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Understanding societal approval of the fishing industry and the influence of third-party sustainability certification

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Abstract

Commercial fisheries are increasingly interested in greater social acceptance of their operations and practices. For harvesters, achieving acceptance is complex because expectations arise from many societal groups who can differ greatly in their perceptions. Historically, third-party certification programmes assisted industry in gaining market acceptance (from consumer and investor groups) by improving the ecological sustainability of fishing practices. This focus is diversifying as societal expectations expand beyond ecological concerns to encompass, for instance, equal access and fair distribution of benefits as well as fisheries management and ethical aspects. In this study, we draw on theoretical work from the social acceptance and social licence literature to create a conceptual model that includes eight variables, representing different aspects of societal approval of fisheries. We applied this model to examine the influence of third-party certification on societal approval of fisheries in Western Australia (WA). Based on study respondents' perceptions, third-party certification had a statistically significant influence on facilitating government and regulatory approval of industry. Most respondents perceived certification to facilitate industry acceptance from stakeholders, but this was less so for the local community and general public. Contrary to expectations, but perhaps specific to WA because seafood is mostly sold without the ecolabel, certification was less influential on domestic and export market acceptance. Our findings, in WA, highlight certification was not equally influential on all societal approval aspects. Additionally, the conceptual model is sufficiently flexible to assist other fisheries (and industries) in understanding the influence of certification (and other factors) on different societal approval aspects.

KEYWORDS

market acceptance, political approval, regulatory approval, social acceptance, social licence, societal approval, third-party certification

1 | INTRODUCTION

As global demand for seafood products continues to rise, the general public are becoming increasingly conscious of threats to the ecological, economic and social sustainability of fisheries (Garcia & Grainger, 2005; Garcia & Rosenberg, 2010). The ecological sustainability of wild-capture fisheries has featured prominently in scientific and public debate for decades (Hilborn et al., ,1995, 2020; Myers & Worm, 2003; Pauly et al., 2002; Worm, 2016). Several publications in high-profile journals convey the message that many of the world's fish stocks are over-exploited and that fisheries management has failed (Tickler et al., 2018; Worm, 2016) despite scientific evidence to the contrary (Hilborn et al., 2020). Aside from environmental issues, the social sustainability of fisheries has also been called into question (Bennett, Cisneros-Montemayor, et al., 2019; Kittinger et al., 2017). In some fisheries, there are deeply concerning business practices involving human trafficking, slavery and dangerous working conditions (Bennett, 2018; Kittinger et al., 2017; Tickler et al., 2018). Fisheries management decisions in some countries have also resulted in inequitable catch allocation and access and benefits distributions that have affected food security, well-being and livelihoods (Bennett, 2018). Publications on these issues, coupled with non-governmental organizations (NGOs) becoming more politically active and using media campaigns to raise awareness of unsustainable industry practices (Cullen-Knox et al., 2017; Haas et al., 2020; Todd & Ritchie, 2000), have led to increasing pressure on the fishing industry to adhere to more ecologically and socially responsible standards that meet the expectations of a range of different groups in society (Bennett et al., 2019).

To address public, stakeholder and consumer concerns regarding ecological and social sustainability, fisheries (and other industries) are altering their operations and practices to align with global sustainability standards under the guidance of third-party certification schemes. Third-party certification programmes like the Marine Stewardship Council (MSC), Friend of the Sea and FairTrade USA provide independent assessments of fisheries and support engagement between stakeholders globally (Gibbs, 2008; Gutiérrez & Morgan, 2015). While some programmes focus more on ecological sustainability (e.g. MSC) and others on social sustainability standards (e.g. FairTrade USA), the third-party certification process involves an assessment by independent experts of a fishery based on evaluations made against a standard (Bellchambers et al., 2016; Borland & Bailey, 2019). Once a fishery is certified, its products may be sold to consumers with an ecolabel. Ecolabels are designed to influence the market through consumers demanding sustainable seafood products from retailers. By responding to this consumer demand, retailers can encourage growth in the number of certified fisheries (Gutierrez & Thornton, 2014a). Hence, certification programmes create market-based incentives for fisheries to achieve ecological and/or social sustainability (Stratoudakis et al., 2016). Yet, recent research has also identified social licence to operate (SLO) alongside, economic and institutional drivers, as an important motivation for certain fisheries to seek third-party certification (Haas et al., 2020; van Putten et al., 2020).

SLO is broadly defined as public, stakeholder and/or community approval for industry or government to use or develop common-pool resources such as fisheries (van Putten et al., 2018). The related concept of social acceptance is defined as favourable evaluation of a policy, technology or industry action after its implementation (Dreyer & Walker, 2013; Wüstenhagen et al., 2007). While some distinction exists in whether evaluations concern prospective or retrospective action or policy, in an industry context, definitions of SLO and social acceptance are synonymous (Moffat & Zhang, 2014). SLO and social acceptance have become pertinent to industry, government and the public across different resource sectors. Theoretical and empirical research on these concepts has developed rapidly over the past few decades, but has largely focused on land-based industries such as mining and renewable energy (Gehman et al., 2017; Moffat et al., 2016; Wüstenhagen et al., 2007). This research suggests that societal approval of industry/company operations does not simply involve acceptance by the wider public, local communities and stakeholders, but also involves actual and perceived approval by government, regulators, markets and the interactions between all of these approval processes based on group perceptions (Bice et al., 2017; Brueckner & Eabrasu, 2018; Wüstenhagen et al., 2007). Interaction between political, community and market acceptance has been illustrated in the renewable energy sector (Wüstenhagen et al., 2007). In this sector, political acceptance can result in government policies that facilitate new investor's access to infrastructure

that in turn improves market acceptance (Wüstenhagen et al., 2007). Additionally, spatial planning systems and collaborative decision-making can facilitate greater community acceptance (Wüstenhagen et al., 2007). While neither social acceptance nor SLO is a legal requirement for the development or use of common pool resources, withholding it may indirectly influence the ability to obtain regulatory approvals, particularly in situations that are politically or socially sensitive (Kelly et al., 2017; Vince, 2018). For example, interactions between political, public and regulatory approval processes were demonstrated when public opposition to a large fishing vessel operating in Australian waters led to the Environment Minister overruling previously granted regulatory approval, resulting in the vessel's departure from Australian waters (Haward et al., 2013; Kelly et al., 2017). Hence, industry success depends on interconnected approval from a range of different societal groups.

Several studies exploring the impacts of third-party certification on fisheries have mentioned SLO (van Putten et al., 2020; Vince & Haward, 2019), but it is a relatively new concept in fisheries and much of the conceptual understanding on acceptance of industry by different societal groups is yet to be transferred from land-based industry applications (Fleming et al., 2020). Previous research has established that third-party certification can result in different market, social, political, environmental and/or institutional benefits (e.g. Bellchambers et al. 2016; van Putten et al., 2020). However, no study has created a conceptual model of the different aspects of societal approval of fisheries. Furthermore, a comprehensive method to empirically examine how certification influences different societal approval aspects is yet to be developed and applied. In this study, we build on theoretical developments in other industries to create a conceptual model that addresses this knowledge gap by explicitly including government and regulatory approval, acceptance of industry from the local community, general public, stakeholders and market groups as well as public approval of the government. Then, we apply the conceptual model to evaluate how individuals involved in fisheries certification perceived the certification process to influence community, stakeholder, public and market acceptance as well as political, government and regulatory licences using certified fisheries in Western Australia (WA) as a case study.

2 | METHODS

2.1 | Conceptual model of societal approval of the fishing industry

In building our conceptual model, we drew on the social, actuarial and political (SAP) licencing model (Bice et al., 2017; Brueckner & Eabrasu, 2018; Robinson et al., 2020) and a conceptual understanding of social acceptance (Wüstenhagen et al., 2007). The SAP model conceptualizes the roles of social licence to operate as well as political and actuarial licences, in relation to public interest and groups of influence (Bice et al., 2017). The conceptual understanding of social acceptance introduces three dimensions of acceptance, namely socio-political, community and market acceptance (Wüstenhagen

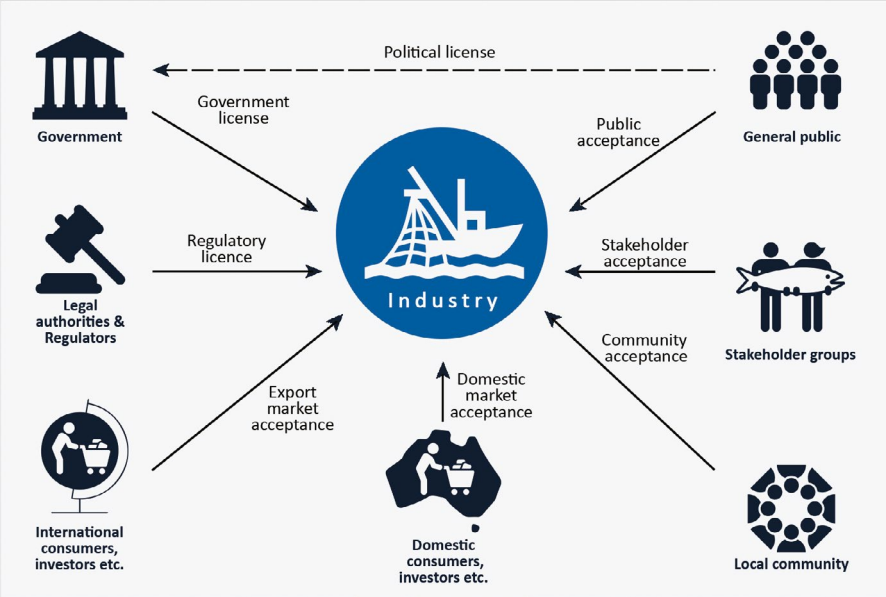

FIGURE 1 The diagrammatic representation of a conceptual model of the eight variables (adjacent to arrows) that represent different societal approval aspects taken from concepts identified in Bice et al. (2017), Wüstenhagen et al. (2007) and Robinson et al. (2020). The societal groups involved in each approval aspect are represented as symbols but are also labelled. Licence givers/acceptance providers are at the beginning of each arrow and the receiver at the end of the arrow. In almost all variables, industry is the direct receiver of approval (represented by solid arrows) with the exception of the political licence variable where government is the direct receiver and industry is an indirect receiver (represented by a dotted line). Each of the variables were defined and used in analysing the influence of third-party certification on different aspects of societal approval of the fishing industry in Western Australia (see Table 1 for further details)

TABLE 1 Description of licence and acceptance variables from the conceptual model of societal approval that were used in the content analysis applied to interview transcripts

Societal approval aspect (type of licence or acceptance)	Licence giver/acceptance provider	Definition/Context
Stakeholder acceptance (SA), referred to as Social licence in Bice et al., (2017); Robinson et al., (2020) 	Stakeholders	A form of acceptance or approval of industry by stakeholders, local communities and the wider public. Note that this definition (adapted from Bice et al. (2017) and Robinson et al. (2020)) assumed community and the wider public are stakeholders. However, the distinct public and community acceptance variables more clearly differentiate the relevant groups and scale of acceptance (see below).
Public acceptance (PA), referred to as Socio-political acceptance in Wüstenhagen et al., (2007) 	General public	Acceptance of industry by the wider public, requiring specific reference to public opinions (including online/social media) at the State or Nationwide scale.
Community acceptance (CA) (Wüstenhagen et al., 2007) 	Local community	Acceptance of industry by members of the local community, in particular residents living in proximity to the area in which the fishery operates.
Political licence (PL), referred to as a political licence to operate in Bice et al. (2017) and a government political licence in Robinson et al. (2020). Note this is an indirect measure of industry acceptance 	Wider public	Approval of government and associated regulatory processes by the wider public, where political decision-making on fisheries is aligned with broader social interests
Government licence (GL), referred to as Company political licence in Robinson et al. (2020)) 	Government	Approval of, and support for, industry by government based on their current policies and agendas.
Regulatory licence (RL), referred to as actuarial licence to operate in Bice et al. (2017) and legal licence to operate in Robinson et al. (2020)) 	Legal system and regulatory authorities	Approval of industry operations stipulated by meeting specified (and measurable) requirements set out in regulations and/or rules of conduct, often related to managing the fishery and industry.
Domestic market acceptance (DMA), referred to as market acceptance in Wüstenhagen et al. (2007) 	Domestic consumers& investors	Acceptance of industry products by consumers, retailers and/or investors (e.g. banks providing loans to fishing companies) from within Australia. This can include reference to market expansion, price premiums and other market-related terms that indicate changes in, or lack of, market acceptance.
Export market acceptance (EMA), referred to as market acceptance in Wüstenhagen et al. (2007) 	International consumers & investors	Acceptance of industry products by international consumers and investors.

Coding (present)	Coding (absent)
Explicit mention of MSC certification providing the industry or fishing company with a social licence, approval or increased trust, credibility or legitimacy of operations by stakeholders, community members and/or the wider public. For example, *"...a lot of it [entering into MSC certification] was social license too - Although we're Australian and we're licensed, no one believes that you're doing the right thing."* Informant 080219_001	Explicit mention of MSC certification undermining, jeopardizing or making no difference to the social licence, approval, trust, credibility or legitimacy of industry operations by stakeholders, community members and/or the wider public. For example, *"we're having to work harder to keep our social license. [Because of MSC certification] We're out there now and we're being looked at.... They [the public] still want to see us gone. So that's where we're having the trouble with the social license."* Informant 080220_001
Explicit mention of MSC certification fostering acceptance and/or favourable public opinions towards the fishing industry and its operations at the geographical scale of Western Australia and/or Australia. For example, *"to build in the WA public an understanding that our fisheries were sustainable. We weren't overfishing our fisheries and therefore money the government spent on fisheries management was being well used."* Informant 080218_003	Explicit mention that MSC certification had a negative or no impact on public opinion at the scale of Western Australia and/or Australia. For example, *"I would say the majority of Western Australians would not be that aware of, you know, the MSC and what it all stands for. I don't think we're as good as we could be at selling the story and promoting some of the good work that's done."* Informant 080218_002
Explicit mention of MSC certification resulting in acceptance and/or improved/favourable opinions of a fishing operation from specific towns and communities close to fishing grounds/operations. For example, *"I reckon as a general community [down in the region], they have improved their social standing by having MSC certification."* Informant 080102_002	Explicit mention of MSC certification having a negative or no impact on the acceptance or opinions of the local communities on fishing operations. For example, *"I'm not sure the community is still fully on side because as I was saying, there's still this emotion that you know, we just simply don't want trawlers on our doorstep of our town."* Informant 080109_005
Explicit statements on MSC certification being used to seek public and/or stakeholder approval and support of government decisions relating to the management of fisheries resources. For example, *"So it was really about, holding out what we [the government] do...and saying, this is actually being held to an international standard that is consistent throughout the world. It's based on best practices [...] and we've met these standards [...] so therefore, we're not making things up."* Informant 080219_002	Explicit mention of MSC certification undermining, jeopardizing or making no difference to decisions made by government on the management of fisheries resources. For example, *"There's an acceptability and respect and value that people hold around the set of these fish stocks or those fisheries [and] they expect Governments and systems like this to recognize [that]... And [MSC] doesn't do any of that."* Informant 080103_001
Explicit statements on MSC certification facilitating government approval of fishing companies and industry, through funding of the assessments and/or providing support for achieving and maintaining certification. Also included mention of the industry's contribution to economic development and value. For example, *"with the government putting all that effort into the MSC initiative and spending those initial millions on the pre assessments, the MSC fisheries will always get priority."* Informant 080218_002	Explicit statements on the MSC certification being used by government to withhold, or making no difference to, their support for the fishing industry based on economic and/or other government approval issues. For example, *"We've just gone through a three-month fight with government over a stupid policy, so it didn't stop that. I don't think being MSC certified gives the [fishery] any more status in policy debate with government."* Informant 080111_001
Explicit mention of MSC certification being used to mitigate the environmental impacts of fishing operations and/or to improve or alter existing fisheries regulations and processes. For example, *"I think [the] number one [benefit of MSC certification] for us was having a way of measuring the sustainability of the fishery and its impact on target species [...], there is a sustainable harvest strategy for that [now]."* Informant 080220_002	Explicit mention of MSC certification not contributing or making no difference to mitigation of environmental impacts or improved regulations and processes. For example, *"Well, most of the things [management regulations] that are in place to minimize impacts were already in place [before MSC certification]."* Informant 080105_002.
Explicit statements on the positive or improved acceptance of fisheries in Western Australia or Australia by seafood consumers, retailers, investors, etc., as a result of MSC certification. For example, *"the supermarket domestic market, because it's on trend, now want to see some form of certification MSC being one of them and we are finding because we're large and we have MSC certification that we are a preferred partner with supermarkets."* Informant 080218_001	Explicit statements on MSC certification negatively impacting or making no difference to the domestic market. For example, *"MSC means nothing to them [domestic retailers and wholesalers]. And then when you say to them, "look, we can put the MSC [logo] on, but you guys have got to go through the process of chain of custody", they said "No, that's too complicated. It's too hard. Just leave the stickers off. Don't brand the MSC. Yes, we know your MSC certified, but we're not interested in putting that in our shop."* Informant 080220_001
Explicit statements on the positive influence of MSC certification on the export market and/or on the seafood consumers and investors in the nations they are exporting into. For example, *"certainly some fisheries were feeling more and more that the markets they dealt with (particularly for markets for overseas) were requesting sustainable seafood that had a label [...] something that was traceable, accountable and transparent."* Informant 080219_002	Explicit statements on the MSC certification negatively impacting or making no difference to the export/international market. For example, *"I don't think it's opened up too many markets. Broadly speaking."* Informant 080109_001

et al., 2007). Here, we combine and adapt these variables to create a conceptual model of societal approval that is relevant to the fishing (and other) industry(ies) (Figure 1 and Table 1).

Several variables taken from the literature and included in our conceptual model were refined for clarity and relevance. The definition of stakeholder acceptance in our model was based on the social licence variable in the SAP model which did not differentiate between stakeholders, the general public or local community (Bice et al., 2017; Robinson et al., 2020). However, socio-political and community acceptance variables from Wüstenhagen et al. (2007) were discretely defined in our model, as public and community acceptance, respectively (see Figure 1 and Table 1). Market acceptance was defined by Wüstenhagen et al. (2007) as acceptance from consumers, retailers and investors, including both offshore and onshore markets, but we divided this variable into two separate domestic and export market acceptance variables given the fishing industry offshore/export markets and onshore/domestic markets can have distinctly different expectations and requirements (Gephart & Pace, 2015).

2.2 | Case study context and data collection

In 2012, the West Australian State Government, through the Department of Primary Industries and Regional Development (DPIRD), funded an initiative to provide fisheries with the opportunity to obtain third-party certification through the MSC (Bellchambers et al., 2016). For the WA government, the primary aim of the programme was to obtain independent, transparent and rigorous reviews of their science and management to increase public (and consumer) confidence in government processes and prevent ongoing challenges from environmental NGOs (Bellchambers, Gaughan, et al., 2016; Bellchambers et al., 2014). For commercial fishers, the programme was a mechanism to maintain access to existing markets and provide access to new international markets (Bellchambers, Gaughan, et al., 2016) as well as maintain SLO (van Putten et al., 2020). At the time of this study, eight State-managed fisheries had achieved certification against the MSC requirements, including those for western rock lobster (*Panulirus cygnus*, Palinuridae), Exmouth Gulf and Shark Bay prawns (Penaeidae), Peel Harvey blue swimmer crab (*Portunus armatus*, Portunidae), Peel Harvey sea mullet (*Mugil cephalus*, Mugilidae), deep sea crystal crab (*Chaceon albus*, Geryonidae), abalone (Haliotidae) and pearl oyster (*Pinctada maxima*, Pteriidae). The rock lobster fishery, as well as one Commonwealth-managed fishery operating from WA, targeting Patagonian toothfish (*Dissostichus eleginoides*, Nototheniidae) and mackerel icefish (*Champsocephalus gunnari*, Channichthyidae) in waters around Heard Island and McDonald Island, were already certified prior to the WA State Government funding being available and consequently did not benefit from the 2012 funding initiative (see Van Putten et al., 2020 for further details).

Data used in this study were collected from surveys, completed in interviews, with 33 respondents who were involved in seven of the nine MSC certified fisheries either based in or operating out of WA in 2019 (described in van Putten et al., 2020). The survey used was developed to broadly evaluate the socio-economic effects of MSC certification as perceived by different stakeholders, including producers, fish buyers, processors, exporters, managers and NGOs. In particular, the survey focused on expected versus realized benefits from environmental, economic, social and institutional perspectives. It contained both multiple-choice and open-ended questions and was implemented using semi-structured interviews. Interview respondents identified as either a: fisher (n = 4), fishing association (n = 3), fishing company (n = 4), processor (n = 3), government manager (n = 6), government scientist (n = 9), academic scientists or NGO (n = 4) representative. Throughout this paper, the representatives who participated in our study are collectively referred to as respondents or stakeholders. In referring to interview respondents as stakeholders, we acknowledge that stakeholders can encompass a broad group of people with interests and influence at different geographical scales that could extend beyond the respondents included in our study (Brueckner & Eabrasu, 2018).

In this study, only qualitative data from the interviews conducted by van Putten et al. (2020) were used to address our research question. These data generally consisted of responses to the following interview questions: (1) Why did the fishery seek certification? (2) What were the top three benefits that you were expecting from certification? (3) Were there any unexpected consequences from MSC certification? Responses to the relevant interview questions, along with the informant's stakeholder group, were transcribed from audio recordings for content analysis. Ethics approval for this research was obtained through CSIRO (093/19), and consent forms were signed by all participants.

2.3 | Content analysis

Our conceptual model (Figure 1 and Table 1) provided the basis for a deductive content analysis of the 33 transcribed semi-structured interview responses. Content analysis was used to determine whether the eight different licence and acceptance variables were present (P), absent (A), unsure (U) or not mentioned (NM) (Krippendorff, 2004). Definitions used in coding presence and absence of variables are summarized in Table 1, with the full coding protocol provided in Appendix S1. The "unsure" category was assigned if variables presence and/or absence was unknown, unclear and/or different responses were provided from the same respondent for different fisheries (i.e. the variable was coded as present for one fishery but absent for another). If there was no explicit mention of variables, it was coded as not mentioned. The unit of analysis was the transcript from each respondent. Hence, each variable could only be coded with one value per respondent.

The coding protocol (see Appendix S1) was tested and refined on six transcriptions by three coders (LR, FB and BC). Revisions were made to reduce ambiguity in variable definitions and interpretations, and coding was applied to all 33 transcriptions by two of the same coders (LR and BC). After coding was completed, any discrepancies in code values between coders were discussed and resolved via

consensus (Syed & Nelson, 2015) (see Appendix S2 for further details and inter-rater reliability test).not-

2.4 | Evaluating the relevance and influence of certification on societal approval variables

The frequency of presence (P), absence (A), unsure (U) and not mentioned (NM) values provided insight into the relevance and influence of certification on the eight variables included in our conceptual model of societal approval (Figure 1, Table 1). Variables that were more frequently present (relative to other category values, i.e. absent, or unsure) indicated that certification was influential in facilitating or aiding that aspect of approval (Table 1). Variables that were more frequently absent indicated that certification had not influenced or had hindered the relevant approval/acceptance process (Table 1). Variables that were more frequently coded as unsure indicated that the influence of MSC was unclear or unknown and those variables that were more frequently not mentioned revealed they were less relevant.

To explore the significance of observed frequencies across value categories for each variable, we tested this statically by comparing observed and expected frequency distributions. Our null hypothesis (H_0) was that observed and expected frequency distributions across categories would be equal. The alternative hypothesis (H_1) was that the distribution of observed and expected frequencies would be different. Given the relatively small sample size ($n = 33$) and uncertainty regarding expected frequency distributions across P, A, U and NM categories, we tested the statistical significance of the frequencies (for each variable) using two different statistical measures (chi-squared and Hellinger distance; Cha, 2007) and expected frequency distributions (uniform and informed). The uniform distribution assumed expected frequencies with equal probabilities across each value category, and the informed distribution estimated probabilities from pooling category counts across the whole data set.

Different statistical tests were used given expected frequencies were less than five in the "unsure" category for all variables when the expected distribution was informed by the pooled data set—rendering the chi-squared test less robust when an informed distribution was assumed (Berman & Wang, 2018). *p*-values in all statistical tests were calculated using bootstrapped resampling without replacement. A Bonferroni correction was applied and only those variables where *p*-values were smaller than .05 across all statistical measures and expected frequency distributions were considered statistically significant.

3 | RESULTS

Based on the analysis of transcribed interviews on the certification of fisheries in WA, all societal approval aspects were mentioned by at least one respondent (Figure 2), indicating that all variables were relevant in the study context. Public acceptance (PA) and community acceptance (CA) were mentioned less frequently than other variables and value categories (i.e.there were higher proportions of not mentioned—NM—values). Consequently, we can assume that these variables were perceived to be less relevant or important than other variables (Figure 2).

Government licence (GL) and regulatory licence (RL) were the most frequently mentioned relative to other variables, and the presence of these variables was also significantly more frequent relative to other value categories (Figure 2). For GL, no respondents were unsure, only a few indicated it was absent and a small proportion

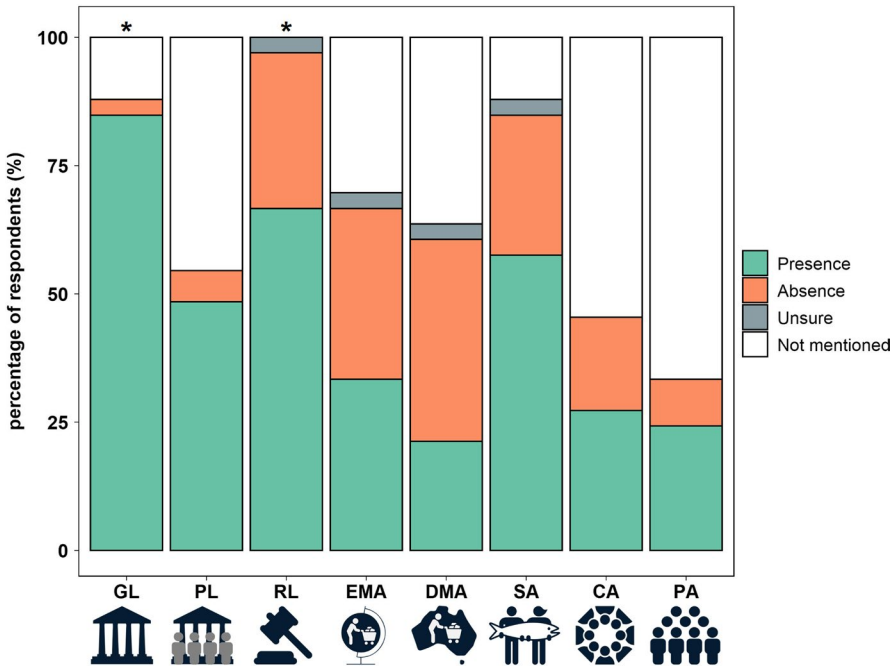

FIGURE 2 The percentage frequency of respondents who perceived government licence (GL), political licence (PL), regulatory licence (RL), export market acceptance (EMA), domestic market acceptance (DMA), stakeholder acceptance (SA), community acceptance (CA) and public acceptance (PA) variables as present (P), absent (A), unsure (U) or not mentioned (NM). Variables that had statistically significant frequency values are denoted by * at alpha <0.05 (note for a variable to be significant in our analysis it needed to be statistically significant in the chi-squared and Hellinger distance tests that assumed uniform and informed expected distributions—see Methods Section 2.3 for further details)

(~12%) of respondents did not mention this variable (Figure 2). While RL was mentioned by all respondents (i.e. 0% not mentioned), it was more frequently absent (~30%) than GL (~3%) (Figure 2). Stakeholder acceptance (SA) was the third most frequently present variable, but just over a quarter of respondents perceived SA as being absent (Figure 2). Export market acceptance (EMA) absence and presence was mentioned by respondents with equal frequency (Figure 2). Domestic market, acceptance was more frequently mentioned as being absent than present (Figure 2). Just under half (~48%) of respondents mentioned the presence of political licence (PL) with only a small proportion mentioning it as being absent (6%) (Figure 2). The observed frequency distribution of value categories was not statistically significant for variables other than GL and RL (Figure 2).

4 | DISCUSSION

In this study, we built a conceptual model for analysing government (direct and indirect, i.e. GL and PL) and regulatory licences (RL), and market (domestic (DMA) and export (EMA)), public (PA), community (CA) and stakeholder acceptance (SA) that are all necessary for societal approval of the fishing industry. Here, we use the conceptual model to analyse the perceived influence of third-party certification on societal approval of certified fisheries in WA, but it could be applied in any country where fisheries operate or be modified to assess the approval of other industries. Additionally, our conceptual model is broadly applicable in understanding societal approval of fisheries without focusing on the influence of certification or it could be applied to better understand the influence of any public or private management intervention.

Our analysis shows that third-party environmental certification was most influential on facilitating government approval of industry (i.e. government licence) and improving the regulatory approval process (i.e. regulatory licence). Export and domestic market acceptance were less influenced by third-party environmental certification (than government and regulatory licences), with survey respondents expressing these variables as being more (or equally) absent than present. Additionally, certification was not found to have a statistically significant influence on the presence (or absence) of stakeholder, community or public acceptance with most respondents not mentioning community and public acceptance. We discuss our empirical findings on the different aspects of societal approval further below and highlight potential implications for third-party certification, industry and different societal groups globally.

4.1 | Government and political licences

In the WA fisheries context, third-party certification was highly influential on government approval of industry process (i.e. GL). This approval aspect was referred to as being present by nearly all respondents. In particular, respondents mentioned the State government's financial support for fisheries to become certified in addition to the time provided by state fisheries management staff in assisting (fishing companies) with understanding certification standards and requirements. While the WA third-party certification initiative aimed to improve public perceptions of fisheries sustainability (Bellchambers, Phillips, et al., 2016), certification can also act as a form of environmental policy (Dosi & Moretto, 2005) that is perceived by some to compliment (Lester et al., 2013) and by others to diminish (Jacquet et al., 2010) policies focused on conservation of marine life. Given government investment in certification coincided with broad-scale implementation of Marine Protected Areas around Australia (Edgar et al., 2018; Kearney et al., 2012), it is also plausible that it may have assisted with a broader political strategy to manage conflicting views and interests in marine resource use and management (Alexander & Abernethy, 2019).

The facilitation of government support and approval of the fishing industry through third-party certification is consistent with previous studies that have examined the political benefits (and challenges) of MSC certification for WA fisheries (Alexander & Abernethy, 2019; Bellchambers, Phillips, et al., 2016). While this result may partly be a product of the certification scheme being initiated by the WA government, it is also consistent with a broader trend among governments in developed nations globally (Karavias, 2018). When certification programmes initially emerged, many governments and fishing industry representatives were sceptical about how a single set of standards was going to apply to the diverse conditions under which fish are harvested internationally (Karavias, 2018). However, since the FAO established guidelines for seafood ecolabelling, and it became apparent that certification standards from programmes such as the MSC had drawn heavily on agreed international fishery management norms, there has been an increasing willingness for governments to support certification schemes (Karavias, 2018).

Government support for industry (i.e. GL) is often essential for business success, as it can greatly influence export and domestic market acceptance (Wüstenhagen et al., 2007). However, if citizens perceive this approval to be too favourable, and it does not align with their personal interests, it can negatively impact a government's political licence, the industries government licence and industry acceptance from the wider public, local communities and stakeholders (Brueckner & Eabrasu, 2018; Robinson et al., 2020). Our study provided no evidence to suggest certification was having a significant influence on public approval of the WA government (i.e. PL), but it would be prudent of government to better understand how their historical and any further future investments in third-party certification of fisheries are perceived by the wider public.

4.2 | Regulatory approval

Despite Australian fisheries being highly regarded as well-managed (Pitcher et al. 2009; Bellchambers, Gaughan, et al., 2016), respondents in our study generally perceived that the third-party certification initiative had improved the management of WA fisheries and facilitated regulatory approval (i.e. RL). The most mentioned

improvement by respondents was related to the development of formal harvest strategies, which is essential to meeting the MSC standard (Bellchambers, Gaughan, et al., 2016; MSC, 2018). Harvest strategies document the indicators used to assess the status of the fishery and the harvest control rules applied when the risk of fishing activities is considered too high and management intervention is required (Fletcher et al., 2016). While rules existed within the regulation of WA fisheries prior to MSC certification, the certification process resulted in their clear and public communication (Bellchambers, Gaughan, et al., 2016). This finding is consistent with a global analysis of the interactions between MSC certification standards with international law on fisheries that found effective synergies between the two (Karavias, 2018). MSC standards and guidelines rely heavily on international law and the Food and Agriculture Organisation (FAO), who are aware of the influence of private certification as a (voluntary) regulatory instrument, has promoted its ecolabelling guidelines and boosted the visibility and legitimacy of this certification programme (Karavias, 2018). In this synergistic relationship, international law retains its traditional function of regulating the conduct of states and international organizations serve as a reference for private certification schemes (Karavias, 2018). Meanwhile, certification schemes gain legitimacy through their consistency with international law and do not seek to antagonize or supplant it (Karavias, 2018). Consequently, certification presupposes State compliance with international law, which is partly why well-regulated marine areas surrounding developed states, like WA, seek out certification.

Perceptions of improved management and regulation of industry from the general public can be important in building (or restoring) trust in regulatory processes and responsible institutions (van Putten et al., 2018). If local communities, the wider public, consumers and retailers had similar perceptions to stakeholders engaged in our study, of certification facilitating and improving fisheries management and regulation, this could result in greater industry acceptance from these groups. However, a better understanding of how these groups perceive, certification and the fishing industry is required to draw any further conclusions. Greater acceptance of fisheries, due to a perceived improvement in fisheries management from certification, would also necessitate an awareness among these civic groups of the changes that may have occurred to regulatory approval of fishery operations due to certification. Greater participation in seafood certification processes from consumers and other societal groups (not currently included as stakeholders) may assist in building awareness of (1) what certification programmes do and (2) how certification can influence/improve mandatory government regulation processes which could consequently improve perceptions of different societal groups towards the fishing industry. Alternatively, government regulation processes could seek greater direct civic engagement and participation in regulatory and legal approval processes of industry activities, which can in turn lead to greater acceptance (van Putten et al., 2018; Robinson et al., 2020; Uffman-Kirsch et al., 2020). Such arrangements move state-based governance towards more inclusive co-management arrangements (Robinson et al., 2020), but authorities need to carefully consider the benefits and challenges of formally integrating public views into aspects of mandatory regulation, as the quest for greater inclusivity can compromise the quality of consultation in natural resource management problems (Gregory, 2017).

4.3 | Export and domestic market acceptance

Market acceptance is necessary for industry survival and it may be expressed by consumers, retailers and investors in various forms such as attitudes, behaviours and importantly investment (Wüstenhagen et al., 2007), yet the market benefits of third-party certification have been less apparent for fisheries in WA (Bellchambers, Gaughan, et al., 2016; van Putten et al., 2020). In our study, only half of respondents who mentioned export market acceptance (EMA) perceived that MSC had generated market opportunities for industry, while the other half indicated that it had made no difference. This is in contrast to evidence from Europe (Bhate & Lawler, 1997; Del Giudice et al., 2018; Fernández Sánchez et al., 2020) and the United States (Gutierrez & Thornton, 2014b), where ecolabels on seafood products are common and have affected consumer preference and purchasing behaviour. This may be explained by the fact that most certified WA fisheries that sell their product overseas, primarily export into China, where ecolabelling is less recognized and where concerns of environmental sustainability are less important than factors such as food safety (Fabinyi et al., 2017), although this could be changing among younger generations (Song et al., 2019). Domestic market acceptance (i.e. within Australia) was also mentioned less frequently in our study. Several survey respondents noted that the perceived absence of the MSC logo on products in Australian stores may be responsible for domestic consumers being largely unaware of product certification. This is despite the fact that certain locally caught and sold fish products are indeed certified. The perceived lack of certification influence on the international and domestic market acceptance of WA fisheries may therefore be due to a number of factors including: a lack of demand (from consumers, retailers and investors) for certified seafood; and/or limited awareness of the ecolabel due to most retailers opting out of MSC supply chain certification (i.e. to exhibit a label on a consumer-facing product, all intermediaries in the supply chain, in addition to the harvesters, need to be certified), and other factors not explored here.

Ecolabels are an information device that allow consumers to make an informed choice about products they purchase (Gutierrez & Thornton, 2014b). While the appearance of the ecolabel on a seafood product does not guarantee its selection, if this information is not available then it cannot influence consumers purchase and support for certified operators. With consumer concerns for environmental and social issues relating to seafood emerging in many Asian countries (Taufique et al., 2014) and among younger consumers globally (Del Giudice et al., 2018), demand for certified seafood may be growing in these markets. For this to have a chance of taking effect for WA certified fisheries, the presence of ecolabels on seafood products will perhaps need to increase and become more

prominent. In promoting greater visibility of ecolabels important lessons can also be learnt from countries where a number of different seafood ecolabels are available, and where the different certification programmes and associated labels are now causing confusion for both consumers and retailers who lack the capacity to identify labels that are credible and verifiable (Roheim et al., 2018). To address confusion arising from multiple ecolabels, partnerships such as the Global Sustainable Seafood Initiative (GSSI) are establishing common standards to benchmark sustainability standards (Roheim et al., 2018). Such initiatives could be valuable both in WA and globally to facilitate ecolabel consolidation and improve fisheries market acceptance for both retailers and consumers (Agnew, 2019; Roheim et al., 2018).

4.4 | Local community, wider public and stakeholder acceptance

Research from other industries, such as mining, renewable energy and aquaculture have found community and wider public acceptance to be critical for industries as a lack of acceptance can manifest as resistance and disrupt industry operations through protesting, blockading and lobbying (Baines & Edwards, 2018; Moffat & Zhang, 2014; Robinson et al., 2020; Vince & Haward, 2019; Wüstenhagen et al., 2007). Contrary to this, our study suggests that acceptance of fisheries through third-party certification was less relevant to local WA communities and the Australian public. At a local community level, acts of resistance towards the wild-capture fishing industry may be perceived as less likely in general (with or without certification) than, for instance, resistance towards mining, renewable energy, or aquaculture industries. In all of these other industries, residents have resisted developments due to visual aesthetics, among other reasons (Katranidis et al., 2003; van der Plank et al., 2016; Roddis et al., 2018). In our study, only one respondent mentioned the visual appearance of fishing boats operating in a World Heritage Area being a problem for local community members. However, as the activities of most wild-capture fisheries do not have the same visual impact on local communities as other industries (D'Souza & Yiridoe, 2014), community acceptance may be less relevant for wild-capture fisheries in WA (and elsewhere) than it is for some other industries and in fact may even have visual amenity for the tourism industry when fishing boat is moored in a harbour (Khakzad & Griffith, 2016).

Another potential explanation for both community acceptance and public acceptance being less relevant for the certification of WA fisheries may arise from a potential lack of awareness that WA fisheries are indeed certified and/or an understanding of the certification process itself. Several respondents in our study mentioned that they believed most West Australians and local community members were not aware that WA fisheries had been MSC certified. This would be consistent with other studies that have indicated certification programmes have not yet found a way to meaningfully engage, measure and integrate the views and social concerns of some societal groups when assessing the sustainability of a fishery (Foley & McCay, 2014; Foley et al., 2018). However, we did not interview local community members or the wider public in our study so we cannot be sure why perceived relevance was lacking for these groups (i.e. it may be from a lack of representation and/or consultation with these groups). Further study on the views and perceptions of local community groups and the wider public, through direct engagement and consultation with these groups, is essential in understanding the exact contribution of third-party fisheries certification on local community acceptance and that of the wider public.

The relatively frequent presence of stakeholder acceptance in our analysis suggests that most respondents in our study perceived third-party certification was facilitating acceptance of fisheries by stakeholders, which is broadly consistent with previous studies (van Putten et al., 2020). However, the aggregation of interest groups and the use of vague and non-specific language by respondents when referring to the acceptance of different stakeholders created some ambiguity in the meaning and interpretation of this variable. Our definition of stakeholder acceptance was adapted from definitions of the social licence concept (i.e. Bice et al., 2017; Robinson et al., 2020), its application in our analysis resulted in perceived influences of certification on local communities and the wider public being aggregated with other interest groups that are more typically considered as stakeholders in a fisheries management context (e.g. fishers, processors, managers, NGOs and scientists) (Mikalsen & Jentoft, 2001). Additionally, when study respondents mentioned certification aiding social licence, trust and credibility of the fishing industry, it often included vague references to "communities," "people" or the "public" rather than a specific reference to the groups in towns, regional areas or even within Western Australia who may be directly (or indirectly) affected by fisheries operations.

Without clear definition in who stakeholder acceptance is being granted from, ambiguity can proliferate, complicate and delegitimize approval and acceptance claims (Brueckner & Eabrasu, 2018). The ambiguous use of the social licence term by members of the mining industry, that has been used to implicitly represent acceptance from various non-specific civic groups, has undermined the legitimacy of SLO claims in this sector (Parsons & Moffat, 2014). Indeed, if industry members (or government authorities) assume that a particular action, such as third-party certification makes fishing operations more acceptable to stakeholders without adequate consultation and information to support such claims, this could reinforce managerialist ways of thinking about the social and environmental responsibilities of industry (or government) and marginalize the views of different civic groups (Parsons & Moffat, 2014).

Ambiguity in the stakeholder acceptance variable that was introduced through aggregating a number of interest groups was partly resolved by analysing both community acceptance (CA) and public acceptance (PA) variables separately, but our experience of trying to adapt social licence definitions to empirically assess the influence of certification on stakeholder acceptance further supports research that has found the social licence term to be more vague, normative and rhetorical than practical (Brueckner & Eabrasu, 2018; Gehman

et al., 2017; Harvey & Bice, 2014). Hence, we recommend future definitions and analysis of stakeholder acceptance remove any reference to community and the general public (vague or specific) and explicitly identify the remaining interest groups included.

In redefining and assessing stakeholder acceptance, identifying which interest groups are relevant and legitimate stakeholders and accommodating the often diverse and sometimes conflicting views will present challenges that may require further division and separation of groups included in this variable. Differences in acceptance among different stakeholders have been addressed in a study that assessed the acceptance of restoration options for the Great Barrier Reef (Taylor et al., 2019). Stakeholders were divided into traditional owners (i.e. rights and responsibilities mean these stakeholders have a distinct status while still sharing characteristic and roles with other stakeholders), livelihood (i.e. including resource-dependent and associated industries), institutional (i.e. local, regional, state and potentially other governing bodies or organizations with responsibilities and interests in the resource) and civic society (i.e. broader public and other interests in the resource from individuals to groups) stakeholders and their levels of acceptance were assessed separately (Taylor et al., 2019). These sub-divisions of groups within stakeholder acceptance may also be useful in future research that examines the influence of certification (and other actions) on societal approval of fisheries. In our study, several respondents stressed the importance of third-party certification in addressing NGO concerns. A more detailed analysis of stakeholder acceptance of fisheries would place perceptions of acceptance about (or from) this group under civic society stakeholder acceptance (Taylor et al., 2019). As certification programmes widen their focus to consider social justice and social sustainability (i.e. fishing crew health and safety aspects) alongside environmental sustainability, the views and concerns of different stakeholder groups as well as local communities and members of the wider public are likely to become increasingly pertinent for fisheries (Bennett et al., 2019).

5 | CONCLUSION

The conceptual model developed in this study for analysing the influence of third-party certification on societal approval of commercial fisheries highlights the benefit of assessing the perceived acceptance of more specific societal groups (i.e. separating and evaluating the views of the wider public from local communities and stakeholders in conjunction with political, regulatory, market groups). Our empirical study of stakeholder perceptions of third-party certified WA fisheries revealed that certification facilitates government and regulatory approval of industry. Stakeholder acceptance was perceived to be frequently present, but this was not statistically significant and given the definition of this variable was adapted from SLO definitions, its practical application in our analysis was compromised by ambiguity. This ambiguity was introduced though a lack of differentiation between local communities and the wider public from other interest groups, such as fishers, scientists and eNGOs, that are more commonly identified as stakeholders in a fisheries management context. Hence, we recommend future definitions of stakeholder acceptance omit local communities and the wider public (as they are already discretely included in our conceptual model of societal approval) and explicitly identify other relevant and legitimate interest groups.

Certification also had little influence on domestic and export market acceptance. This is perhaps more specifically applicable to the WA context and related to the perceived absence of MSC (and other eco) labels on WA seafood products sold locally and abroad. While fisheries choosing not to display labels on their products may be relatively unique to WA, the efficacy of certification programmes to influence consumer choice and behaviour market has been variable in different countries and fisheries globally. This result provides an opportunity to reflect on when the business model of third-party certification schemes may be best applied to influence the market aspect of societal approval and whether in some countries certification may be most effective at bolstering perceptions of regulatory licences and government approval. Insights from applying our conceptual model also revealed certification was less influential on local community and wider public acceptance.

Our study provides valuable insights on how certification is perceived to influence a variety of societal approval aspects. Ideally, further research would provide representation of the perceptions of local communities, the wider public, consumers and a more diverse group of stakeholders including traditional owners and rights holders, to complement the work presented here. Assessing wider public, stakeholder and local community acceptance directly, through employing methods that facilitate meaningful engagement and participation from these groups in the certification process, would not only result in greater societal influence, but could also be used to develop measures of social justice along with perceived concerns of industry operations that could inform future sustainability assessments.

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AUTHOR CONTRIBUTIONS

Please see the following authorship statement for further details on how co-authors contributed to different stages of the research. LR and IvP conceived and designed the study. LR, IvP and FB developed the methods. IvP and LR performed interviews. LR and BC conducted the content analysis. LR, FB and BC performed the statistical analyses. LR prepared the figures. All authors had equal input in the interpretation of results. LR led the writing of the manuscript with substantial input from all authors.

DATA AVAILABILITY STATEMENT

Due to the relatively small sample size of the respondents interviewed in Western Australia, confidentiality issues prevent a full release of the information where the identity of the respondent could potentially be revealed. Any chance of identification through data release is in contravention of our ethics approval. The study was approved by CSIRO's Social Science Human Research Ethics Committee in accordance with the National Statement on Ethical Conduct in Human Research (2007). Interested researchers can request access to the data by getting in touch with the Manager of Social Responsibility and Ethics on +61 (07) 3833 5693 or by email at csshrec@csiro.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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