

EAFE CONFERENCE 2019

Searching the blue: economics of the post-millennial fisheries and aquaculture



Measuring the impact of mass media on consumers purchase of aquaculture products

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AGENDA

- 1. CONCEPTUAL FRAMEWORK**
- 2. MASS MEDIA VARIABLES & AQUACULTURE DEMAND**
- 3. PROPOSAL OF AN INDEX TO MEASURE MASS MEDIA COVERAGE OF AQUACULTURE**
- 4. DEBATE ON MASS MEDIA COVERAGE VARIABLES MEASUREMENT**
- 5. PRELIMINAR FIELD WORK IN SPAIN**

CONCEPTUAL FRAMEWORK

Mass media coverage and demand analyses

- ❑ **Research on mass media coverage and aquaculture demand → very scarce and focused on negative events** (Sha et al., 2015; Liu et al., 2016)
- ❑ **Based on linear Almost Ideal Demand System (LA/AIDS)** (Deaton & Muellbauer, 1980)
- ❑ **Media coverage measured through a simple index mainly considering depth of discussion and prominence of placement within the newspaper** (Swartz & Strand, 1981; Smith et al. 1988; Wessells et al., 1995; Sha et al., 2015)

CONCEPTUAL FRAMEWORK

Mass media coverage on aquaculture

- ❑ **More research available on aquaculture media coverage with a descriptive / explorative approach** (Amberg and Hall, 2008; Bocking, 2010; Feucht and Zander, 2017; Froehlich et al., 2017; Olsen and Osmundsen, 2017; Osmundsen and Olsen, 2017)
- ❑ **Research focused on positive and negative impacts of aquaculture**
- ❑ **No research focused on Sea bass / Sea bream neither on the Mediterranean area**

CONCEPTUAL FRAMEWORK

Author	Geographical scope	Aquaculture type	Media coverage	Period studied	Total content units analyzed
Feucht and Zander (2017)	Germany	Aquaculture in general	3 most widely read German daily newspapers (Süddeutsche Zeitung, Frankfurter Allgemeine Zeitung, and BILD)	2008-2013	208 articles (online and print)
Olsen and Osmudsen (2017) and Osmudsen and Olsen (2017)	Norway	Salmon aquaculture	9 Norwegian newspapers (Debate contributions)	2012-2014	273 debate contributions
Liu et al. (2016)	Norway	Salmon aquaculture	Media reports in different sources (online, newspapers, television) provided by Norwegian Seafood Council	2007-2013	More than 1,000 media reports per month
Sha et al. (2015)	US	Salmon aquaculture	US newspaper articles regarding PCB contaminants in farmed salmon, obtained by Lexis-Nexis database	Feb 2004 - Dec 2006	140 news aprox (average of news 4 per month)
Bocking (2010)	Canada	Salmon aquaculture	Canadian databases of newspapers and magazines	1982-2007	1,261 text units
Amberg and Hall (2008)	US	Salmon aquaculture	US newspaper articles hosted on three online newspaper databases: LexisNexis, ProQuest, and EBSCO Host	2000-2005	206 articles

MASS MEDIA VARIABLES & AQUACULTURE DEMAND

- ☐ Tone / valence of the content (Feucht and Zander, 2017): Negative / Neutral / Positive
- ☐ Relation to aquaculture: Medium / Large
- ☐ Content / agenda (Feucht and Zander, 2017): Economy / Environment / Human health / Animal welfare / Regulation
- ☐ Size: Small / Medium / Large (Coding pending of decisión, e.g. words, sentences,...)
- ☐ Depth of the content (Sha et al., 2015): Technical vs Divulgative
- ☐ Picture / Video: Yes / No (cualitative analysis of content)
- ☐ Geographical scope (text content, no newspaper scope) (Olsen and Osmundsen, 2017): National (or global/international) / Regional / Local

MASS MEDIA VARIABLES & AQUACULTURE DEMAND

- ❑ **Tone / valence of the content** (Feucht and Zander, 2017):
 - ❑ **Negative:** Emphasizing predominantly negative aspects of aquaculture (e.g., risks for the environment) and uses words like 'factory farming' and/or describes fish farms as intensive mass production
 - ❑ **Neutral:** Referring to aquaculture in a well-balanced manner. The message of this tone can be summarized as follows: Aquaculture bears risks as well as benefits
 - ❑ **Positive:** Highlighting mostly advantages/benefits of aquaculture like the high culinary value of farmed products or the promising economic prospects of the sector

MASS MEDIA VARIABLES & AQUACULTURE DEMAND

❑ Content / agenda (Feucht and Zander, 2017):

- ❑ **Economy:** Which focuses on the economic aspects of aquaculture, e.g., 'business opportunity of the future'. Aspects: Prospects of the sector / Production description.
- ❑ **Environment:** Which referred to environmentally relevant issues (e.g., biodiversity, energy consumption) in connection with aquaculture. Aspects: Environmental risks / Environmental protection / Use of resources / Genetic engineering.
- ❑ **Human health:** Which points out risks and/or benefits to human health including the source of the risks/benefits, e.g., '[...] illegal, carcinogenic pesticides are used against parasites' (FAZ, 2010). Aspects: Good for human health / Risk for human health.
- ❑ **Animal welfare:** Which focuses on the animal welfare of farmed aquatic species. Also if words like 'fish welfare' and 'animal cruelty' are used in the context of aquaculture. Aspects: Appropriate husbandry / Animal health
- ❑ **Regulation:** Which refers to regulatory aspects with respect to aquaculture, e.g., food safety issues or the control regime in general. Aspects: Regulation and control on national level / Impact of the EU / Conflict of interest

PROPOSAL OF AN INDEX TO MEASURE MASS MEDIA COVERAGE OF AQUACULTURE

SIMPLIFIED INDEX

$$I_t = \sum_{n=1}^N (v_n \cdot r_n \cdot c_n \cdot s_n)$$

I = value of the index for period t

t = period of time

n = news

v = valence, where

Negative = -1.00

Neutral = 0.50

Positive = 1.00

r = relation with aquaculture, where

Medium = 0.50

Strong = 1.00

c = content (main), where

Economy = 0.75

Environment = 0.75

Human health = 1.00

Animal welfare = 0.50

Regulation = 0.50

s = size, where

Small = 0.50

Medium = 0.75

Large = 1.00

PROPOSAL OF AN INDEX TO MEASURE MASS MEDIA COVERAGE OF AQUACULTURE

EXTENDED INDEX

$$I_t = \sum_{n=1}^N (v_n \cdot r_n \cdot c_n \cdot s_n \cdot d_n \cdot p_n \cdot g_n)$$

I = value of the index for period t

t = period of time

n = news

v = valence, where

Negative = -1.00

Neutral = 0.50

Positive = 1.00

r = relation with aquaculture, where

Medium = 0.50

Strong = 1.00

c = content (main), where

Economy = 0.75

Environment = 0.75

Human health = 1.00

Animal welfare = 0.50

Regulation = 0.50

s = size, where

Small = 0.50

Medium = 0.75

Large = 1.00

d = depth of the content, where

Technical = 0.50

Divulgative = 1.00

p = picture/video, where

Yes = 1.00

No = 0.75

g = geographical scope, where

International = 0.75

National = 1.00

DEBATE ON MASS MEDIA COVERAGE

VARIABLES MEASUREMENT

v = valence, where

Negative = -1.00

Neutral = 0.50

Positive = 1.00

r = relation with aquaculture, where

Medium = 0.50

Strong = 1.00

c = content (main), where

Economy = 0.75

Environment = 0.75

Human health = 1.00

Animal welfare = 0.50

Regulation = 0.50

s = size, where

Small = 0.50

Medium = 0.75

Large = 1.00

d = depth of the content, where

Technical = 0.50

Divulgative = 1.00

p = picture/video, where

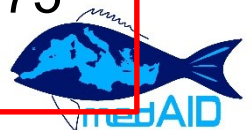
Yes = 1.00

No = 0.75

g = geographical scope, where

International = 0.75

National = 1.00



FIELD WORK: SPAIN 2013-2017

Search Methodology

- ☐ Geographical scope: SPAIN
- ☐ Aquaculture type: Aquaculture in general and specific species (Sea bass / Sea bream / Salmon / Panga)
- ☐ Media coverage: 5 main national newspapers in Spain ONLINE VERSION (El País, El Mundo, ABC, La Razón, La Vanguardia)
- ☐ Period studied: 2013 – 2017.
- ☐ Keywords used:

Aquaculture*

Sea bass

Marine resources

Pisciculture*

Sea bream

Fishery resources

Fish farm(-ing)

Salmon

Fishing overexploitation

Farmed fish

Panga



* Main keyword and derivations



FIELD WORK: SPAIN 2013-2017

News registered and classification

- ❑ Total news found: 3,381 news including at least 1 keyword
- ❑ Relevant news found: 305 news related to aquaculture

Newspaper	Total news	Total related to aquaculture
ABC	812	92
El Mundo	724	19
El País	900	88
La Razón	466	54
La Vanguardia	479	52
TOTAL	3.381	305

- ❑ Selection procedure: independent evaluation, and subsequent coordination of findings, by 2 referees

FIELD WORK: SPAIN 2013-2017

News registered and classification

YEAR	High Relation	Medium Relation	Total
2013	12	39	51
2014	7	42	49
2015	5	41	46
2016	19	63	82
2017	35	42	77
TOTAL	78	227	305

NEXT STAGE: CONTENT ANALYSIS

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