

Juan María Hernández

C/ Saulo Torón s/n

35017 Las Palmas, Spain

Phone: +34 928-458-228

E-mail: juan.hernandez@ulpgc.es

Personal page: <http://dmc.ulpgc.es/juan-hernandez.html>

Google Scholar page: <https://scholar.google.es/citations?user=edPdGDkAAAAJ&hl=es&oi=sra>

Education

- **Ph.D.** in Economics, University of Las Palmas de Gran Canaria, Spain, 1991-1997.
- **BS and MS** in Mathematics, University of Granada, Spain, 1986-1991.

Present Position

- Associate Professor, Department of Quantitative Methods in Economics, University of Las Palmas de Gran Canaria (ULPGC)

Interest areas

- Complex systems, application to natural resource economics, such as tourism and fishery.

Languages

- Spanish, English.

Teaching

Undergraduate and Graduate courses at:

- University of Las Palmas de Gran Canaria, Spain (1991-2021)
- Canarian Institute of Marine Sciences, Spain (2001, 2005, 2007, 2011, 2013, 2015, 2017, 2019, 2021)
- Center for Research and Advanced Studies, Merida, Mexico (2000, 2003)

Subjects:

- Differential calculus, linear algebra, system dynamics, mathematical modelling applied to natural resource economics, microeconomics applied to aquaculture

Teaching project leadership:

- Educational Innovation Project. University of Las Palmas de Gran Canaria. 2009-2010.

Grants

Principal investigator:

- *Changes of tourist behavior regarding the contracting services in origin and activities in destinations in the post-COVID scenario.* Financed by: University of Las Palmas de Gran Canaria. 2020. Amount: €10.500.
- *Analysis of the Tourist Market in Canary Islands through the use of Big Data, Spatial Complex Networks and Optimization.* Financed by: Government of Canary Islands. 2019. Amount: €4.620.
- *Sustainable Rural Development Project in Guatemala and Mexico, based on Tilapia and Shrimp Polyculture.* Financed by: Spanish Agency of International Cooperation and Development, Government of Spain. 2008-2010. Amount: €20.700.
- *Dynamic Optimization of Tourism and Environmental Management in Spain.* Financed by: Ministry of Science and Technology, Government of Spain. 2006-2009. Amount: €26.317,50.
- *Sanitary Measures and Optimum Sustainable Management in Aquaculture. Applications to Shrimp Culture in Sinaloa, Mexico.* Financed by: Ministry of Science and Technology, Government of Spain. 2004-2006. Amount: €6.000.
- *Modeling and Optimizing of the Environmental Management Decisions in Aquaculture.* Financed by: Ministry of Science and Technology, Government of Spain. 2003-2006. Amount: €14.800.
- *Contribution of José Ortega y Gasset and Blas Cabrera Felipe to the Development and Diffusion of Science in the First Third of the XXth Century and Subsequent Influence.* Financed by: University of Las Palmas de Gran Canaria (Intramural). 2002. Amount: €3.000.

Co-Investigator:

- *Spatial interaction models and complex networks techniques for studying trade flows and tourism.* Financed by: Ministry of Science, Innovation and Universities, Government of Spain. 2020.
- *Optimization techniques and complex networks models for decision making in Economy.* Financed by: Ministry of Economy and Competitiveness. 2015-2017.
- *Dynamics of distribution and fish trade relationships from a value networks perspective.* Financed by: National Autonomous University of Mexico (UNAM). 2015-2016.
- *Development of a biotechnological platform for exporting genetic services to improve warm water aquaculture species production in America applying genomic selection.* Financed by: Corporación de Fomento de la Producción-INNOVA Chile CORFO/Aquainnovo, S.A. 2014-2018.
- *Methodological Advances in Design and Innovation in the Tourist Industry.* Financed by: Government of Canary Islands. 2009-2012.
- *Heterogeneous Optimal Control Models in Population Economics.* Financed by: Government of Spain and Austria. 2004-2005.
- *Estimation of the Production Capacity of Aquaculture in Canary Islands.* Financed by: National Committee of Marine Cultures, Spain. 2000-2001.
- *Stock-Recruitment Modeling: Environmental Considerations and Economic Consequences.* Financed by: Government of Canary Islands. 1998-2000.
- *Deterministic Chaos in Modeling and Predicting Complex Systems.* Financed by: Government of Canary Islands 1995-1996.

List of Publications

- Hernández, J. M., Bulchand-Gidumal, J., & Suárez-Vega, R. Using accommodation price determinants to segment tourist areas. *Journal of Destination Marketing & Management*, 21, 100622, 2021.
- Chica, M., Hernández, J. M., Manrique-de-Lara-Peñate, C., & Chiong, R. An Evolutionary Game Model for Understanding Fraud in Consumption Taxes [Research Frontier]. *IEEE Computational Intelligence Magazine*, 16(2), 62-76, 2021.
- Chica, M., Hernández, J. M., & Bulchand-Gidumal, J. A collective risk dilemma for tourism restrictions under the COVID-19 context. *Scientific Reports*, 11(1), pp. 1-12, 2021.
- Hernández, J. M., Santana-Jiménez, Y., & González-Martel, C. Factors influencing the co-occurrence of visits to attractions: The case of Madrid, Spain. *Tourism Management*, 83, 104236, 2021.
- González-Martel, C., Hernández, J. M., & Manrique-de-Lara-Peñate, C. (2021). Identifying business misreporting in VAT using network analysis. *Decision Support Systems*, 141, 113464, 2021.
- Suárez-Vega, R. and Hernández, J.M. Selecting Prices Determinants and Including Spatial Effects in Peer-to-Peer Accommodation. *ISPRS International Journal of Geo-Information*, 9 (4), 2020.
- Hernández, J.M. and Dorta-González, P. Interdisciplinarity Metric Based on the Co-Citation Network. *Mathematics*, 8 (4), 2020.
- Domínguez-May, R., Poot-López, G.R., Hernández, J.M. and Gasca-Leyva, E. . Dynamic optimal ration size in tilapia culture: Economic and environmental considerations. *Ecological Modelling*, 420 (15), 2020.
- Giannoni, S., Hernández, J. M. and Pérez-Rodríguez, J. V. Economic growth and market segment choice in tourism-based economies. *Empirical Economics*, 59, pp. 1435 – 1452, 2020.
- Hernández, J. M. and Pedroza-Gutiérrez, C. Estimating the influence of the network topology on the agility of food supply chains. *PloS one*, 14(7), e0218958, 2019.
- Zhou, X., Santana Jiménez, Y., Pérez Rodríguez, J. V. and Hernández, J. M. (2019). Air pollution and tourism demand: A case study of Beijing, China. *International Journal of Tourism Research*, 21, pp. 747-757, 2019.
- Kirilenko, A. P., Stepchenkova, S. O. and Hernandez, J. M. Comparative clustering of destination attractions for different origin markets with network and spatial analyses of online reviews. *Tourism Management*, 72, pp. 400-410, 2019.
- Santana-Jiménez, Y., Hernández, J.M. and Suárez-Vega, R. Land use conversion from tourist to residential. *Current Issues in Tourism*, 22(14), pp. 1686-1704, 2019.
- Hernández, J.M., Kirilenko, A. and Stepchenkova, S. Network approach to tourist segmentation via user generated content. *Annals of Tourism Research*, 73, pp. 35-47, 2018.
- David-Negre, T., Almeida-Santana, A., Hernández, J.M. and Moreno-Gil, S. Understanding European tourists' use of e-platforms. Analysis of networks. *Information, Technology & Tourism*, (online), 2018.
- David-Negre, T., Hernández, J.M. and Moreno-Gil, S. Understanding tourists' leisure expenditure in the destination: A social network analysis. *Journal of Travel & Tourism Marketing*, (online), 2018.
- Araneda, M., Hernández, J.M., Domínguez-May, R., Vela, M.A. and Gasca-Leyva, E. Harvest time optimization considering the stocking density and heterogeneity of sizes in the culture of white shrimp in fresh water. *Aquaculture Economics & Management*, 22(4), pp. 431-457, 2018.
- Pedroza-Gutiérrez, C. and Hernández, J.M. Social networks, market transactions, and reputation as a central resource. The Mercado del Mar, a fish market in central Mexico. *PLoS One*, 12, e0186063, 2017.
- Giannoni, S., Hernández, J.M. and Pérez-Rodríguez, J. Market-segment targeting and long-term growth in a tourism-based economy. *UMR CNRS 6240 LISA Working Paper TerRA n°03*, 2017.
- Hernández, J.M. and González-Martel, C. An evolving model for the lodging-service network in a tourism destination. *Physica A*, 482, pp. 296-307, 2017.

- Hernández, J.M. and Pedroza, C. The influence of the network topology on the agility of a supply chain. *arXiv:1611.10094*, 2016.
- Hernández, J.M., Suárez-Vega, R. and Santana-Jiménez, Y. The inter-relationship between rural and mass tourism: The case of Catalonia, Spain. *Tourism Management*, 54, pp. 43-57, 2016.
- Rabassó, M. and Hernández, J.M. Bioeconomic analysis of the environmental impact of a marine fish farm. *Journal of Environmental Management*, 158, pp. 24-35, 2015.
- Santana-Jiménez, Y., Sun, Y.Y., Hernández, J.M. and R. Suárez-Vega. The influence of remoteness and isolation in the rural accommodation rental price among Eastern and Western destinations. *Journal of Travel Research*, 54, pp. 380-395, 2015.
- Poot-López, G., Hernández, J.M. and E. Gasca-Leyva. Analysis of ration size in Nile tilapia production: Economics and environmental implications. *Aquaculture*, 120-121, pp. 198-205, 2014.
- Santana-Jiménez, Y., Hernández, J.M. and R. Suárez-Vega. Estimating the environmental attractions of rural tourism lodging units in La Gomera island, Spain. *European Journal of Tourism Research*, 6 (2), 132-140, 2013.
- Sánchez-Zazueta, E., Hernández, J.M. and F.J. Martínez-Cordero. Credit management analysis of semi-intensive shrimp farming in Mexico. *Aquaculture Economics and Management*, 17 (4), pp. 360-379, 2013.
- Araneda, M., Hernández, J.M. and E. Gasca-Leyva. Growth modelling including size heterogeneity: Application to the intensive cultivation of white shrimp (*P. vannamei*) in freshwater. *Aquaculture Engineering*, 56, pp. 1-12, 2013.
- Sánchez-Zazueta, E., Hernández, J.M. and F.J. Martínez-Cordero. Stocking density and date decisions in semi-intensive shrimp *Litopenaeus vannamei* (Boone, 1931) farming: a bioeconomic approach. *Aquaculture Research*, 44, pp. 574-587, 2013.
- Hernández, J.M. and C.J. León. Welfare and Environmental Degradation in a Tourism-Based Economy. *Tourism Economics*, 19 (1), pp. 5-35, 2013.
- Hernández, J.M. and L.A. Casimiro. Simulation model for a joint mass/rural tourism system. *Tourism and Hospitality Research*, 12(1), pp. 5-14, 2012.
- Domínguez-May, R., Hernández J.M., Gasca-Leyva, E. and G. Poot-López. Effect of ration and size heterogeneity on harvest time: tilapia culture in Yucatan, Mexico. *Aquaculture Economics and Management*, 15(4), pp. 278-301, 2011.
- Araneda, M., Hernández, J.M. and E. Gasca-Leyva. Optimal harvesting time of farmed aquatic populations with nonlinear size-heterogeneous growth. *Natural Resource Modelling*, 24(4), pp. 477-513, 2011.
- Santana-Jiménez, Y., Suárez-Vega, R. and J.M. Hernández. Spatial and environmental characteristics of rural tourism lodging units. *Anatolia*, 22(1), pp. 89-101, 2011.
- Santana-Jiménez, Y. and J.M. Hernández. Estimating the effect of overcrowding on tourist attraction: The case of Canary Islands. *Tourism Management*, 32, pp. 415-425, 2011.
- Poot-López, G., Hernández, J.M. and E. Gasca-Leyva. Input management in integrated agriculture-aquaculture systems in Yucatan: Tree spinach leaves as a dietary supplement in tilapia culture. *Agricultural Systems*, 103, pp. 98-104, 2010.
- Gasca-Leyva, E., Hernández, J.M. and V. Veliov. Optimal harvesting in a size-heterogeneous population. *Ecological Modelling*, 210, pp. 161-168, 2008.
- León-Santana, M. and J.M. Hernández. Optimum management and environmental protection in the aquaculture industry. *Ecological Economics*, 64, pp. 849-857, 2008.
- Hernández-Guerra, C. and J.M. Hernández. Discursive analysis and pragmatic metadiscourse in four sub-areas of Economics research articles. *Iberica*, 16, pp. 81-108, 2008.

- León, C.J., Hernández, J.M. and M. González. Economic welfare, the environment and the tourist product lifecycle. *Tourism Economics*, 13, pp. 583-602, 2007.
- Hernández, J.M. and C.J. León. The interaction between natural and physical capitals in the tourist life-cycle model. *Ecological Economics*, 62, pp. 184-193, 2007.
- Hernández, J.M., León-Santana, M. and C.J. León. The role of water temperature in the optimal management of marine aquaculture. *European Journal of Operational Research*, 181, pp. 872-886, 2007.
- León, C.J., Hernández, J.M. and M. León-Santana. The effects of water temperature in aquaculture management. *Applied Economics*, 38, pp. 2159-2168, 2006.
- Ponce-Marbán, D., Hernández, J.M. and E. Gasca-Leyva. Simulating the economic viability of Nile tilapia and Australian reaclaw crayfish polyculture in Yucatan, Mexico. *Aquaculture*, 261, pp. 151-159, 2006.
- Hernández, J.M., Gasca-Leyva, E., León, C.J. and J.M. Vergara. A Growth Model for Gilthead Seabream. *Ecological Modeling*, 165 (2-3), pp. 265-283, 2003.
- Gasca-Leyva, E., León, C.J. and J.M. Hernández. Management Strategies for Gilthead Cultivation in the Mediterranean and Atlantic Seas. *Journal of the World Aquaculture Society*, 34 (1), pp. 29-39, 2003.
- Gasca-Leyva, E., León, C.J., Hernández, J.M. and J.M. Vergara. Bioeconomic Analysis of Production Location of Seabream (*Sparus aurata*) Cultivation. *Aquaculture*, 213 (1-4), pp. 219-232, 2002.
- León, C.J., Hernández, J.M. and E. Gasca-Leyva. Cost Optimizacion and Input Substitution in the Production of Gilthead Seabream. *Aquaculture Economics and Management*, 5 (3&4), pp. 147-170, 2001.
- Gasca-Leyva, E., León, C.J., Hernández, J.M. and J.M. Vergara. Bioeconomics Analysis of seabream culture in Canary Islands and the Mediterranean area. *Economía Agraria y Recursos Naturales*, 1, pp. 55-76, 2001. (In Spanish).
- Hernández, J.M. and F. Fernández-Rodríguez. A qualitative study of the disaggregated long-wave model. *System Dynamics Review*, 13, pp. 87-96, 1997.

Book chapters

- Hernández, J.M., Santana-Jiménez, Y. and R. Suárez-Vega. Metodología para la estimación de los atractivos de un destino turístico rural. In González, M., León, C.J., León, J. and S. Moreno (Eds.): *Turismo rural y en áreas protegidas*, Ed. Síntesis, Madrid, pp.67-82, 2013. (In Spanish).
- Suárez-Vega, T., Casimiro, L., Acosta-González, E. and J.M. Hernández. Assessing the spatial and environmental characteristics of rural tourism lodging units using a Geographical Weighted Regression model. In: *Quantitative Methods in Tourism Economics*, Springer-Verlag, pp.195-212, 2013.
- González, M., Hernández, J.M., Suárez, R. and B. Suárez. Redes y clústeres en la competitividad de destinos turísticos. In: *Selección de Investigaciones Empresariales. Convocatoria 2010*. FYDE-Cajacanarias, Santa Cruz de Tenerife, Spain, pp. 9-35, 2012. (In Spanish).
- Gasca-Leyva, E., Hernández, J.M. and A. Flores-Nava. Management Strategies for Bullfrog Production in inundated Systems. In: *Global Business and Economic Review*, B&ESI, Worcester, MA, USA, pp. 333-341, 2004.
- Hernández, J.M. and E. Gasca-Leyva. A size distribution model applied to fish farming. In Dimov, I. Lirkov, S. Margenov, Z. Zlatev (Eds.): *Numerical Methods and Applications: Lecture Notes in Computer Sciences*, Springer-Verlag, Berlín, pp. 221-229, 2003.
- Gasca-Leyva, E., León, C.J. and J.M. Hernández. Management Strategies for Gilthead Seabream (*Sparus Aurata*) Cultivation in Floating Cages in the Mediterranean Sea and Atlantic Ocean. In C.J. Bridger and B.A. Costa-Pierce (Eds.) *Open Ocean Aquaculture: From Research to Commercial Reality* The World Aquaculture Society, Baton Rouge, Louisiana, United States, pp. 341-351, 2003.

Gasca-Leyva, E., León, C.J., Hernández, J.M. and J.M. Vergara. Bioeconomic Analysis of the impact of Location on Gilthead Seabream (*Sparus Aurata*) Cultivation. In C.J. Bridger and B.A. Costa-Pierce (Eds.): *Open Ocean Aquaculture: From Research to Commercial Reality* The World Aquaculture Society, Baton Rouge, Louisiana, United States, pp. 325-339, 2003.

León, C.J., Hernández, J.M. and A. Melián. Resources and capacities, environmental management and results fo the aquaculture farm. In. *Empresa y Medio Ambiente en Canarias* (C. León and A.M. García coord.) FYDE-Cajacanarias, Santa Cruz de Tenerife, Spain, pp. 51-71, 2001. (In Spanish).

Undergraduate text books:

Gómez-Déniz, E., Dávila, N., Dorta-González, P., Martel-Escobar, M. and Hernández, J.M. *Solved Problems for Business Studies*. Delta Publicaciones, Madrid, Spain. 2020. (In Spanish).

Gómez, E., Dávila, N., Dorta, P., García, M.D., Hernández, J.M. *Basic Text of Mathematics for Business*. Delta Publicaciones, Madrid, Spain, 2015, 2020 (second edition). (In Spanish).

Dorta, P., Gómez, E., González, C., Hernández, J.M., Santos, D.R. and R. Suárez. *Linear Algebra and Linear Programming for Economics and Business Studies*. Ediciones Anaga, Las Palmas, Spain, 2004. (In Spanish).

Martel, M.C., Andrada, J. and J.M. Hernández. *Interactive Guide for Differential Calculus for Economics and Business Studies with Derive*. Colección de Manuales Docentes Universitarios, ULPGC, 2004. (In Spanish).

Gómez, E., Martel, M.C., Dávila, N., Hernández, J.M. and M.D. García. *Introduction to Differential Calculus for Economics and Business Studies*. ULPGC, 2002. (In Spanish).

Suárez, R., Dorta, P., González, C., Andrada, J. and J.M. Hernández. *Problems of Linear Algebra for Economics and Business Studies. Solved Exercises, Questions and Use of Derive and Lingo*. El Libro Técnico, Las Palmas, Spain, 2001. (In Spanish).

Presentations

- Over 60 presentations in Scientific meeting and Conferences. A selection of them is:

International Association of Tourism Economics (IATE), 2007, 2009, 2011, 2015, 2017, 2019.

Conference on Complex Systems (CCS), 2016, 2017

Complex Networks: from theory to interdisciplinary applications, 2016.

International Institute of Fisheries, Economics and Trade (IIFET), 1998, 2006, 2010, 2016.

Advances in Tourism Economics, 2011, 2014.

Aquaculture Conference, 2013.

Workshop on Quantitative Approaches in Tourism Economics and Management, 2008, 2010, 2012.

Aquaculture America, 2011.

Asociación Hispano-Portuguesa de Economía de los Recursos Naturales y Ambientales, 2010.

World Aquaculture Society, 2009.

European Association of Environmental and Resource Economists (EAERE), 2003, 2004, 2005.

International Environmental Modelling and Systems, 2004.

Viennese Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, 2003.

International Conference on Numerical Methods and Applications, 2002.

European Association of Fishery Economics (EAFE), 2001.

International System Dynamics Conference, 1996, 1998.

- 13 invited presentations and lectures in the following Institutions:

University of Florida, USA. 2011, 2018.

National Autonomous University of Mexico (UNAM), Mexico, 2013, 2016.

Center of Research and Advances Studies in Merida, Mexico. 2000, 2003, 2017.
University of Aveiro, Portugal, 2013.
University of Valladolid, Spain. 2011.
Museum of Science, Las Palmas, Spain. 2010.
Center of Research in Food and Development of Mazatlan, Mexico. 2006.
International Institute for Applied Systems Analysis (IIASA), Austria. 2004.
Technical University of Vienna, Austria. 2001.
University of Bilbao, Spain. 1999.

MsC and PhD student supervisor

- Supervisor of 2 MsC students (2004, 2012).
- Co-supervisor of 2 PhD students (1999, 2019).
 - Eucario Gasca-Leyva, PhD Thesis: “*Bioeconomics of seabream culture*” Graduated in 1999.
 - Tatiana David Negre, PhD Thesis: “*Social network analysis in tourism for improving marketing strategies: Understanding tourists’ behavior through their customer journey*” Graduated in 2019.

Other professional activities

Long academic visits:

- Department of Tourism Recreation & Sport Management, University of Florida, USA (6 months). 2018.
- Group of Complex Systems and Random Networks, Department of Physics, University of Aveiro, Portugal (6 months). 2013-2014.
- Research unit on Place, Identity, Space, and Human Activity, University of Corsica (2 months). 2012.
- Center of Research and Advances Studies in Merida, Mexico (6 months). 2008.
- Institute of System Theory and Operations Research. Vienna Institute of Technology, Vienna, Austria (5 months). 2001-2002.

Journals’ reviewer:

<i>Annals of Tourism Research</i>	<i>Environmental and Resource Economics</i>
<i>Aquaculture</i>	<i>European Journal of Operational Research</i>
<i>Aquaculture Engineering</i>	<i>Journal of Environmental Management</i>
<i>Aquaculture International</i>	<i>Journal of Mathematical Analysis and Application</i>
<i>Aquaculture Research</i>	<i>Journal of Tourism and Hospitality</i>
<i>Biosystems Engineering</i>	<i>Journal of Travel and Tourism Management</i>
<i>Ecological Modelling</i>	<i>Physica A</i>
<i>Environmental Engineering and Manag. Journal</i>	<i>Reviews on Aquaculture</i>
	<i>Tourism Management</i>

University Service:

- Member of the Library Commission at the Faculty of Economics, ULPGC. 1999.
- Member of the Student Exchange Program Commission at the Faculty of Economics. ULPGC. 1999 - 2013.