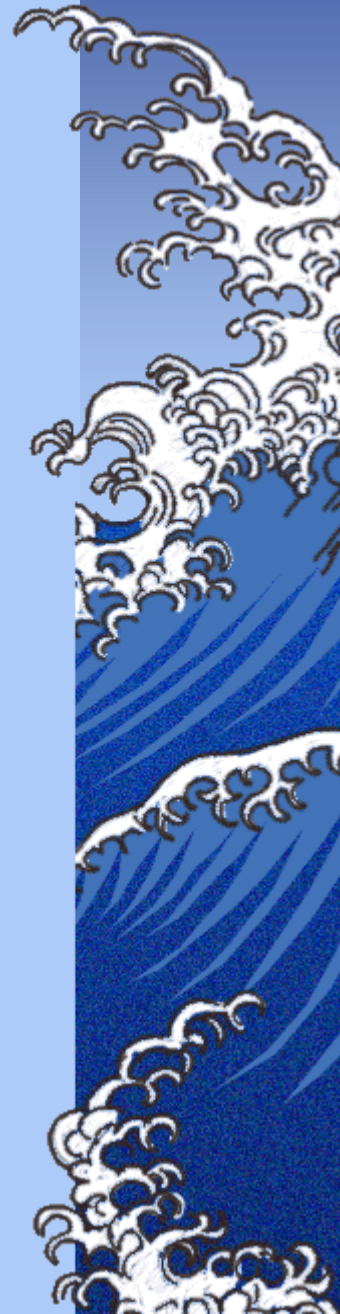


TRAVEL WITH PROMETHEE

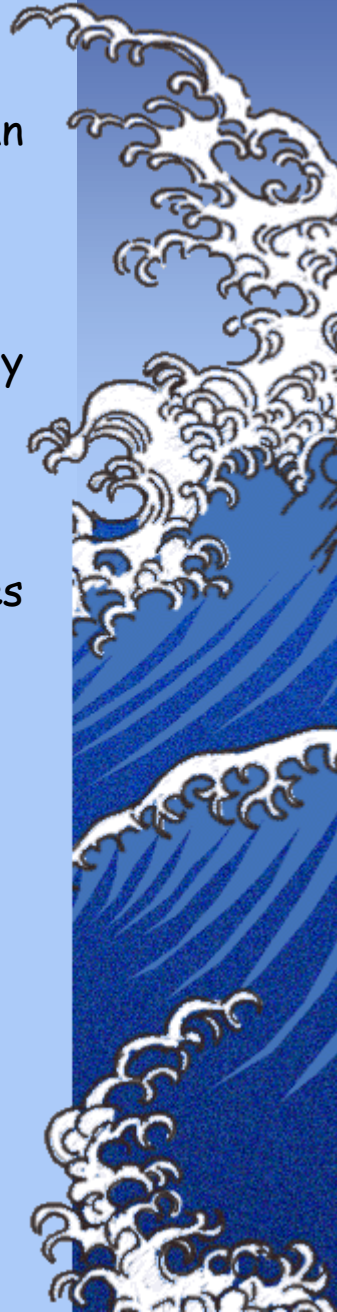
Prof. Gabriela Fernández Barberis
Director of the Mathematics Section
Department of Applied Mathematics and Statistics
School of Business and Economics
University San Pablo CEU Madrid - Spain

PROMETHEE Days 2020
Rabat, Morocco, 2-4 June



My travel with PROMETHEE

- ✦ I would like to tell you an interesting story. This is a story which began many year ago.
- ✦ I decided to start a trip accompanied by a friend, until then, completely unknown to me.
- ✦ Surprisingly, he turned out to be my best friend. Even today, he goes together with me on my adventures in the world of research and teaching.
- ✦ This mysterious friend is PROMETHEE.

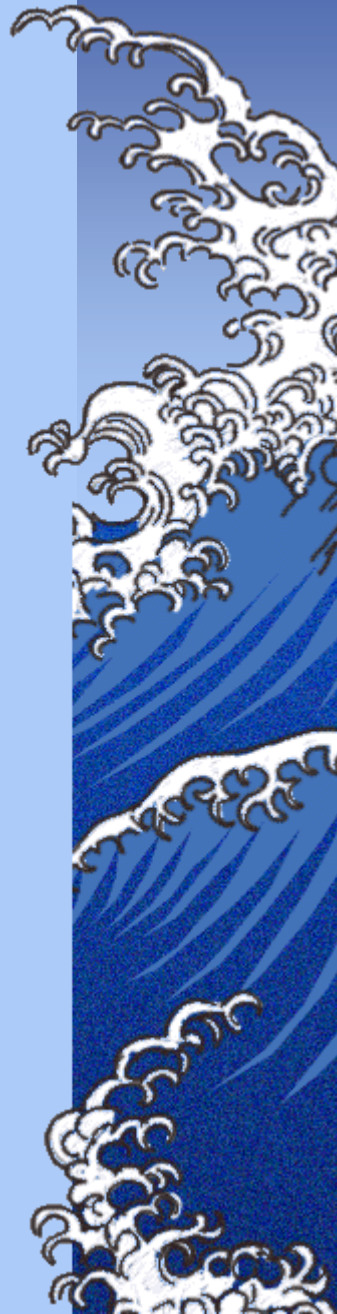


I am really surprise. Since 1990 I have an inseparable travel colleague, this is PROMETHEE.

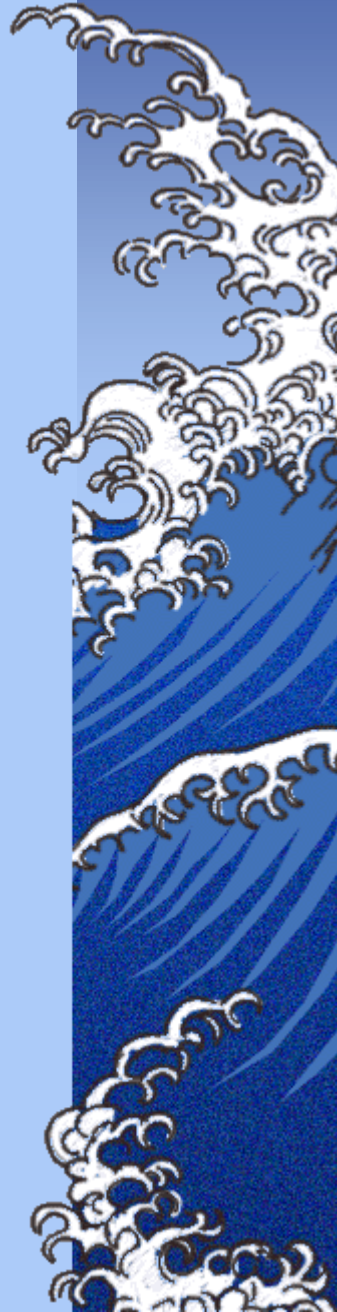
✦ In 1989, I finished a Master in Public Sector Economy, in Alcalá de Henares, Madrid (Spain) and one of my professors, who was then my Ph. degree Director, proposed me to do the doctorate.

✦ Of course, I accepted, but I thought, which could be the subject of my doctoral thesis? At that moment PROMETHEE Methods were "in diapers", but they were very novelty within the family of Outranking Relations Methods.

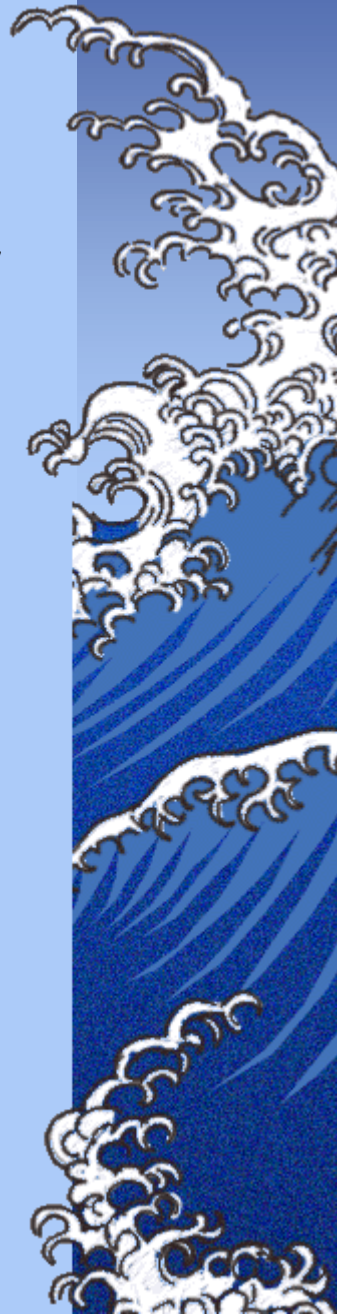
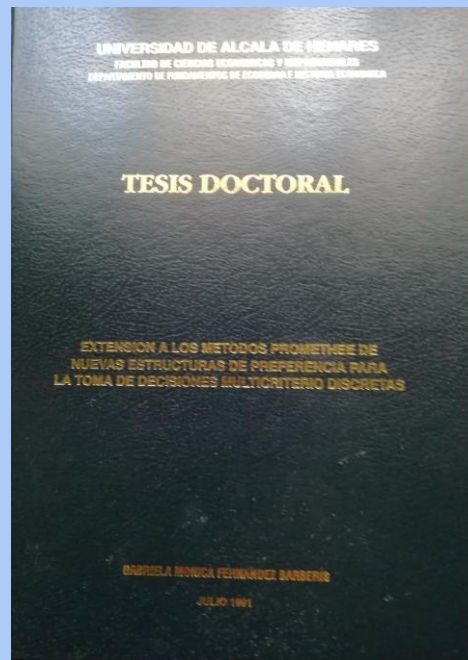
✦ My Director put me in touch with *Professor Jean Pierre Brans*, who answered me immediately.



- ✦ He sent me the paper "A preference ranking organization method: The PROMETHEE method for MCDM".
- ✦ This paper signed in his handwriting, was the first real reference of PROMETHEE that I had in my hands, it was incredible for me. From that moment up to the present days, I continue working with PROMETHEE.
- ✦ I would like to present you my travel all over the world with PROMETHEE, from the beginning up to now.
- ✦ Now, my story begins. I hope I don't bore you too much.



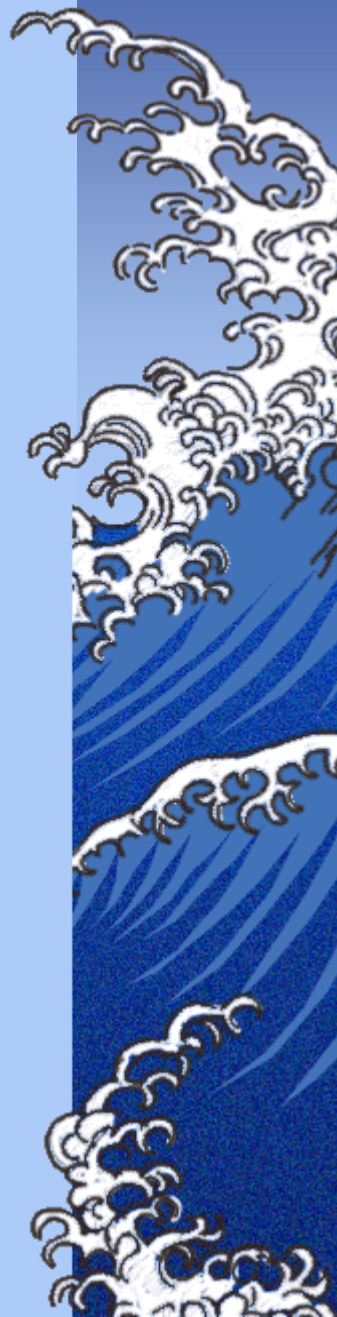
★ The first reference of my life with PROMETHEE was the PhD Thesis. I was defended on July 10, 1991. The title is "Extensión a los Métodos PROMETHEE de Nuevas Estructuras de Preferencia para la Toma de Decisiones Discretas" (Extension to PROMETHEE Methods of New Preference Structures for Discrete Decision Making). University of Alcalá de Henares, Madrid, Spain.



✦ In December 1990, I worked for a Consultant. I presented and developed during a year, a course on Multicriteria Decision and application of the PROMETHEE Methods in the Andalusian Environment Agency, in Seville. The objective was to use these methodologies to solve the problem of jurisdiction of Doñana Park.



- ✦ I participated in many research projects:
- Red Temática de Decisión Multicriterio, Ministerio de Educación y Ciencia, España. (2004-2007).
 - Optimización del Gasto en Defensa en el marco de una alianza al caso de España mediante Técnicas de Decisión Multicriterio. (2000-2003).
 - Desarrollo de instrumentos de apoyo de gestión de red de Parques Nacionales. Agencia de Medio Ambiente de Andalucía. (1991-1992).

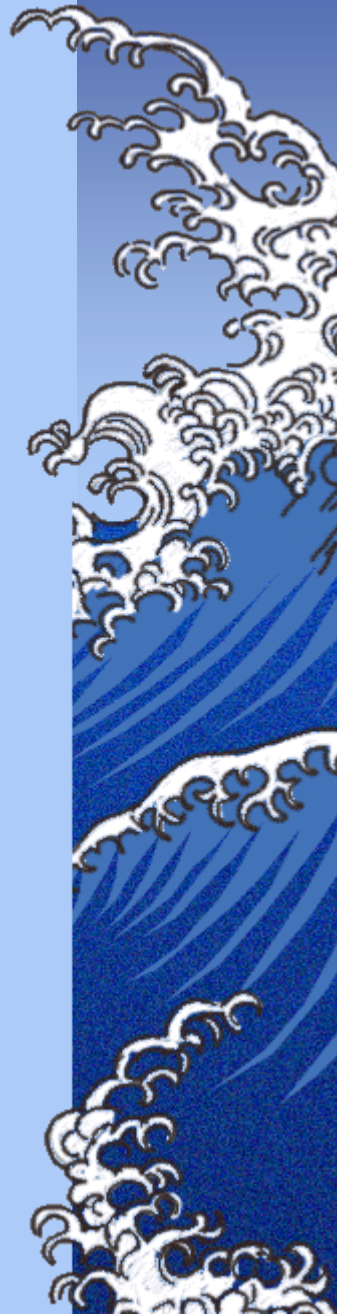


I had some stays in foreign centres:

❑ Frankfurt School of Finance & management, Institute for International Health Management. Frankfurt. Germany. "PROMETHEE and GAIA" Methodologies for Multiple Criteria Decision Aid. Practical cases with Decision Lab Software. 2011.

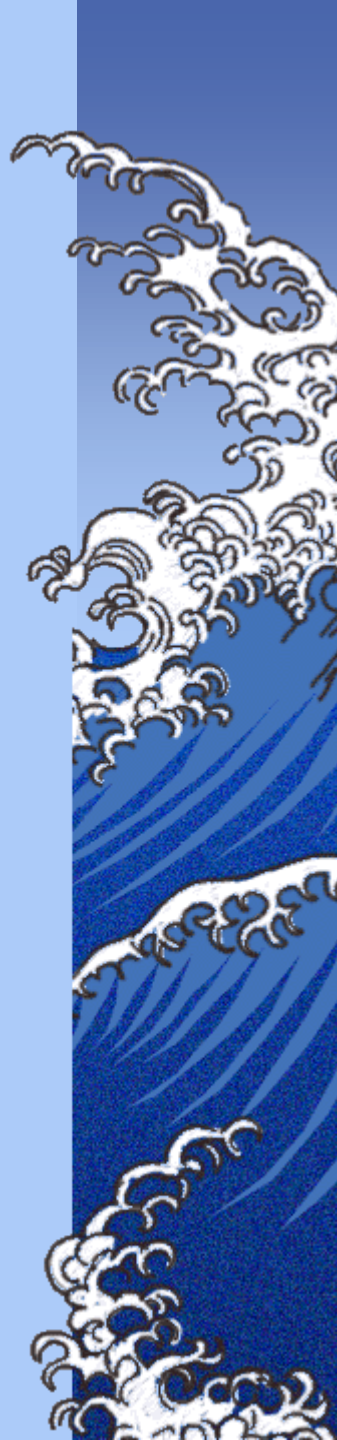
❑ Postdoc researching. Centre for Management Studies of Instituto Superior Técnico (CEG-IST). Lisbon. Portugal: Ayuda a la Decisión Multicriterio, Investigación Operativa: PROMETHEE, Macbeth, ELECTRE. 2007.

❑ Seventh Summer School on Multicriteria Decision Aid: Methods, Applications and Software. EURO working Group on Multicriteria Decision Aid. Acireacle. Catania Italy. 2000



The publications in which I applied PROMETHEE are:

- Decisiones Óptimas en la modalidad de reaseguro cuota-parte. Una aplicación de los Métodos PROMETHEE, 1993.
- New Preference Structures for Multiple Criteria Making: its extension to PROMETHEE Methods, 1993.
- Weight Stability Intervals in Multicriteria Decision Aid under Semi order Preference Structures, 1994.
- La Decisión Multicriterio en el Análisis y la Gestión de los Problemas Medioambientales, 1995.
- El pasado, el presente y el futuro de la Investigación Operativa. El espacio de libertad del Decisor, 1996.



- Extension of the Criteria Notion: New Generalized Criteria in Multicriteria Analysis, 1997.



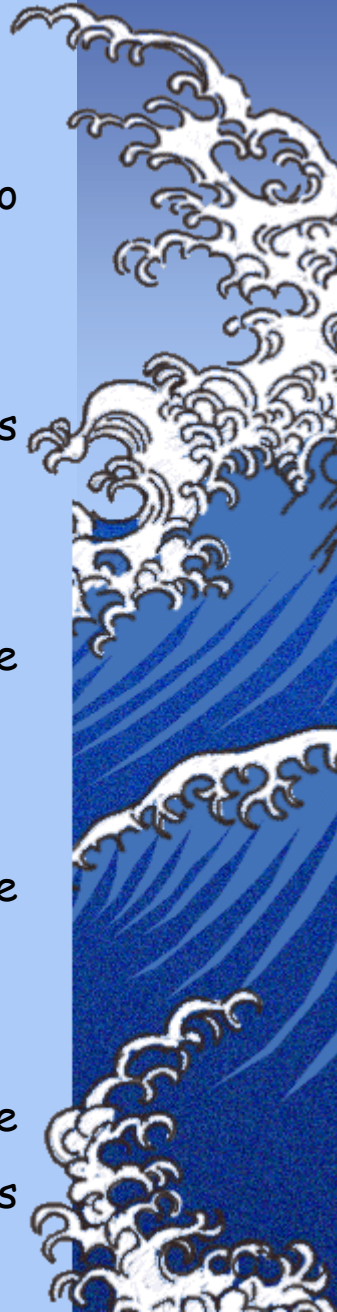
- Nuevas Estructuras de Preferencia para la Toma de Decisiones Multicriterio Discretas: su extensión a los Métodos PROMETHEE, 1997.

- Intervalos de Estabilidad de Pesos bajo Estructuras de Semiorden en los Métodos PROMETHEE, 1997.

- La Modelación de las Preferencias del Decisor y su aplicación a problemas de Decisión Multicriterio, 1997.

- Introducción de restricciones intra e inter criterios en problemas de decisión multicriterio, 1998.

- Intervalos de Estabilidad de Pesos (IEP) bajo las Nuevas Estructuras de Preferencia (NEP) extendidos al análisis y aplicación de los Métodos PROMETHEE, 1998.



CENTRAL EUROPEAN JOURNAL for OPERATIONS RESEARCH and ECONOMICS

VOLUME 2, NUMBER 1, 1993

formerly Czechoslovak Journal for Operations Research, vol. 2 (1993)

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Equilibrium Models

G. M. FERNÁNDEZ BARBER: New Preference Structures for Multiple Criteria Decision Making: Its Extension to PROMETHEE Methods

B. VEČELAK: Adaptive Multistage Queues with Two Operating

Conditions

B. FLOKIEWICZ and M. KULEJ: Feasibility and Optimality of Time Schedules in Vehicle Routing and Scheduling Problem with Time Window Constraints

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BOOK REVIEW

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REVISTA TÉCNICA DE SEGUROS

NUMERO 25 - Abril 1993

EN ESTE NUMERO

Decisiones Optimas en la Modalidad de Reaseguros Cuota-Parte.

Incorporación al Derecho Español de la Segunda Directiva de Vida.

Doctrina DGS: — Convenio Marco de Asistencia Sanitaria con Instituciones Sanitarias Públicas.

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Congreso sobre Técnicas de Ayuda a la Decisión en la Defensa

ACTAS



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Madrid, 12-15 de diciembre de 2000

MERCURIO

REVISTA DE ECONOMÍA Y EMPRESA



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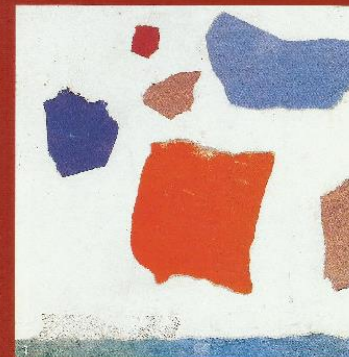
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La aventura de decidir: una aproximación científica mediante casos reales



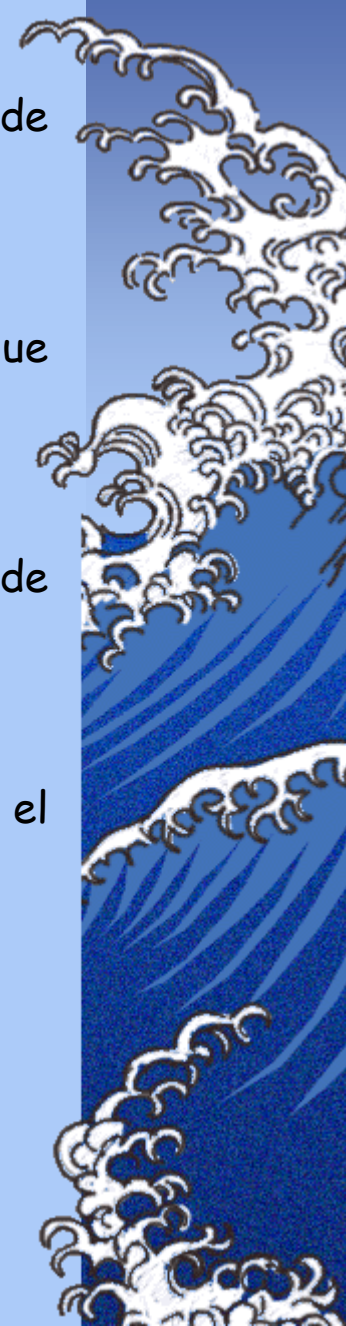
Francisco R. Fernández
Rafael Caballero
Carlos Romero
(Coordinadores)

Red Temática de Decisiones Multicriterio



N.º 1
1997

- Modelo de minimización del impacto humano en una zona protegida, 1999.
- Modelación de las preferencias del decisor. Sistemas relacionales de preferencias con uno o más pseudocriterios, 1999.
- La decisión multicriterio en la elección del emplazamiento de un parque temático. Una aplicación práctica, 1999.
- Introducción de restricciones al conjunto de alternativas en Problemas de Decisión Multicriterio, 2000.
- Análisis de Robustez aplicado a un problema de Decisión Multicriterio en el ámbito de la Defensa Nacional. 2000.
- Toma de Decisiones con Criterios Múltiples, 2002.



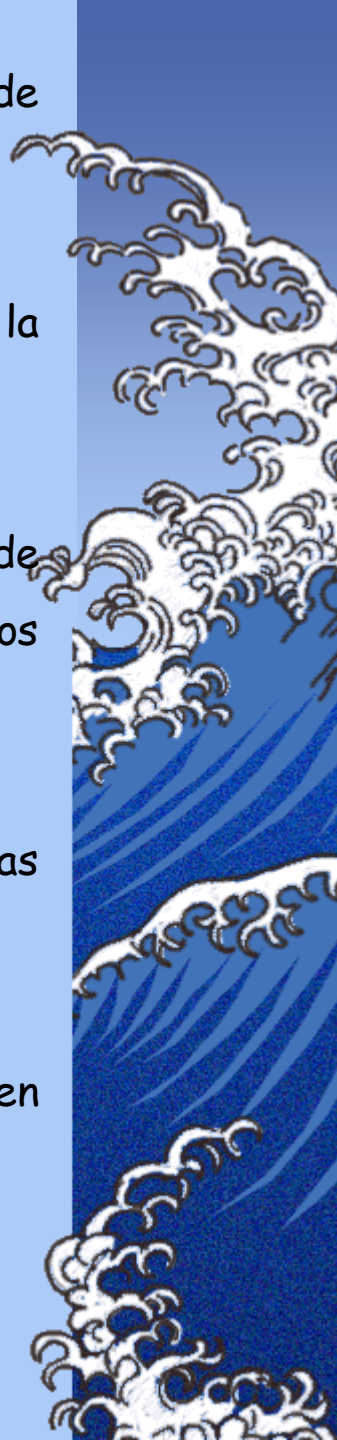
- Los Métodos PROMETHEE: Una Metodología de Ayuda a la Toma de Decisiones Multicriterio Discreta, 2002.

- Estudio comparativo de Métodos de Ayuda a la Decisión Multicriterio en la valoración y selección de alternativas de inversión, 2002.

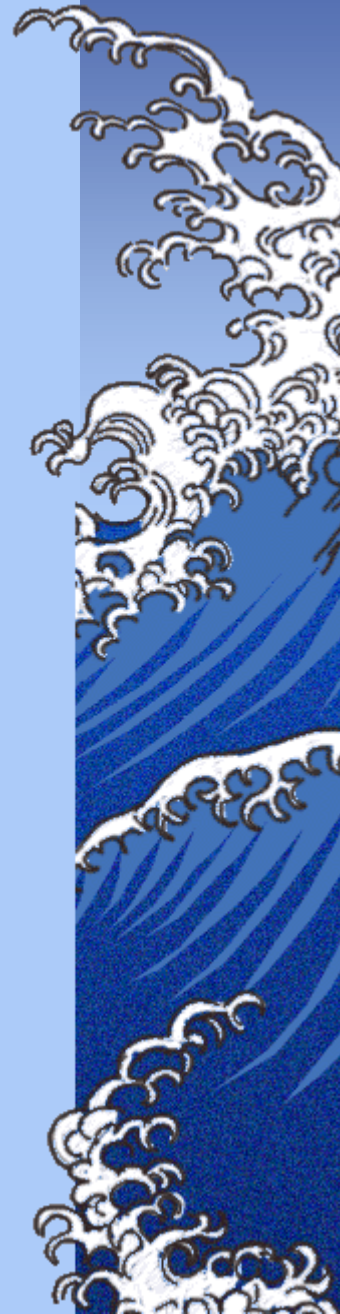
- Análisis de robustez de un modelo de valoración y selección de alternativas de inversión, con ayuda de la decisión multicriterio, utilizando métodos aproximados y cronológicos, 2002.

- Aplicación de la Ayuda a la Decisión Multicriterio en el Ámbito de las Operaciones de Paz, 2004.

- Nuevos Criterios Generalizados para modelar las preferencias del decisor en los Métodos de Relaciones de Superación, 2006.



- Sitting a University Kindergarten in Madrid, 2007.
- Un modelo de decisión multicriterio aplicado a las nuevas figuras comerciales de local y córner franquiciados, 2007.
- Métodos de Ayuda a la Decisión Multicriterio con Nuevos Criterios Generalizados: una aplicación a los mercados financieros, 2009.
- Semi orders, Interval orders and pseudo orders Preference Structures in Multiple Criteria Decision Aid Methods, 2012.
- La decisión multicriterio y su aplicación en la clasificación de los bancos cooperativos, 2012.
- The Revolutionary Restructuring Process of the Regional and Local Spanish Bank, 2012.



- The Revolutionary Restructuring Process of the Regional and Local Spanish Bank, 2012.



- Las cajas de ahorro españolas: ¿una pretendida reordenación bajo criterios de racionalidad económica y social?, 2012.

- Modelización de Preferencias mediante estructuras matemáticas de pseudo orden, 2012.

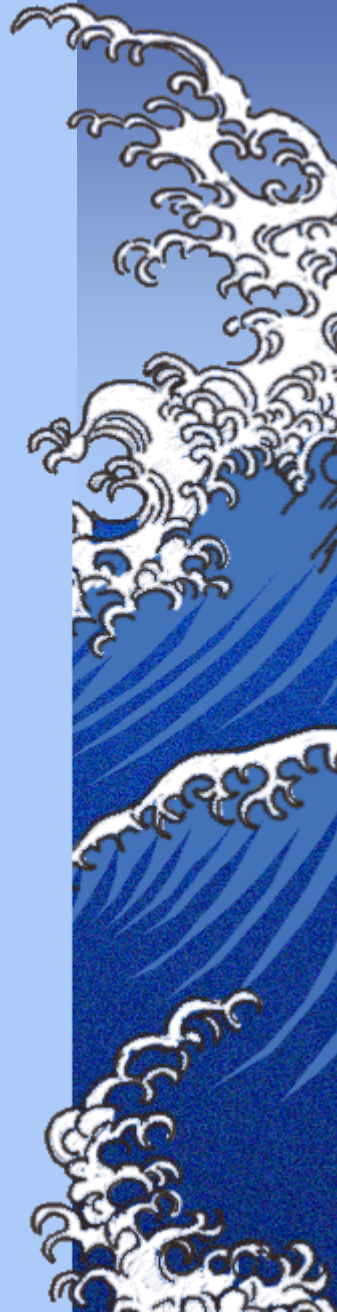
- Semi orders, Interval orders and pseudo orders preference structures in Multiple Criteria Decision Aid Methods, 2013.

- Responsabilidad Social Corporativa y Género en los Consejos de Administración de las Cooperativas de Crédito Españolas, 2013.

- Weight Stability Intervals in Multicriteria Decision Aid under Semi order Preference Structures, 2013.



- ¿Hay relación entre la presencia de la mujer en los Consejos de Administración y la Eficiencia Empresarial? Análisis en el sector de la banca cooperativa, 2013.
- Aplicación del Visual PROMETHEE: planteamiento y resolución de un problema real de decisión multicriterio, 2013.
- The inadequacy of the dimension of asset to classify financial institution: application to cooperative banks, 2014.
- How to obtain a ranking of individuals measuring their excellence by means of a Multicriteria Decision Model, 2015.
- Análisis Multicriterio del cumplimiento de los Objetivos de Desarrollo Sostenible en la OCDE para 2030. 2017.

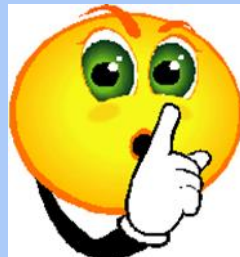


- Una metodología matemática al servicio de los Objetivos de Desarrollo Sostenible para 2030. 2018.

- ¿Se cumplirán los Objetivos de Desarrollo Sostenible en el horizonte 2030? Un análisis cuantitativo, 2019.

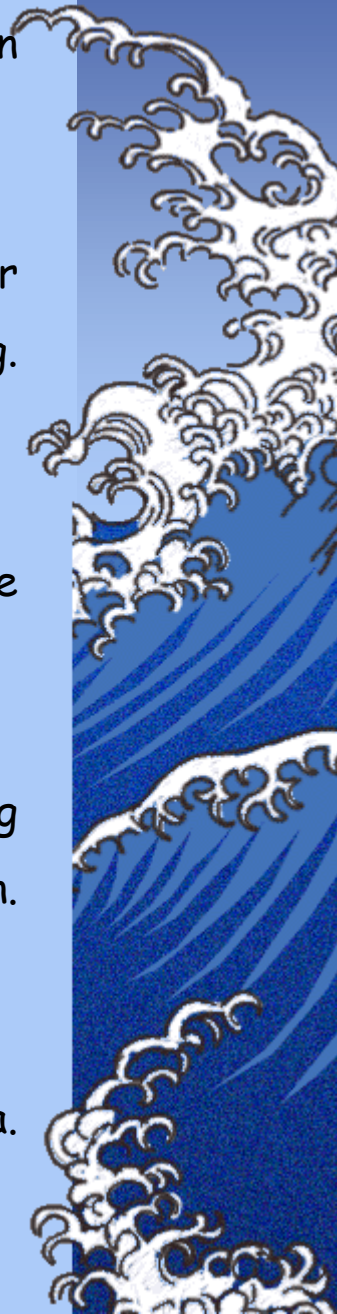
- Salud, pobreza, ODS de la Agenda 2030, ¿un reto posible de alcanzar?, 2020.

I was the Director of the Doctoral Thesis: Modelo de Decisión Multicriterio aplicado al emplazamiento de "Coffe shops" en el Levante español. Sinergia y canibalismo entre la franquicia y el córner como modelos de negocios complementarios. Defended in 2006. San Pablo CEU University. Madrid. Spain.

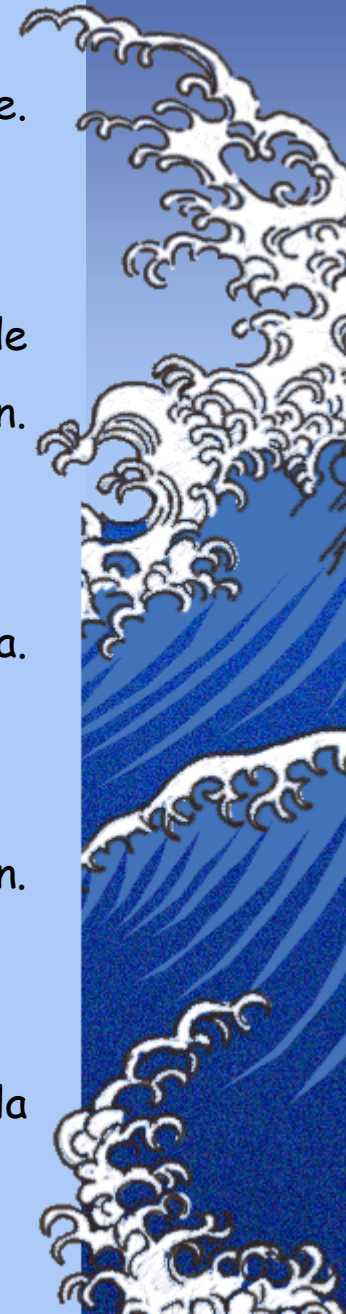


I participated in a many national and international events (congresses, conferences, seminars, courses, etc.) in which I used PROMETHEE Methods in my presentations.

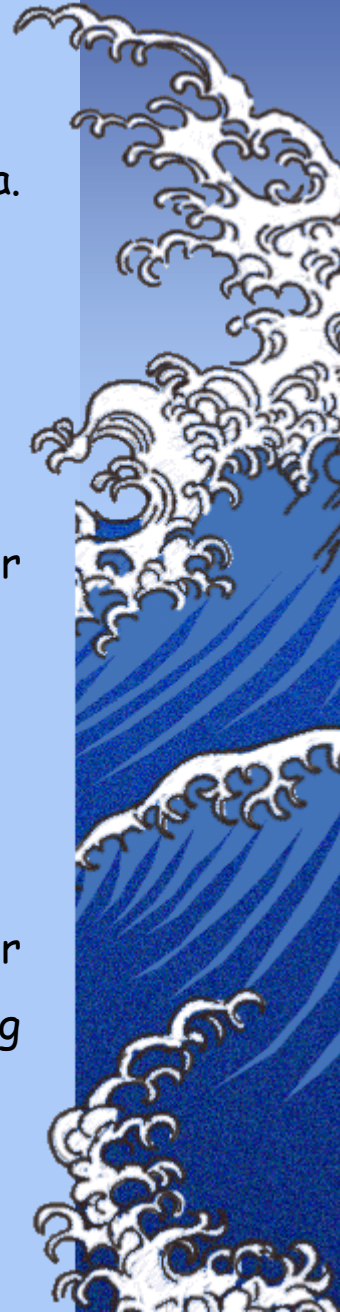
- 36th Meeting of the European Working Group "Multicriteria Aid for Decisions". Centre de Recherche Public. Centre Universitaire. Luxembourg. 1992.
- I Congreso Iberoamericano y XX Reunión Nacional de Estadística e Investigación Operativa. Cáceres. España. 1992.
- Decision Making: Towards the 21st century. "The 1st International Meeting about Multicriteria Decision Aid". Real Academia de Ciencias. Madrid. Spain. 1993.
- IX Reunión ASEPELT-España. Universidad de Santiago de Compostela. Galicia. España. 1995.



- X Reunión ASEPELT-España. Universidad de Castilla la Mancha. Spain. 1996.
- 7th Mini Euro Conference-Decision Support Systems Groupware. Multimedia-Electronic Commerce. Bruges. Belgium. 1997.
- V Jornadas de la Asociación Española de Profesores Universitarios de Matemáticas para la Economía y la Empresa (ASEPUMA). Málaga. Spain. 1997.
- XXIII Congreso Nacional de Estadística e Investigación Operativa. Valencia. Spain. 1997.
- XI reunión ASEPELT-España. Universidad del País Vasco. Bilbao. Spain. 1997.
- 46ème Journées du Groupe de Travail Europeen. « Aide Multicritère à la Décision ». Université de Corse. Pascal-Paoli. Bastia. Corse. France. 1997.



- XXV International Congress of History of Science. Université de Liège. Belgium. 1997.
- XXIV Congreso Nacional de Estadística e Investigación Operativa. Universidad de Almería. Spain. 1998.
- IFORS'99. The 15th Triennial Conference of IFORS. Beijing. China. 1999.
- 49th Meeting of the Multicriteria Working Group "Multicriteria Aid for Decision". Milan. Italy. 1999.
- VII Jornadas de ASEPUMA. Universidad de Valencia. Valencia. Spain. 1999.
- 50th Meeting of the Multicriteria Working Group "Multicriteria Aid for Decision". Exceptional Meeting. 25th Anniversary of the EURO Working Group. Cerisy-La Salle. Normand. France. 1999.



- VIII Jornadas ASEPUMA. Universidad de Sevilla. Sevilla. Spain. 2000.
- EURO XVII. 17th European Conference on Operational Research. Budapest. Hungary. 2000.
- XXV Congreso Nacional de Estadística e Investigación Operativa. Universidad de Vigo. Galicia. Spain. 2000.
- Congreso sobre Técnicas de Ayuda a la Decisión en la Defensa. Ministerio de Defensa. Secretaría General Técnica. Unidad de Estadística. Centro de Investigación Militar (CIMO). Escuela Politécnica Superior del Ejército. Madrid. Spain. 2000.
- 53rd Meeting of the European Working Group "Multicriteria Decision Aid for Decisions". Greece. 2001.
- XXVI Congreso de Estadística e Investigación Operativa. Universidad de Jaén. Úbeda. Jaén. Spain. 2001.



- IX Jornadas ASEPUMA. Las Palmas de Gran Canaria. Spain. 2001.
- X Jornadas ASEPUMA. Universidad San Pablo CEU. Madrid. Spain. 2002.
- 56th Meeting of the European Working Group "Multicriteria Aid for Decisions". University of Coimbra. Portugal. 2002.
- XVI Reunión ASEPELT-España. Madrid. Spain. 2002.
- 5th Edgard A. Bouchet International Conference on Physics and High Technology. AMA (Association of Mathematics and Application). Tunisia. Africa. 2003.
- XXVII Congreso Nacional de Estadística e Investigación Operativa. Lérida. Spain. 2003.



- 58th Meeting of the European Working Group "Multicriteria Aid for Decisions". Moscow. Russia. 2003.

- XVII Reunión ASEPELT-España. Universidad de Almería. Almería. Spain. 2003.



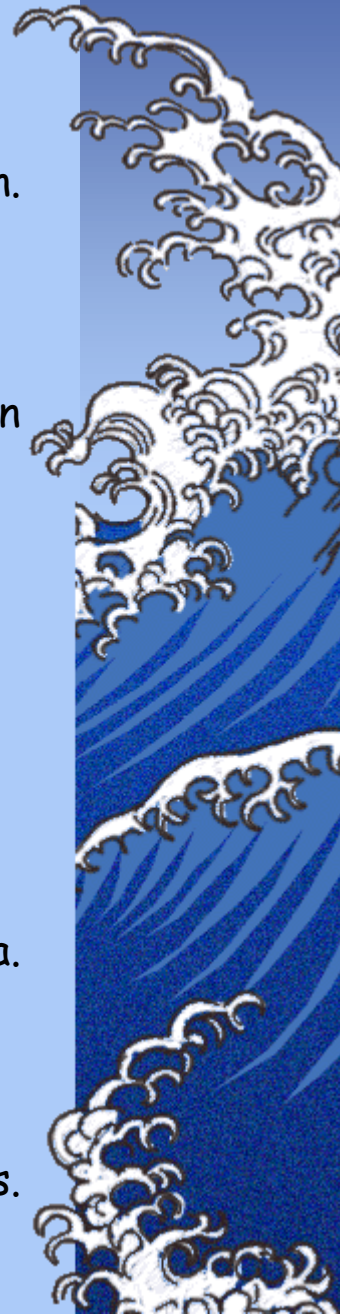
- I Jornadas de la Red Temática de Decisión Multicriterio. Universidad San Pablo. CEU. Madrid. Spain. 2003.

- XXVIII Reunión ASEPELT- España. Universidad de León. León. Spain. 2004.

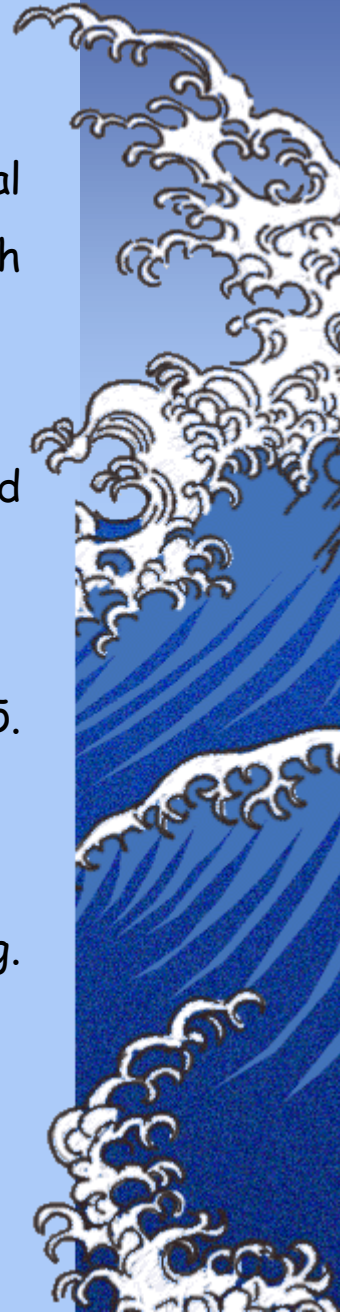
- XII Jornadas ASEPUMA. Universidad de Murcia. Murcia. Spain. 2004.

- XXVIII Congreso Nacional de Estadística e Investigación Operativa. Universidad de Cádiz. Cádiz. Spain. 2004.

- II Jornadas de la Red Temática de Decisión Multicriterio. Torremolinos. Málaga. Spain. 2004.



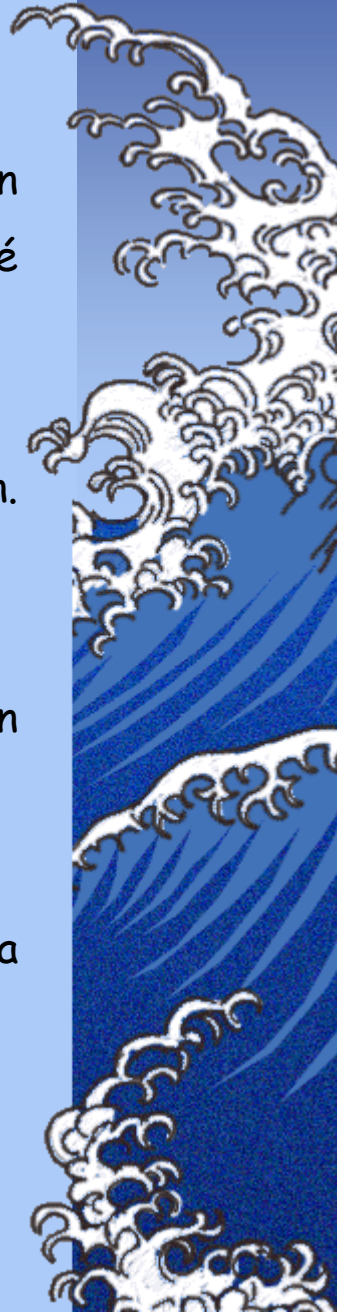
- III Jornadas de la Red Temática de Decisión Multicriterio. Universidad Complutense de Madrid. Madrid. Spain. 2004.
- 17th Triennial Conference of the International Federation of Operational Research societies Hosted by INFORMS. Milton Hawaiian Village Beach Resort & Spa. Hawaii. Honolulu. USA. 2005.
- III Congreso Internacional de Historia de la Estadística y de la Probabilidad (AHEPE). Madrid. 2005.
- Congreso Conjunto de Matemáticas RSME-SCM-SEIO-SEMA. MATES2005. Valencia Spain. 2005.
- 18th International Conference on Multiple Criteria Decision Making. Mediterranean Agronomic Institute of Chania (MAICH). Chania. Crete. 2006.



- 63rd Meeting of the EURO Working Group of Multicriteria Decision Aiding. Universidade do Porto. Faculdade de Engenharia (FEUP). Portugal. 2006.
- XXIX Congreso Nacional de estadística e Investigación Operativa. La Laguna. Tenerife. Spain. 2006.
- International Congress of Mathematicians. ICM2006. Madrid. Spain. 2006.
- Risk, Uncertainty and Decision Analysis for Environmental Security and Non-Chemical Stressors. Estoril. Lisbon. 2007.
- Encuentro de la Red Iberoamericana de Evaluación y Decisión Multicriterio RED2007. Culiacán, Sinaloa. México. 2007.
- 67th Meeting of the European Working Group "Multicriteria Decision Aid". Rovaniemi. Finland. 2008.



- XVII Jornadas ASEPUMA y V Congreso Internacional de Profesores de Matemáticas para la Economía y la Empresa. Burgos. Spain. 2009.
- 69th Meeting of the EURO Working Group "Multiple Criteria Decision Aiding". Faculté Polytechnique de la l'Université Libre de Bruxelles. Faculté Polytechnique de Mons. Bruselas. Belgium. 2009.
- 24th European Conference on Operational Research (EURO XXIV). Lisbon. Portugal. 2010.
- 71st Meeting of the European Working Group "Multiple Criteria Decision Aiding". Torino. Italy. 2010.
- VI Congreso Internacional de la Historia de la Estadística y de la Probabilidad. AHEPE. Valencia. Spain. 2011.



- XIX Jornadas ASEPUMA y VII Encuentro Internacional de Profesores Universitarios de Matemáticas para la Economía y la Empresa. Valencia. Spain. 2011.

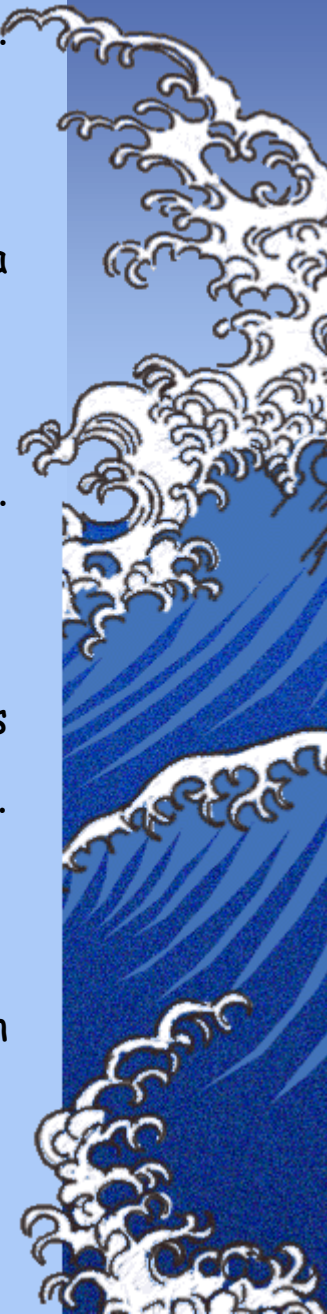


- XI Congreso de la Sociedad Española de Historia de la Ciencia y de la Técnica. SEHCYT. Guipúzcoa. País Vasco. Spain. 2011.

- XXV European Conference on Operational Research (EURO2012). Vilnius. Lithuania. 2012.

- XX Jornadas ASEPUMA y VIII Encuentro Internacional de Profesores Universitarios de Matemáticas para la Economía y la Empresa. Barcelona. 2012.

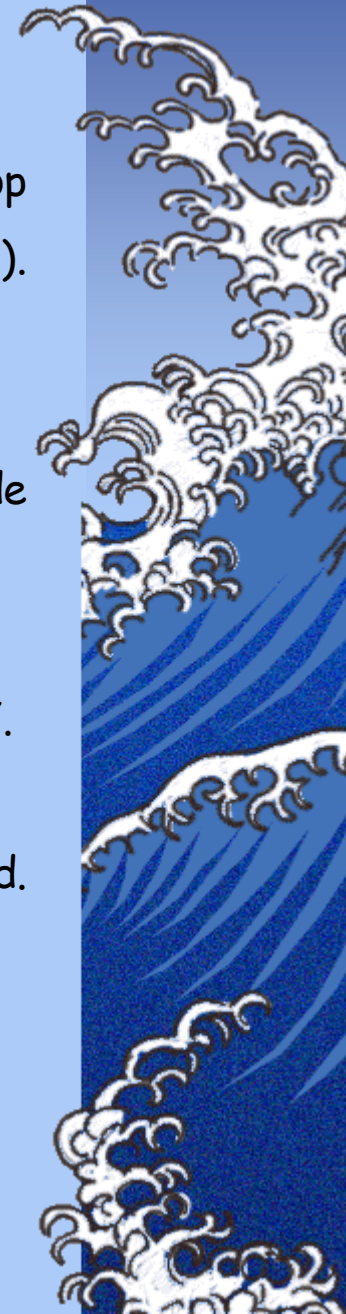
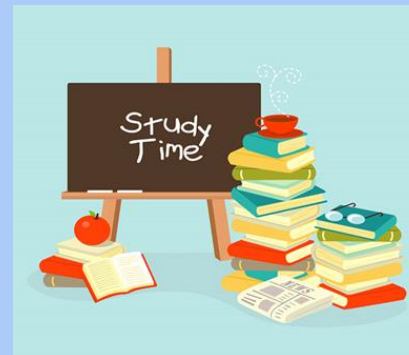
- Reunión del Grupo Español de Decisión Multicriterio. Workshop: Decisión Multicriterio en la Sociedad del Conocimiento. Zaragoza. Spain. 2012.



- International Symposium in Operational Research and Applications (ISORAP2013). Marrakech. Morocco. 2013.
- XXI Jornadas ASEPUMA y IX Encuentro Internacional de Profesores Universitarios de Matemáticas para la Economía y la Empresa. Tenerife. Spain. 2013.
- XII Congreso de la Sociedad Española de Historia de las Ciencias y de las Técnicas (SEHCYT). Ciencia y Técnica entre la Paz y la Guerra. Madrid. 2014.
- XXII Jornadas ASEPUMA y X Encuentro Internacional de Profesores Universitarios de Matemáticas para la Economía y la Empresa. Málaga. Spain. 2014.
- CIEM- 3ª Jornada Internacional "Matemáticas EveryWhere". Castro Urdiales. Cantabria. Spain. 2014.



- First Joint International Meeting RSME-SCM-SEMA-SIMAT-UMI. Bilbao. País Vasco. Spain. 2014.
- MCDA Workshop PROMETHEE-IMW2014. International MCDA Workshop on PROMETHEE: Research and case studies. Vrije Universiteit Brussel (VUB). 2014.
- IX Reunión del Grupo Español de Decisión Multicriterio. Universidad Pablo de Olavide. Sevilla. Spain. 2015.
- XI Reunión del Grupo Español de Decisión Multicriterio. Málaga. Spain. 2017.
- 85th Meeting of the EURO Working Group on Multicriteria Decision Aid. Padova. Italy. 2017.



- XXV Jornadas ASEPUMA y XIII Encuentro Internacional de Profesores Universitarios de Matemáticas para la Economía y la Empresa. La Coruña. Galicia. Spain. 2017.
- V Jornada Internacional Matemáticas EveryWhere. Castro Urdiales. Cantabria. Spain. 2018.
- 87th Meeting of the European Working Group "Multiple Criteria Decision Aiding". Delft, New Netherland. 2018.
- XII Reunión del Grupo Español de Decisión Multicriterio. Universidad de Valencia. Spain. 2018.
- XXVI Jornadas ASEPUMA y XIV Encuentro Internacional de Profesores Universitarios de Matemáticas para la Economía y la Empresa. Universidad de Sevilla. Sevilla. Spain. 2018.



- PROMETHEE Days 2019. Workshop. Split Croatia. 2019.
- XXVII Jornadas ASEPUMA y XV Encuentro Internacional de Profesores Universitarios de Matemáticas para la Economía y la Empresa. Santander. Spain. 2019.

I could continue mentioning other activities, events, applications, seminars, conferences, etc. in which I have applied or explained the PROMETHEE Methods, but it is not my intention to bore you.



Undoubtedly, you know that a topic of great interest and very relevant is the one referred to "[The Sustainable Development Goals and the 2030 Agenda](#)".

On September 25, 2015, United Nations member states approved 17 Sustainable Development Goals. These represent a universal agenda for sustainable development, calling on all countries to pursue a comprehensive strategy containing three key dimensions: economic development, social inclusion and environmental sustainability, supported by the principle of good governance.

The use of substantial parameters and data is critical to making SDG a practical problem-solving tool through of: the governments, the society and the business; provide information to monitor progress and to ensure accountability; its usefulness as a management tool for the transformations necessary to reach the SDG in 2030.

The first Global Report published in 2016 by the Bertelsmann Stiftung and Sustainable Development Solutions network (SDSN) described the status of SDG in 34 countries of the Organization for Economic Cooperation and Development (OECD), mostly high-income countries. This report extends the analysis in several directions, one of which is to include the 149 countries of the 193 ONU member states.

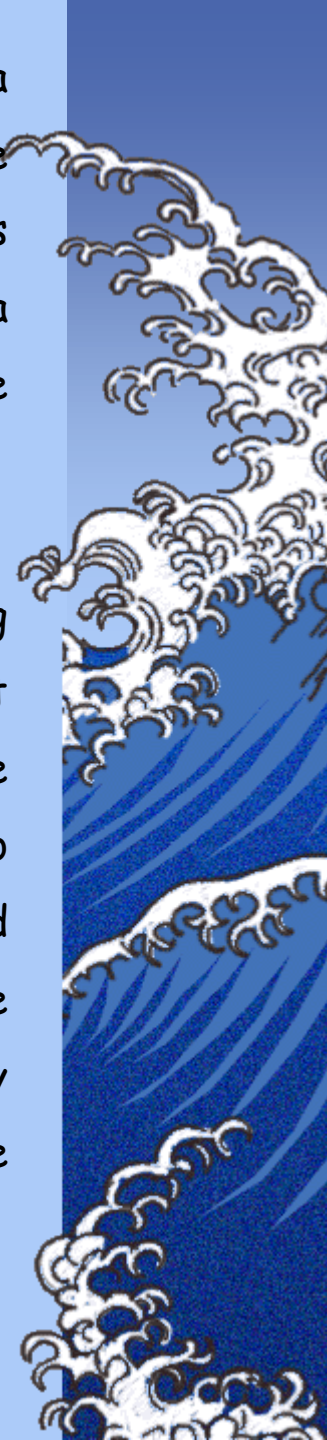
In this sense, my first investigation consisted of carry out an ordering of the OECD countries to evaluate the current state of progress in achieving the SDG by the 2030 horizon.



In order to obtain the ranking, I used the PROMETHEE Multicriteria Methodology and Visual PROMETHEE and I studied the robustness of the model. The results of this study are in the paper entitled "Análisis Multicriterio del cumplimiento de los Objetivos de Desarrollo Sostenible en la OCDE para 2030" (Multicriteria Analysis of the fulfilment of the Sustainable Development Goals in the OECD by 2030).



The global concern regarding the 2030 Agenda was growing with the passing of days. The following Global Report, published in 2017, introduced significant changes with respect to the previous one. The Panels of the SDG for the OECD countries showed that all rich countries are facing major challenges to achieve many of the goals. The biggest challenges exist in production and responsible consumption (SDG 12), climate action (SDG 13), underwater life (SDG 14), terrestrial ecosystems life (SDG 15). For that reason, I focused my investigation only in the stated objectives, since they experimented more changes in their composition, calculation and definition.



I made a Multicriteria Decision Analysis complemented by an econometric study (multilogit model), in order to establish which was the situation of the countries in those criteria, which were critical, and generated spillover effects.

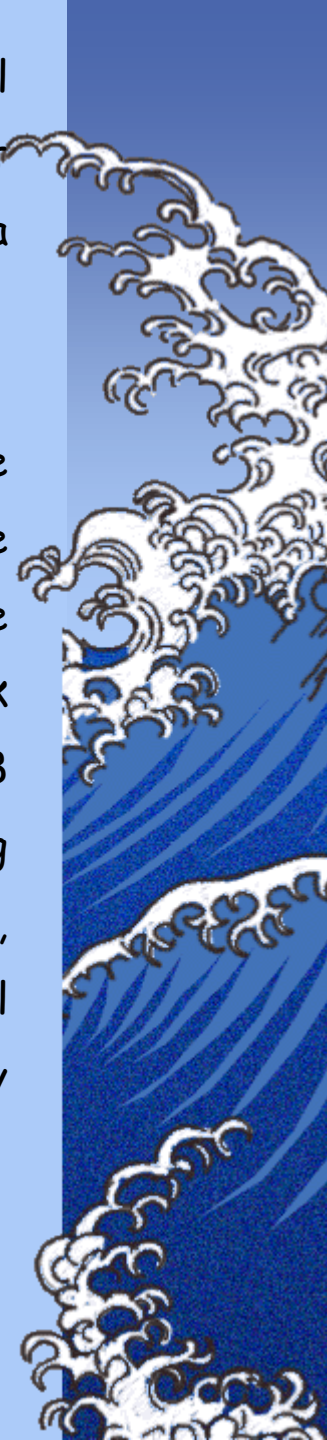
The conclusions of this research were that the degree of compliance with the SDGs on the 2030 horizon is dramatic. If you pay attention to the objectives addressed in the study, 12, 13, 14 and 15, the situation is even bleaker. The degree of compliance with the SDGs on the 2030 horizon is dramatic. If you pay attention to the objectives addressed in the study, 12, 13, 14 and 15, the situation is even bleaker.

There are many governments really involved in this challenge, but they must generate real actions that give meaningful and concrete life to the 2030 Agenda for Sustainable Development.



The paper, "¿Se cumplirán los Objetivos de Desarrollo Sostenible en el horizonte 2030? Un análisis cuantitativo." (Will the Sustainable Development Goals be reach by the 2030 horizon. A quantitative analysis.), contains a detailed study of the problem posed and the proposed model.

Three years after the adoption of the 2030 Agenda of the Sustainable Development Goals, in 2018, the third edition of the annual summary of the country's performance in the SDGs was published, jointly prepared by the Bertelsmann Stiftung and the Sustainable Development Solutions Network (SDSN). This summary known as SDG Index and Dashboards Report 2018 (Global Report 2018). The global report clearly and overwhelming demonstrates that profound transformations in education, health, energy use, land use, urban planning and information technology deployment systems will be required. The SDG data contained in the Report indicates that no country is completely on the right track to achieve satisfactorily all the objectives.



In that year, my research focused the SDG in relation with health and poverty. The objectives considered were:

SDG 1: to put an end to poverty in all its forms and throughout the world,

SDG 2: to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture,

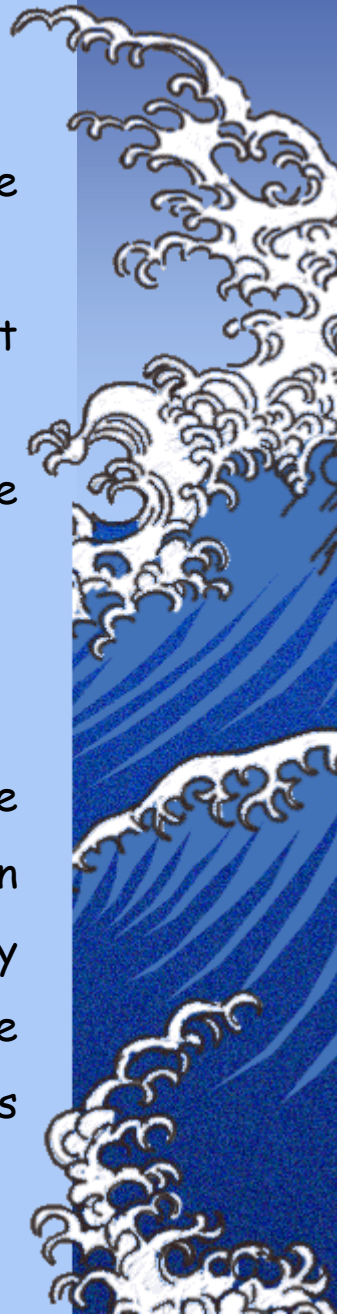
SDG 3: to guarantee healthy life and promote the well-being of everyone at all ages,

SDG 4: to guarantee an inclusive and equitable quality education and promote lifelong learning opportunities for all,

SDG 10: to reduce inequality in and between countries.



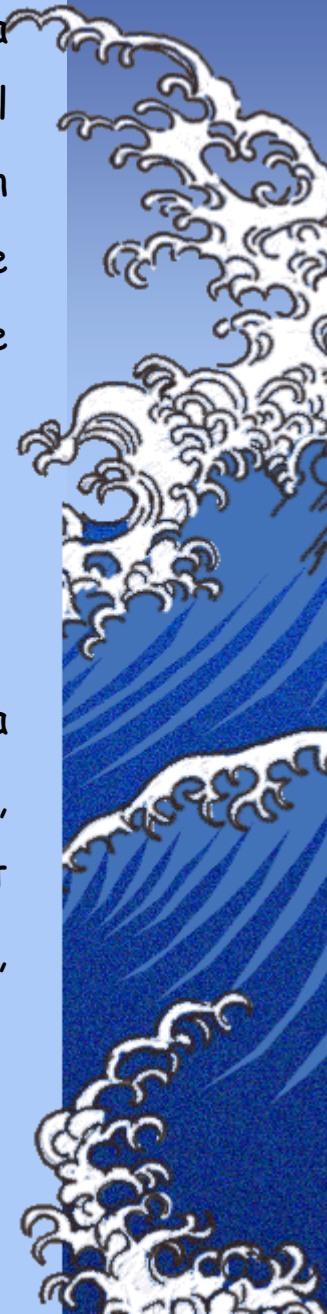
To analyse the position in the ranking that the different countries have regarding to fulfilment of these objectives, I made a multicriteria decision analysis complemented with a multilogit model. The results of this study allowed determining the variables on which countries should work to improve the level of compliance with the different objectives. Once again, the results are devastating.



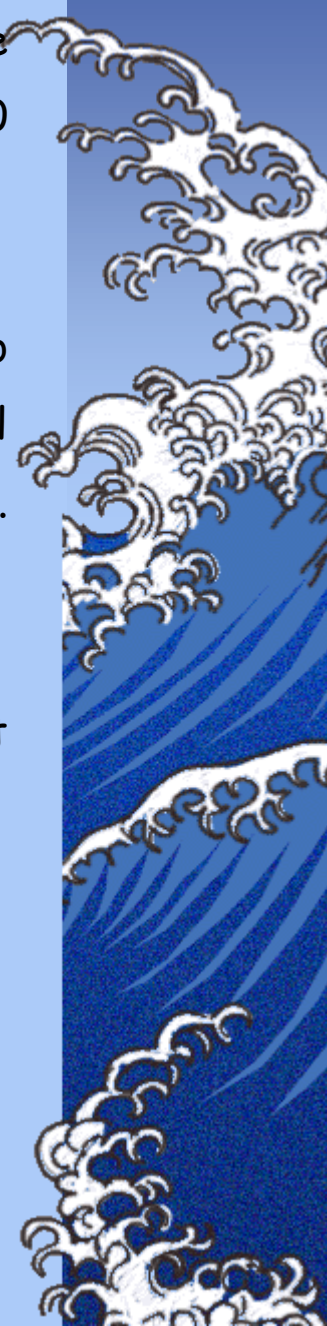
Countries must take seriously and responsibly the commitment made to the 2030 Agenda, since, unfortunately, there is no study carried out that puts a glimmer of hope in their achievement. Time passes very fast and there is still a long way to go. A complete and detailed study of the problem posed, is in the paper "Salud y pobreza, ODS de la Agenda 2030, ¿un reto posible de alcanzar?" ("Health and poverty, SDG of the 2030 Agenda, a possible challenge to achieve?").

Other publications related to the SDGs and the 2030 Agenda are:

- "Los Objetivos de Desarrollo Sostenible en el horizonte 2030. ¿Cuál es la situación actual de los países de la OCDE? Un análisis multicriterio. (Málaga, Julio 2017). "The Sustainable Development Goals on the 2030 horizon. What is the current situation of OECD countries? A multicriteria analysis. (Malaga, July 2017).



- “Los Objetivos de Desarrollo Sostenible. ¿Cumplirán los países de la Unión Europea la Agenda 2030?” (Valencia, Julio 2018). “The Sustainable Development Goals. Will the countries of the European Union meet the 2030 Agenda? ” (Valencia, July 2018).
- “Una metodología matemática al servicio de los Objetivos de Desarrollo Sostenible para el 2030”. (Castro Urdiales, Junio 2018) “A mathematical methodology at the service of the Sustainable Development Goals for 2030”. (Castro Urdiales, June 2018).
- “The Sustainable Development Goals in the 2030 horizon. A very difficult challenge to achieve”. (Croatia, Split, May 2019).



Finally, we reach the year 2020. One more year the entire world faces the challenge of the 2030 Agenda, for the achievement of the Sustainable Development Goals (SDGs).

The latest Global Report published in December 2019 emphasizes six broad transformations that it is necessary to implement. It is the fourth annual edition that analyses the performance of countries in the 17 SDGs. It takes as a point of reference the work prepared by the World.

And so we come to today. Undoubtedly, you can appreciate that PROMETHEE is always with me and I trust that he will continue to be my travel and adventure friend for a long time to come.



THANK YOU VERY MUCH

