
PSO-SA	Particle Swarm Optimization with Simulated Annealing	2020	Compares all possible ranking orders of the solution options to identify the one offering highest satisfaction with respect to criteria.	2	Ranking	Order	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
QFD / HOQ	Quality Function Deployment / House of Quality	1966	Used to translate product requirements into design specifications. Used to rank product design characteristics by quantifying its relationship product requirements through importance scores. QFD operation is based on the MCDA concepts and akin to prioritising multicriteria options.	1	Ranking	Point Values	N/A	N/A	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Nominal	Point Value	Direct Rating	Programming
QUALIFLEX	QUALItv by FLEXible multicriteria	1978	Uses concordance analysis through successive permutations to rank the alternatives so they corroborate with ordinal information.	1	Ranking	Order	Both	N/A	Heavy	Unlimited	Weighted	Subjective	Point Value	Comparison	Interacting	Flat only	Unlimited	Any	Interval	Direct Rating	Programming
RA	Realization Analysis	2020	Requires representing a complex system of criteria through 2 key parameters, Value & Cost. Serves to uncover the full spectrum of the potential outcomes in the decision situations involving uncertainty and high similarity of the alternatives. Particularly useful for practical decision-making in situations that are traditionally served by complex methods.	1	Ranking	Distribution	Option Ratings	N/A	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Hierarchical	Unlimited	Any	Distribution	Probability	Separation
RBOP	Ranking Based on Optimal Points	2018	Finds the best option by measuring the distances of the available alternatives from the optimum and the optimal alternatives. The best alternative sits closest to its optimum points and the optimal points simultaneously. The criteria are not outlined explicitly but defined through hypothetical "optimum" alternatives used to map the available options against them.	1	Ranking	Point Values	Option Ratings	N/A	Reasonable	≤ 25	Weighted	Pre-determined	Point Value	Assignment	Independent	Hierarchical	≤ 25	Any	Order	Comparison	Functional
REGIME	REGIonal Multicriteria Elimination	1982	Builds a pairwise comparison matrix using +1 for positive dominance, 0 for equivalent alternatives, and -1 for negative dominance to build weighted pre-order of alternatives.	1	Ranking	Order	N/A	N/A	Reasonable	≤ 25	Weighted	Pre-determined	Order	Assignment	Independent	Flat only	≤ 25	Any	Order	Comparison	Programming
REMBRANDT	Preference RAnking Global frequencies in Multicriteria Analysis	1992	A multiplicative version of the AHP that uses pairwise comparison to subjectively perform both criteria weighting and option performance Scoring tasks.	1	Ranking	Order	N/A	N/A	Reasonable	≤ 25	Weighted	Subjective	Ratio	Comparison	Independent	Hierarchical	≤ 25	Nominal	Ratio	Direct Rating	Programming
RICH	Rank Inclusion in Criteria Hierarchies	2005	A detailed method for determining precise criteria weights based on DM's criteria dominance statements, and geometrical assessment of option rankings based on interval Scoring. Allows for both known and uncertain information on option performances against various criteria.	1	Ranking	Intervals	Preference Model	Criteria Influence	Heavy	≤ 25	Weighted	Pre-determined	Order	Assignment	Independent	Hierarchical	≤ 25	Nominal	Interval	Direct Rating	Programming
RIM	Reference Ideal Method	2015	A method that uses reference to ideal and anti-ideal solutions like TOPSIS and VIKOR. However, where other methods define the ideal/anti-ideal solutions with extreme MAx/Min values for each criterion, RIM allows for the hypothetical ideal solution to be described by any value and not necessarily the Max/Min possible value for given criterion, which is more realistic.	1	Ranking	Point Values	N/A	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
RIM-F (FRIM)	Fuzzy Reference Ideal Method	2018	A fuzzy version of the RIM method that deals with imprecise option ratings and reference interval bounds.	1	Ranking	Point Values	Option Ratings	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
RMCDM	Robust MCDM	2017	Combines subjective and objective approaches (EM I, AHP, TOPSIS, and VIKOR methods) to minimise risk and maximise gain by introducing the consideration of DM views into objective analysis.	1	Ranking	Point Values	N/A	N/A	Light	≤ 25	Weighted	Objective	Point Value	Comparison	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Functional
RMP	Ranking with Multiple Profiles	2013	A simple ranking method for dealing with various types of criteria that may not be numerical and have to be evaluated subjectively. Uses comparative outranking against hypothetical solution options to model the DMs preference and not a pairwise comparison between the actual alternatives, which allows for a larger number of criteria and options to be considered.	1	Ranking	Order	N/A	N/A	Reasonable	Unlimited	Weighted	Pre-determined	Ratio	Assignment	Independent	Flat only	Unlimited	Any	Order	Reference	Programming
RMP-PE	Preference Elicitation for Ranking with Multiple Profiles	2022	An objective preference elicitation method for pairwise-based ranking methods, originally intended for use with the RMP method. Used to derive option Scoring and preference orders for non-numerical (lexicographic) criteria.	1	Ranking	Order	Both	Both	Heavy	Unlimited	Weighted	Pre-determined	Ratio	Assignment	Independent	Flat only	Unlimited	Measurable	Order	Reference	Programming

RPAP	Reference-based Preferences Aggregation Procedure	2013	A qualitative method for dealing with situations where the importance relations of criteria and preference relations of options are mutually dependent (i.e. one serves as the reference for the other).	1	Ranking	Order	N/A	N/A	Heavy	≤ 25	Weighted	Subjective	Order	Reference	Independent	Flat only	≤ 25	Abstract	Order	Reference	Programming
RRMI	Relative Ranking with Multidimensional Indicators	2018	A thorough method for ordering the alternatives in situations where their performance against the individual criteria is defined by multiple differing scenarios.	1	Ranking	Point Values	Preference Model	N/A	Heavy	≤ 25	Weighted	Pre-determined	Order	Assignment	Independent	Hierarchical	Unlimited	Measurable	Interval	Direct Rating	Programming
RTM	Ranking Theory Method	2019	A family of related methods based on ranking theory to build a special score matrix for a given problem. Simultaneous use of several calculation approaches offers a wider view on results.	1	Ranking	Point Values	N/A	N/A	Heavy	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Order	Comparison	Functional
RUBIS	N/A (custom name)	2008	A new iterative subtype of outranking approaches that uses bipolar-valued outranking digraph to enable progressive decision-aiding (i.e. options get eliminated along the process).	1	Ranking	Order	N/A	Both	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Ratio	Comparison	Programming
RUTA	Rank-related requirements with UTA	2012	An evolution of GRIP where, instead of using criteria, the DM preferences are expressed as the desired rank of reference alternatives to order non-reference options.	1	Ranking	Order	N/A	Option Ratings	Heavy	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Measurable	Ratio	Reference	Programming
SAW	Simple Additive Weighting	1954	Simplified MAVT/special case MAUT with additive value function normalised on a 0-1 scale. Involves direct addition of the alternative performances multiplied by the criteria weights.	8	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
SAW-F (FSAW)	Fuzzy SAW	2013	A SAW basis with fuzzy representation of the criteria weights.	3	Ranking	Point Values	Both	N/A	Reasonable	Unlimited	Weighted	Subjective	Distribution	Assignment	Independent	Flat only	Unlimited	Measurable	Distribution	Direct Rating	Functional
SBER	Simulation-Based Evidential Reasoning	2015	A simulation-based extension to the original Evidential Reasoning method for dealing with information (multiple conflicting "belief Scoring"). Requires a computer code to execute.	1	Ranking	Point Values	Option Ratings	N/A	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Interacting	Flat only	Unlimited	Measurable	Order	Probability	Programming
SCA (I)	Strategic Choice Approach	1987	An interactive method for dealing with problems involving complex knowledge. Facilitates consensus between stakeholders or assessing the solution options through a joint learning process. Uses pairwise comparison of alternatives to derive a graphical representation of the overall comparison between each pair. Implemented as STRAD software.	1	Ranking	Distribution	Option Ratings	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Any	Order	Probability	Programming
SCA (II)	Spatial Compromise Programming	1997	A combination of CP and GIS methods for prioritising among the geographical solution alternatives where different geographical locations are used as a separate criteria layer.	1	Ranking	Point Values	N/A	Criteria Influence	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Separation
SI	Sugeno Integral	2004	A detailed, precise technique to rate option performances against the Max & Min reference point on interacting criteria.	1	Ranking	Point Values	Option Ratings	N/A	Heavy	Unlimited	Equivalent	N/A	N/A	N/A	Interacting	Flat only	≤ 25	Any	Order	Comparison	Programming
SIPRES	Simos' Procedure for REference Situations	2015	The combined ZAPROS & Simos methods for ranking qualitative alternatives using quantitative information.	1	Ranking	Point Values	N/A	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Nominal	Ratio	Reference	Separation
SIR	Superiority and inferiority ranking	2001	An extension of the PROMETHEE method that introduces Superiority & Inferiority concepts instead of Concordance & Discordance. Can be applied to rank the alternatives on its own or in combination with other existing methods for criteria weighing and options ranking.	1	Ranking	Point Values	N/A	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
SIR-F/G/IFG	Fuzzy SIR / Grey SIR	2010	A fuzzy extension to SIR for dealing with uncertainties in option Scoring. A variety of versions exist, including Fuzzy, Grey, and Grey-Intuitionistic representation of option Scoring. Allows working with many criteria in a hierarchical structure, but forces the user to narrow down to 15 flat criteria in the process. Includes the consideration of DM competence.	1	Ranking	Point Values	Both	Option Ratings	Reasonable	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Hierarchical	≤ 25	Nominal	Point Value	Direct Rating	Separation
SMAA	Stochastic Multicriteria Acceptability Analysis	1998	A ranking method based on stochastic simulation of heavy uncertainties. Uses option performances to derive criteria weights by calculating the "rank acceptability index" for each possible rank order of options.	1	Ranking	Order	Preference Model	N/A	Heavy	≤ 25	Weighted	Subjective	Interval	Comparison	Independent	Flat only	≤ 25	Measurable	Point Value	Direct Rating	Programming
SMAA-2	SMAA for GDM	1998	SMAA adapted for incomplete preference information presented using value ranges.	1	Ranking	Order	Preference Model	N/A	Heavy	≤ 25	Weighted	Subjective	Interval	Comparison	Interacting	Flat only	≤ 25	Measurable	Point Value	Direct Rating	Programming
SMAA-3	SMAA with thresholds	1998	SMAA with thresholds limiting the possible option values, which affects the possible selection of option rankings from which criteria weights are calculated.	1	Ranking	Order	Preference Model	Option Ratings	Heavy	≤ 25	Weighted	Subjective	Interval	Comparison	Interacting	Flat only	≤ 25	Measurable	Point Value	Direct Rating	Programming
SMAA-A	SMAA based on Achievement functions	2002	SMAA that uses subsets of reference points to derive criteria weights that produce the most acceptable ranking order of alternatives.	1	Ranking	Order	Both	N/A	Heavy	≤ 25	Weighted	Subjective	Interval	Reference	Interacting	Flat only	≤ 25	Measurable	Point Value	Direct Rating	Programming
SMART	Simple Multi-Attribute Scoring Technique	1976	Simplified MAVT/special case MAUT: uses an additive model with a linear simplification of the utility/value function. Assumes independence of utility and preference. Independent performances are assigned at a common scale. Includes a simple approach to deriving criteria weights.	1	Ranking	Point Values	N/A	N/A	Light	≤ 25	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Ratio	Reference	Functional
SMARTER	SMART Exploiting Ranks	1994	An improvement to SMARTS offering methodological preference elicitation for the pre-specified attributes. Does not require stakeholder interviews and offers simpler calculations.	1	Ranking	Point Values	N/A	N/A	Light	≤ 25	Weighted	Subjective	Order	Comparison	Independent	Flat only	Unlimited	Measurable	Ratio	Reference	Functional
SMARTS	SMART + Swings	1994	An improvement to SMART method that resolves its insensitivity to ranges/variability of utility values. Uses SWING method to derive criteria weights from subjective ordering.	1	Ranking	Point Values	N/A	N/A	Light	≤ 25	Weighted	Subjective	Ratio	Reference	Independent	Flat only	Unlimited	Measurable	Ratio	Reference	Functional
SMCDM	Stratified MCDM	2018	Uses stratification concept to consider the possible probabilistic variations in criteria weights while a decision is being made or after it was made.	1	Ranking	Point Values	Preference Model	N/A	Reasonable	≤ 25	Weighted	Subjective	Ratio	Probability	Interacting	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
SNOD	Scale of Normalized and Ordered Differences	2004	A VDA method involving the efficiency criteria grouped into independent subsets. Performs a pairwise analysis of advantages and disadvantages between the alternatives. VDA procedures imply verbal participation of the DMs i.e. qualitative, verbal responses retrieved through interviews are fed into the analytical model to aggregate numerical preference scores.	1	Ranking	Order	N/A	N/A	Light	≤ 25	Equivalent	N/A	N/A	N/A	Interacting	Flat only	≤ 25	Measurable	Ratio	Comparison	Programming
SORR	Stochastic Ordinal Regression for Ranking	2013	A method built by combining the approaches from SMAA, ROR, & ERA methods. It allows building a very detailed representation of the DMs preferences using scarce data and derive a reliable ranking recommendation based upon several different utility function types.	1	Ranking	Distribution	N/A	Option Ratings	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Measurable	Point Value	Comparison	Programming
SP	Scenario Planning	1995	A planning approach that leverages the full range of possible events and outcomes to select the best course of action. Consideration of the various possible scenarios is corrected for the common cognitive biases (overconfidence, tunnel vision). Combines both qualitative and quantitative planning means (the latter typically related to financials & timeline).	1	Ranking	Distribution	Option Ratings	N/A	Light	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Abstract	Order	Comparison	Programming
SPOTIS	Stable Preference Ordering Towards Ideal Solution	2020	A simple method for ranking deterministic options based on how far they fall from the ideal solution available for each criterion.	1	Ranking	Point Values	N/A	Option Ratings	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
SURE	Simulated Uncertainty Range Evaluations	2018	An improvement to MARE method using triangular distribution simulations to reflect the uncertainty in the performance of alternatives. Produces a range of possible values with the most likely values indicated.	1	Ranking	Distribution	Option Ratings	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Nominal	Distribution	Probability	Functional
TACTIC	Treatment of the Alternatives aCcording To the Importance of Criteria	1986	Concordance & discordance-based preference evaluation is used on DM's subjective judgements to yield the most objective order of alternatives based on the relative importance of criteria.	1	Ranking	Order	Option Ratings	Both	Heavy	Unlimited	Weighted	Subjective	Order	Comparison	Independent	Flat only	Unlimited	Measurable	Order	Reference	Programming
TCO	Total Cost of Ownership	2011	A quantitative method for evaluating quantitative & qualitative decision aspects through a common factor expressed in monetary terms. Allows for imperfect quantification of non-monetary aspects. Is not originally part of the MCDA domain, but allows to derive a merit for ranking the alternative solutions. Allows the inclusion of DM competence rating.	1	Ranking	Intervals	Both	N/A	Light	Unlimited	Weighted	Objective	Point Value	Options-based	Interacting	Hierarchical	Unlimited	Measurable	Point Value	Direct Rating	Functional
TODIM	Interactive Multi-Criteria Decision Making (Port.)	1991	Facilitates gathering the insights about DM/Stakeholder subjective preferences. Uses dominance measure to reproduce the gain/loss function of prospect theory.	1	Ranking	Point Values	Option Ratings	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
TODIM-CPT	TODIM based on Cumulative Prospect Theory	2013	An extension of TODIM that takes criteria interactions into account	1	Ranking	Point Values	Both	N/A	Heavy	≤ 25	Weighted	Subjective	Point Value	Assignment	Interacting	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
TODIM-E	Extended TODIM	2019	An extension of TODIM method for dealing with probability intervals.	1	Ranking	Intervals	Option Ratings	N/A	Heavy	≤ 25	Weighted	Subjective	Point Value	Assignment	Interacting	Flat only	Unlimited	Measurable	Interval	Probability	Separation
TODIM-F	Fuzzy TODIM	2012	An extension of the original TODIM method for dealing with imprecise decision information expressed by the DM as interval or linguistic values.	1	Ranking	Point Values	Both	N/A	Reasonable	Unlimited	Weighted	Subjective	Distribution	Assignment	Independent	Flat only	Unlimited	Measurable	Distribution	Direct Rating	Separation
TODIM-IF	Intuitionistic Fuzzy TODIM	2013	A general extension to TODIM that considers hesitation regarding option performances.	1	Ranking	Point Values	Option Ratings	N/A	Reasonable	≤ 25	Weighted	Subjective	Ratio	Reference	Independent	Flat only	Unlimited	Measurable	Interval	Direct Rating	Separation
TOPSIS	Technique for Order of Preference by Similarity to Ideal Solution	1981	Emphasises the solutions closest to the ideal goal using Euclidean distances by minimising the distance to the ideal solution and maximising the distance to the anti-ideal solution. Requires fewer calculations than VIKOR.	3	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
TOPSIS-F	Fuzzy TOPSIS	2012	A TOPSIS basis with fuzzy triangular representation of criteria weights and options Scoring to represent a discordance of opinions in a GDM setting.	1	Ranking	Point Values	Both	N/A	Reasonable	Unlimited	Weighted	Subjective	Point Value	Assignment	Independent	Flat only	Unlimited	Nominal	Point Value	Direct Rating	Separation
TOR	Trade-Off Ranking	2016	Allows choosing the best alternative from a set of equivalent Pareto Optimal solutions (as produced by an MODM procedure) by ranking based on minimising trade-off.	1	Ranking	Point Values	N/A	N/A	Light	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
TRUST	TRigger-based aUtomatic Subjective weighTing	2009	An efficient method (i.e. avoids pairwise comparisons) for prioritising options using a combination of subjective and objective judgements on specific technical and natural parameters outside of DM's control (e.g. equipment performance values).	1	Ranking	Point Values	N/A	N/A	Reasonable	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Abstract	Point Value	Direct Rating	Functional
ULOWA	Unbalanced Linguistic Ordered Weighted Averaging	2010	An extension to LOWA that uses non-uniform distribution of Fuzzy values assigned to linguistic labels to allow a more precise, case-specific adjustment of the DM's preference behaviour. This helps to deliver a more realistic interpretation of the linguistic terms provided by the DMs with different opinion weights.	2	Ranking	Point Values	Option Ratings	N/A	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Nominal	Point Value	Direct Rating	Functional
UTA	UTilités Additives	1982	The core method in a set of "aggregation-disaggregation" approaches originally developed as an alternative to MAUT. Optimally infers additive value function consistent with the global preferences expressed through ranking a set of reference alternatives by the DM#.	3	Ranking	Order	N/A	Option Ratings	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Any	Point Value	Reference	Programming
UTA-GMS	Extension of UTA with GMS (named by the authors' names)	2008	A version of the UTA method that uses permutation of all possible consistent value functions to identify the most suitable one.	3	Ranking	Order	N/A	Option Ratings	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Any	Point Value	Reference	Programming
UTA-GMS-INT	UTA GMS for INTeracting criteria	2014	An extension of the UTA-GMS method using Non-Additive Integrals to allow for dependence between criteria.	1	Ranking	Order	N/A	Option Ratings	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Interacting	Flat only	≤ 25	Any	Point Value	Reference	Programming
UTAMP	UTA Meta-Process	2005	An extension to UTA that highlights the differences between successive reference actions to yield a more pronounced preference model.	3	Ranking	Order	N/A	Option Ratings	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Any	Point Value	Reference	Programming
UTASTAR	UTA with Stability Analysis	1985	A more precise version of UTA that replaces constraint values with error margins for the reference rankings.	1	Ranking	Point Values	Option Ratings	N/A	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Any	Ratio	Reference	Programming
VCIO	Variation of Criteria Importance Order	2011	Objectivity of this method is supported by the fact that is calculates all possible variations of criteria rank orders of importance. This allows to graphically demonstrate the probabilities of a particular criteria to take a particular rank position, where the section area for each criterion on the graph can be used to define the final rank position for that criterion among others.	1	Ranking	Intervals	Both	N/A	Reasonable	≤ 25	Weighted	Subjective	Order	Comparison	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
VIKOR	Multi-Criteria Optimisation & Compromise	2012	A compensatory version of TOPSIS that minimises the distance to ideal solution using linear normalisation. Produces a more precise, relevant answer and allows exploring the range of stable criteria weights i.e. such that retain the same ranking as was obtained with original weights.	1	Ranking	Point Values	N/A	Criteria Influence	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Separation
VIKOR-F	Fuzzy VIKOR	2015	A VIKOR basis with fuzzy representation of the DM preferences and option performance Scoring to suit a GDM setting with multiple opinions.	1	Ranking	Point Values	Both	Criteria Influence	Light	Unlimited	Weighted	Subjective	Point Value	Assignment	Independent	Flat only	Unlimited	Nominal	Point Value	Direct Rating	Separation
VIMDA	VIsual MCDA reference Direction Approach	1988	An interactive method for measuring the DM's overall aspiration levels using reference directions. Ranking is derived subjectively using graphical output representation.	1	Ranking	Order	N/A	Option Ratings	Reasonable	≤ 25	Weighted	Objective	Ratio	Options-based	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
VIP	Variable Interdependent Parameters	2000	A method for preference aggregation using additive value functions for problems with imprecise decision information. Involves progressive down-selection of the alternatives using tolerance measures.	1	Ranking	Intervals	Option Ratings	Both	Reasonable	≤ 25	Weighted	Subjective	Ratio	Reference	Interacting	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Programming
WASPAS	Weighted Aggregated Sum Product Assessment	2012	Represents a combination of WPM and WSM with adjustable bias towards one of the aggregation approaches (multiplicative or additive), if preferred.	8	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
WASPAS-G	Grey WASPAS	2015	An extension to the WASPAS method with Grey numbers for dealing with imprecise, underdefined, or immeasurable decision information.	1	Ranking	Point Values	Both	N/A	Light	Unlimited	Weighted	Pre-determined	Interval	Assignment	Independent	Flat only	Unlimited	Nominal	Interval	Direct Rating	Functional
WEBIRA	WEight Balancing Indicator Ranks Accordance	2017	A high-precision method for optimising criteria weights through an iterative procedure until the optimum distribution of weights is identified, based on the initial ranking of alternatives performed with equal criteria weights.	1	Ranking	Point Values	N/A	N/A	Heavy	≤ 25	Weighted	Objective	Order	Options-based	Independent	Flat only	≤ 25	Measurable	Point Value	Direct Rating	Programming
WISDOM	Weightless Incremental Selection, Decision, and Ordering Method	2003	A very simple, spreadsheet-based method for deriving option performance Scoring from pairwise comparison information that uses qualitative gradations. The aggregation function is hidden from the user.	1	Ranking	Order	N/A	N/A	Light	Unlimited	Weighted	Subjective	Ratio	Comparison	Independent	Flat only	Unlimited	Any	Order	Comparison	Functional
WLCRT	Weighted Linear Combination Ranking Technique	2013	Uses linear combinations of matrix algebra (Eigenvector calculations) to derive criteria weights based on option performances. Produces the decision matrix using nominal scoring against external reference values for each criterion. Relatively simple and flexible.	1	Ranking	Point Values	N/A	Option Ratings	Heavy	Unlimited	Weighted	Objective	Point Value	Options-based	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
WLSM	Weighted Least Square Method	1979	A more robust and precise version of the AHP-like method that involves elaborate computer-based calculations.	1	Ranking	Point Values	N/A	N/A	Reasonable	Unlimited	Equivalent	N/A	N/A	N/A	Independent	Flat only	≤ 25	Nominal	Ratio	Comparison	Functional
WOD	Weighted Overlap Dominance	2011	An interactive procedure for ranking the alternatives based on weighted overlap of interval Scoring values, risk attitude, and weighted dominance. Presents a visual output to facilitate the DM's understanding of the relationships between ranked alternatives.	1	Ranking	Intervals	Option Ratings	Option Ratings	Heavy	≤ 25	Weighted	Pre-determined	Point Value	Assignment	Interacting	Flat only	Unlimited	Measurable	Interval	Direct Rating	Separation
WPM	Weighted Product Method	2011	A version of the WSM method that uses multiplicative aggregation instead of addition to amplify performance differences between the options.	8	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
WPM-F (FWPM)	Fuzzy Weighted Product	1996	An extension to WPM method where the α-level sets are used to derive fuzzy utilities	3	Ranking	Point Values	Both	N/A	Reasonable	Unlimited	Weighted	Subjective	Distribution	Assignment	Independent	Flat only	Unlimited	Measurable	Distribution	Direct Rating	Functional
WSM	Weighted Sum Method	1954	Global performance of each alternative is computed as the algebraic sum of its evaluations multiplied by its weighted criteria.	8	Ranking	Point Values	N/A	N/A	Light	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Independent	Flat only	Unlimited	Measurable	Point Value	Direct Rating	Functional
WSM-F (FWSM)	Fuzzy Weighted Sum	1996	An extension to WSM method where the α-level sets are used to derive fuzzy utilities	3	Ranking	Point Values	Both	N/A	Reasonable	Unlimited	Weighted	Subjective	Distribution	Assignment	Independent	Flat only	Unlimited	Measurable	Distribution	Direct Rating	Functional
XOR-AHP	XOR-based AHP	2019	A technique for deriving criteria weights and ranking the alternatives based on multiple judgements in the presence of uncertainty regarding both option scoring and criteria weights. Incorporates optimistic, pessimistic, and neutral DM attitudes to uncertainty by implementing XOR(Exclusive OR) logic.	1	Ranking	Point Values	Both	N/A	Reasonable	≤ 25	Weighted	Subjective	Ratio	Comparison	Independent	Hierarchical	≤ 25	Nominal	Ratio	Comparison	Programming
ZAPROS	Foreign Transliteration of an acronym in Russian: Closed Procedures near Reference Situations	1979	A verbal decision analysis method that derives partial order on the set of options using psychologically aligned preference elicitation procedures. Uses ordinal evaluation of alternatives against criteria pairs to build binary relations.	1	Ranking	Order	N/A	N/A	Light	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Abstract	Order	Comparison	Programming
ZAPROS III	Foreign Transliteration of an acronym in Russian: Closed Procedures near Reference Situations, version 3	2001	An extension of ZAPROS method for dealing with ordinal evaluations of alternatives expressed in interval form, which allows for incomparability and partial order.	1	Ranking	Order	N/A	N/A	Reasonable	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Abstract	Order	Reference	Programming
ZMii	N/A (custom name)	2019	A Scoring technique for aggregating interval judgements about option performances in GDM setting, where the degree of agreement between the DMs and the degree of information completeness are measured to drive prioritisation.	1	Ranking	Distribution	Preference Model	N/A	Heavy	≤ 25	Equivalent	N/A	N/A	N/A	Independent	Flat only	Unlimited	Any	Order	Reference	Functional
AHP	Analytic Hierarchy Process	1980	Pairwise comparison of hierarchical criteria based on difference information (additive). Rankings estimated using the maximum eigenvector method. Performance evaluation uses a 9-score system. Suitable for multiple DMs with different voting powers.	2	Weighting	Point Values	N/A	N/A	Light	≤ 25	Weighted	Subjective	Ratio	Comparison	Independent	Hierarchical	N/A	Any	N/A	N/A	Functional
AHP-F (FAHP)	Fuzzy AHP	2011	AHP basis with fuzzy evaluation of criteria weights.	1	Weighting	Point Values	Preference Model	N/A	Reasonable	≤ 25	Weighted	Subjective	Ratio	Comparison	Independent	Hierarchical	N/A	Any	N/A	N/A	Functional
AHP-M (MAHP)	Multiplicative AHP	1997	AHP extension where pairwise comparisons are based on ratios, and ranking approximations are based on the logarithmic least squares technique. Allows magnifying the differences between alternative performances to offer a better distinction between the alternatives. Used for the problems where the evaluations of some alternatives fall very close to each other.	2	Weighting	Point Values	N/A	N/A	Light	≤ 25	Weighted	Subjective	Ratio	Comparison	Independent	Hierarchical	N/A	Any	N/A	N/A	Functional
AHP-MG	Consensus Decision-Making	2019	Consensus analysis for GDM MAHP settings based on heuristic consistency control.	1	Weighting	Point Values	Preference Model	N/A	Heavy	≤ 25	Weighted	Subjective	Ratio	Comparison	Independent	Hierarchical	N/A	Any	N/A	N/A	Programming
AHP-R (RAHP)	Revised AHP	1983	An improved version of AHP featuring a revised rating procedure to resolve rank reversal in iterative applications. It involves normalising option Ratings so their sum always equals 1.	1	Weighting	Point Values	N/A	N/A	Light	≤ 25	Weighted	Objective	Ratio	Comparison	Independent	Hierarchical	Unlimited	Any	N/A	N/A	Functional
AIP	Aggregated Individual Priority	2017	A simple method for criteria weighting based on the geometric mean principle. Offers a rough approximation of the EM results at low effort only using one simple formula.	3	Weighting	Point Values	N/A	N/A	Light	Unlimited	Weighted	Subjective	Ratio	Comparison	Independent	Flat only	N/A	Any	N/A	N/A	Functional
ANP	Analytic Network Process	1996	General, non-linear evolution of AHP that uses Markov-chain based aggregation. Clusters the DP elements (criteria, solution alternatives) as a graph structure to investigate the connections.	1	Weighting	Point Values	N/A	N/A	Reasonable	Unlimited	Weighted	Subjective	Ratio	Comparison	Interacting	Hierarchical	N/A	Any	N/A	N/A	Functional
BCM	Base-Criterion Method	2019	A simplification of BWM using a single base-criterion selected, which is pairwise compared against all other criteria to ensure fully consistent criteria weights.	1	Weighting	Point Values	N/A	N/A	Reasonable	≤ 25	Weighted	Subjective	Ratio	Reference	Interacting	Flat only	N/A	Any	N/A	N/A	Functional
BPA	Benefits Prioritization Analysis	2020	Aggregates the preferences ("perceptions") collected from a large number of different stakeholders, offering an additional metric to measure the respondent's expertise and the importance of their opinion in the given project. Dedicated for use with BIM in the building industry, but could be adapted for other contexts.	1	Weighting	Point Values	Preference Model	N/A	Light	Unlimited	Weighted	Subjective	Point Value	Assignment	Independent	Flat only	N/A	Any	N/A	N/A	Functional
BWM	Best-Worst Method	2015	Based on selecting the best (most important) and the worst (least important) decision criteria followed by systematic pairwise comparison of the remaining criteria against these two. Proposed as a simplification to the AHP pairwise process to enable working with many criteria efficiently.	1	Weighting	Point Values	N/A	N/A	Light	Unlimited	Weighted	Subjective	Ratio	Reference	Independent	Flat only	N/A	Any	N/A	N/A	Functional
BWM-G	Group BWM	2021	An adaptation of BWM for GDM i.e. a multitude of opinions regarding the Best & Worst criteria	1	Weighting	Point Values	Preference Model	N/A	Reasonable	Unlimited	Weighted	Subjective	Ratio	Reference	Independent	Flat only	N/A	Any	N/A	N/A	Functional
BWS	Best-Worst Scaling	1990	Serves as a cost-effective decision data collection tool. Uses the DM's best/worst preferences for all available options compared in pairs to derive priorities by identifying the maximum difference in option utilities. Although requiring some competence in MCDA theory for the analyst, this method is dedicated to offer a data-gathering process that is simple for the respondents to use.	1	Weighting	Distribution	Preference Model	N/A	Reasonable	Unlimited	Weighted	Subjective	Point Value	Reference	Independent	Hierarchical	N/A	Any	N/A	N/A	Functional
CA (I)	Conjoint Analysis	1978	A highly flexible method for estimating high-precision preference structure of multiple DMs (attributes, weights, priorities) from their overall evaluations, which may be vague. Allows building a unique preference model for each individual DM or a unique situation depending on the goal of the task. Combines various analytical methods (reference-based, comparison-based, functional, statistical).	1	Weighting	Distribution	Preference Model	N/A	Reasonable	≤ 25	Weighted	Pre-determined	Point Value	Assignment	Interacting	Flat only	N/A	Any	N/A	N/A	Functional
CBS	Count-Balanced Sum	2019	A simple method for criteria weighting that offers a simpler calculation procedure than EM to produce similar results.	3	Weighting	Point Values	N/A	N/A	Light	Unlimited	Weighted	Subjective	Ratio	Comparison	Independent	Flat only	N/A	Any	N/A	N/A	Functional
CCSD	Correlation Coefficient and Standard Deviation	2010	A method for objective criteria weight derivation based on the performance of alternatives against each criterion and its individual effect on the overall ranking. Offers the ability to include the DM's subjective preferences for criteria weights (e.g. threshold, bias) on top of an objective weight.	1	Weighting	Point Values	N/A	Criteria Influence	Heavy	Unlimited	Weighted	Objective	Distribution	Reference	Independent	Flat only	Unlimited	Measurable	N/A	N/A	Programming
CFPR	Consistent Fuzzy Preference Relations	2004	A Group DM method for defining criteria weights from multiple vague opinions using pairwise comparisons. Translates linguistic terms into fuzzy numbers.	1	Weighting	Point Values	Preference Model	N/A	Reasonable	Unlimited	Weighted	Subjective	Ratio	Comparison	Independent	Flat only	N/A	Abstract	N/A	N/A	Functional
CGT	Cooperative Game Theory	2019	An analytical approach to discrete MCDA used to consider preferential dependence existing in complex problems as a consequence of interaction among the options or criteria. Although a specific method is proposed in the source, no name is assigned so the discipline title is used.	1	Weighting	Point Values	N/A	N/A	Heavy	≤ 25	Weighted	Objective	Point Value	Comparison	Interacting	Hierarchical	Unlimited	Any	N/A	N/A	Programming
CI	Choquet Integral	2004	A method for objective derivation of weights for the criteria that exhibit dependencies between each other. Based on partial preorder of a reference set of criteria.	1	Weighting	Order	Preference Model	Criteria Influence	Heavy	Unlimited	Weighted	Pre-determined	Point Value	Assignment	Interacting	Flat only	N/A	Any	N/A	N/A	Programming
CILOS	Criterion Impact LOSs	1987	A simple procedure for objective criteria weighting based on measuring relative criteria impacts using entropy methods applied to Option Ratings.	1	Weighting	Point Values	N/A	N/A	Light	Unlimited	Weighted	Objective	Ratio	Reference	Independent	Flat only	Unlimited	Measurable	N/A	N/A	Functional
CILOS-F	Fuzzy CILOS	2020	Extension of CILOS method to deal with vague criteria loss representations using triangle fuzzy numbers.	1	Weighting	Point Values	Option Ratings	N/A	Reasonable	Unlimited	Weighted	Objective	Ratio	Reference	Independent	Flat only	Unlimited	Measurable	N/A	N/A	Functional
CRITIC	CRiteria Importance Through Intercriteria Correlation	1995	Defines the criteria weights using an approach opposite to the EM method. Tests the correlation between criteria using the information contained in the Decision Matrix.	1	Weighting	Point Values	N/A	N/A	Light	Unlimited	Weighted	Objective	Distribution	Reference	Independent	Flat only	Unlimited	Measurable	N/A	N/A	Functional
CROC	Cardinal Rank Ordering of Criteria	2012	A method for cardinal criteria weighting based on criteria rank to represent ordinal importance information. Calculates criteria weights based on the identification of the most and the least important criteria. Allows grouping criteria weights that are more or less similar in importance. Implemented as software.	1	Weighting	Point Values	Preference Model	N/A	Light	Unlimited	Weighted	Subjective	Ratio	Comparison	Independent	Flat only	N/A	Any	N/A	N/A	Separation

DANP	DEMATEL-based ANP	2011	An extension of ANP with the DEMATEL method for assigning criteria weights with high precision and solving dependence and feedback problem.	1	Weighting		Point Values		Preference Model		N/A		Reasonable		Unlimited		Weighted		Subjective		Point Value		Assignment		Interacting		Hierarchical		N/A		Any		N/A		N/A		Functional	
DEMATEL	Decision making trial and evaluation laboratory	1974	An adaptation of the original DEMATEL method for finding the cause-and-effect relationships between objects to MCDA tasks. May be used either to rank the alternatives with implicit consideration of the criteria; or to derive criteria weights. Represents a special case FCM.	2	Weighting		Point Values		N/A		Criteria Influence		Light		≤ 25		Weighted		Subjective		Ratio		Comparison		Interacting		Flat only		N/A		Any		N/A		N/A		Functional	
DIVAPIME	Détermination d'Intervalles de Variation pour les Parametres d'Importance des Methodes Electre	1995	An interview-based method for criteria weighting that uses a more detailed version of preference relations to model complex DM attitudes; includes hesitation and intransitive relations.	1	Weighting		Point Values		N/A		Criteria Influence		Reasonable		≤ 25		Weighted		Subjective		Order		Reference		Independent		Flat only		N/A		Any		N/A		N/A		Separation	
ELICIT	N/A (custom name)	2016	A semi-objective criteria weighting method that uses the order of criteria importance provided by the DM to infer the most probable criteria weights using a statistical approach.	1	Weighting		Point Values		Preference Model		N/A		Light		Unlimited		Weighted		Pre-determined		Order		Assignment		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
EM	Eigenvector Method	1977	Used to retrieve criteria weights using matrix operations on the nominal criteria importance Scoring from multiple DMs.	1	Weighting		Point Values		N/A		N/A		Reasonable		Unlimited		Weighted		Subjective		Ratio		Comparison		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
EWM	Entropy Weights Method	1992	Facilitates the definition of objective criteria weights from option performances where the DM has no information on criteria importance. Prone to resulting in criteria weights that may be 100s of times greater than for other criteria.	1	Weighting		Point Values		N/A		N/A		Light		Unlimited		Weighted		Objective		Point Value		Reference		Independent		Flat only		Unlimited		Measurable		N/A		N/A		Functional	
FARE	FActor RElationship	2011	A detailed method for determining the weights of criteria that exhibit measurable interdependence based on subjective scaling of the criteria importance by the DM.	1	Weighting		Point Values		N/A		N/A		Reasonable		≤ 25		Weighted		Subjective		Ratio		Comparison		Interacting		Flat only		N/A		Any		N/A		N/A		Functional	
FCM	Fuzzy Cognitive Maps	1986	The application of Cognitive Maps method to depict the relationships between interdependent criteria.	1	Weighting		Order		Preference Model		Criteria Influence		Heavy		≤ 25		Weighted		Subjective		Order		Comparison		Interacting		Flat only		N/A		Any		N/A		N/A		Programming	
FDEMATEL	Fuzzy DEMATEL	2011	DEMATEL modification intended for working with uncertainties in the decision input data.	1	Weighting		Point Values		Preference Model		N/A		Reasonable		Unlimited		Weighted		Subjective		Distribution		Probability		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
FDM	Fuzzy Decision Maps	2006	An evolution of FCM dedicated to dealing with the feedback effect due to criteria dependencies.	2	Weighting		Point Values		N/A		Criteria Influence		Light		≤ 25		Weighted		Subjective		Ratio		Comparison		Interacting		Flat only		N/A		Any		N/A		N/A		Functional	
FUCOM	Full Consistency Method	2018	An elaborate method for deriving precise criteria weights based on simplified pairwise comparison procedure offering a more robust process.	1	Weighting		Point Values		N/A		N/A		Reasonable		Unlimited		Weighted		Subjective		Ratio		Comparison		Independent		Flat only		N/A		Any		N/A		N/A		Programming	
HRE	Heuristic Scoring Estimation	2013	An iterative process to retrieve the unknown criteria weights based on the known weights for the reference set of criteria. The unknown weights are determined as an arithmetic mean of the values and ratios determined from the known weights.	1	Weighting		Point Values		Preference Model		N/A		Heavy		≤ 25		Weighted		Subjective		Ratio		Comparison		Independent		Flat only		N/A		Any		N/A		N/A		Programming	
IDOCRIW	Integrated Determination of Objective CRIteria Weights	2016	An integrated compensatory method that employs CILOS decision matrices and Entropy Method to measure relative criteria weights.	1	Weighting		Point Values		N/A		N/A		Reasonable		Unlimited		Weighted		Objective		Ratio		Reference		Independent		Flat only		Unlimited		Measurable		N/A		N/A		Functional	
ISM	Interpretive Structural Modelling	1975	A software-based method that uses DMs knowledge about the considered criteria to infer intercriteria influences and inform criteria structure by creating a binary relations matrix.	1	Weighting		Order		N/A		N/A		Reasonable		Unlimited		Weighted		Subjective		Order		Comparison		Interacting		Hierarchical		N/A		Any		N/A		N/A		N/A	
KANO	N/A (by Author's name)	1984	A qualitative method dedicated to ordering product attributes in accordance with their importance for the task at hand. Used as a precursor to calculating criteria weights using other methods.	1	Weighting		Order		N/A		N/A		Light		Unlimited		Weighted		Subjective		Point Value		Assignment		Independent		Flat only		N/A		Any		N/A		N/A		Programming	
KANO-F (F-KANO)	Fuzzy KANO	2009	An adaptation of the KANO method to allow for uncertainty or variability in the user/expert opinions, which may be expressed using more than 1 score, or withheld altogether.	1	Weighting		Order		Preference Model		N/A		Light		Unlimited		Weighted		Subjective		Point Value		Assignment		Independent		Flat only		N/A		Any		N/A		N/A		Programming	
KEMIRA	KEmeny Median Indicator Ranks Accordance	2014	Originally dedicated to Choice problematic and does not offer a ranking capability. Allows deriving criteria weights for problems involving 2 sets of different criteria e.g. qualitative and quantitative, positive and negative, etc. where sets do not exhibit equal importance. Options can be subsequently ranked using optimisation on both sets of criteria.	1	Weighting		Point Values		Preference Model		N/A		Heavy		Unlimited		Weighted		Objective		Order		Comparison		Independent		Flat only		Unlimited		Measurable		N/A		N/A		Programming	
KEMIRA-E	Entropy KEMIRA	2017	An extension of the KEMIRA method with entropy tools to incorporate the consideration of 3 or more groups of criteria when deriving weights.	1	Weighting		Point Values		Preference Model		Criteria Influence		Heavy		Unlimited		Weighted		Objective		Order		Reference		Independent		Hierarchical		Unlimited		Measurable		N/A		N/A		Programming	
LFDN	Linguistic Fuzzy Decision Networks	2013	An extension to FDM (II) for dealing with uncertain definitions in the relative criteria importance.	1	Weighting		Point Values		Preference Model		N/A		Reasonable		≤ 25		Weighted		Subjective		Ratio		Comparison		Interacting		Flat only		N/A		Any		N/A		N/A		Functional	
MEREC	MEthod based on the Removal Effects of Criteria	2021	A simple method for objective criteria weight elicitation that uses a logarithmic function and a permutation of the possible scenarios.	1	Weighting		Point Values		N/A		N/A		Light		Unlimited		Weighted		Objective		Point Value		Probability		Independent		Flat only		Unlimited		Measurable		N/A		N/A		Programming	
PACMAN	Passive and Active Compensability Multicriteria ANalysis	1998	Distinguishes between the active & passive criteria to demonstrate compensation asymmetry. Binary indexes are used to identify preference relations.	1	Weighting		Point Values		Preference Model		Criteria Influence		Heavy		≤ 25		Weighted		Subjective		Order		Comparison		Interacting		Flat only		N/A		Any		N/A		N/A		Programming	
PIPRECIA	Pivot Pair-wise RElative Criteria Importance Assessment	2017	A method for defining criteria weights in large GDM settings with highly diverse opinions.	1	Weighting		Point Values		Preference Model		N/A		Light		Unlimited		Weighted		Subjective		Order		Comparison		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
RE	Rank Exponent	1981	A method for semi-objective criteria weighting. Similar to RR, but its formula involves an additional parameter for the number of ranking dimensions. Allows working with problems involving a mix of both ordered and equal weights.	4	Weighting		Point Values		N/A		N/A		Light		Unlimited		Weighted		Pre-determined		Order		Assignment		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
RI	Relative Importance	1999	A method for criteria weighting that uses a non-iterative analytical procedure to offer the result nearly identical to EM. Used to replace the EM method if the comnusational resource is limited or to validate EM outputs. Offers better alignment of relative results than AIP or CBS methods.	3	Weighting		Point Values		N/A		N/A		Light		Unlimited		Weighted		Subjective		Ratio		Comparison		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
ROC	Rank Order Centroid	1992	A method for objective criteria weighting based on subjective ranking of criteria as a reflection of its ordinal importance. Based on the mathematical principle of centroid; but suffers from unconstrained range of the possible criteria weights resulting - which can differ far enough to appear that some criteria have negligible influence on the decision compared to others.	4	Weighting		Point Values		N/A		N/A		Light		Unlimited		Weighted		Pre-determined		Order		Assignment		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
ROD	Rank Order Distribution	2002	A method for semi-objective criteria weighting that offers an improved, reliable performance over ROC method by using a more objective probabilistic assumption. Unrestricted-weights are assumed to have uniform distribution and calculated using probability density functions. Produced criteria weights are similar to RS method and more objective than ROC method.	1	Weighting		Point Values		Preference Model		N/A		Reasonable		Unlimited		Weighted		Subjective		Distribution		Assignment		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
RR	Rank Reciprocal	1981	A method for semi-objective criteria weighting. Calculates the non-normalised weights in 0-1 range through division by rank reciprocals (1/n).	4	Weighting		Point Values		N/A		N/A		Light		Unlimited		Weighted		Pre-determined		Order		Assignment		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
RS	Ranking Sum	1981	A method for semi-objective criteria weighting. Calculates normalised weights in the 0-1 range through the division of criteria ranks by the rank-sum. Suggested for use in place of ROD method in problems featuring too many criteria (>25).	4	Weighting		Point Values		N/A		N/A		Light		Unlimited		Weighted		Pre-determined		Order		Assignment		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
SAST	Strategic Assumptions Surfacing and Testing	1979	The procedure for deriving criteria importance weights based on two key metrics: importance and uncertainty	1	Weighting		Point Values		N/A		N/A		Reasonable		Unlimited		Weighted		Subjective		Ratio		Comparison		Interacting		Flat only		N/A		Abstract		N/A		N/A		Programming	
SIMOS	N/A (by Author's name)	1990	A method for objective derivation of the criteria weights using a bespoke set of coloured cards. Simplifies the elicitation of relative criteria importance evaluations in a play-like process.	1	Weighting		Point Values		N/A		N/A		Light		Unlimited		Weighted		Subjective		Ratio		Comparison		Independent		Flat only		N/A		Any		N/A		N/A		Programming	
SRF	Simos-Rov-Figueira (Revised SIMOS)	2002	An improved version of the SIMOS method for criteria weights derivation based on reference points rather than mutual comparison between criteria.	1	Weighting		Point Values		N/A		Criteria Influence		Light		Unlimited		Weighted		Subjective		Ratio		Comparison		Independent		Flat only		N/A		Any		N/A		N/A		Programming	
SS	Light Scoring	2018	One of the simplest methods for ranking the alternatives. Relies on transforming a complex set of values and requirements into a clear (mutually exclusive, exhaustive, and relevant) criteria. Particularly effective in Group DM settings. Separate options are scored directly by voting and ranked using the sum or the average of the provided scores.	1	Weighting		Point Values		N/A		N/A		Light		Unlimited		Weighted		Subjective		Point Value		Assignment		Independent		Hierarchical		N/A		Any		N/A		N/A		Programming	
SWARA	Step-wise Weight Assessment Ratio Analysis	2010	A method for criteria weighting in Group DM settings based on the frequency of criteria mentions in respondent opinions. Requires the involved stakeholders to express their opinions regarding criteria importance, which are then combined to yield the resultant relative criteria weights.	1	Weighting		Point Values		Preference Model		N/A		Light		≤ 25		Weighted		Pre-determined		Order		Assignment		Independent		Flat only		N/A		Any		N/A		N/A		Functional	
SWING	Derived from the concept of swinging between extremes	1986	A multistage method for deriving criteria weighs based on the total range of possible option ratings. Uses dedicated functions (linear, non-linear) to allow different preference shapes between the extremes.	1	Weighting		Point Values		N/A		N/A		Light		≤ 25		Weighted		Subjective		Ratio		Reference		Independent		Flat only		N/A		Measurable		N/A		N/A		Functional	
SWING-I (ISWING)	Imprecise SWING	2017	SWING criteria weighting method adapted for partial preference inputs.	1	Weighting		Point Values		Preference Model		N/A		Reasonable		≤ 25		Weighted		Subjective		Ratio		Reference		Independent		Flat only		N/A		Measurable		N/A		N/A		Functional	
BSC	Balanced ScoreCard	1995	Originally a "pros-and-cons" type tool and not a formal MCDA method. A qualitative business analysis framework for aligning the decisions with organisational strategy. Uses 4 dimensions: Financial, Customer, Internal, Growth. Allows deriving the criteria and solution alternatives to apply with MCDA criteria weighting and aggregation.	1	Formulation		Statements		N/A		N/A		Light		Unlimited		Equivalent		N/A		N/A		N/A		Independent		Flat only		Unlimited		Any		Order		Comparison		N/A	
CM (II)	Cognitive Mapping	1988	A group method to map the DM's perception about the problem as a value tree (node & arrow diagram) representing the various connections and relationships between criteria. Useful for structuring complex problems with multi-level quantitative and qualitative criteria that are difficult to comprehend in precise terms. Used as a precursor to criteria weighting methods.	1	Formulation		Statements		Preference Model		N/A		Light		Unlimited		Equivalent		N/A		N/A		Assignment		Interacting		Hierarchical		N/A		Any		N/A		N/A		N/A	
DELPHI	N/A (Assigned name and not an acronym)	1962	A structured group interaction method to define, select, and structure the evaluation criteria and solution options for MCDA problems using statistical methods.	1	Formulation		Mixed		Both		N/A		Light		Unlimited		Weighted		Subjective		Distribution		Probability		Independent		Flat only		Unlimited		Any		Distribution		Probability		N/A	
DPSIR	Drivers, Pressures, States, Impacts, Responses	1993	A qualitative "pros-and-cons" type approach to structuring MCDA criteria. Describes interactions between the systems through cause-effect relationships expressed through the associated criteria and solution alternatives. Developed to simplify the representation of complex problems (e.g. environmental) for use before the application of an aggregation approach.	1	Formulation		Mixed		N/A		N/A		Light		Unlimited		Weighted		Subjective		Point Value		Assignment		Independent		Hierarchical		Unlimited		Any		Point Value		Direct Rating		N/A	
DPSWR	Driver, Pressure, State, Welfare, Response	2013	A DPSIR basis ("pros-and-cons" type approach) modified to identify measurement objects within a problem, which represents criteria interactions.	1	Formulation		Mixed		N/A		N/A		Light		Unlimited		Weighted		Subjective		Point Value		Assignment		Interacting		Hierarchical		Unlimited		Any		Point Value		Direct Rating		N/A	
EEP	Expert Elicitation Process	2011	A qualitative method for retrieving decision information from multiple experts before formulating an MCDA task. The information retrieved allows to formulate the objectives of the task (used as criteria in an MCDA task), prioritisation of the objectives (to inform criteria weights), and define action alternatives (used as options).	2	Formulation		Statements		N/A		N/A		Light		Unlimited		Equivalent		N/A		N/A		Assignment		Independent		Hierarchical		Unlimited		Any		N/A		N/A		N/A	
GCM	Group Cognitive Maps	1994	Cognitive Mapping ("CM-II") method adapted for Group DM.	1	Formulation		Mixed		Both		N/A		Reasonable		Unlimited		Weighted		Subjective		Distribution		Assignment		Interacting		Hierarchical		Unlimited		Any		Distribution		Direct Rating		N/A	
MADM-OPT	OPTimum MADM	2016	A method for defining the criteria, identifying the options and the ideal alternative, and deriving option performances based on a range of available documentation e.g. leaislative or technical. No aaareaation procedure is involved.	1	Formulation		Point Values		N/A		N/A		Light		Unlimited		Weighted		Pre-determined		Point Value		Assignment		Independent		Flat only		Unlimited		Measurable		Point Value		Reference		N/A	
MCIA	Multi-Criteria Intelligence Aid	2017	An AI-based approach for structuring complex problems with uncertain linguistic inputs, which also considers the DM's risk-taking attitude (represented as criteria influence thresholds).	1	Formulation		Mixed		Both		N/A		Light		Unlimited		Weighted		Subjective		Distribution		Assignment		Independent		Flat only		Unlimited		Nominal		Point Value		Direct Rating		N/A	
NGT	Nominal Group Technique	1970	A structured method for identifying ratios of subjective outcome likelihoods. Facilitates equal contribution from stakeholders and quick agreement on the final ranking.	1	Formulation		Mixed		Option Ratings		N/A		Light		Unlimited		Equivalent		N/A		N/A		N/A		Independent		Flat only		Unlimited		Nominal		Ratio		Probability		N/A	
PMADM	Procpective MADM	2016	A GDM approach to derive option Scoring based on future event probabilities and the limitations to possible Option Ratings.	1	Formulation		Point Values		Option Ratings		N/A		Light		Unlimited		Weighted		Pre-determined		Point Value		Assignment		Independent		Flat only		Unlimited		Measurable		Point Value		Direct Rating		N/A	
PRUF	Possibilistic Relational Universal Fuzzy	1978	A method for translating verbal (linguistic) assessments of option performances into probabilistic values with application of fuzzy logic to account for vagueness in verbal meanings.	1	Formulation		Distribution		Option Ratings		N/A		Heavy		Unlimited		Equivalent		N/A		N/A		N/A		Independent		Flat only		Unlimited		Any		Interval		Probability		N/A	
SA	Stakeholder Analysis	1997	Not a formal MCDA method originally. Offers decision-aiding function by helping the DM to identify the key actors / stakeholders in a project, and assess their respective interests and influences. The evaluations from different stakeholders are used to define the criteria. The possible actions affected by the evaluation define the options.	1	Formulation		Statements		N/A		N/A		Light		Unlimited		Equivalent		N/A		N/A		Assignment		Interacting		Flat only		N/A		Any		N/A		N/A		N/A	
SODA	Strategic Options Development and Analysis	2010	A qualitative method that uses a form of Cognitive Mapping process to build a value map, which in MADM problems can be used as a mean to define the criteria and their hierarchy. Dedicated to underdefined problems of both quantitative and qualitative nature. Centred around the subjectivity of stakeholder views in organisational decision-making tasks.	2	Formulation		Statements		N/A		N/A		Light		Unlimited		Equivalent		N/A		N/A		Assignment		Independent		Hierarchical		Unlimited		Any		N/A		N/A		N/A	
SSM	Soft Systems Methodology	1990	A method for defining objectives/criteria for complex, poorly defined or vague decision problems through an interactive interview/questionnaire process. Offers a strong qualitative capability and involves comparing the considered problem against the existing or past real-world examples. Results in sets of criteria that can be further used in MCDA process.	1	Formulation		Statements		N/A		N/A		Light		Unlimited		Equivalent		N/A		N/A		Assignment		Interacting		Hierarchical		Unlimited		Any		N/A		N/A		N/A	
SUSAIP	Sustainability appraisal in infrastructure projects	2006	A method for translating strategic objectives into finite criteria in large group settings (e.g. public polls) to pre-process objectives for MCDM activities before using an aggregation method (e.g. WSM).	1	Formulation		Point Values		Both		N/A		Light		Unlimited		Weighted		Subjective		Point Value		Comparison		Interacting		Hierarchical		Unlimited		Any		Distribution		Direct Rating		N/A	
SWOT	Strengths, Weaknesses, Opportunities, and Threats	1998	Originally a "pros-and-cons" type tool and not a formal MCDA method. Can be used to inform the system of criteria for strategic decision problems. A qualitative tool for defining the parameters/KPIs considering the specifics of the surrounding business environment. Evaluates the situation and potential actions against 4 dimensions: Strengths, Weaknesses, Opportunities, and Threats.	1	Formulation		Statements		N/A		N/A		Light		Unlimited		Equivalent		N/A		N/A		Assignment		Independent		Flat only		Unlimited		Any		N/A		N/A		N/A	