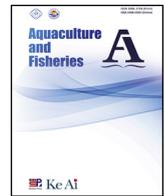




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Original research article

## A corpus-based approach to understanding market access in fisheries and aquaculture international business research: A systematic literature review

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### 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 softwares 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, 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. And while the product orientation of different business sectors might differ, this SLR study works with the assumption that both business sectors are international in orientation, and complex in their operations from product to market. To that extent, research scholars and practitioners in FAIB 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. 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.

### 1. Introduction

Different ocean environments and fish production processes favour the breeding of different types of fish. Fish<sup>1</sup> account for about 17% of animal protein consumed globally, providing approximately 44% of the human population with 20% of their animal protein needs (UN News, 2018). As such, fisheries and aquaculture businesses are inherently international. In the country example of Norway, that has a long coastline of about 83 000 km, 90% of Norway's fisheries harvest stocks are exported (FAO, 2018). In the period of five decades, global fish consumption peaked in 2016 at about 171 million tonnes with aquaculture towards human food consumption accounting for 47% (FAO, 2018). 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 that the fisheries and aquaculture international business (FAIB<sup>2</sup>) industry, being mainly primary produce oriented and intensively intertwined in their value chain processes, understands how to manage its global value chains, gaining access to its targeted markets. Yet, scholars in the field of strategic business management have noted that businesses in general tend too much towards practice without concerted effort on strategic processes. The fragmented use and application of business terminology surrounding strategic processes such as the use of the term 'market access' in strategic management and thinking is one such example

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<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'.

<sup>2</sup> The term "fisheries and aquaculture international business", shortened to FAIB is used here to raise awareness that fisheries and aquaculture, in business and academia, is highly international and interdisciplinary in orientation. This fact has often been overlooked by scholars in mainstream international business (IB) studies who tend to focus on manufacturing processes and management.

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(French, 2009; Phelan & Lewin, 2000).

The concept of ‘market access’ in FAIB is important because it constitutes an allocated frame of ideas that help businesses steer in foresight towards targeted goals both short and long-term. To have an allocated frame of ideas, by using specific terminology also legitimises an arena for discourse to occur, creating a space for negotiations between businesses and between businesses and customers. Fish is also part of the international discourse on food security, poverty reduction and ecological conservation (Béné et al., 2016) so that having a shared terminology of use, understanding its operation processes and business models is crucial in bolstering global sustainable development goals (SDGs). 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 research. The use and creation of standardised terminology in any academic or business field is important, the absence of which potentially results in a weak foundation towards common discourse that in turn bolsters the broader issues of addressing SDGs (Engelseth, 2016).

The objective of this study is to provide a systematic literature review (SLR) that uncovers the ways in which the term ‘market access’ is used in current general academic discourse, narrowing down towards how ‘market access’ is used in the field of FAIB. 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 (Honkanen & Young, 2015; Joffre, Klerkx, Dickson, & Verdegem, 2017; Moreno et al., 2012; Ødegård & Olesen, 2011). 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 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 fisheries and aquaculture international business (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 include an empirical illustration of (i) new applications of language-based research methodology applied to fisheries and aquaculture research, and it 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 (Anthony, 2013, 2018), a bibliometric analysis software for visualisation of similarities, VOSviewer (Van Eck & Waltman, 2007), and Web of Science's (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.

This paper is structured as follows. Using a functional approach to language analysis and language in use, the following section will give a synopsis on why investigating the use of the term ‘market access’ across different disciplines in both academic and professional discourses is

important. Because this SLR is meant to be data and corpus driven, section 1.2 begins with a review of normative definitions of the term ‘market access’ from dictionary definitions to internet search engine retrievals. Section 2 details the method used for this SLR. Section 3 discusses the findings, beginning with the broadest search retrievals for the term ‘market access’, for which in this case, the SLR illustrates that ‘market access’ seems a more developed concept within the field of the healthcare and pharmaceutical industry. It then narrows down to how the term ‘market access’ is used and understood in FAIB. Leveraging the difference in depth of conceptual construct between the pharmaceutical industry section 4 discusses the findings and potential avenues of conceptual development, towards best practices for ‘market access’ in the field of FAIB. Future avenues of research and the limitations of this study is given in the concluding section.

### 1.1. A functional view of language

Language, as a cognitive socio-functional tool and facilitator of transactional processes, has the capacity to create and shape human perception of reality (Lupyan & Ward, 2013; Whorf, 1956). Language is used by humans to construe experiences, express thoughts and as a tool to formulate higher levels of thinking about activities and events that occur in the surrounding contexts. In many instances, the construal of experiences co-evolves with specific terminology. Such realms of processes and experiences are usually thought of as a type of knowledge (Halliday & Matthiessen, 1999). One such type of knowledge is the language of business processes where language is used in a shared context between organizations and between organizations and even their customers. In terms of FAIB, the evolution and use of a shared terminology lays a foundation for smoother cross-border operations and negotiations. Shared language use creates a community within which not only transactions can be conducted, but negotiations between communities can occur. It legitimises social and business practices towards the creation of business process strategies for example (Harzing, 2014; Lemke, 1993), the reason why investigation into how the term ‘market access’ is used and conceived is important.

Studies on fisheries management have acknowledged that the two-fold challenge of fish production consists of accounting for conservation as well as exploitation of a single 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 (Bjørndal, Lane, & Weintraub, 2004; Garcia, Sanchez, Pallezo, Urtizberea & Andrés, 2017; Ives & Scandol, 2013; Lane & Stephenson, 1998; Pauly et al., 2001; Ricker, 1975). 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 (UN News, 2018), 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.

### 1.2. Market access: a review of normative definitions

#### Oxford dictionary 2017:

“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.” (Black, Hashimzade, & Myles, 2017:5)

Being the internet's largest search engine and top social media platform, normative definitions of the term ‘market access’ were retrieved via a general keyword search via Google<sup>3</sup> and YouTube<sup>4</sup>. A keyword search of ‘market access’ was also conducted using Google Books Ngram Viewer in order to retrieve the use of the term in archived online books. Fig. 1 shows is the Google Books Ngram Viewer for the words ‘market access’, indicating that the idea was coined somewhere around the 1960s and gained momentum in usage till today. Fig. 1 shows that even if the use of the term is small compared to the general corpus of Google Books English language in use, there is however a relative marked increase of the use of the term ‘market access’ from 1970s onwards to 2000.

Google results for ‘market access’ renders ca. 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 2017 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. While free trade implies a free of cost by governments towards the flow of goods and services across borders, ‘market access’ is seen as an early step towards deepening trade ties that focuses on negotiation processes.

Within the field of international trade, the term Qualified Market Access (QMA) was defined by scholars at the request of the Directorate General for Trade of the European Commission (EC) of the European Union (EU) in a final feasibility report from October 2008 in relation to food and agricultural products. QMA sets requirements for imported food and agricultural products into the European Union (EU) member states, so the products meet specific environmental protection and human welfare protection standards (Hannes, 2006). In implementation, QMA increases import tariffs for non-compliant products. But even as QMA has been debated and written about within the EU context, scholars agree that the term is vague, and its implementation is challenging. Holmes, Rollo, Winters, Dawar, and Mathis (2008) noted in their report that “There is no consensus view on the standards that QMA should cover” and that “this study assumes that QMA applies to norms and standards regarding the quality of the production process, so called non-product related Production Process Measures (PPMs), not the quality of the end product.” (Holmes et al., 2008, p. 4). As such, further refinements needed to be made to QMA in relation to GATT law violation and how the EU would compensate affected WTO members for trade losses (Holmes et al., 2008). QMA within the field of political science, international labour studies and global studies is one that is recognized as the practice of linking trade agreements to values such as human rights, labour standards, or environmental protection (Barry & Reddy, 2006; Herzog & Walton, 2014).

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 (Andersen, Harrison, Hole, Lau, & Rutström, 2012) 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 multilateralization liberalization of trade flows (De Sousa, Mayer, & Zignago, 2012).

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 (Doherty, 2011; Glasspool, 2013). 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 (Sobrio & Mesnil, 2016; Wild & Williams, 2018):

“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.” (Chaudury, 2018)

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 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 a sensitive issue that is emotionally and politically charged (Hulshof, 2012). 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. 2 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 study aims to map to gain a deeper understanding of the term as it is used in the field of fisheries and aquaculture.

## 2. Method

The previous section of this paper, with investigating the normative use of ‘market access’ in both academic and industry discourse, has illustrated one of the methodological intentions of this SLR study, which is to be corpus driven in investigative analysis. The normative definition analysis has retrieved data indicating that the pharmaceutical and healthcare industry are most advanced in using and conceptualising market access. The purpose of this SLR is not however to go into any deeper analysis of industry structures, so that comparing the industry structures of the pharmaceutical industry and FAIB lies outside of the scope of this paper contribution and could well form an arena of research for another paper contribution.

In terms of technicalities of methodology, corpus driven, this SLR uses bibliometric analysis in combination (VOSviewer and WoS analytics) with text corpus analysis (AntConc). Modelling on other reviews in international business studies and cognate fields of research (Canabal &

<sup>3</sup> Google has ca. 72% search engine market share (Ratcliff, 2016).

<sup>4</sup> YouTube is ranked second highest social media website with ca. 1,9 million monthly active users after Facebook with ca. 2,2 million monthly active users (Kallas, 2018).

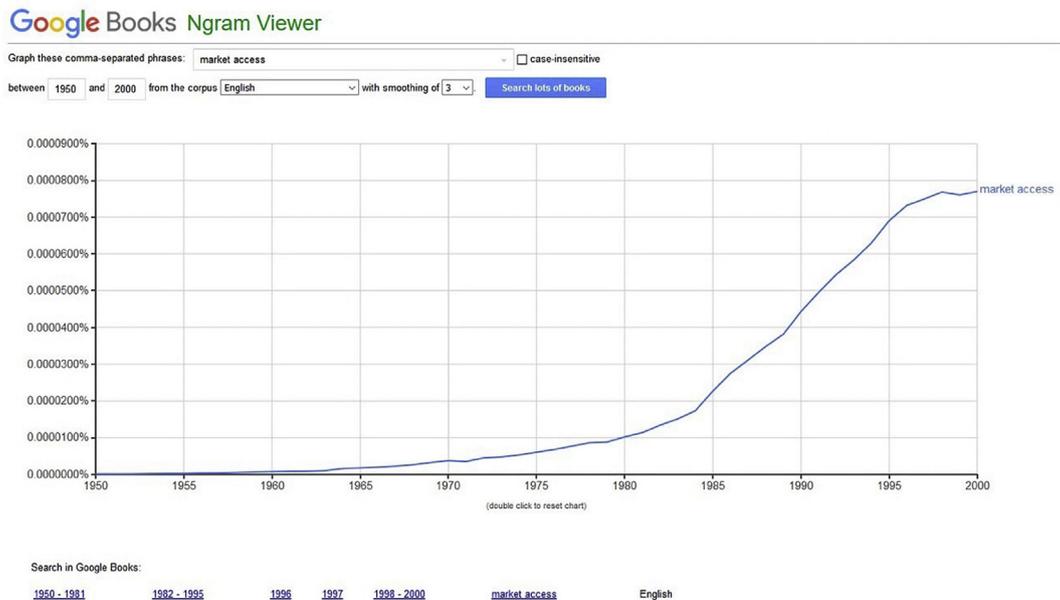


Fig. 1. Google Ngram for keywords search 'market access' as found mostly in books (Google Books Ngram Viewer, 2018).

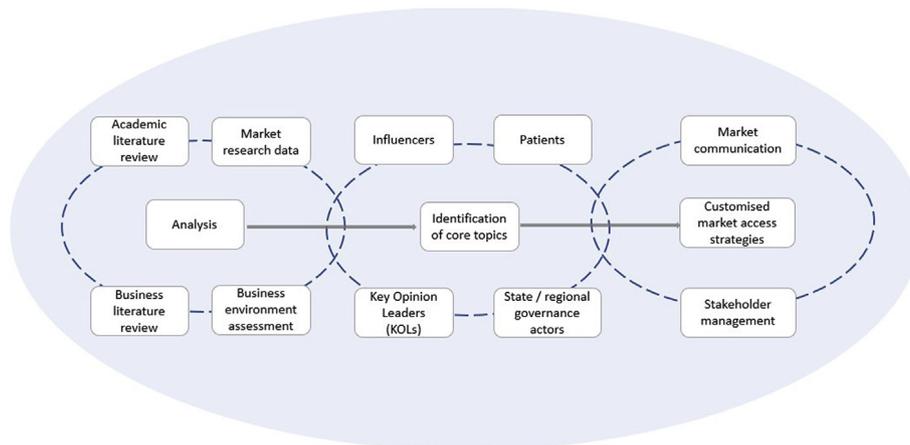


Fig. 2. Market access model from a pharmaceutical and healthcare industry practitioner perspective.

White, 2008; Paul & Benito, 2018; Paul, Parthasarathy, & Gupta, 2017; Rialp, Rialp, & Knight, 2005; Rosado-Serrano et al., 2018), the review process began with a keyword search for the words 'market access' in a Scandinavian university library subscribed online 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 (Falagas, Pitsouni, Malietzis, & Pappas, 2008; Kokol & Vosner, 2018). WoS for example allows for bibliographic information download of up to 5 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 the words '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 publishing language. Because the Google Ngram results indicated that the term 'market access' began to gain traction from after 1970s, the retrieved results were also narrowed to focus on publications from 1980s to 2018, spanning about forty 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 (Anthony, 2018). 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 is 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.

While AntConc is used for 'market access' kwic searches based on

sets of full text documents, the bibliometric analysis freeware VOSviewer (Van Eck & Waltman, 2007) 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>5</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 (Van Eck & Waltman, 2013). 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.

### 3. Findings

#### 3.1. Market access as key term across disciplines

A total of 1 096 026 return hits were found using a search for the key words ‘market access’ for publications occurring between 1980 and 2018 across 6 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 (6230), French (5775) and Portuguese (4544) language articles following. The 50 articles were published in 38 different journals. The journal titles were 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 *Journal of Market Access and Health Policy*, with 5 publications. Following this are *World Development* and *Applied Economics* with 3 publications each, then *Journal of World Trade*, *Economic Letters*, *Frontiers in Pharmacology* and *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing* with 2 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. 3 shows ‘market access’ word clusters that occur ranked top 20 in accordance to frequency and in clusters of maximum 4 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.

Fig. 4 shows only the top 20 kwic concordance results for the words ‘market access is’. 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” (Fillat-Castejón, 2018, p. 41) and “market access is indeed the most important aim of the European Union” (Li & Jiang, 2011, p. 61).

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*” (Sendyona, Odeyemi, & Maman, 2016, 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,” (De Sousa, 2012, p. 1043), “market access is *driven* by the regulatory environment, public institutions and network industries” (Squalli, Wilson, & Hugo, 2010, p. 1833), as well as being an influencer of some other circumstances, “market access is a *significant determinant* of wages for all firm types” (Kamal, Lovely, & Ouyang, 2012, 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” (Li & Jiang, 2011, p. 60). Reflected in Hit 1 of the kwic search findings in Fig. 3b, “market access is a broader concept that involves three sets of characteristics: the regulatory environment; public institutions; and network industries.” (Squalli et al., 2010, p. 1843) and that it “involves other drivers beyond the right trade policy environment” (Squalli et al., 2010, p. 1834). In a benchmark work on the study of market access, reflected in Hit 11 in Fig. 3b, the acknowledgement that “market access is a slippery concept to define and an even more difficult concept to measure” (Squalli et al., 2010, p. 1833) led to the authors constructing for the first time, a market access index (MAI) for a large sample of world economies.

Fig. 5 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 range of document types retrieved from WoS is comprehensive, with the top five genres being journal articles (19 929), conference proceedings (1118), 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 (4836), Business (1356), Management (1351), Environmental Studies (1277), Planning Development (1181), Public Environmental Occupational Health (1054), Business Finance (1040), Health Policy Services (1016), and Health Care Sciences Services (1009).

Notable in this set of findings is that the concept of ‘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’, ‘market access’ seems however 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 international business studies.

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 health-care 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’.

#### 3.2. Market access in fisheries research

The key term ‘market access + fisheries’ had 32 811 return hits for

<sup>5</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.

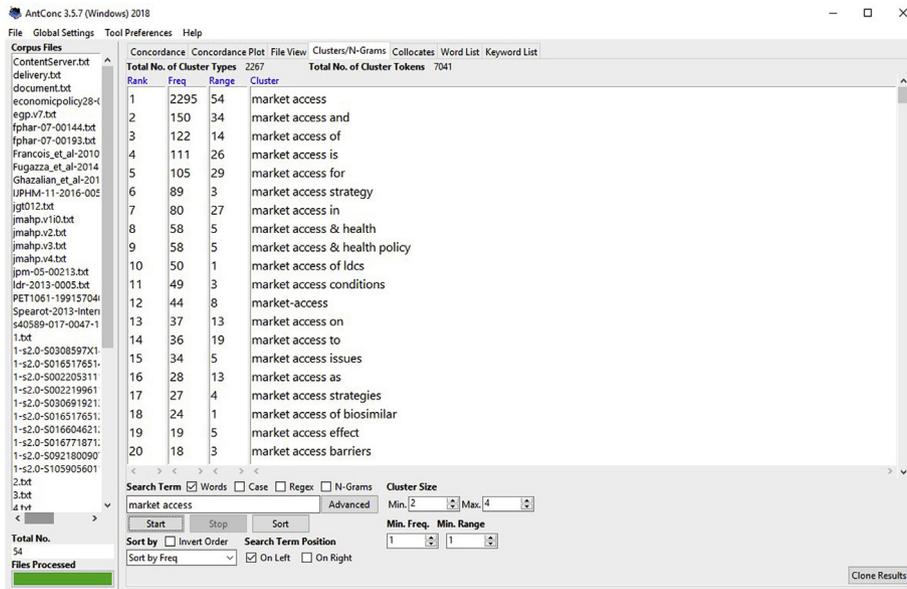


Fig. 3. AntConc word concordance results for the key term 'market access' only, showing 'market access' 4-word clusters ranked by frequency of occurrences, top 20.

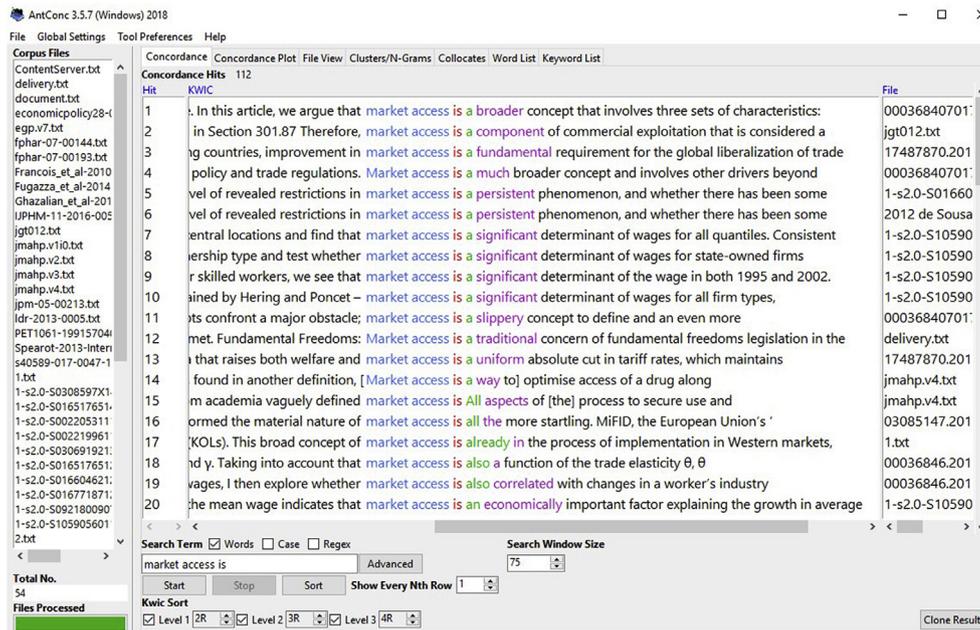


Fig. 4. Concordance top 20 hits on the words 'market access is' from a text corpus of 54 articles with 'market access' as key term, 4 words sorted right.

journal articles published between 1980 and 2018 across 6 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.

The WoS indexes 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 gives 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. The bar graph in Fig. 6 shows that market

access in relation to fisheries have in the past decade, been increasingly studied. Fig. 7 shows the subject dispersion of the 238 documents, with the top 6 subject fields being related to environmental studies/sciences/ecology (186 articles combined) in relation to Economics (53) and International Relations (47).

Fig. 8 shows the top 20 occurrences of 4-word clusters from the text corpus of 'market access + fisheries'. Distinct in this text corpus is a lack of concrete definition for 'market access' as used in fisheries studies. However, an investigation of the 4-word clusters can be conducted in order to gain an overview of the general discourse of market access in fisheries studies. The kwic analyses will look at existential/relational variations of the verb *to be*, prepositions such as *but*, and verbs that indicate absence or deficiency such as *lack*, *lack of* that appear in the top ranks of word frequency list in the AntConc analysis. Analysing contrastive language use such as *but* and *lack of* explains what market access consists of not in stating how it is formally structured but how it is

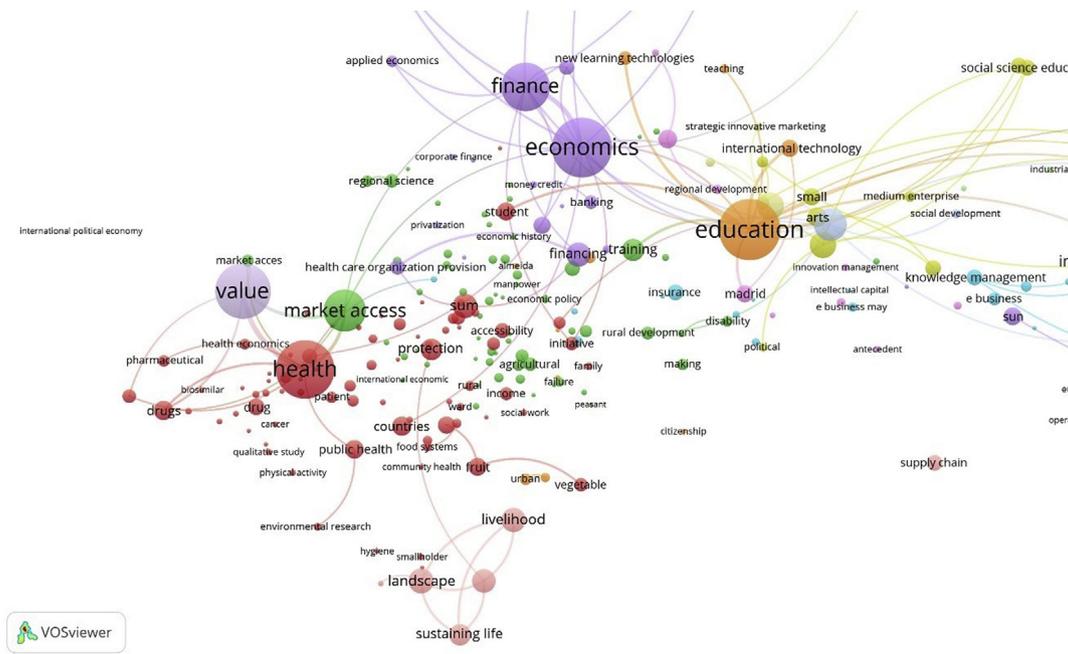


Fig. 5. VOSviewer for search the key term ‘market access’ and its related fields of study reflected in the Web of Science (WoS) indexes for publications between 1966 and 2019 based on ca. 21 500 retrieved documents.

related to other things by systemic paradigmatic relationships.

A kwic analysis reflected in Rank 14 of the cluster “market access is” as described using variations of the verb *be* returned 3 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.” (Tregidgo, Barlow, Pompeu, De Almeida Rocha, & Parry, 2017, p. 8658, 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” (Garcia Rodrigues & Villasante, 2016, p. 38, 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.” (Vieira, Kinch, White, & Yaman, 2017, p. 43, p. 43)



Fig. 7. Web of Science (WoS) key term ‘market access + fisheries’ subject dispersion for 238 documents retrieved.

Notable in the above cluster analysis 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 cluster ‘market access, but’ (Fig. 8, Rank 15) is used in 3 contexts that include:

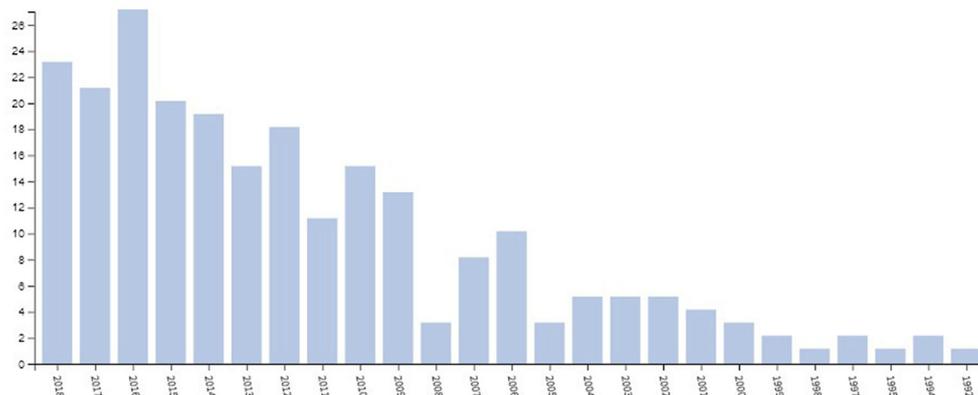


Fig. 6. Publications in market access and fisheries from 1992 to 2018.

Rank	Freq	Range	Cluster
1	165	9	market access
2	20	9	market access and
3	15	7	market access for
4	9	4	market access on
5	9	5	market access, population
6	8	8	market access in
7	8	5	market access, population density
8	6	4	market access on nicaragua
9	5	5	market access for african
10	4	1	market access and competitiveness
11	4	4	market access in the
12	4	3	market-access
13	3	2	market access for seafood
14	3	3	market access is
15	3	2	market access, but
16	3	2	market access, lack
17	3	2	market access, lack of
18	3	2	market access, the
19	2	1	market access - fishing
20	2	1	market access - fishing industry

Fig. 8. AntConc word concordance results for the key term ‘market access + fisheries’, showing ‘market access’ 4-word clusters ranked by frequency of occurrences, top 20.

“Food security requires more adequate *market access*, but national resource bases are limited, and government intervention and policy formation are both weak and exhibit urban bias in unusually fragmented states. Climate change is likely to further hamper local food production.” (Connell, 2015, p. 1299, p. 1299)

“As demand for eco-certifications has grown, producers and regulators have expressed concern that external assessments (or the lack thereof) could undermine not only *market access*, but also government authority over fisheries management.” (Foley & Havice, 2016, 28)

“Fisheries interest groups perceive growing demand for verification and communication of sustainability as a threat to government authority and *market access*, but also to territorially constituted industry identities and practices.” (Foley & Havice, 2016, p. 29, p. 29)

The contrastive element highlighted for market access in fisheries are mainly two, with connotation that market access in fisheries is a complex socio-economic issue that can be controversial when different wills/agendas contest in the same field of discourse. 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.

### 3.3. Market access in aquaculture research

The key term ‘market access + aquaculture’ had 10 564 return hits for journal articles published between 1980 and 2018 across 6 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 retrieved journal articles were published in 18 different journals. The journal titles are taken as indication of their field of research. 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. 9, 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 6 subject fields being related to environmental studies/sciences/marine freshwater biology (42 combined), Fisheries (28), Economics (23) and



Fig. 9. Web of Science (WoS) key term ‘market access + aquaculture’ subject dispersion for 89 documents retrieved.

### Planning Development (11).

The WoS documents ranged in genres from articles, reviews, proceeding papers and book chapters. While the top 50 articles in gives an indication of journal titles and article titles, a more subject targeted corpus database was formed using the 89 documents saved in plain text format so that a kwic analysis can be conducted. This resulting text corpus from the 89 documents contained 32 430-word types and 684 860-word tokens. Fig. 10 shows the AntConc top 20 ranked 4-word clusters for the ‘market access + aquaculture’ text corpus. 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 term. The cluster for relational and existential verbs of *to be*, such as ‘market access is’ (Rank 4) and ‘market access are’ (Rank 19) in this text corpus 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 differential 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.” (Van Brakel & Ross, 2011, p. 939, 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.” (Trifković, 2014, p. 240, 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 (Rabanal, 1988) is currently developing rapidly due to global demographic changes, advances in technology and influencing global economic forces. The contextual focus of the study of market access for small-scale farms and the poor in aquaculture research is confirmed when analysing the kwic results for ‘market access for’ and ‘market access for the’ (Ranks 2 and 6).

### 3.4. Market access in seafood research

The key term ‘market access + seafood’ had 7997 return hits for journal articles published between 1980 and 2018 across 6 consolidated scientific databases that include PubMed, Scopus, Karnov, Cinahl, Nationalencyklopedin and Mediearkivet. English language articles dominated in the retrieved findings with 7928 hits, followed by Spanish (54), Japanese (28) and Chinese (26) articles. The top 50 retrieved journal articles were published in 28 different journals. The journal titles are taken as indication of their field of research. Journals

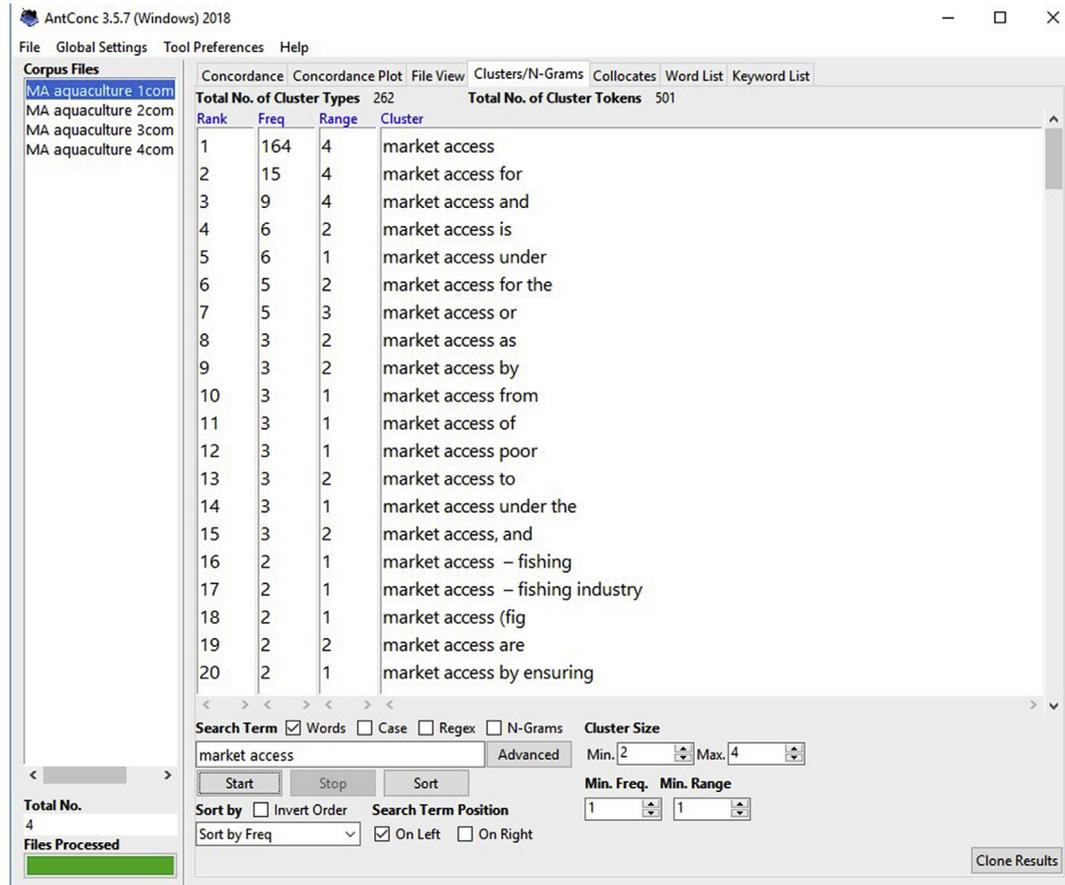


Fig. 10. AntConc word concordance results for the key term ‘market access + aquaculture’, showing ‘market access’ 4-word clusters ranked by frequency of occurrences, top 20.

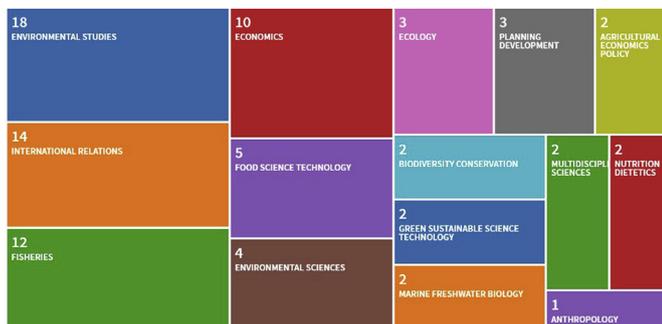


Fig. 11. Web of Science (WoS) key term ‘market access + seafood’ subject dispersion for 53 documents retrieved.

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. 11. 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 6 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 + seafood’ was created from the 53 WoS documents, resulting in a corpus database of 22 580-word types and 395 138-word tokens. Fig. 12 shows the AntConc word concordance results for 4-word clusters ranking those with more than 2 occurrences (Ranks 1–12).

Consistent with other text corpora of the kwic ‘market access’ in fisheries and aquaculture, the literature for ‘market access + seafood’ reflect no concrete definition 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. Ranks 2–4 and Rank 9 gives contextual cues as to how market access is discussed in the literature, 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* eco-labeled products that would not be otherwise available to the fishery.” (Goyert, Sagarin, & Annala, 2010, p. 1104, 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*” (Foley & Havice, 2016, p. 28, 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

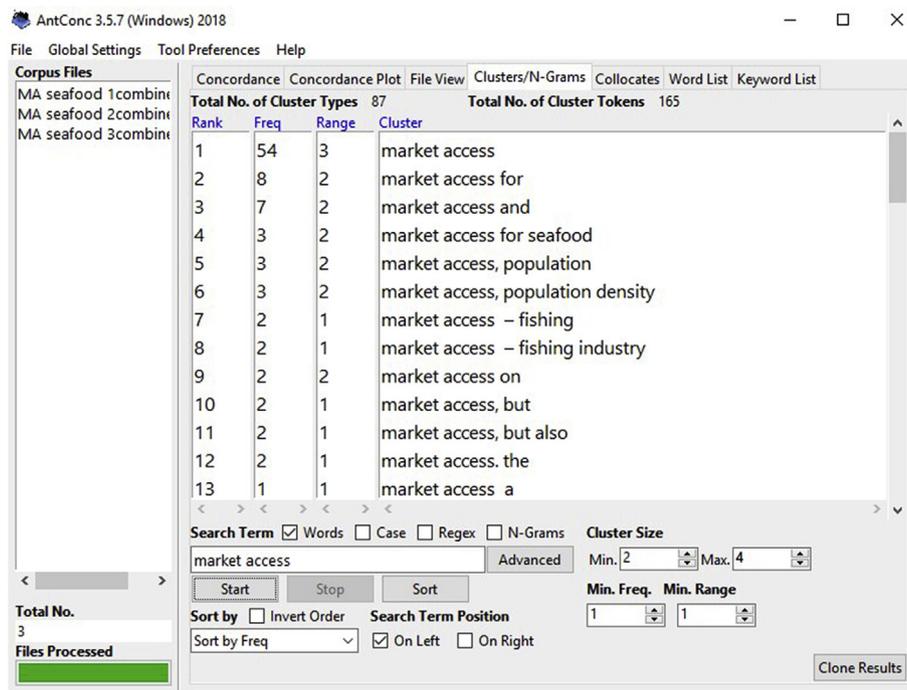


Fig. 12. AntConc word concordance results for the key term ‘market access + seafood’, showing ‘market access’ 4-word clusters ranked by frequency of occurrences of more than two in the corpus (Ranks 1 to 12).

the scheme itself.” (Bush, Toonen, Oosterveer, & Mol, 2013, p. 291, p. 291)

#### 4. Market access in fisheries and aquaculture: discussion of findings

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 at the point of conducting this study were used as indication of the subject interest and dispersion within each key term search. These results are reflected in the tables attached as appendices to this SLR study. A further triangulated method of text analysis was conducted using 3 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 where WoS 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 international business (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. 2 for the pharmaceutical and healthcare marketing industry. A likewise nuanced market access development model for the fisheries and aquaculture international business (FAIB) is shown in Fig. 13.

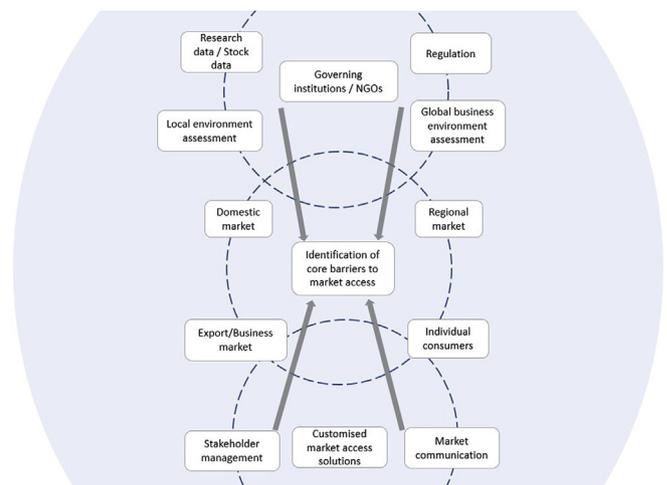


Fig. 13. Market access development model for fisheries and aquaculture international business (FAIB).

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. 13 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 globalization 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.

## 5. Conclusion

Although FAIB studies might seem marginal to IB studies in general, fisheries and aquaculture IB 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 literature.

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.

Attention to language use and business process terminology such as ‘strategic management’ and ‘market access’ are important because the use of terms legitimise a framework allocation for ideas. When specific terminology is used, the concept can be built-upon, it can be discussed, changed or terminated if not useful. What specific terminology does is to open an arena for negotiations to occur and for future planned behaviour to take place. Using the term ‘market access’, for example in the pharmaceutical and healthcare industry since the 1960s, has produced fairly sophisticated business process models, and industry infrastructure of getting product to different types of market, under different types of national and global regulations. Observing the upward trend in global fish consumption, the business processes of FAIB will need to evolve to accommodate more service minded customer orientation. The corresponding relative lack of the use of term ‘market access’ in FAIB points towards an arena for potential research and applied best practices for business processes to be developed further.

This SLR has indicated that it remains inadequate that the task of solving increased fish production for global consumption towards Zero Hunger and ecosystem conservation lay purely on the shoulders of engineers, production biologists and scientists working with aquaculture to bring forward more robust types of fish to market. Rather, this SLR has indicated that fish to market belongs to the responsibility of the entire global value chain of fish production. ‘Market access’ is currently fragmented in usage and application within FAIB. If we are to solve global SDGs, there needs to be an integrated effort around the concept of ‘market access’ for the FAIB at national, regional and international levels.

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 conceptualisation of the challenges and potential barriers as well as avenues for solutions to developing market access for FAIB.

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