

Are Greenland's Small-Scale Fishers Ready for Individual Transferable Quotas?



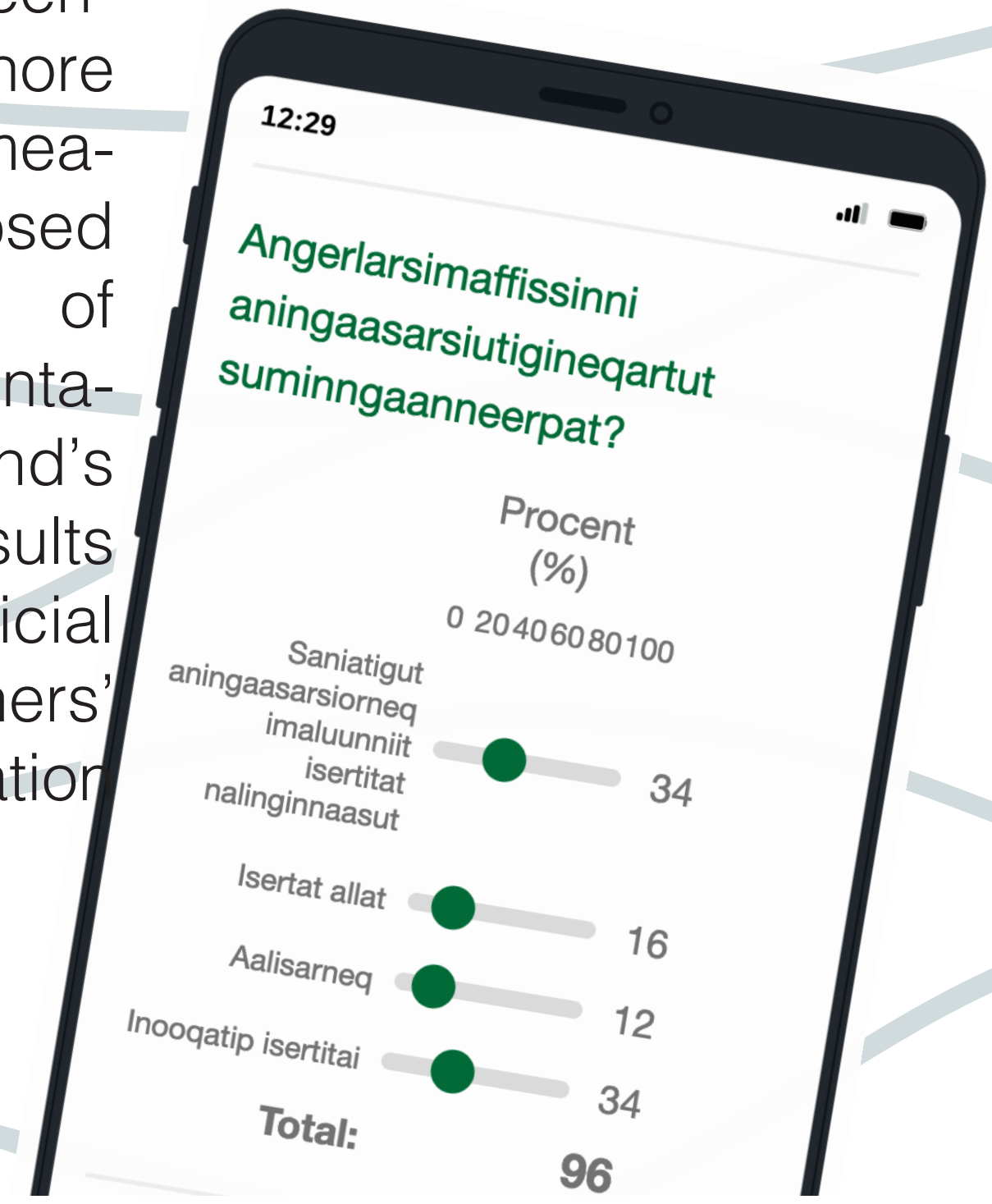
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Justification: Fisheries policy that is comprehensible and agreeable to fishermen and women is a cornerstone of democratic and inclusive governance of living marine resources. However, policy designers struggle to systematically include diverse perspectives. Failing to anticipate the reception of conservation rules can spur policy rejection, distrust, and foster noncompliance. Knowing fishers' **knowledge** of, **inclination** toward, and **vulnerability** to proposed changes can help fishery managers design and implement inclusive and forward-thinking fishery management plans.

Problem: Greenland's inshore fishery for Greenland halibut (*Reinhardtius hippoglossoides*) is overfished and overcapitalized. In response, Greenland halibut fishery stakeholders have proposed implementing individual transferable quotas (ITQs). ITQs convert resource access into a commodity that can be bought and sold. Skeptics of ITQ warn that fishers and fishing villages are subject to disenfranchisement if quota is aggregated in the hands of a few. They argue that fishers should be informed of the benefits and potential consequences. Proponents argue that ITQs are required to achieve ecologically sustainable and profitable fisheries.

The Study: In 2022, Snyder issued the Greenland Halibut Fishing Survey to all inshore Greenland halibut fishers. The survey measured attitudes toward current and proposed changes to Greenland's management of Greenland halibut, resulting in a representative sample of responses from Greenland's halibut fishers ($n=469$). These survey results were combined with each respondents' official catch landings records to evaluate fishers' knowledge, vulnerability and inclination toward those proposed changes.



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Spørgeskemaundersøgelse af Hellefisk fiskeri
Greenland Halibut Fishing Survey

DKK 2.300-inik eqquigut



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Hypotheses:

Knowledge:

- H1: The most knowledgeable fishers are also the least vulnerable.
- H2: Fishers from towns are more knowledgeable on ITQs than fishers from settlements.
- H3: Fishers who earn the most also know the most about ITQs.

Preference or Inclination:

- H7: Less vulnerable fishers are more inclined to support ITQs.
- H8: Higher earning fishers are more inclined to support ITQs.
- H9: High CPUE fishers are more inclined to support ITQs.

Vulnerability:

- H4: Fishers in settlements are more vulnerable than fishers in towns.
- H5: The most vulnerable fishers live in municipalities experiencing halibut overfishing.
- H6: ITQ skeptics are also the most vulnerable.

Preliminary Results

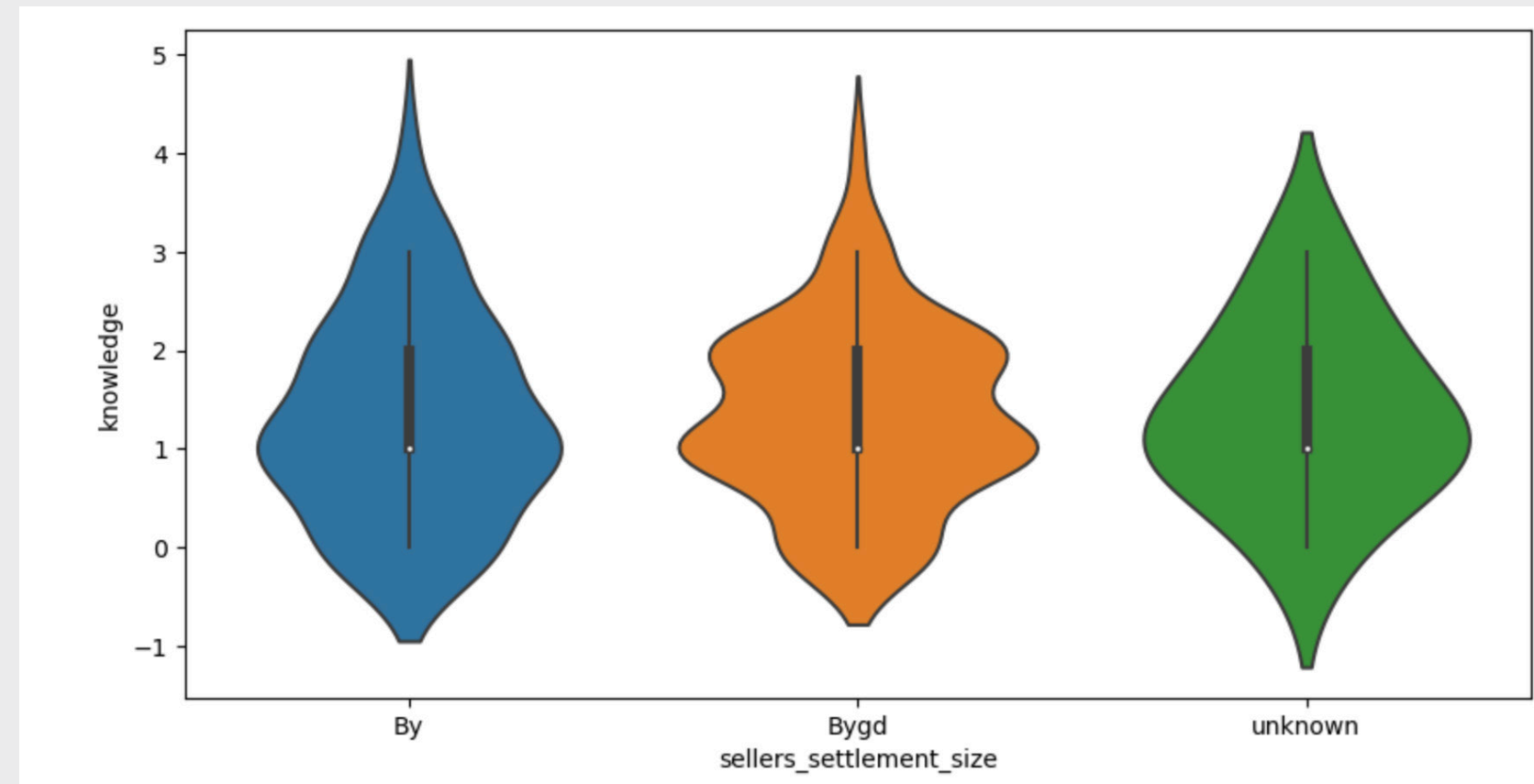


Figure 1 shows that **knowledge** on ITQs is not significantly different between settlements and towns, and that overall, fishers know little about ITQs.

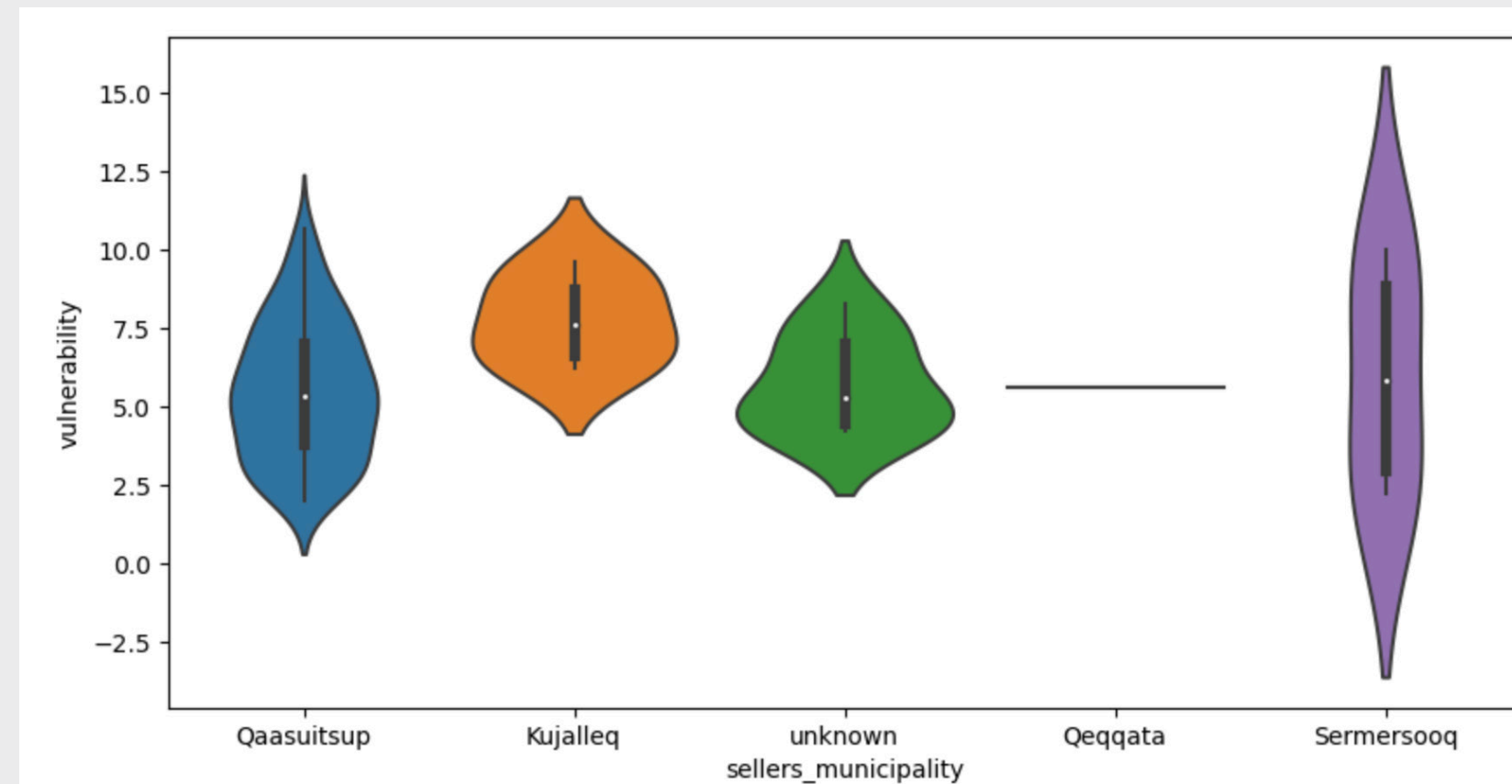


Figure 2 shows that fishers' livelihoods in are similarly **vulnerable**, but that within each municipality, some fishers are more vulnerable than others.

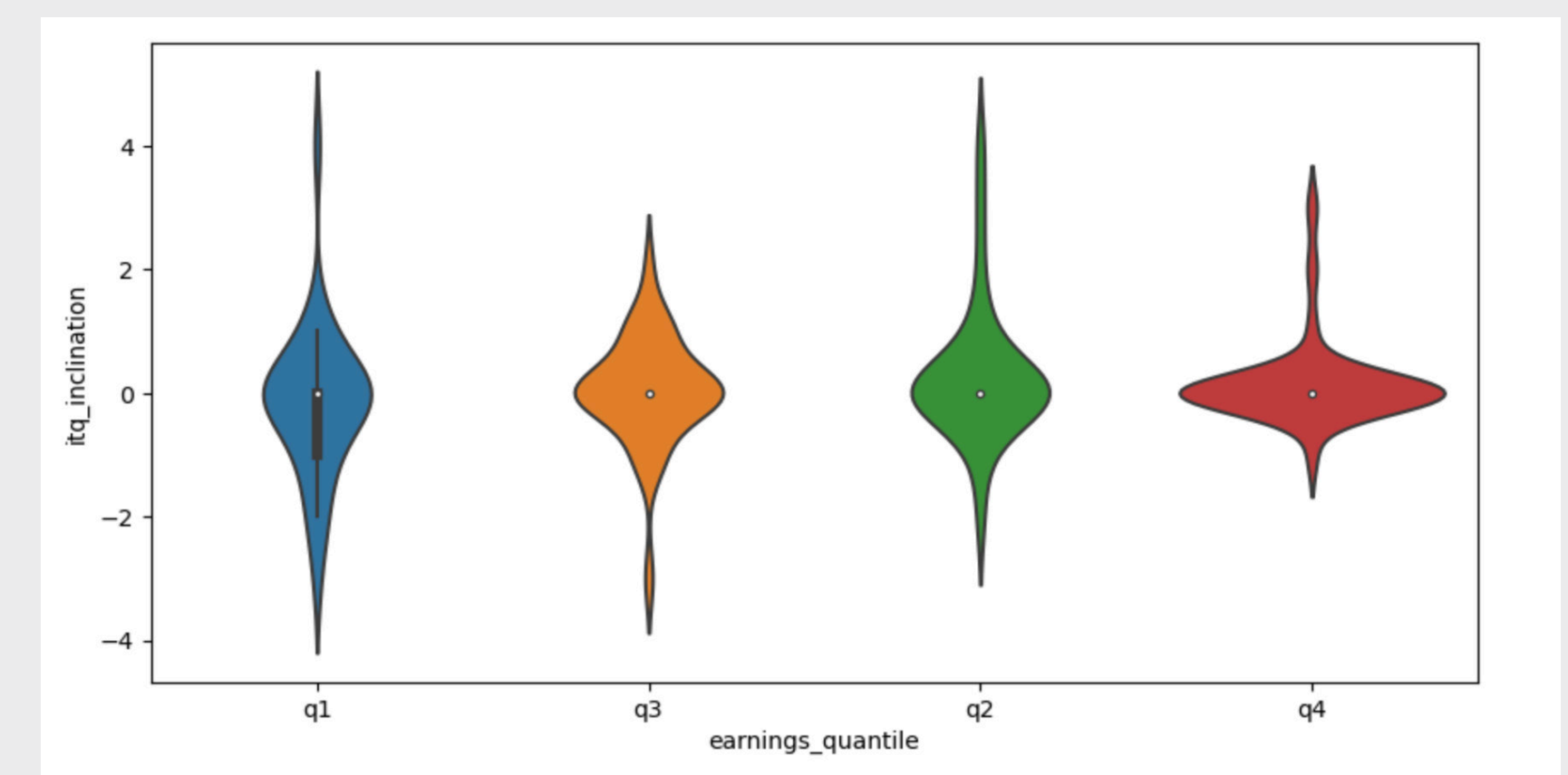


Figure 3 shows that the both highest and the lowest earning fishers are neither inclined nor disinclined toward ITQs.

Main Takeaways:

1. We reject the null hypothesis for each of our nine hypotheses.
2. Fishing performance between towns and settlements is significantly different ($p = .009$), with settlements having higher mean catch per unit of effort.
3. However, there is no systematic difference in knowledge, inclination, or vulnerability between towns and settlements, or between high and low earners.
4. The knowledge deficit among fishers on ITQs sets a clear goal for improvement and in turn for achieving democratic and inclusive governance of living marine resources.
5. Greenland's inshore halibut fishers are not more or less inclined to support an ITQ program; they simply have no inclination
6. Given the low level of knowledge, fishers cannot yet make an informed decision on ITQs.
7. Fishery managers now must evaluate the social and economic outcomes that will arise from implementing an ITQ across Greenland's inshore small-scale fishery.

Figure 4 lists each locality in Greenland and shows stacked bar charts of fishing revenue, split by color for each fisher. It shows which (a) fishers within each locality are the largest and smallest earners and which may aggregate quota under an ITQ. It also shows (b) which localities already have more or less competition (see Ilulissat and Ammassavik).

