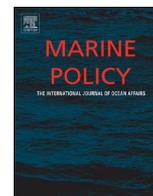




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Marine Policy

journal homepage: www.elsevier.com/locate/marpol

Government effectiveness, regulatory compliance and public preference for marine policy instruments. An experimental approach



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ARTICLE INFO

Article history:

Received 7 January 2016

Received in revised form

18 May 2016

Accepted 18 May 2016

Keywords:

Environmental steering instruments

CPR management

Governmental effectiveness

Regulatory compliance

Fisheries

Scenario experiment

Sweden

ABSTRACT

Democratic governance of natural resources requires democratic accountability. To explore the antecedence of public preference for marine policy instruments, this study revisits previous research findings linking inefficient political institutions to demand for more coercive policy tools. Thus, the aim of this study is to investigate the influence of 1) effectiveness of authorities and 2) regulatory compliance among resource users on the public preference for marine policy instruments. A 2 × 2 between-subject scenario experimental approach was utilised, where the effectiveness of authorities and regulatory compliance of shrimpers varied. Respondents were asked to rank three different marine policy instruments: 1) tougher penalties for noncompliance, 2) dialogue between authorities and resource users and, 3) tradable quotas. The results from the scenario experiment demonstrate that ineffective authorities increase the preference for tougher penalties. A potential explanation for this finding is that regulation implies less discretion, and hence regulation is preferred when public institutions are inefficient.

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1. Introduction

Political theorists are paying increased attention to the important role of the state in governing the commons [16]. Democratic governance of natural resources requires democratic accountability to the people, thus challenging researchers to explore further the explanatory of public policy preferences in common pool resource (CPR) management.

Decreasing fish stocks due to rule violation and excessive overfishing have challenged policy-makers to design new kinds of policy instruments to promote sustainable fisheries. The prior literature has explored resource users' preferences for steering by, for example, tougher penalties for non-compliance, promotion of dialogue between authorities and resource users, and tradable allowances [12]. There is also a large literature arguing that both horizontal trust between resource users and resource users' vertical trust in the authorities managing the resource can account for variations in compliance with policy regimes [13–15,19,2,21,22,24,4]. For a critical perspective, see [23].

However, marine resources belong to the public, and therefore

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<http://dx.doi.org/10.1016/j.marpol.2016.05.021>

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steering instruments in fisheries should take the public interest into account [17]. Comparatively little attention has been paid to the important role of public preferences in governing marine resources. This means that despite the fact that public acceptance and legitimisation of any steering instrument is essential for democratic governance of natural resources, less is known about the factors influencing public preferences for marine policy instruments.

Results from previous studies investigating predictors of policy preferences in general among the public have given rise to an interesting puzzle. Several studies show that people living in the context of corrupt and inefficient political institutions demand more regulation and coercive policy tools, and scholars are intrigued by that: [3,6,7,20]:

“why do people in countries with bad governments want more government intervention?” ([3], 1018) The explanation provided is that the prevalence of *market failure* and *government failure* are highly correlated [1]. In societies where market actors generate negative consequences, such as CPR depletion, the government fails to provide or protect the CPRs. Facing both market failure and government failure, people tend to demand government intervention. The will to prevent the entrance of potential free riders and to punish market actors that defect is strong¹ and outweighs

¹ That the will to punish defecting behavior is strong has been shown repeatedly in experiments. People dislike defecting behavior and are prepared to punish it even if such punishment is costly [8].

the ineffectiveness of the authorities actually implementing the policies [1,3].

This theory is advanced to explain cross-country variation in demand for regulation, but there is also individual level data to support this view. Aghion et al. [3] focus on people's perceptions of trustworthiness in their attitudes toward the regulation of business actors and Harring [10] focuses on people's perceptions of trustworthiness in their attitudes toward the regulation of both business actors and citizens in general. Both these studies show that people with low trust in other citizens (or interpersonal trust), low trust in market actors and low political trust tend to prefer punishing regulation [3,10].

These are interesting and important findings, but the prior studies suffer from three critical limitations:

1. Previous cross-section studies have been incapable of establishing causality, e.g. it is impossible to say if *ineffective/untrustworthy institutions have a causal effect on policy preference* or if it is merely a matter of association.
2. The causal mechanism linking ineffectiveness/untrustworthiness with policy preference is not put to a proper test. In survey analysis, different trust variables are often highly correlated [18,27]. People who perceive that implementing institutions are trustworthy also tend to trust other people in general. In order to say something about the effect of the tension between market failure and government failure on policy preferences, *the effect of trust in market actors and trust in authorities* needs to be isolated
3. Trust is a multidimensional concept, consisting of different components. According to Stern [25], 'social trust' is based on perceptions of shared values, identities and experiences and 'rational trust' is understood as evaluations of expected outcomes. Stern and Coleman [26] distinguish between dispositional, rational, affinitive and procedural components of trust. Understanding the role of trustworthy institutions in relation to policy preference requires a *focus on rational aspects of trust*. This is essential in order to test properly the mechanism suggested in the prior literature, namely, that trust in this context refers to perceived governmental effectiveness in preventing defectors from entering the market.

To address the limitations in the prior literature, the aim of this paper is to investigate the isolated influence of 1) the effectiveness of governmental authorities² and 2) regulatory compliance among fishermen on the public's preferences for marine policy instruments.

2. Two hypotheses

Building on the evidence in the prior literature demonstrating that dysfunctional authorities are associated with a preference for more regulation [3,6,7,20] and more coercive policy tools [10,11] the first hypothesis reads as follows:

H1. *Ineffective authorities increase the preference for command-and-control types of policy measure.*

H1 is rejected if there is no significant impact by government effectiveness on the preference for command-and-control forms of steering. However, prior research also claims that the explanation for the association between inefficient government intervention

and demand for more coercive policy tools is the co-variation between ineffective authorities and distrust; hence, low trust in resource users results in a willingness to punish free riders. In order to confront the theorised mechanism with empirics, the second hypothesis reads as follows:

H2. *Ineffective authorities increase the preference for command-and-controls type of policy measures only when regulatory compliance is low among resource users.*

3. Methods and materials

3.1. Experimental procedure

In order to test the two hypotheses, a hypothetical scenario experiment was implemented. Scenario vignettes and related questions were handed out to a total of 252 undergraduate students at the Faculty of Education, University of Gothenburg. The response rate was 91%, comprising 231 completed scenario surveys. Participants were randomly assigned to one out of five different scenario vignettes. They were asked to read a scenario vignette and to answer the related questions during a break in their lecture; it took them about five minutes to complete. It was made very clear that participation was voluntary. In addition to a question about policy preferences (see below), the respondents were also asked questions about their environmental concerns, their position on the left-right political scale, and their gender.³

3.2. Experimental design

A post-test-only 2 × 2 full factorial design was utilised, in which the effectiveness of the responsible authorities and the regulatory compliance of Swedish shrimpers were between-subject factors (see Appendix A for the scenario vignettes).

First, scenarios diverge with regard to the description of the authorities. In half of the scenarios, it is stated that the authorities have been criticised for the manner in which they have worked on the issue of sustainable shrimp fisheries. In the other half, it is stated that the authorities have been praised for their work with sustainable shrimp fisheries. The vignettes thus capture whether the fishing authorities are effective or ineffective.

Second, scenarios diverge with regard to the description of the shrimpers. Half of the scenarios emphasised that Swedish shrimpers quite often practice high-grading, and in the other half of the scenarios, it is stated that high-grading is quite rare among Swedish shrimpers. High-grading is an illegal practice in which the shrimper throws back less profitable catches in the hope of landing catches that pay better. Whether this is rare or common among Swedish shrimpers thus captures whether shrimpers are complying with regulations or not. The combination of the two stimuli rendered four different conditions, as illustrated in Table 1.

In addition to the four scenario vignettes generated by the 2 × 2 design, a scenario was distributed without any information regarding either the authorities or the shrimpers.⁴ Respondents assigned to this scenario comprised part of the control group.

3.3. Scenario and measurements

Respondents were asked to read a scenario vignette and then rank three different policies in line with their opinion concerning

² It is important to note that the focus is on trustworthiness as an assessment of whether authorities are effective, not whether the authorities are important as such.

³ In the group, 85% are women, 61% consider themselves as being on the left politically and 29% regard themselves as very interested in environmental issues.

⁴ After the experiment, the respondents were informed that the provided information was not entirely correct.

Table 1
Four different experimental conditions.

	Effective authorities	Ineffective authorities
Regulatory compliance among CPR users	A	C
Regulatory non-compliance among CPR users	B	D

the best way to counter overfishing among shrimpers. The scenario vignettes and subsequent questions were as follows:⁵

Researchers and specialists are currently estimating that the Swedish shrimp stock is threatened by overfishing. Many experts [**also/despite this**] believe that Swedish authorities are [**ineffective/effective**] in combating over-fishing. Efforts to combat overfishing are not just about the work of the authorities, but also about what the fishermen are actually doing. The most profitable for shrimpers is to catch large shrimp that can be sold at a price that is significantly higher than the less sought but more common raw shrimp. High-grading means that fishermen throw back the cheaper catch in the hope of getting something more profitable. High-grading is banned in Sweden because it poses a serious threat to the shrimp stock. Calculations show that the so-called high grading is relatively [**unusual/usual**] among Swedish shrimpers. Researchers and specialists [**nevertheless**] argue that new steering is needed.

In the on-going debate about fisheries policies, several different means to achieve a sustainable shrimp fishery are being discussed. We now want you to rank the three proposals based on what you consider to be the most effective way to combat overfishing of shrimp stocks. 1=the most effective option, 2=the second most effective option, 3=the least effective option.

The three different options were:

1. Tougher penalties for shrimpers violating regulations.
2. Promotion of dialogue between the authorities and fishermen.
3. Implementation of tradable allowances limiting the number of days that fishermen are allowed to fish for shrimp and that fishermen can buy and sell among themselves without interference from the authorities.

3.4. Sample characteristics

The majority of the participants were women. Respondents to the survey are politically oriented more to the left than a representative sample of the Swedish population asked the same question. In addition, an analysis of responses to the question about interest in environmental issues indicates that the respondents of the survey are somewhat more interested in the environment, than are the representative Swedish sample.⁶

3.5. Statistics

To assess the influence of the stimulus on respondents' most preferred policy alternative, a multinomial logistic regression model was used, which estimate the probability among the respondents of choosing a particular policy as their most preferred under control for the other preferences.

⁵ Scenario stimuli manipulation in bold and square brackets. In the control scenario, sentences with the stimuli manipulations were eliminated.

⁶ The national SOM Survey 2014: www.som.gu.se/.

4. Results

As mentioned above, the respondents were given three policy options: 'Tougher penalties' (command and control); 'Dialogue' (soft steering), and 'Tradable allowances' (resources user managed). Table 2 shows that the policy that was most favoured by the respondents was 'Dialogue'. 'Dialogue' turned out to be the most popular policy alternative in all groups. Moreover, in all groups, for all scenarios except that in which the authorities are described as ineffective and regulatory non-compliance low (scenario C), the 'Dialogue' policy alternative was ranked as the best option by more than half of the respondents. Among the four groups subject to experimental treatment, the 'Tradable allowances' option was the most popular in the scenario in which the government was described as inefficient and regulatory non-compliance rare. However, interestingly, this option was also the most popular in the control group, in which no information was given about either government authorities or resource users, while 'Tougher penalties' was the least popular option when no information was given.

The first hypothesis of this paper says that ineffective authorities increase the preference for command-and-control types of policy measure. The results obtained lend support to this hypothesis. In scenarios where government authorities were described as ineffective (scenarios C and D), 37% chose 'Tougher penalties', whereas in scenarios where government authorities were described as effective (scenarios A and B) 22% chose 'Tougher penalties'.

The second hypothesis says that ineffective authorities increase the preference for command-and-control types of policy measure *only* when the regulatory compliance among resources users is low. There is no support for this hypothesis. In scenario C, 33.3% chose 'Tougher penalties', less than the 41.5% who chose 'Tougher penalties' in scenario D. However, even if non-compliance is rare, almost a third chose 'Tougher penalties' if government authorities are described as ineffective.

There is also an interesting dynamic between resource-managed systems ('tradable allowances') and command-and-control instruments ('tougher penalties') when the authorities are described as ineffective and regulatory non-compliance widespread. In this scenario, the 'Tougher penalties' policy alternative is almost six times more popular than the 'Tradable allowances' alternative (41.5% vs. 7.3%). In the scenario where the authorities are described as ineffective but regulatory non-compliance rare, the 'Tougher penalties' policy alternative is more popular than the 'Tradable allowances' alternative, but the difference is comparatively small (33.3% vs. 24.4%).

It is also notable that the share of respondents who pick 'Tradable allowances' as the best policy is substantially lower in the scenario where the authorities are described as ineffective and regulatory non-compliance is widespread than in the scenario describing the authorities as ineffective but non-compliance as rare. Hence, compliance among resource users seems to increase the preference for resource-user-managed types of policy measure. The differences between 'Tougher penalties' and 'Tradable allowances' in the different scenario groups are illustrated in Fig. 1:

In order to test these findings formally, a multinomial logistic regression model was applied to the data, presented in Table 3, with odds ratios (ORs) and 90% confidence intervals displayed. The table shows that the respondents in the group of participants in the 'ineffective authorities' stimuli group prefer 'Tougher penalties' to 'Dialogue' 2.13 (C.I. 1.19–3.81) and 'Tradable allowances' 2.12 (C.I. 1.00–4.54). Put differently, this implies that respondents who were told that the authorities are inefficient were more likely to choose 'Tougher penalties' as their preferred policy. Hence H1 cannot be rejected.

Studying the effect of the compliance/non-compliance stimuli,

Table 2

The per cent (%) each policy alternatives rated as the most effective, in the four scenario groups and in the control group (number of respondents in parenthesis).

	Tougher penalties for lawbreakers	Promotion of dialogue between authorities and shrimpers	Tradable allowances	
Effective authorities/regulatory compliance (A)	20.0% (9)	57.8% (26)	22.2% (10)	100.0%
Effective authorities/regulatory non-compliance (B)	23.9% (11)	58.7% (27)	17.4% (8)	100.0%
Ineffective authorities/regulatory compliance (C)	33.3% (15)	42.2% (19)	24.4% (11)	100.0%
Ineffective authorities/regulatory non-compliance (D)	41.5% (17)	51.2% (21)	7.3% (3)	100.0%
Scenario control (E)	13.0% (6)	52.2% (24)	34.8% (47)	100.0%

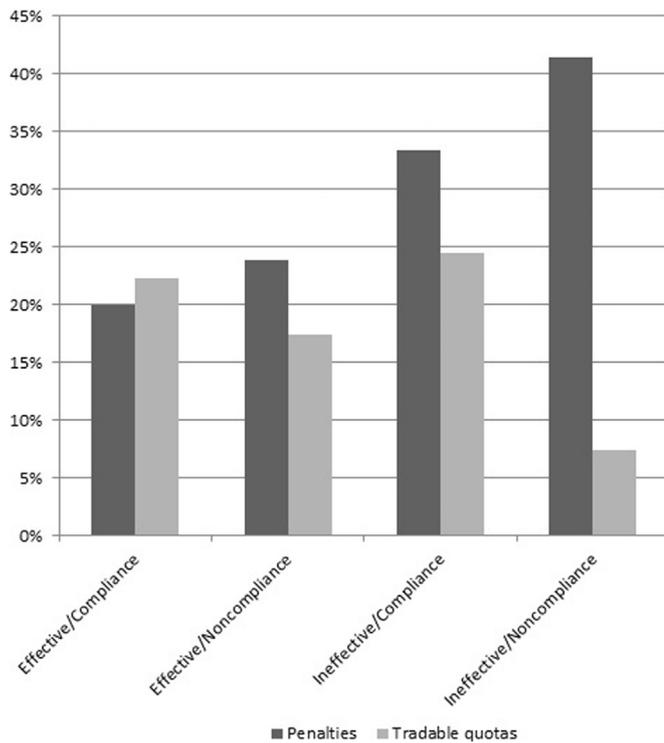


Fig. 1. The per cent (%) of the ‘Tougher penalties’ and ‘Tradable allowances’ alternatives rated as the most effective, in the four scenario groups.

Table 3

Odds ratio and 90% confidence interval for each policy alternative being the most favoured.

	Multilevel logit estimates		
	Penalties vs dialogue	Penalties vs tradable allowances	Dialogue vs tradable allowances
	OR (C. I.)	OR (C. I.)	OR (C. I.)
Stimuli			
Effective government	1	1	1
Ineffective government	2.13 [1.19,3.81] <i>P</i> =0.033	2.12 [1.00,4.54] <i>P</i> =0.102	1.00 [0.50,1.99] <i>P</i> =0.945
Compliance	1	1	1
Non-compliance	1.13 [0.63,2.01] <i>P</i> =0.734	2.29 [1.06,4.96] <i>P</i> =0.076	0.49[0.24,0.99] <i>P</i> =0.095
N=177 X ² (df=4)=8.63 Pseudo R-square=0.024			

there is a significant difference in the likelihood of preferring ‘Tougher penalties’ to ‘Tradable allowances’. The respondents are more likely to prefer ‘Tougher penalties’ to ‘Tradable allowances’ (2.29 C.I. 1.06–4.96) in the non-compliance group. This lends some support to the argument that people prefer more government intervention when compliance is low. However, it does not by any means fully explain why ineffective institutions generate a higher demand for regulatory and punishing instruments, as already shown by the differences presented in Table 3. Hence, H2 is rejected.

5. Conclusions

Decreasing fish stocks due to rule violation and excessive overfishing have challenged policy-makers to design new kinds of policy instruments to promote sustainable fisheries. However, democratic governance of marine resources requires democratic accountability to the people, and therefore steering instruments in fisheries should consider the public's interest.

This paper investigates the influence of the effectiveness of governmental authorities and regulatory compliance among fishermen on the public's preferences for marine policy instruments. The empirical investigation produced several interesting findings. The most striking finding is that the effectiveness of government is an essential component when choosing the preferred policy measure. The empirical analysis indicates that when governmental authorities are considered ineffective, the preference for command-and-control types of steering is higher than in scenarios where government authorities are described as effective. If authorities are ineffective, people seem to demand command-and-control responses regardless of whether the regulatory compliance among shrimp fishers is described as good or not. The finding is interesting in the light of previous, cross-country comparative studies of the association between policy preferences and institutional trust. Previous studies have shown that in countries where levels of trust in governmental institutions is low, the preference for command-and-control types of steering is higher, which is confirmed by our results. However, people who perceive institutions to be inefficient are more likely to choose stronger regulations and more government control, regardless of whether resource users are complying with the rules or not. It should be noted that compliance rates do affect people's preferences but it is something else that explains why ineffective institutions generate a demand for more regulatory and punishing instruments. To some extent, this questions or challenges the previous suggested mechanism that the relationship between ineffective authorities and the preference for command and control is explained by low levels of trust. One explanation might be that regulation can be perceived to imply less discretion, and is hence something that is preferred when public institutions are inefficient. ‘Tradable allowances’ and ‘Promotion of dialogue’ may need a well-functioning (public) framework in order to be efficient (see [5]). It has, for

example, been argued that political trust is important for the acceptance of Pigouvian-style environmental taxes, since such taxes imply a lot of discretion on the part of public institutions in setting incentives correctly [9]. Other scholars are encouraged to explore this effect further.

Results from this and other studies investigating public preferences for steering instruments in relation to natural resources demonstrate the importance of considering country-specific contextual factors in natural-resource policy development. The solution to natural-resource depletion in countries characterised by ineffective authorities may not be greater marketisation and a submerged state, but the contrary. For example, since it is difficult to find popular support for tradable environmental allowances in western high-income countries characterised by effective institutions and a fair amount of regulatory compliance, it seems even more unlikely to find support for this kind of policy tools in the context of dysfunctional governmental institutions and regulatory non-compliance. As far as the results from this study are concerned, advocates of the policy diffusion of resource-managed systems to countries outside this privileged group must pay close attention to the puzzling role of the state in natural-resource management.

Acknowledgements

This research was funded by PhD candidate grants and also supported by the Swedish Research Council within the project Climate Change Challenge (721-2011-5991). We would also like to express our appreciation to Aksel Sundström, Martin Sjöstedt and the Centre for Environmental Political Studies seminar for useful comments on an early draft of the paper.

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