

# A Corpus-Based Approach to Understanding Market Access in Fisheries and Aquaculture: A Systematic Literature Review

Cheryl Marie Cordeiro

**Abstract**—Although fisheries and aquaculture studies might seem marginal to international business (IB) studies in general, fisheries and aquaculture IB (FAIB) management is currently facing increasing pressure to meet global demand and consumption for fish in the next coming decades. In part address to this challenge, the purpose of this systematic review of literature (SLR) study is to investigate the use of the term ‘market access’ in its context of use in the generic literature and business sector discourse, in comparison to the more specific literature and discourse in fisheries, aquaculture and seafood. This SLR aims to uncover the knowledge/interest gaps between the academic subject discourses and business sector practices. Corpus driven in methodology and using a triangulation method of three different text analysis software including AntConc, VOSviewer and Web of Science (WoS) analytics, the SLR results indicate a gap in conceptual knowledge and business practices in how ‘market access’ is conceived and used in the context of the pharmaceutical healthcare industry and FAIB research and practice. While it is acknowledged that the product orientation of different business sectors might differ, this SLR study works with the assumption that both business sectors are global in orientation. These business sectors are complex in their operations from product to market. This SLR suggests a conceptual model in understanding the challenges, the potential barriers as well as avenues for solutions to developing market access for FAIB.

**Keywords**—Market access, fisheries and aquaculture, international business, systematic literature review.

## I. INTRODUCTION

GIVEN the uneven distribution of natural resources where the cold arctic waters favour the breeding and harvesting of certain species of fish, the fisheries and aquaculture business sector is inherently international in its outlook. Fish account for about 17% of animal protein consumed globally, providing approximately 44% of the human population with 20% of their animal protein needs [1]. In the period of five decades, global fish<sup>1</sup> consumption peaked in 2016 at about 171 million tonnes with aquaculture towards human food consumption accounting for 47% [2]. Between 1961 and 2016, the average annual increase in global human food fish

consumption (3.2%) outpaced our own population growth (1.6%). Human appetite for fish increased about 1.5% per year in the past five decades. In per capita terms, we consumed fish from 9 kg in 1961 to 20.2 kg in 2015. These facts and numbers assume an understanding of global value chain management and market access on the part of fisheries and aquaculture. Yet, a literature search for ‘market access’ in the fisheries and aquaculture literature seem to indicate not only a marginal use of the term, but a fragmented perspective the definition of the term market access in FAIB and research [3]. But why would a more cohesive use of term in an inherently global business sector so encompassing of its various processes and actors prove useful?

Language, as a cognitive socio-functional tool and facilitator of transactional processes, has the capacity to create and shape human perception of reality [4], [5]. Language used in context and use of shared terminology lays a foundation for smoother cross-border operations and negotiations, especially within FAIB that faces the twofold challenge of accounting for conservation as well as exploitation of a single fish resource base. In address to this challenge, scholars have developed various bio-economic models and decision support systems where the approach to fisheries management problem solving takes into consideration human social welfare [6]-[10]. Because the global fish production sector is expected to grow in the next decade, even if wild fish capture has levelled and aquaculture slows down [1], the global community currently faces a disparity while making progress towards the 2030 Agenda for Sustainable Development and Zero Hunger. The sustainability gap between developed and developing economies, partially resulted from increased interdependencies and limited management and governance capacity in developing economies, makes accounting for depth of access to various global markets challenging and obscure.

The objective of this study is to provide a SLR towards a deeper understanding of how the term ‘market access’ is used in current FAIB discourse. Fisheries and aquaculture are an innovation rich and knowledge intensive business sector where university-industry collaboration is high from the welfare of fish in fisheries management to the consumer’s dining table and preferences [11]-[14]. The high university-industry collaboration leads to the working assumption in this SLR that academic discourse to some extent reflects industry discourse. A deeper understanding of how the term ‘market access’ is used in context in the fisheries and aquaculture is fundamental due to the inherent integrated systemic workings

C. M. Cordeiro is Market Scientist at the Department of Marketing Research at the Norwegian Institute of Food, Fisheries and Aquaculture Research (NOFIMA) (phone: +47 948 30 793; e-mail: cheryl.cordeiro@nofima.no).

<sup>1</sup> The term ‘fish’ is used in accordance to the Food and Agriculture Organization of the United Nations (FAO 2018) definition referring to fish, crustaceans, molluscs and other aquatic animals. The term excludes aquatic mammals, reptiles, seaweeds and other aquatic plants. The term ‘fish’ is also used in synonymous exchange with the term ‘seafood’.

of the fisheries sector along its entire global value chain. This SLR uses a corpus driven approach in addressing the use of the term 'market access' as reflected in FAIB research. The tripartite objective of this study:

- i. to identify how the term 'market access' is used in the general context of academic literature and research.
- ii. to identify how the term 'market access' is used in FAIB research.
- iii. to discuss the challenges this literature presents for FAIB research and business sector processes.

The contribution of this study is twofold that includes an empirical illustration of (i) new applications of language-based research methodology, and suggests a (ii) theoretical integration of a consolidated understanding of the subject of fisheries and aquaculture at a systems perspective level, lending insight to potential avenues of research in the field. Corpus driven, it contributes a novel and complementary perspective on literature review through a triangulation of methods of text corpus data analysis. This SLR combines the use of a word concordance software program called AntConc version 3.4 [15], [16], a bibliometric analysis software for visualisation of similarities, VOSviewer [17] and WoS data analytics in uncovering the manner in which the term market access is used in academic research and discourse. From the intended second contribution (ii) above, it is plausible that industry-university collaborations would over time, influence professional discourse towards a greater cohesive use of the term market access for the purposes of more efficient cross-border business communication and negotiations in FAIB.

#### *A. Market Access: Normative Definitions*

A formal normative definition comes from the Oxford Dictionary defines market access as, "The freedom to buy or sell in a market. Market access may not be available for natural or institutionally imposed reasons. Natural obstacles include distance and inability to meet the requirements of customers; institutional obstacles include legal restrictions on entry, tariffs and quotas, and public procurement rules excluding possible suppliers. Inability to compete on price may result from nature or policy; in increasing returns industries, lack of access to some markets limits total output and may cause high costs. Similarly, in industries where technical progress is partly due to learning by doing, past lack of market access contributes to present inability to compete. With the ongoing development of online trade, e-commerce, and peer-to-peer internet markets, access to internet is gaining importance in market access both for buyers and sellers" [18].

Normative definitions of the term 'market access' were retrieved through a general keyword search via Google and YouTube. Google results for 'market access' renders approximately 1.1 million return hits, of which, the top hits belong to Wikipedia, Investopedia and the European Commission. These definitions that cross between practitioner and academic contexts seem to highlight both formal and informal use in the context of international business and trade (IBT). The general connotation for the use of the term as reflected in the Oxford Dictionary definition is that market

access refers to a company's facilitation to sell goods and services across borders that is not necessarily equivalent to free trade.

In accordance to the normative view of market access, at the intersection of international trade and economic geography, market access is an entity that can be measured through a theoretical framework derived from a logit demand system based on trade flows that benchmark trade patterns. Market access challenges are mapped after supply and demand capacity, bilateral frictions such as imposed tariffs, as well as the impact of multilateralisation liberalisation of trade flows [19].

The top 50 retrieved hits from Google also indicated that the term market access has apparent etymology in word use in the pharmaceutical industry as means to healthcare marketing [20]. It could be observed that due to the term originating in the pharmaceutical and healthcare marketing industry, that healthcare marketing market access models show up more prominently in the retrieved results:

"Principally market access involves preparing a positive environment which supports uptake of your product and demonstrating the 'value' of your product to the range of customers who influence uptake. Strategically, market access is about packaging data in the right way, for the right customer at the right time" [21].

Top ranked YouTube retrieved findings reflect a similar pattern of the term market access being used in mostly the pharmaceutical and healthcare industry. Set in an uncertain environment in a context of advancing medical and healthcare technologies, market access in this industry sector is complex, sometimes even controversial. Bringing a new medicine to market is dependent upon several factors including its research and development (R&D) budget, government regulations on new medicines, employers, private insurance companies and the patient themselves who demand better treatments to be made available in greater parts of the world where increasingly in some countries, there exists an aging population demography. While there is genuine interest for the pharmaceutical industry to provide better treatments approved by different governments around the globe, the context of market access for new medicines in terms of pricing and patient accessibility is a sensitive issue that is emotionally and politically charged [22]. As such, an efficient communication strategy is one means of improved market access in this industry, taking into consideration various stakeholders situated at different societal and regional sectors that include scientists, key opinion leaders (KOL), patients, non-governmental organizations (NGOs) as well as government institutions. Fig. 1 illustrates the elements collected from an industry practitioner perspective on what constitutes an efficient market access communication strategy for pharmaceutical and healthcare enterprises.

Since language is a living entity that travels and evolves with its users, practitioners and scientists have adopted and adapted the term 'market access' to their own fields of study, necessarily keeping its multi-dimensional, multi-actor

perspectives. It is this aspect of market access in context of use across various fields of study that this research aims to

map to gain a deeper understanding of the term as it is used in the field of fisheries and aquaculture.

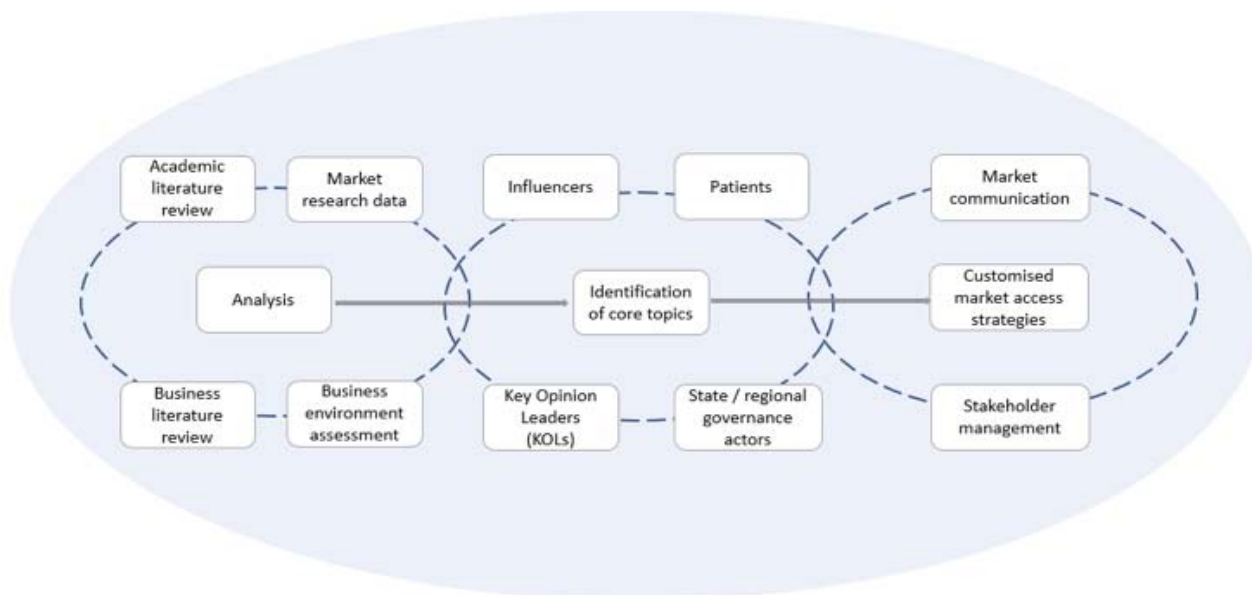


Fig. 1 Market access model from a pharmaceutical and healthcare industry practitioner perspective

## II. METHOD

Corpus driven, this SLR uses bibliometric analysis in combination (VOSviewer and WoS analytics) with text corpus analysis (AntConc). Modelling on other reviews in IB studies and cognate fields of research [23]-[27], the review process began with a keyword search for 'market access' in scientific databases such as PubMed, Scopus, Karnov, Nationalencyklopedin, Mediearkivet and WoS indexes. The range of selection of various bibliographic databases is due to the different accessibilities, subject orientations and utilities that may result in different types of retrieved documents [28], [29]. WoS for example allows for bibliographic information download of up to five thousand documents per time in the event of analysing very large datasets. It also has its own bibliographic analysis output in various visual formats (bar graphs to tree diagrams) that allows for easy comparison of different data sets.

To compare review results between the generic use of the term market access across all disciplines and for market access as it is used in context in the aquaculture and fisheries field, other keyword searches included 'market access + seafood', 'market access + aquaculture' and 'market access + fisheries' were done. As the purpose of this review is to understand how the words 'market access' is used in context, a corpus driven approach is taken when retrieving review data, prioritising documents of highest relevance as ranked by the search engines first. The retrieved results were scoped for peer review academic publications, as well as English as the publishing language. Because the term 'market access' began to gain traction from after 1970s, the retrieved results were also narrowed to focus on publications from the 1980s to 2018, spanning about 40 years of research literature.

The top 50 retrieved articles from each search string from the databases were saved in plain text format in order to create four parallel corpora for the term 'market access' as used in various fields of study that could then be analysed using AntConc 3.5.7. AntConc is a computer freeware linguistic tool that enables for the systematic analysis of words/groups of words as used in context (keyword-in-context or KWIC) from a created corpus. AntConc can be used for any language corpora that are supported by Unicode, although in this review, the corpus consists of English language texts. Full regular expressions for complex word searches can be used. Word collocation and correlations can also be uncovered using AntConc, illustrating certain statistical probabilities of co-occurrences of words in the corpus, which is useful towards tracing semantic variations. Distribution plots illustrating how frequently a word is used in each file can be uncovered using the concordance plot feature. Due to the large database retrieved in this SLR, the reference section will only include articles cited in reference to conducting SLRs, and to citations directly used in this study when conducting the SLR.

While AntConc is used for 'market access' KWIC searches based on sets of full text documents, the bibliometric analysis freeware VOSviewer is used for the structural analysis of different fields of bibliographic information in a journal article, creating visual bibliometric networks. Bibliometrics is a method of quantitative analysis of articles published in a specific research field. It allows for an evaluation of the impact in quality performance of scientific publications using bibliometric indicators such as titles, authors, abstracts, citations and other information sources. It visualises the strength of co-occurrences of keywords and citations within and across disciplines. Keyword searches using the four strings, 'market access', 'market access + seafood', 'market

access + aquaculture' and 'market access + fisheries' were conducted in the WoS<sup>2</sup> indexes. Similar to AntConc, VOSviewer uses natural language processing techniques, and a text corpus can be created from the files extracted from WoS indexes. The most generic search string 'market access' for example, retrieved a database of articles published between 1966 and 2018 with 27,166 files for which visual representations of co-occurrences of search terms can be correlated.

### III. FINDINGS

#### A. Market Access as Key Term across Disciplines

Over a million (1,096,026) return hits were found using a search for the key words 'market access' for publications occurring between 1980 to 2018 across six consolidated scientific databases that include PubMed, Scopus, Karnov, Cinahl, Nationalencyklopedin and Mediearkivet. English language journal articles dominated in the retrieved findings with 1,082,286 hits, with Spanish (6,230), French (5,775) and Portuguese (4,544) language articles following. The top 50 articles were published in 38 different journals. The journal titles are taken as indication of their field of research.

Reflecting the normative definition of 'market access' found in generic search engines such as Google and YouTube, academic literature indicated that 'market access' appeared most within the fields of pharmaceutical and health studies, followed by the field of economics studies. The journal with most publications with 'market access' as key term is the *Journal of Market Access and Health Policy*, with five publications. Following this are *World Development* and *Applied Economics* with three publications each, then *Journal of World Trade*, *Economic Letters*, *Frontiers in Pharmacology* and *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing* with two publications each.

The top 54 most relevant ranked articles retrieved were used to create a full text corpus for a word collocation and KWIC analysis using AntConc. The corpus had a total of 19,288-word types and 481,099-word tokens. Fig. 2 shows market access word clusters that occur ranked top 20 in accordance to frequency and in clusters of maximum four words. Reflected in the word clusters analysis for the key term 'market access' is the myriad of facets of study surrounding the key term from 'market access strategy/strategies' (Ranks 6 and 17), market access contexts (Ranks 7, 13 and 15) to market access challenges and influences (Ranks 19 and 20). Of key relevance to this SLR study is how 'market access' is defined in this corpus. This can be retrieved by conducting a KWIC concordance analysis reflected in Rank 4 with the words 'market access is', where *is*, the existential verb of the form *be*, is used to assert the existence or non-existence of a phenomenon/circumstance.

<sup>2</sup> Web of Science (WoS) was originally produced by the Institute for Scientific Information (ISI), and is currently maintained by Clarivate Analytics. It provides a comprehensive citation search. Web of Science Indexes include SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI.

The corpus findings show that in this generic, across disciplines 'market access' key term search, market access is weighted heavily in some literature with high modality (high necessity/possibility) and affect. It is a "fundamental requirement for the global liberalization of trade" [30, p.41] and market access is indeed the most important aim of the European Union. Similar to the underlying assumption made in this SLR study for why it is important to have a common understanding of market access in fisheries and aquaculture research is iterated in the field of pharmaceutical studies with similar use of high modality and affect, "A common understanding of what is meant by market access is *essential* to the development and accessibility of medicines and devices that *will benefit* patients" [31, p.9]. It is also seen that market access is influenced by other circumstances, "the current high level of revealed *restrictions in market access* is a persistent phenomenon," [19, p.1043], "market access is *driven* by the regulatory environment, public institutions and network industries" [32, p.1833], as well as being an influencer of some other circumstances, "market access is *a significant determinant* of wages for all firm types" [33, p.69]. The call for a common understanding of the use of term 'market access' is perhaps the result of an understanding that market access is not a simple issue itself. Rather, "market access is a broader concept that involves three sets of characteristics: the regulatory environment; public institutions; and network industries." [32, p.1843]. It also "involves other drivers beyond the right trade policy environment" [32, p.1834]. In this benchmark work on the study of market access, the acknowledgement that "market access is a slippery concept to define and an even more difficult concept to measure" [32, p. 1833] led to the authors constructing for the first time, a market access index (MAI) for a large sample of world economies.

Fig. 3 is the VOSviewer clustering of subjects for the search term 'market access' and its nearest associated fields of study from the indexes of WoS database. The clustering results in are based on a text corpus that contains 21,511 documents, published between 1966 and 2019. The range of document types retrieved from WoS is comprehensive, with the top five genres being journal articles (19,929), conference proceedings (1,118), reviews (983), editorial material (286) and meeting abstracts (248). The top nine subjects ranked by more than 1000 record articles retrieved for the WoS database associated with market access studies include economics (4,836), business (1,356), management (1,351), environmental studies (1,277), planning development (1,181), public environmental occupational health (1,054), business finance (1,040), health policy services (1016), and health care sciences services (1,009). The VOSviewer clustering shows the subjects with strongest relevant association. Notable is that 'market access' in itself belongs to one of the smaller clusters of topic/subjects compared to 'education', 'health' and 'economics'. Fields of study with the strongest links are shown with connecting curved lines, the thicker the line, the stronger the connection between subjects. Although 'economics', 'finance' and 'value' in the purple cluster form the greatest number of publications

in the WoS indexes with regard to ‘market access’, it seems however to be often studied more explicitly in correlation with ‘health’ and ‘value’, where one could assume topics as value-

added products or services, and value chain analysis if situated within the clustering realm of economics, finance and IB studies.

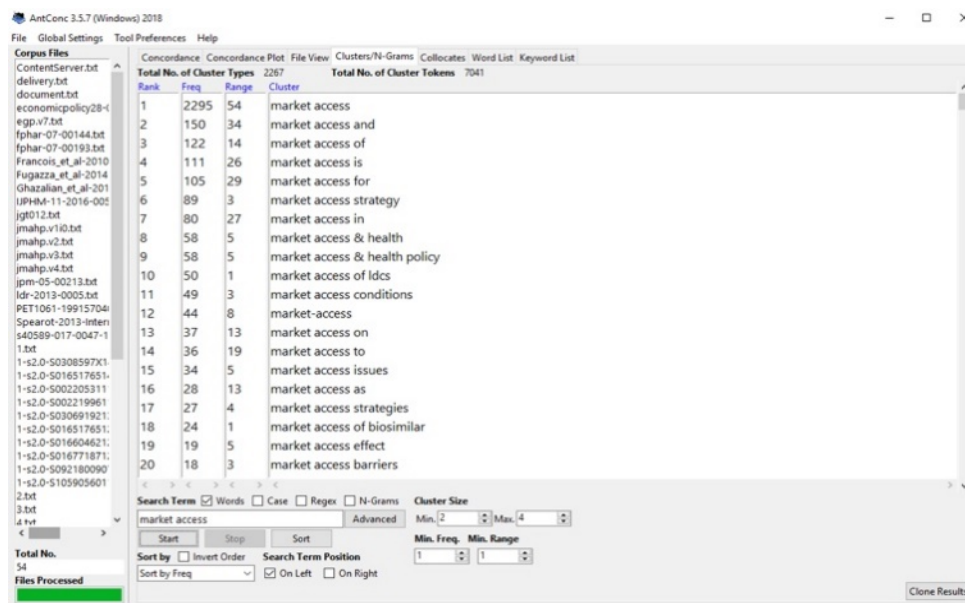


Fig. 2 AntConc word concordance results for the key term ‘market access’ only, showing ‘market access’ 4-word clusters ranked by frequency of occurrences, top 20

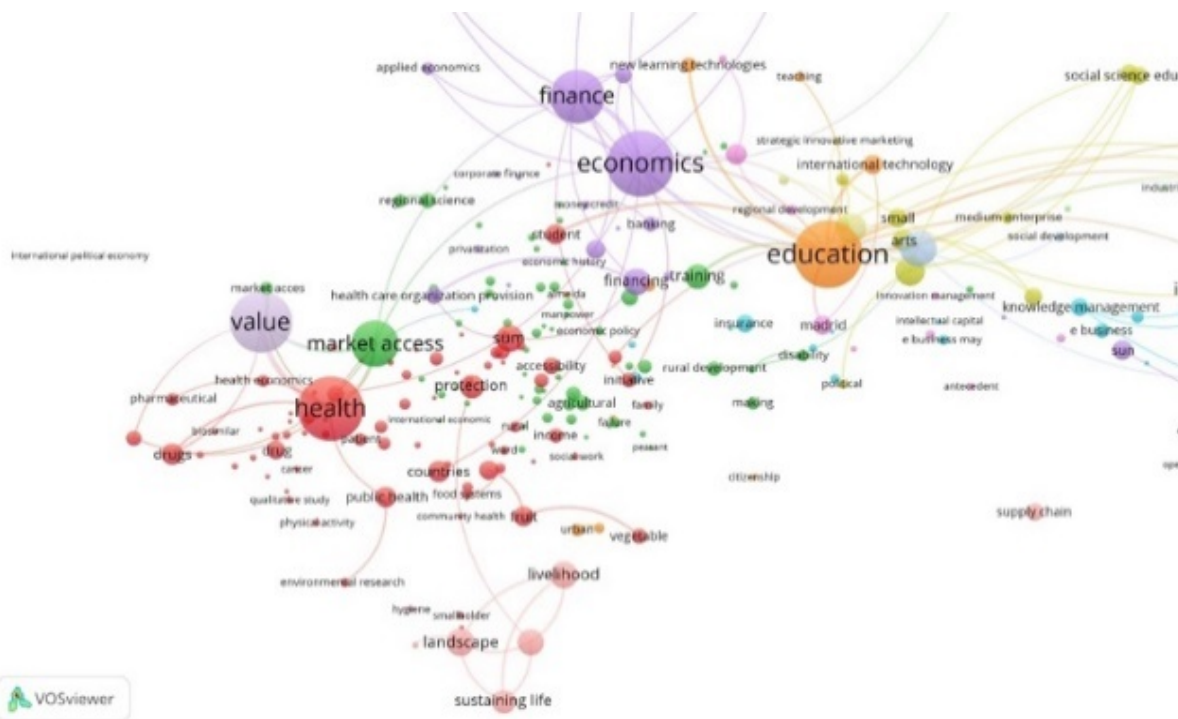


Fig. 3 VOSviewer for search the key term ‘market access’ and its related fields of study reflected in the WoS indexes for publications between 1966 and 2019 based on approximately 21,500 retrieved documents

In synopsis, the generic search for key term ‘market access’ and the resulting VOSviewer clustering gives important insight into how the key term is used across disciplines, highlighting the fact that ‘market access’ is most often used in

subjects related to the business of healthcare and global development. This SLR study now turns to text corpuses that can provide a KWIC analysis of ‘market access + fisheries’, ‘market access + aquaculture’ and ‘market access + seafood’.

*B. Market Access in Fisheries Research*

The key term ‘market access + fisheries’ had 32,811 return hits for journal articles published between 1980 to 2018 across six consolidated scientific databases that include PubMed, Scopus, Karnov, Cinahl, Nationalencyklopedin and Mediearkivet. English language journal articles dominated in

the retrieved findings with 31,627 hits, followed by French (206), Spanish (160), Portuguese (117) and Chinese (104) articles. The top 50 articles were published in 26 different journals. The journal titles are taken as indication of their field of research.



Fig. 4 WoS key term ‘market access + fisheries’ subject dispersion for 238 documents retrieved



Fig. 5 WoS key term ‘market access + aquaculture’ subject dispersion for 89 documents retrieved

The WoS indexes (Fig. 4) returned 238 document hits for the key term search ‘market access + fisheries’, with publications between 1991 and 2018. The documents ranged in genres from articles, reviews, proceeding papers, book chapters and meeting abstracts. While the top 50 articles give an indication of journal titles and article titles, a larger corpus database was formed using the 238 documents saved in plain text format so that a KWIC analysis can be conducted. This resulting text corpus from the 238 documents contained 48 171-word types and 1,624,224-word tokens.

Distinct in this text corpus is a lack of concrete definition for ‘market access’ as used in fisheries studies. KWIC analysis findings for the phrase “market access is” as described using variations of the verb *be* returned three results that include:

“Market access is indicated solely as fluvial travel distance to Manaus because the studied section of the Purus River contains no roads, and all transport is via the river network” [34, p.8658].

“To reverse this situation, the creation of stronger fishers’ and traders’ associations and cooperatives could help in attaining better marketing conditions, as collective bargaining power and market access is likely to increase” [35, p.38].

“Market access is likely to further improve, particularly if the sea cucumber fishery is reopened and/or shark fin prices increase. Therefore, low-cost, community-based management of shark resources based on the allocation of allowable shark catches to ward



communities is recommended” [36, p.43].

Notable in the literature for fisheries for ‘market access *is*’ are material descriptions of geographic access connected to (i) a place and how market access is influenced by (ii) industry cooperatives and policy as well as (iii) the availability of material resources supported by industry policies. The KWIC analysis reveals contests of interests based on the (i) limited resources that includes the capacity of government institutions and state policy influence on market access and (ii) power struggles at international levels over globally applicable ecological labelling for sustainable fish products.

#### C. Market Access in Aquaculture Research

The key term ‘market access + aquaculture’ had 10,564 return hits for journal articles published between 1980 to 2018 across six consolidated scientific databases that include PubMed, Scopus, Karnov, Cinahl, Nationalencyklopedin and Mediearkivet. English language articles dominated in the retrieved findings with 10,494 hits, followed by Spanish (76), Portuguese (50) and French (42) articles. The top 50 articles were published in 18 different journals.

Journal titles reflecting the word *aquaculture* such as *Aquaculture* (25 articles), *Aquaculture International* (3 articles) and *Aquaculture Research* (1 article) have the largest combined number of articles at 29 total. This subject dispersion is also reflected in Fig. 5, with the WoS indexes returning 89 document hits for the key term search ‘market access + aquaculture’. The publications are between 1999 and 2018 with the top six subject fields being related to environmental studies/sciences/marine freshwater biology (42 combined), fisheries (28), economics (23) and planning development (11).

The WoS documents ranged in genres from articles, reviews, proceeding papers and book chapters. A corpus database was formed using the total 89 documents saved in plain text format so that a KWIC analysis can be conducted. This resulting text corpus contained 32,430-word types and 684,860-word tokens. Findings indicated that consistent in this text corpus with that created from the documents of ‘market access + fisheries’ is a distinct lack of definition of market access as a term. The cluster for relational and existential verbs of *to be*, such as ‘market access *is*’ and ‘market access *are*’, occur (apart from methodological calculations) in correlation with understanding access to rural/urban areas, which are material socio-economic contexts of reference:

“While urban *market access is* almost certainly much higher than the 3% area that the baseline scenario suggests, the scenarios of deferential access of poor people to these markets support the notion that poor producers are at a disadvantage both in terms of the quality and in terms of the quantity of marketable fish that they can deliver to urban markets” [37, p.939].

“The expectations of better *market access are* also important for the application of standards. These motives are expressed as a desire to increase sales and they were ranked highly by 24% of farmers. In addition, buyers are accepting the product better if the standards are applied (Interview F5). The emphasis on improved *market access*

*is* sensible in light of the pangasius market characteristics” [38, p.240].

Common between the two KWIC occurrences is the focus on developing Southeast-Asian economies where aquaculture, that has been part of the Far East and Southeast-Asian tradition dating as far as 4000 years ago [39] is currently developing rapidly due to global demographic changes, advances in technology and influencing global economic forces.

#### D. Market Access in Seafood Research

The key term ‘market access + seafood’ had 7,997 return hits for journal articles published between 1980 to 2018 across six consolidated scientific databases that include PubMed, Scopus, Karnov, Cinahl, Nationalencyklopedin and Mediearkivet. English language articles dominated in the retrieved findings with 7,928 hits, followed by Spanish (54), Japanese (28) and Chinese (26) articles. The top 50 articles were published in 28 different journals. Journals explicitly focused towards policy making such as *Marine Policy*, *Food Policy*, and *Food Control* (that implies a focus on behavioural framework) seem to have most focus on seafood market access with a combined total of 18 articles. Other journal titles with two or more publications on market access and seafood include *Fisheries Research* (3 articles), *Chemosphere* (3 articles), *Ecological Economics* (2 articles), *Journal of Cleaner Production* (2 articles) and *International Journal of Food Microbiology* (2 articles). The WoS indexes returned a total of 53 documents for ‘market access + seafood’ published between 1999 and 2018. The subject dispersion is reflected in Fig. 6. Depending on how journal subject orientations are classified, the subject dispersion reflected in the WoS documents could be seen to imply a more global/international orientation for market access in relation to seafood. The top six subjects being environmental studies/sciences and fisheries (combined 34 articles), international relations (14), economics (19) and food science technology (5).

A subject specific text corpus for market access and seafood was created from the 53 WoS documents so that KWIC analyses could be conducted. This resulted in a corpus database of 22,580-word types and 395,138-word tokens.

Consistent with other text corpuses of the KWIC ‘market access’ in fisheries and aquaculture, the literature for ‘market access + seafood’ reflect no concrete definition of market access. The definition for market access is inferred from paradigmatic word relations. In the case of this particular text corpus, there exists no existential/relational verb *to be* in relation to market access, of which eco-labelling is one concern:

“Considering the high known costs and the uncertainty of benefits, a fishery must consider many factors—including how likely it is to be certified and maintain certification, and whether the market conditions are likely to bear price premiums or *market access for* ecolabeled products that would not be otherwise available to the fishery” [40, p. 1104].

“One IRF leader describes eco-certification as simply a

form of “verification of government fisheries management performance” which facilitates *market access for seafood*” [41, p. 28].

“The externally driven differentiation to recognise sustainability below and beyond the MSC may reward

higher ambitions for sustainability and provide funding opportunities and *market access for* small-scale fishermen (and thus deal with fundamental criticism of the label as it is), but the consequence may be the undermining of the scheme itself” [42, p.291].

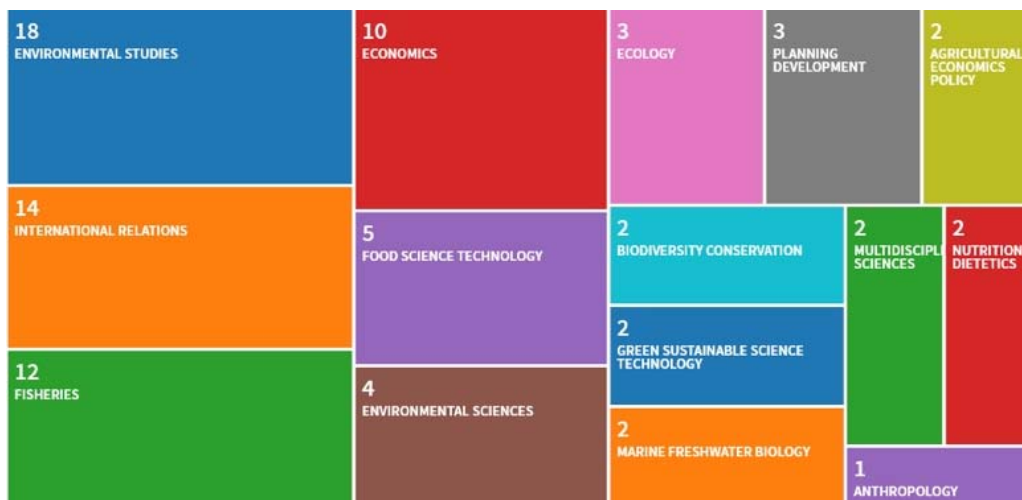


Fig. 6 WoS key term ‘market access + seafood’ subject dispersion for 53 documents retrieved

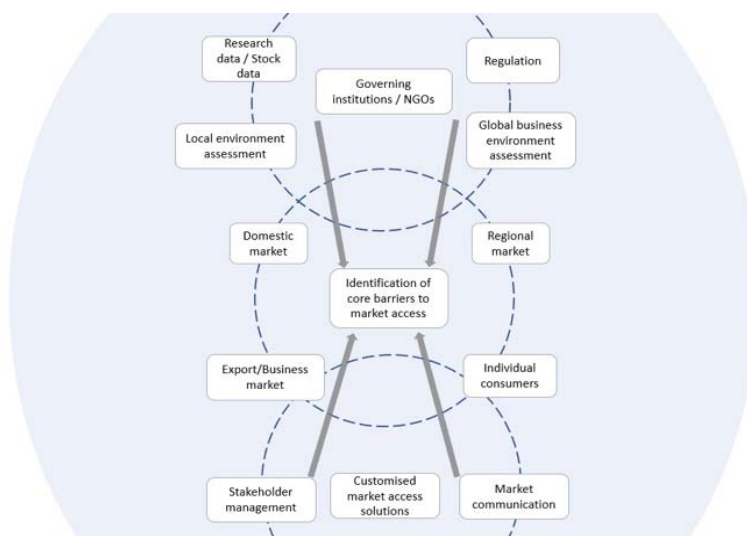


Fig. 7 Market access development model for FAIB

#### IV. FINDINGS AND DISCUSSION

The design of this SLR is to first take a broad sweep of the use of term ‘market access’ as it is used in context in general academic literature. Applying a funnel approach to text distillation, text corpuses were built with increasing subject specificity, using various academic databases with slightly different document retrieval methods and utilities. The top 50 retrieved documents ranked as most relevant by their search engines were used as indication of the subject interest and dispersion within each key term search. A further triangulated method of text analysis was conducted using three different types of software for text corpus analysis including (i) AntConc, (ii) VOSviewer and (iii) WoS analysis. The full text

corpuses were built mostly from WoS retrievals, where WoS seemed to return more subject specific documents and allowed for quick access downloads to full texts.

In answer to the first research question, the findings indicate that ‘market access’ in general academic literature is expectedly broad in subject dispersion. Market access seems most often discussed in the field of IB (economics, business and management), in close correlation with the pharmaceutical and healthcare industry as well as global development. The relatively early drive to study market access within the pharmaceutical and healthcare industry from the 1960s onwards, has resulted in a nuanced understanding of the term. As such, it is not uncommon to find the key term ‘market access’ co-occurring with communication strategies or



marketing strategies, where it is also understood that market access is a multistakeholder issue in a complex business environment.

A generic model of the use of term 'market access' and its elements is shown in Fig. 1 for the pharmaceutical and healthcare marketing industry. A likewise nuanced market access development model for the FAIB is shown in Fig. 7.

In answer to the second and third research question, while fisheries and aquaculture is not only inherently international in its orientation and outlook, thus the use of the term FAIB, the literature currently reflects a relatively less nuanced approach to the study of FAIB market access. Fig. 7 assumes that the business environment context for FAIB is no less uncertain and complex to navigate than any other IB context. FAIB is affected by technological social forces as well as forces of globalisation and international regulation in management of a globally limited resource base.

The term 'market access' began appearing in documents relating to fisheries research in the 1990s, its usage gaining attention just about in the early 2000s, where most KWIC analyses showed that market access is studied in direct relation to material infrastructure, as well as in address to issues of poverty. This is an important aspect because it indicates too, the current challenges that FAIB research face. In order to better manage the twofold challenge of global fish production that consists of accounting for conservation as well as exploitation of a single resource base, scholars have developed various bio-economic models and decision support systems where the approach to fisheries management problem solving takes into consideration human social welfare. Yet, as this SLR might indicate, one cannot access more sophisticated market access concepts such as that reflected in the pharmaceutical and healthcare marketing industry, if scholars/practitioners cannot move beyond the study and solving of challenges in relation to basic infrastructure, source of living income and food security within the field of FAIB.

#### V. CONCLUSION

Although FAIB studies might seem marginal to IB studies in general, FAIB management is currently facing increasing pressure to meet global demand and consumption for fish in the next coming decades. To that extent, the purpose of this SLR study aimed to investigate the use of the term 'market access' in its context of use in the generic literature and business sector discourse, comparing it to the more specific literature and discourse in fisheries, aquaculture and seafood in order to uncover the knowledge/interest gaps between the literatures.

Corpus driven, this SLR illustrated a gap in conceptual knowledge and business practices between different fields of research and business sectors. In particular, how market access is conceived, studied and managed in the pharmaceutical and healthcare marketing industry in comparison to fisheries and aquaculture. FAIB's complexity is directly acknowledged in the 2030 Agenda for Sustainable Development and Zero Hunger. To that extent, both research scholars and practitioners in the business sector will need to broaden their

efforts in understanding the multiplicity of forces that influences fisheries and aquaculture and its international orientation towards both emerging as well as mature markets. Fig. 13 is a conceptualization of the challenges and potential barriers as well as avenues for solutions to developing market access for FAIB.

#### REFERENCES

- [1] UN News (2018). New UN agriculture agency report underscores value of fishing in fight against global hunger, *United Nations (UN) News, Economic Development*, 9 July 2018. Internet resource at <https://news.un.org/en/story/2018/07/1014222>. Retrieved 19 Oct. 2018.
- [2] FAO (2018). The state of world fisheries, *Food and Agriculture Organization of the United Nations, FAO 2018 report*. Internet resource at <http://www.fao.org/publications/card/en/c/19540EN>. Retrieved 17 Oct. 2018.
- [3] Engelseth, P. (2016). Aligning end-to-end seafood supply through a series of markets. *International Journal of Production Economics*, 173, 99-110.
- [4] Lupyan, G. & Ward, E. (2013). Language can boost otherwise unseen objects into visual awareness. *Proceedings of the National Academy of Sciences*, 110(35), 14196-14201.
- [5] Whorf, B. L. (1956). *Language thought and reality: Selected writings of Benjamin Lee Whorf*. John B. Carroll (ed). New York, London: The Technology Press of Massachusetts Institute of Technology and John Wiley & Sons, Inc.
- [6] Garcia, D., Sánchez, S., Pallezo, R., Urtizberea, A. & Andrés, M. (2017). FLBEIA: A simulation model to conduct Bio-Economic evaluation of fisheries management strategies. *SoftwareX*, 6, 141-147.
- [7] Ives, M. C. & Scandol, J. P. (2013). BIOMAS: A bio-economic modelling and assessment system for fisheries management strategy evaluation. *Ecological Modelling*, 249, 42.
- [8] Bjørndal, T., Lane, D. & Weintraub, A. (2004). Operational research models and the management of fisheries and aquaculture: A review. *European Journal of Operational Research*, 156(3), 533-540.
- [9] Pauly, D., Palomares, M., Froese, R., Sa-a, P., Vakily, M., Preikshot, D., & Wallace, S. (2001). Fishing down Canadian aquatic food webs. *Canadian Journal of Fisheries and Aquatic Sciences*, 58(1), 51-62.
- [10] Ricker, W. E. (1975). Computation and interpretation of biological statistics of fish populations. Bulletin 191 of the Fisheries Research Board of Canada. Internet resource at <http://www.dfo-mpo.gc.ca/Library/1485.pdf>. Retrieved 19 Oct. 2018.
- [11] Joffre, O., Klerkx, L., Dickson, M. & Verdegem, M. (2017). How is innovation in aquaculture conceptualized and managed? A systematic literature review and reflection framework to inform analysis and action. *Aquaculture*, 470(C), 129-148.
- [12] Honkanen, P., & Young, J. (2015). What determines British consumers' motivation to buy sustainable seafood? *British Food Journal*, 117(4), 1289-1302.
- [13] Moreno, H. M., Montero, M. P., Gómez-Guillén, M. C., Fernández-Martin, F., Mørkøre, T. & Borderias, J. (2012). Collagen characteristics of farmed Atlantic salmon with firm and soft fillet texture. *Food Chemistry*, 134(2), 678-685.
- [14] Ødegård, J. & Olesen, I. (2011). Comparison of testing designs for genetic evaluation of social effects in aquaculture species. *Aquaculture*, 317(1), 74-78.
- [15] Anthony, L. (2013). Developing AntConc for a new generation of corpus linguists. *Proceedings of the Corpus Linguistics Conference (CL 2013)*, July 22-26, 2013. Lancaster University, UK, pp. 14-16. Internet resource at [http://www.laurenceanthony.net/research/20130722\\_26\\_cl\\_2013/cl\\_2013\\_paper\\_final.pdf](http://www.laurenceanthony.net/research/20130722_26_cl_2013/cl_2013_paper_final.pdf). Retrieved 23 Oct. 2018.
- [16] Anthony, L. (2018). AntConc (Version 3.5.7) (Computer Software). Tokyo, Japan: Waseda University. Internet resource at <http://www.laurenceanthony.net/software>. Retrieved 28 Sep. 2018.
- [17] Van Eck, N. J., & Waltman, L. (2007). VOS: A new method for visualizing similarities between objects. In: Decker R., Lenz H. J. (eds), *Advances in Data Analysis. Studies in Classification, Data Analysis, and Knowledge Organization*. Springer, Berlin, Heidelberg. DOI: [https://doi.org/10.1007/978-3-540-70981-7\\_34](https://doi.org/10.1007/978-3-540-70981-7_34).
- [18] Black, J., Hashimzade, N., & Myles, G. (2017). Market access. *A Dictionary of Economics*. Oxford University Press.

- [19] De Sousa, J., Mayer, T. & Zignago, S. (2012). Market access in global and regional trade. *Regional Science and Urban Economics*, 42(6), 1037-1052.
- [20] Glasspool, J. (2013). Market access is dead: Patient access is the new prescription for healthcare marketing. *PharmExec.com*. Internet resource at <http://www.pharmexec.com/market-access-dead-patient-access-new-prescription-healthcare-marketing>. Retrieved 26 Sep. 2018.
- [21] Chaudhury, H. (2018). Market access focus: What does modern market access really mean? *Pharmafield Magazine*. Internet resource at [https://www.pharmafield.co.uk/in\\_depth/market-access-focus-what-does-modern-market-access-really-mean/](https://www.pharmafield.co.uk/in_depth/market-access-focus-what-does-modern-market-access-really-mean/). Retrieved 26 Sep. 2018.
- [22] Hulshof, J. (2012). Simon-Kucher expert talk: Drug pricing and market access. *Simon-Kucher & Partners Strategy & Marketing Consultants*, 1 Oct. 2012. Internet resource at <https://youtu.be/pkaZKaRlYlo>. Retrieved 29 Oct. 2018.
- [23] Rosado-Serrano et.al (2018). International Franchising: A Literature Review and Research Agenda. *Journal of Business Research*. 85 (238-257). <https://doi.org/10.1016/j.jbusres.2017.12.049>.
- [24] Paul, J., & Benito, G. R. (2018). A review of research on outward foreign direct investment from emerging countries, including China: What do we know, how do we know, and where should we be heading? *Asia Pacific Business Review*, 24(1), 90-115.
- [25] Paul, J., Parthasarathy, S., & Gupta, P. (2017). Exporting challenges of SMEs: A review and future research agenda. *Journal of World Business*, 52(3), 327-342.
- [26] Canabal, A., & White III, G. O. (2008). Entry mode research: Past and future. *International Business Review*, 17(3), 267-284.
- [27] Rialp, A., Rialp, J., & Knight, G. A. (2005). The Phenomenon of Early Internationalizing Firms: What Do We Know After a Decade (1993–2003) of Scientific Inquiry? *International Business Review*, 14(2), 147-166.
- [28] Kokol, P. & Vosner, H. B. (2018). Discrepancies among Scopus, Web of Science, and PubMed coverage of funding information in medical journal articles. *Journal of the Medical Library Association*, 106(1), 81-86.
- [29] Falagas, M., Pitsouni, E., Malietzis, G., & Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: Strengths and weaknesses. *FASEB Journal: Official Publication of the Federation of American Societies for Experimental Biology*, 22(2), 338-42.
- [30] Fillat-Castejón, C. (2018). Restrictive or expansive selection: The uneven role of tariff structure in improving market access. *Journal of Economic Policy Reform*, 21(1), 39-58.
- [31] Sendyona, S., Odeyemi, I., & Maman, K. (2016). Perceptions and factors affecting pharmaceutical market access: Results from a literature review and survey of stakeholders in different settings. *Journal of Market Access & Health Policy*, 4(1), 1-10.
- [32] Squalli, J., Wilson, K., & Hugo, S. (2010). An analysis of market access. *Applied Economics*, 42(14), 1833-1844.
- [33] Kamal, F., Lovely, M. & Ouyang, P. (2012). Does deeper integration enhance spatial advantages? Market access and wage growth in China. *International Review of Economics and Finance*, 23(C), 59-74.
- [34] Tregidgo, D., Barlow, J., Pompeu, P., De Almeida Rocha, M., & Parry, L. (2017). Rainforest metropolis casts 1,000-km defaunation shadow. *Proceedings of the National Academy of Sciences of the United States of America*, 114(32), 8655-8659.
- [35] Rodrigues, G., J. & Villasante, S. (2016). Disentangling seafood value chains: Tourism and the local market driving small-scale fisheries. *Marine Policy*, 74(C), 33-42.
- [36] Vieira, S., Kinch, J., White, W. & Yaman, L. (2017). Artisanal shark fishing in the Louisiade Archipelago, Papua New Guinea: Socio-economic characteristics and management options. *Ocean and Coastal Management*, 137, 43-56.
- [37] Van Brakel, M. L., & Ross, L. G. (2011). Aquaculture development and scenarios of change in fish trade and market access for the poor in Cambodia. (Report). *Aquaculture Research*, 42(7), 931-942.
- [38] Trifković, N. (2014). Certified standards and vertical coordination in aquaculture: The case of pangasius from Vietnam. *Aquaculture*, 433(C), 235-246.
- [39] Rabanal, H. (1988). *History of Aquaculture*, ASEAN/SF/88/Tech 7. Food and Agriculture Organization of the United Nations, ASEAN/UNDP/FAO Regional Small-Scale Coastal Fisheries Development Project, Manila, Philippines. Internet resource at <http://www.fao.org/docrep/field/009/ag158e/AG158E00.htm#TOC>. Retrieved 8 Nov. 2018.
- [40] Goyert, W., Sagarin, R. & Annala, J. (2010). The promise and pitfalls of Marine Stewardship Council certification: Maine lobster as a case study. *Marine Policy*, 34(5), 1103-1109.
- [41] Foley, P. & Havice, E. (2016). The rise of territorial eco-certifications: New politics of transnational sustainability governance in the fishery sector. *Geoforum*, 69(C), 24-33.
- [42] Bush, S., Toonen, H., Oosterveer, P. & Mol, A. (2013). The 'devils triangle' of MSC certification: Balancing credibility, accessibility and continuous improvement. *Marine Policy*, 37(1), 288-293.

**Cheryl M. Cordeiro** has a PhD in general linguistics from the University of Gothenburg. She is currently Market Scientist at Nofima, (the Norwegian Institute of Food, Fisheries and Aquaculture Research) at Tromsø headquarters in Northern Norway. Prior to working at Nofima, she was faculty member at the Centre for International Business Studies (CIBS), School of Business, Economics and Law at the University of Gothenburg and Principal Investigator in the Flexit 2015/18 programme funded by the Bank of Sweden Tercentenary Foundation (Riksbankens Jubileumsfond, RJ). As part of the RJ Flexit 2015 programme, she worked as a Research Scientist at the User Experience and Industrial Design Group at ABB AB Corporate Research in Västerås, Sweden. She has a Master of Science in Information Studies (2001) from the Nanyang Technological University (NTU) of Singapore, and a Master of Arts in the English Language (2000) from the National University of Singapore (NUS). In 1999, she was Singapore's national representative to the international *Miss Universe* pageant held in Trinidad & Tobago. Her CV can be found on her webpage at [www.cherylmariacordeiro.com](http://www.cherylmariacordeiro.com).