# How does the Vessel Days Scheme impact tuna catch in the Pacific?

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# Resume of the Paper

**The purpose of this study**

This study aims to provide evidence on the connection between the VDS and the domestic catch levels and examining the sustainability of tuna fishery to provide framework the policy debate on fisheries management in the Pacific.

**Model (DiD)**

$$Ln(Catch)_{it} = (VDSXTC)'_{it}\beta + X'_{it}\delta + \mu_i + \eta_i + \epsilon_i \qquad (1)$$

Where:

- $Ln(Catch)_{it}$ is total tuna catch in fleet of each country;
- $(VDSXTC)'_{it}$ is the treatment variable;
- $\beta$ is coefficient that captures an estimate of the treatment effect;
- $X$ is the control variables: GDP per capita, prices of tuna, price of marine diesel oil, and sear surface temperature.; and
- $\delta$ is the control variables coefficients, $\mu$ is the (?), $\eta$ is the (?); $\epsilon$ is the error term.

# Results

**Table 5: Impact of VDS on Pacific Tuna Fleet Catch (in metric tones)**

| | log of total fleet catch | | | | | |
|---|---|---|---|---|---|---|
| VARIABLES | (1) | (2) | (3) | (4) | (5) | (6) |
| VDS × TC | 0.924** | 1.891*** | 2.514*** | 0.661* | 2.282*** | 2.480*** |
| | (0.432) | (0.266) | (0.384) | (0.312) | (0.359) | (0.389) |
| Observations | 306 | 306 | 306 | 306 | 306 | 306 |
| R-squared | 0.015 | 0.841 | 0.853 | 0.023 | 0.847 | 0.854 |
| No. of Countries | 17 | 17 | 17 | 17 | 17 | 17 |
| Country FE | NO | YES | YES | NO | YES | YES |
| Year FE | NO | NO | YES | NO | NO | YES |
| Covariates | NO | NO | NO | YES | YES | YES |
| F | 4.568 | 50.39 | 42.83 | 2.988 | 8.850 | 21.51 |

Note: Robust Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Covariates include: $GDPPC_{it}$, $Diseloil_{it}$, $Elniño$, $AlbacorePrice$, $BigeyePrice$, $SkipjackPrice$, $YellowfinPrice$

- Parallel trend assumption is satisfied;
- Heterogeneity exists in the selected covariates;

# Discussion

1. Maybe this paper could provide some historical context of Industrial Tuna Fishing to provide context of the policy development of the fisheries management. *(Barclay 2014, History of Industrial Tuna Fishing in the Pacific Islands)*.
2. With 2 research questions: (1) showing the impact of the VDS and catch level, and (2) examining the sustainability of the policy, this study may need to provide a discussion on the second question.
3. Elaborate more on the heterogeneity test, does it means certain types of fish need to be more regulated? *(example: Vidal et al. 2020 that assess the skipjack tuna abundance and the cath effort, "Assessing trends in skipjack tuna abundance from purse seine catch and effort data in the WCPO")*
4. The study shows that VDS increase catch level to more than 2 times (200%) of quota based system. could you elaborate what is the policy implication of this result? Quota based is better for sustainability than VDS? you mention a short statement of reviewing the VDS in the abstract, but the paper does not provide more discussion about these comparation between policy.