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Shark Fin Soup Consumption Reduction Survey 2018 Singapore In-Market Report

Drivers of demand and behavior change in Singapore

July 2018

ADM CAPITAL FOUNDATION

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1. Background, Objectives, Methodologies and Analyses

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Background

ADM Capital Foundation commissioned this survey in four markets to increase understanding of current shark fin consumption trends and to inform in the development and implementation of targeted, evidence-based and market-specific behavior change communication and awareness campaigns.

The demand for shark fin in East and Southeast Asia has long been considered a major driver behind the overfishing of sharks. While global efforts to better manage shark and ray fisheries appear to be accelerating, efforts are likely undermined if there is strong demand. The ultimate aim is to reduce demand for shark fin and mobula ray gill plates across the region through a well-coordinated, best practice approach that delivers locally-specific intervention strategies.

This report presents the results from an extensive and comprehensive research study conducted amongst a general population representative sample in mainland China, Hong Kong, Taiwan and Singapore between October 2017 – March 2018 on the topic of reducing consumption of shark fin soup. The regional results are presented in a combined project report.

The report is a synthesis of a three-phased research approach in Singapore:

1. Desk research of relevant studies conducted earlier on this topic
2. Qualitative phase, which included one focus group discussion (FGD) with shark fin soup consumers in Singapore.
3. Quantitative survey: 1156 structured on-line interviews in total in Singapore among which 613 respondents (568 after weighting) are Past 12 Months Shark Fin Soup Consumers and/or mobula ray gills Ever Consumers.



Objectives

The results provide insight into the attitudes, beliefs and values driving the consumption of, and demand for shark fin soup, manta and mobula ray gill plates. The research also aims to identify specific behaviors and audiences that could form the focus of a targeted set of behavior change communications and approaches.

More specifically, the survey objectives are:

- Estimate consumption in the market

(Note: Estimated consumption is based on the % of respondents who claim to have consumed in the past, and does not intend to generate a figure for comparison against previous baselines set by others)

- Uncover motivations, drivers and inhibitors of consumption of shark fin soup and mobula ray gill plates
- Segment the consumers (via an attitudinal segmentation), so that different segments can be best addressed in targeted messages
- Test a limited number of messages and provide input for the messages which resonate best with the different consumer segments
- Establish market comparisons: What are the differences and similarities between the four market surveyed?



Methodology Overview: Desk and Qualitative Research

Phase 1: Desk Research

Review of existing research materials: A combination of proprietary research conducted by ADM Capital Foundation, TRAFFIC, WWF, GlobeScan and desk research online: see page 91 for an overview of literature studied.

Phase 2: Focus Group Discussions (FGDs)

On 3rd October 2017, one Focus Group Discussion (FGD) was conducted in Singapore.

A list of respondents' criteria was set prior to recruitment to ensure a good mix of respondents that had knowledge of the topic, had experience consuming shark and/or ray products and were well articulated in each focus group. Each focus group included:

- A mix of ages between 25–49 years old, 50/50 split of gender and active/passive consumers
- At least 3–4 respondents who consumed shark fin soup in the past 12 months, and the other respondents who consumed at least one type of shark product in the past 12 months
- At least 1 respondent per FGD who consumed mobula ray gill in the past 12 months
- 1–2 respondents who were heavy shark products consumers
- 1–2 respondents who were medium/occasional shark products consumers

The focus group was moderated by local qualitative research professionals and observed or listened to by GlobeScan and/or TRAFFIC/ADMCF team members, in a separate space/viewing room which could not be seen by participants.

Methodology Overview: Quantitative Research

Phase 3: Quantitative Research

The quantitative survey was conducted online, from January 18 to March 12, 2018. Respondents from an online panel were invited to participate in the survey via email, with a questionnaire length of 18 minutes on average.

In total, 1156 respondents from the online population in Singapore were sampled. The overall online population represents over 95 percent of those aged 18 years and older in Singapore. Any respondents under 18 years of age and/or any respondent working in the advertising, public relations, marketing, market research and media industries were screened out.

This quantitative survey was based on two distinct samples:

1. **A general population representative sample** of 1156 respondents in Singapore, representative by gender, age and education of the market population. To achieve this sample, quotas were set from the start of fieldwork and were monitored regularly during the fieldwork. This sample was recruited to be able to define the incidence of shark fin soup and mobula ray gill plates consumption.

2. **A specific sample of consumers:**

- A sample of 613 (568 after weighting) shark fin soup consumers in the past 12 months and/or mobula ray gills Ever Consumers. This sample allowing the uncovering of motivations, drivers and inhibitors of shark fin soup consumption and to establish the segmentation.
- This sample also allows an analysis of mobula ray gills consumers (ever) at a significant level.

Methodology Overview: Sub-groups Definition

Education

Education	Singapore
Low	Below secondary
Middle	Secondary
High	University / diploma or professional qualification / Post-secondary (non tertiary)

Monthly Personal Income (before taxes)*

Income	Singapore
Low	Below SGD 1,999
Middle	SGD 2,000–7,999
High	SGD 8,000 or above

Monthly Personal Income (before taxes) in USD Based on April 2018 Exchange Rates*

Income	Singapore
Low	Below USD 1,488
Middle	USD 1,489–5,950
High	USD 5,951 or above

*Income brackets were set based on the average salary of the internet population in the market surveyed, i.e., slightly higher than the average salary.

Methodology Overview: Sub-groups Definition

Definition of Consumer Sub-groups

Various consumer sub-groups were analyzed in this survey and defined based on specific questions or via a segmentation analysis.

The key sub-groups of consumers are defined as follows:

Key sub-groups analyzed in this report	Definition	Question used to define the sub-group
Ever Consumers of shark fin soup	Respondents who claim to have consumed shark fin soup at least **once in the past (anytime).**	Q1. Have you ever eaten any of the following foods? - Shark fin soup
Past 12 Months Consumers of shark fin soup	Respondents who claim to have consumed shark fin soup at least once **in the past 12 months.**	Q2/Q2a. In the past 12 months, have you eaten anything of the following, even if only once? - Shark fin soup
Rejecters	They consumed shark fin soup at least once in the past 12 months. They either stopped consuming shark fin soup in the past year or intend to decrease consumption or stop.	Multiple questions, these segments are based on a segmentation using Latent Class clustering (please refer to slide 13)
Persuadable Consumers	They consumed shark fin soup at least once in the past 12 months. They are mostly occasional consumers; and a majority intends to consume less shark fin soup in the future.	
Diehard Consumers	They consumed shark fin soup at least once in the past 12 months. They are regular/ frequent consumers who intend to continue consuming shark fin soup in the future.	

Methodology Overview: Sub-groups Definition

Rationale Behind the Recruitment of a General Population Representative Sample

- As the objective of the survey was to conduct an in-depth analysis of shark fin soup consumers, the questionnaire and main analysis is focused on the Past 12 Months Consumers only (i.e., they answered the behavioral/attitude questions on consumption and on communication).
- This focus on consumers allows an in-depth analysis by various sub-groups of consumers (by age, gender, education, consumption behavior, segments, etc.).
- A general population representative sample was recruited as well in order to fulfill the following objectives and analysis:
    1. Ensure that the sample of respondents who take the survey are representative of the general population, so that there is no bias in the profile that could influence the findings
    2. Allow to calculate the ever and past 12 months consumption incidence
    3. Allow to compare the profile of the consumers vs the general population on key demographics

Quantitative Research: Fieldwork Monitoring and Sampling Plan

- The fieldwork has been monitored on a daily basis and detailed checks of interim data have been performed during fieldwork (at 10%, 20%, 55% and 80% of sample completion) to ensure data quality and consistency.
- The official census data was used to set these quotas, see link: https://www.singstat.gov.sg/statistics/browse-by-theme/census-of-population
- During fieldwork, the detailed reviews and monitoring enabled the ability to take action in order to meet the quotas. For instance, for the sub-groups with slow progress (e.g., 65 years old and above), more invitations were sent to these potential respondents via different panels, fieldwork was open longer for completing these samples, etc.).

Detailed Methodology: Fieldwork and Sampling

Quantitative Research: Quotas

- In order for the sample to be representative by gender, age and education, quotas were set from the start of fieldwork and were monitored regularly during the fieldwork.
- For Singapore, the general public from all ethnicities was interviewed, with no specific quota by ethnicity.
- The following quotas were used at total market level:

Quotas by Gender	Male	Female
Singapore	49.1%	50.9%

Quotas by Education	High	Middle	Low
Singapore	47.0%	19.6%	33.4%

Quotas by Age	18-24	25-34	35-44	45-54	55-64	65 and over
Singapore	11.3%	18.0%	20.0%	20.1%	16.7%	14.0%

Achieved Sample and Weighted Sample for Singapore

The final samples achieved are robust and have a low margin of error at market level (for more details, please see appendix):

Singapore	Unweighted sample size (*n*=)	Weighted sample size (*n*=)	Margin of error
General population representative sample	1156	1156	2.9%
Past 12 Months Shark Fin Soup Consumers and/or mobula ray gills Ever Consumers	613	568	4.1%

Note: The quota was set on the general population representative sample only. The sample of consumers is an output/result of this survey, hence we cannot set quotas on this sample in order not to influence the actual profile of these consumers (which is a learning / part of the analysis).

Design and Analyses

Segmentation Analysis

Attitudes and behaviors towards shark fin soup consumption are very diverse and interactive. They form unique combinations or patterns that should be specifically addressed in communication campaign. In order to identify such patterns and link them to specific groups of individuals and the communication channels they use we normally conduct segmentation analysis.

In order to identify homogenous groups of shark fin soup consumers in terms of their behavior, intentions, attitudes and motives, we have developed a custom segmentation using Latent Class clustering. This analysis helped identify three distinct segments: ***Rejecters, Persuadable Consumers and Diehard Consumers***. This three-segment solution is more clear-cut, robust, interpretable, applicable and trackable than four- or five-segment solutions which we have also explored.

Shark Fin Soup Attractiveness Index

We constructed a customized index, called the Shark Fin Soup Attractiveness Index, which can be considered as a barometer or a predictive score of shark fin soup attractiveness. This allows for the customization of strategies and messages for sub-groups, e.g., consumer segments, market, age groups, etc., and was developed by reducing key attributes that were related to the consumption and the drivers of demand of shark fin soup down to four dimensions: (1) Consumption (i.e., past and intended future consumption), (2) Perceived Health Benefits, (3) Uniqueness (referring mostly to the unique aspects of shark fin soup such as taste and quality) and (4) Symbolic Value. It is a sum of these dimensions, adjusted to a scale from 1 to 10, with 1 being the least attracted to consume shark fin soup and 10 being the most attracted.

Path Analysis: Please refer to section 3.3 for explanation

Detailed descriptions and rationale of methods and analysis used can be found in the relevant chapters throughout the report and in the appendix.

Design and Analyses

MaxDiff (Maximum Differentiation Scaling)

In order to achieve a greater differentiation between the motives of purchase, we deployed MaxDiff design. MaxDiff scores, which result from the ranking exercise, describe the **hierarchy and/or strength** of motives or opinions better than direct ratings. (Note: Please refer to the MaxDiff chart called 'Opinions on Shark Fin Soup Consumption' in chapter 3.3 for for the illustration of this 'hierarchy').

Ratings scales are vulnerable to the so-called "acquiescence bias" which is a category of **response bias** in which respondents to a survey have a tendency to agree with all the questions or to indicate a positive connotation.

Using MaxDiff provides a better differentiation between the item importance compared to rating scales, mainly because:
With rating scales, there can be many straight-line answers, such as giving ratings of 3 to all items on a 5-point scale.
Cultural biases in the use of the scale. For example, respondents in Mainland China tend to use the top portion of the scale, while respondents in Germany tend to use the middle or bottom portions of the scale.

Research has shown that importance scores obtained with MaxDiff range from 0 to 10 were more varied compared to the range from 5 to 8 obtained with stated importance ratings (e.g., everything is important).

Detailed descriptions and rationale of methods and analysis used can be found in the relevant chapters throughout the report and in the appendix.



2.1 Executive Summary

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Shark Fin Soup Consumption

Past 12 months consumption of shark fin soup (amongst general population)

Within the **general population representative sample** of 1156 respondents in Singapore, **5 in 10 have consumed shark fin soup in the Past 12 Months.**



46%

All occasions of consumption in the past 12 months*

The main occasions of consumption are **wedding banquets** in Singapore.



Wedding banquet 61%



At a Restaurant 36%



Chinese New Year 32%

Frequency of consumption*

Shark fin soup consumers are mostly **infrequent** consumers (76% consumed once or twice in the past 12 months).

Occasional consumers (1-2 times in past 12 months)	Regular consumers (3+ times in past 12 months)	Avg. frequency (# times in past 12 months)
76%	24%	1.9

Future intention to consume shark fin soup*

Half of Past 12 Months Consumers claim that they will (intend to) **decrease their consumption frequency of shark fin soup** in the future.

"Would definitely/ probably eat more frequently"	No change	"Would definitely/ probably eat less frequently"
12%	33%	46%

*Base: Past 12 Months Shark Fin Soup Consumers: *n*=1156 in Singapore

Dominant Opinions and Deterrents of Consumption

Based on a list of both drivers and inhibitors of consumption, consumers in Singapore share the same **dominant opinions** on shark fin soup consumption as the consumers in the other markets surveyed (i.e., Mainland China, Taiwan and Hong Kong).

The dominant opinions (among the list of 25 statements) are all related to **conservation,** and are negative views of consumption**, i.e., deterrents.** Other deterrents relate to **tradition/substitution,** and consequently, challenge the **social pressure** associated with shark fin soup consumption.

Dominant opinions (deterrents)

1. It is essential to **protect sharks** from extinction.



2. Shark fins are harvested in a very **cruel** way.



Other deterrents

3. A **government ban** on shark fin harvesting is absolutely necessary.



4. Shark fin soup in a set dinner can easily be **substituted.***



5. The **tradition** of shark fin soup will soon **fade out.**



Main substitutes of shark fin soup mentioned by consumers in Singapore:

1. *Fish maw (24%)*
2. *Abalone (18%)*

Main Drivers of Consumption

The leading **drivers** of shark fin soup consumption are related to its **symbolic value** (tradition), its uniqueness (taste, quality) and **social pressure** (please the elders, do not refuse to eat not to create embarrassment).

Dominant Driver

1. Serving a shark fin dish is a **tradition** in the Chinese Culture.



Other Drivers

2. Shark fin soup tastes great.



3. When buying shark fin, **quality*** is the most important.



4. Shark fin soup is served to **please the elders** (parents/ grand-parents).



5. In a banquet, I don't refuse shark fin soup, not to create e**mbarrassment.**



**Please refer to the slide called 'Definition of the Quality of Shark Fins' in chapter 3.3 for more details. In Singapore, the quality of shark fin is mostly determined by its taste, its texture and its freshness.*

Communication and Messages on Shark Protection

Preferred message* Among the Past 12 Months Consumers, the message on **Extinction** is most ranked as the **preferred message** out of the options provided in all markets.	An estimated 100 million sharks are killed every year with fins from up to 73 million used for shark fin soup, primarily to supply the markets in Asia. And 94.9 percent of shark species cannot maintain population stability if the harvest continues. The consumption of shark fins could lead to the extinction of sharks which have lived on this planet for over 400 million years.	% Ranked as top message in Singapore: **33%**
2nd Preferred message* Among the Past 12 Months Consumers, the message on **Animal Cruelty** gets the second-best score as the **preferred message** out of the options provided in all markets.	Expensive fin soups are made of shark fins. During fishery activities, in order to stockpile the most shark fins, sharks are often captured, finned and abandoned. Sharks without fins cannot swim in the sea and will bleed to death.	% Ranked as top message in Singapore: **21%**

** Note: Messages selected from a limited range. This does not necessarily mean that people will stop consuming shark fin, after hearing the preferred message.*

Campaign Support

In Singapore, 64 percent of the consumers claim to be likely or very likely to support a campaign. The type of support they intend to give is:

- Stop consuming shark fin soup (80%)
- Speaking with family/friends (46%)
- (Re-)posting messages on social media (31%)

Most Trusted Messengers

The government is the most trusted when it comes to delivering messages on shark protection. **Family and friends** are also seen as credible messengers.

- Government (51%)
- Family (33%)
- Friends (31%)

* Please refer to chapter 3.4 for the full list of 5 tested messages. Results based on Q16. Which one of the following messages affects your intention to consume shark fin soup the most?

Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

Segments Definitions

The following three segments of **Past 12 Months Shark Fin Soup Consumers** were identified in Singapore:

Rejecters

Either stopped consuming shark fin soup in the past year or intend to decrease consumption or stop. Their past consumption is mostly driven by social pressure.

Persuadable Consumers

Mostly occasional consumers; a majority intends to consume less shark fin soup in the future. Their past consumption is mostly driven by tradition.

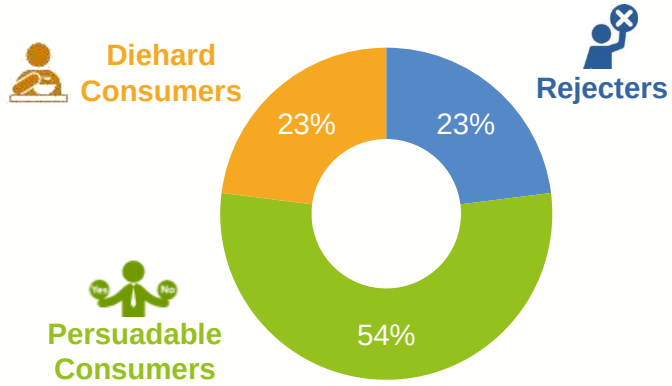
Diehard Consumers

Active consumers who intend to continue consuming shark fin soup in the future. Their past consumption is mostly driven by the unique aspects of shark fin soup (i.e. taste, quality).

Consumer Segmentation

In order to identify homogenous groups of shark fin soup consumers in terms of their behavior, intentions, attitudes and motives, a custom segmentation was developed using Latent Class clustering*. This analysis helped identify three distinct segments: **Rejecters, Persuadable Consumers** and **Diehard Consumers.**

Segments' Representation in Singapore



*See detailed description in chapter 1.

Note: As the segmentation is based on Past 12 Months Consumers only, all the respondents in the segments will have consumed shark fin soup. However, although Rejecters have consumed in the past year, it may have been occasionally and to please others. They are still Rejecters because they show a strong willingness to stop or decrease consumption in the future. Moreover, the variables taken into account in the segmentation are the drivers and deterrents (based on question 9), which allow to differentiate Rejecters from the other segments.

Who Are the Rejecters in Singapore?

Consumption Behavior and Drivers

- Rejecters have **either decided to stop consuming** shark fin soup in the past year or **intend to stop or decrease their consumption in the future. Their past consumption is mostly driven by social pressure.**
- Their past consumption was occasional and “passive”: They mostly consumed at weddings in Singapore (69%) and during Chinese New Year (25%).
- This occasional consumption is **driven by social pressure**; i.e., “I prefer not to eat it, but I don't refuse not to create embarrassment” and “I don't particularly like eating shark fin soup but I do so to please others” are their two major drivers.

Opinion

- Rejecters are the most concerned about the environmental consequences of shark finning, i.e., their main deterrents are related to **conservation** and **animal cruelty**, and the message on extinction strongly resonates amongst them.
- They are ready to support campaigns and are the most likely to repost messages on social media to do so.

Main Occasions of Consumption

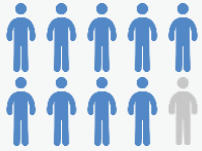


Wedding banquets



Chinese New Year

Intention to Consume **Less Frequently** in the Future



9 out of 10

Main Drivers*



Social Pressure: I prefer not to eat but don’t refuse not to create embarrassment



Social Pressure: I don't like eating shark fin soup but do so to please others

Main Deterrents*



Conservation



Cruelty

Most Impactful Message (out of the 5 messages tested): Extinction

An estimated 100 million sharks are killed every year with fins from up to 73 million used for shark fin soup, primarily to supply the markets in Asia. And 94.9 percent of shark species cannot maintain population stability if the harvest continues. The consumption of shark fins could lead to the extinction of sharks which have lived on this planet for over 400 million years.

** Please refer to chapter 3.1 for the detailed overview on drivers and deterrents by segment.*

Who Are the Persuadable Consumers?



Consumption Behavior and Drivers

- Persuadable Consumers are the largest segment of consumers in Singapore (54% of the consumers).
- They are mostly occasional consumers, and have consumed shark fin soup at weddings (56%) and at a restaurant (36%).
- Their consumption is passive, i.e. only 9% of them say they take the decision to include shark fin soup in meals they help to organize (Decision-makers).
- This occasional consumption is driven by tradition and unique culinary aspects; i.e., “Serving a shark fin dish is a tradition in the Chinese culture” and “Shark fin soup tastes great” are their two major drivers.

Opinion

- Their dominant opinions on shark fin soup consumption are related to **conservation** and **animal cruelty**.
- The message on extinction strongly resonates amongst them, and they mostly trust the government, family and friends to deliver messages

Main Occasions of Consumption



Wedding banquets



At a restaurant

Intention to Consume **Less Frequently** in the Future



5 out of 10

Main Drivers*



Tradition (in Chinese culture)



Uniqueness/ culinary (good taste and quality)

Main Deterrents*



Conservation



Cruelty

Most Impactful Message (out of the 5 messages tested): Extinction

An estimated 100 million sharks are killed every year with fins from up to 73 million used for shark fin soup, primarily to supply the markets in Asia. And 94.9 percent of shark species cannot maintain population stability if the harvest continues. The consumption of shark fins could lead to the extinction of sharks which have lived on this planet for over 400 million years.

** Please refer to chapter 3.1 for the detailed overview on drivers and deterrents by segment.*

Who Are the Diehard Consumers?

Consumption Behavior and Drivers

- The Shark Fin Soup Attractiveness Index score (see page 13) is high among this segment (at 4.45 versus 2.76 for Persuadable Consumers and 1.59 for Rejecters)
- While weddings (66%) are their main occasions for eating shark fin soup, Diehard Consumers also consume shark fin soups during Chinese New Year (47%) and at restaurant (47%). Overall, they have more occasions of consumption than the other segments.
- Not more than four in ten Diehard Consumers would be likely to support a future campaign on shark protection (39%), with over 80 percent of them who either do not think shark fin consumption should be decreased, or who do not have a stance.

Opinion

- Their main drivers are related to unique culinary aspects (i.e., taste, quality) and to the Chinese tradition.
- Substitutes to shark fin soup can deter them from consuming.

Main Occasions of Consumption



Wedding banquets | Chinese New Year | At a restaurant

Intention to Consume **Less Frequently** in the Future



2 out of 10

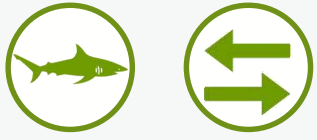
Main Drivers*



Uniqueness/ culinary (good taste and quality)

Tradition (in Chinese culture)

Main Deterrents*



Conservation

Substitute (Shark fin soup in a set dinner can easily be substituted)

Most Impactful Message (out of the 5 messages tested): Luxury/Status
While including shark fin soup in a banquet seems to be a luxurious choice, it's an old-fashioned way to show people your respect and status. Nowadays, people respect those who are conscious on the environmental impact of their consumption.

** Please refer to chapter 3.1 for the detailed overview on drivers and deterrents by segment.*

2.2 Key Findings and Conclusions



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Shark Fin Soup Attractiveness Index

Shark Fin Soup Attractiveness Index: Definition

- For this survey, we constructed a customized index which we labelled the “Shark Fin Soup Attractiveness Index.”
- The Shark Fin Soup Attractiveness Index can be considered as a barometer or a measure of shark fin soup attractiveness.
- It allows us to customize strategies and messages for specific sub-groups, e.g., consumer segments, markets, age groups, etc.
- The Shark Fin Soup Attractiveness Index helps to see the overall picture, i.e., who are the most persistent shark fin soup consumers.

How Is it Compiled?

- The Index is an aggregate measure that distills several indicators down to a single number enabling quick comparisons across consumer segments, markets, age groups, etc.
- The structure of the Index was identified and tested using Path Modeling.
- The Shark Fin Soup Attractiveness Index was developed by reducing all attributes that were related to the consumption and drivers of demand of shark fin soup down to four dimensions:
    1. Consumption (i.e., past [1] and intended future consumption [2])
    2. Health Benefits [3]
    3. Uniqueness [3]
    4. Symbolic Value [3]
- It is a sum of these dimensions, based on a 10-point scale, with 1 being lowest (least attractiveness to consume shark fin soup) and 10 being the highest.

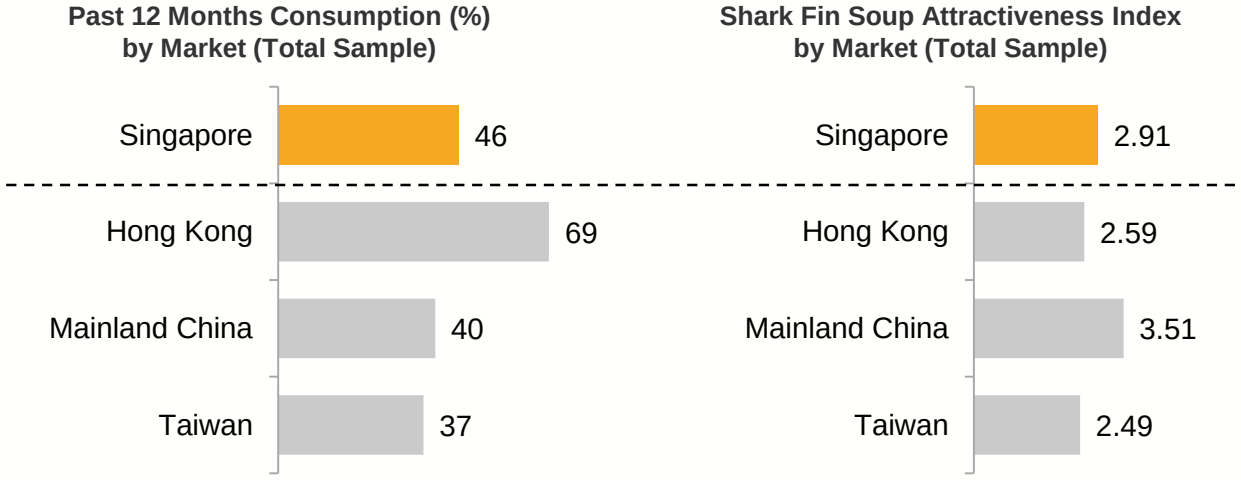
[1] Based on Q2/Q2a. In the past 12 months, have you eaten anything of the following, even if only once? Shark fin soup
[2] Based on Q1. Have you ever eaten any of the following foods? Shark fin soup
[3] Based on Q9. Now we will focus on shark fins and its consumption. On the following screens we will provide you lists of various statements. For each screen, please select the statement which describes your opinion the most, and the statement which describes your opinion the least.

Summary of Findings – Consumption and Index

Past 12 Months Claimed Consumption of Shark Fin Soup vs Shark Fin Soup Attractiveness Index

The past consumption and the Shark Fin Soup Attractiveness Index are two different metrics. The past 12 months consumption is based on the direct answers of the respondents to the past consumption question, while the Attractiveness Index is based on a model which includes past and future consumption, recommendation, etc. It is a "predictive score."

In Singapore, past consumption percentage is similar to that in Mainland China and significantly below that of Hong Kong. However, unlike in Hong Kong, there is less of a disconnect between past consumption and attractiveness in Singapore, and the Attractiveness Index is actually higher than in Hong Kong. One of the potential reasons is that drivers related to shark fin soup's uniqueness – such as taste and quality – are stronger in Singapore and drive its attractiveness, while social pressure is a dominant driver in Hong Kong.



Q2/Q2a. In the past 12 months, have you eaten anything of the following, even if only once? Shark fin soup – **Weighted data**

Base: Total General Population Representative Sample, *n*=3543 in Mainland China, *n*=859 in Singapore, *n*=1541 in Taiwan, *n*=1156 in Singapore

Summary of Findings

Shark Fin Soup Past and Future Consumption

- **The Shark Fin Soup Attractiveness Index reflects the importance and persistence of consuming shark fin soup:**
  - It is highest among the 55+ age group, reflecting the importance of tradition for the elders. On the other hand, the 18–24 age group has a relatively high attractiveness Index score as well, reflecting their attachment to tradition (i.e., one of their main drivers of consumption). Shark fin soup is also significantly more attractive to the Decision-makers.
  - However, shark fin soup is significantly less attractive to Non Decision-makers.
- **The incidence levels observed in this survey are similar to other incidence surveys**:
  - Among the general population representative sample, seven in ten respondents have ever consumed shark fin soup, and five in ten consumed it in the past 12 months.
  - Consumption is mostly driven by the **high-education consumers** – although the low-education consumers are the ones with the highest attractiveness Index score – and by consumers aged 55+.
  - **Young people aged 18–24 have a significantly lower past 12 months consumption** vs other age groups (similar to the other markets), while at the same time their Attractiveness Index score is relatively high (3.04), indicating a potential change in behavior if they would have the opportunity to consume more often. These young people are also characterized by hyper-social connectivity, i.e., they have a high number of online contacts and interactions.
- Among those who claim that they have ever consumed shark fin soup in the past, more than half (54%) have decided to stop. Most of the decisions to stop have been made in the past year. The main reason for deciding to stop is conservation/shark protection.
- Half of the consumers intend to eat less shark fin soup in the future (46%). This confirms that consumption in Singapore has potential to change, but persistence to consume remains (i.e., the other half intends to either continue consuming at the same frequency or more often in the future).

Summary of Findings

Shark Fin Soup Consumption Behavior: Active vs Passive Consumers

- **Frequency of consumption is relatively low in Singapore:** Although close to half of the respondents claim to have consumed shark fin soup in the past 12 months, they are mostly infrequent consumers (i.e., six in ten had only one occasion of consumption in these past 12 months).
- **Weddings (banquets) are by far the main occasions of consumption** of shark fin soup in Singapore (61%), across all age, gender and education groups. It is worth noting that **Decision-makers* on shark fin soup have significantly more occasions of consumption** than Non Decision-makers (3.2 versus 1.8 occasions, respectively, in the past year), particularly social occasions, indicating their potential influence on consumption.
- However, a majority of consumers (87%) **seldom actively make the decision to include shark fin soup** in the meals that they help to organize in Singapore, suggesting that a majority are passive consumers.
- A majority also agrees that, in general, **consumption of shark fin soup has to decrease** (59%).

**Note: Decision-makers on shark fin soup are defined as those who decide all of the time, or most of the time, to include shark fin soup in the meals that they help to plan or organize*

Summary of Findings

Shark Fin Soup Consumption Behavior: Impact of Affluence (High Income) on Consumption

- **The Shark Fin Soup Attractiveness Index scores are similar** by income levels (on the contrary to the scores by education levels, as low-education consumers have a significantly higher Index score than high-education consumers).
- However, there are **differences in terms of frequency of consumption**. High-income consumers are significantly more likely to be regular consumers than middle-/low-income consumers (i.e., 44 percent consumed shark fin soup three times or more in the past year vs 20 percent of the low-income consumers).
- **High-income consumers are also more active consumers** (Decision-makers), i.e., 32 percent make the decision to include shark fin soup in menus vs 5 percent of the low-income consumers. Although **weddings are their main occasion of consumption**, they have significantly **more occasions** than the other sub-groups (2.8 occasions for high-income consumers versus 1.4 occasions for low-income consumers, respectively, in the past year). In particular, these are social occasions (i.e., family events, friends reunions), **indicating their potential influence on driving passive consumption**. On the other hand, **low-income consumers have limited occasions**, mostly weddings, which reflects their occasional consumption profile.
- **This suggest that growing affluence has an impact on consumption patterns** (as observed in other markets). The more affluent consumers are, the more occasions of consumption and the highest frequency of consumption they have, while **low-/middle-income consumers can only "afford" occasional consumption**, even if their attractiveness score is at the same level as high-income consumers (i.e., they consume mostly when they are invited in weddings, which is passive consumption).

Summary of Findings

Drivers of Consumption

- The leading drivers of consumption of shark fin soup are predominantly related to **tradition** and **social pressure** (i.e., please the elders). These drivers mostly influence passive consumption.
- However, active consumption is most likely driven by the **unique aspects** of shark fin soup, particularly its **taste** and **quality,** which are leading drivers as well.
- **Younger people (18–24)** do not give as much credit to status as the other age groups. However, **tradition** is an important driver for them (unlike in other markets) and **social pressure** is a dominant driver as well.
- **Affluence** (i.e., high income) is also identified as a main driver of consumption (see previous slide).

Deterrents of Consumption

- The strongest opinions regarding shark fin soup consumption are negative views of consumption, i.e., deterrents.
- Among the statements surveyed, **conservation** is found to be the strongest influencer of shark fin soup (non) consumption among Past 12 Months Consumers, followed by the **awareness of animal cruelty** and **the necessity of a government ban.**
- While serving a shark fin dish is perceived as a tradition, consumers also think that shark fin soup can **easily be substituted,** indicating room for **alternatives.**
- Together, these deterrents suggest a sense of urgency and indicate that consumers are aware that shark fin soup consumption is a direct threat to sharks.

Summary of Findings

Preferred Messages and Other Campaigns

- When consumers see stimuli presenting different impactful pictures of shark finning, their most common reaction is to take action and change their own consumption behavior by **refusing to include shark fin soup in menus** they prepare.
- Over **half of shark fin soup consumers claim to be aware of shark finning**, particularly those aged 18–24. Decision-makers are also aware of these facts.
- However, although a majority believes that shark fin soup consumption should decrease, **only one in four consumers can recall a (specific) campaign.**
- When presented with a list of messages focused on either animal welfare, conservation or other deterrents of consumption, consumers prefer the message on the topic of extinction.
- The message on animal cruelty also resonates among consumers.

Communication

- Four in ten consumers are unsure or **do not intend to support a campaign**, indicating room to increase their support by driving up their campaign awareness and the visibility of campaigns.
- The government is the most trusted voice when it comes to delivering messages on shark protection. Friends and relatives are also seen as trusted messengers, indicating the importance of word of mouth.
- On the other hand, NGOs are less trusted as messengers on this topic. In particular, high-education consumers trust NGOs significantly less than the other consumer groups.



3. Detailed Analysis

3.1 Consumer Profiles and Segmentation

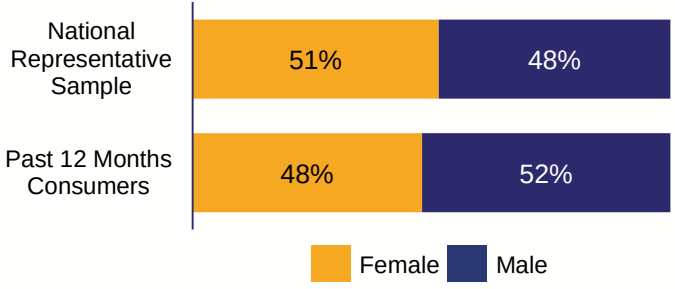
© AP Photo/ Kin Cheung

Respondents' Profile

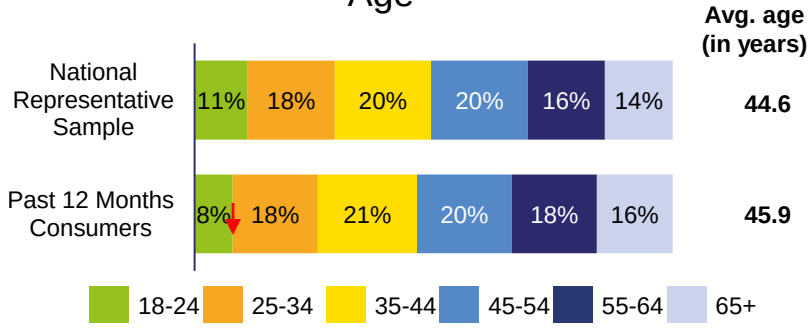
General Population Representative Sample vs Past 12 Months Shark Fin Soup Consumers Sample

In Singapore, the profile of Past 12 Months Consumers of shark fin soup is similar to the general population in terms of gender. However, shark fin soup consumers are slightly older and have higher levels of education than the general population.

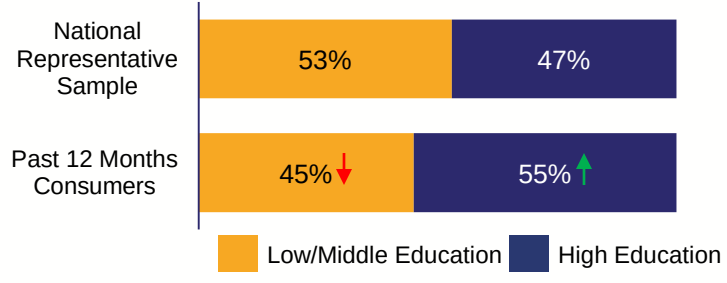
Gender



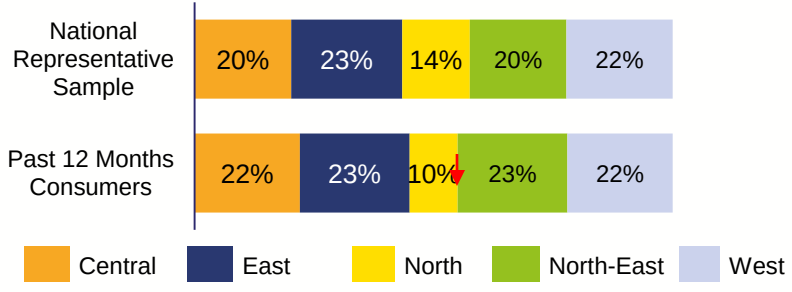
Age



Education



Region



S1. Region, S2. Gender, S3. Age, S4. Education **– Weighted data**

Base: Total General Population Representative Sample, *n*=1156 in Singapore

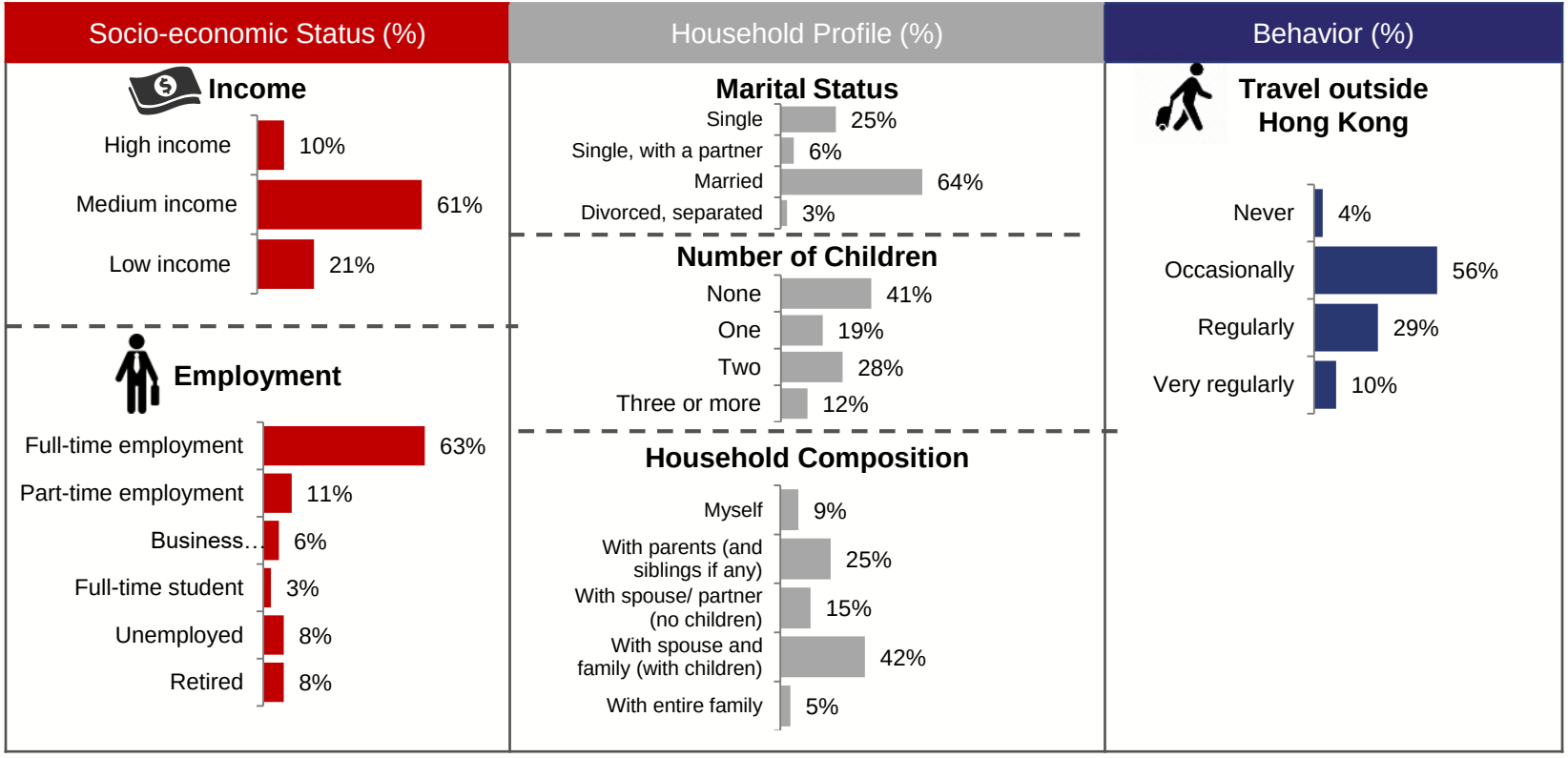
Base: Total Past 12 Months Shark Fin Consumer Sample, *n*=528 in Singapore

↑ ↓ Statistically significant difference: higher / lower at 95% confidence level vs Total

Household and Socio-economic Profile

Past 12 Months Shark Fin Soup Consumers Sample

Past 12 Months Shark Fin Soup Consumers in Singapore, mostly have a medium income (see income definition in chapter 1), are employed full time, are married and travel occasionally to regularly.



Q23. Income, Q24. Marital Status, Q25. Number of Children, Q26. Household composition, Q27. Employment, Q28. Travel behavior **– Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

Segmentation Methodology

Segmentation Analysis Methodology

Attitudes and behaviors towards shark fin soup consumption are very diverse and interactive. They form unique combinations or patterns that should be specifically addressed in communication initiatives. In order to identify such patterns and explore distinct groupings of individuals behind each patterns, we have conducted segmentation analysis.

In this particular study, after exploring alternative segmentation approaches (e.g. Two-step clustering), we decided to proceed with **Latent Class Clustering** as it was able to deliver a more robust and actionable segmentation solution.

In order to develop the segmentation we have used **8 behavioral and 25 attitudinal indicators** (please find the details in the next slide).

Deciding on the number of segments

Segmentation analysis normally involves producing several solutions with different number of segments with further comparison between them. In this study, the robustness of the clustering solutions was tested using Discriminant Function Analysis, which tests the distinctiveness and predictability of the segments using the input variables.
Overall, 3-segment solution proved to be more robust being able to correctly identify segment members (90.4%) compared to 4-segment solution (86.4%).

Segmentation Methodology

Variables used in the segmentation analysis

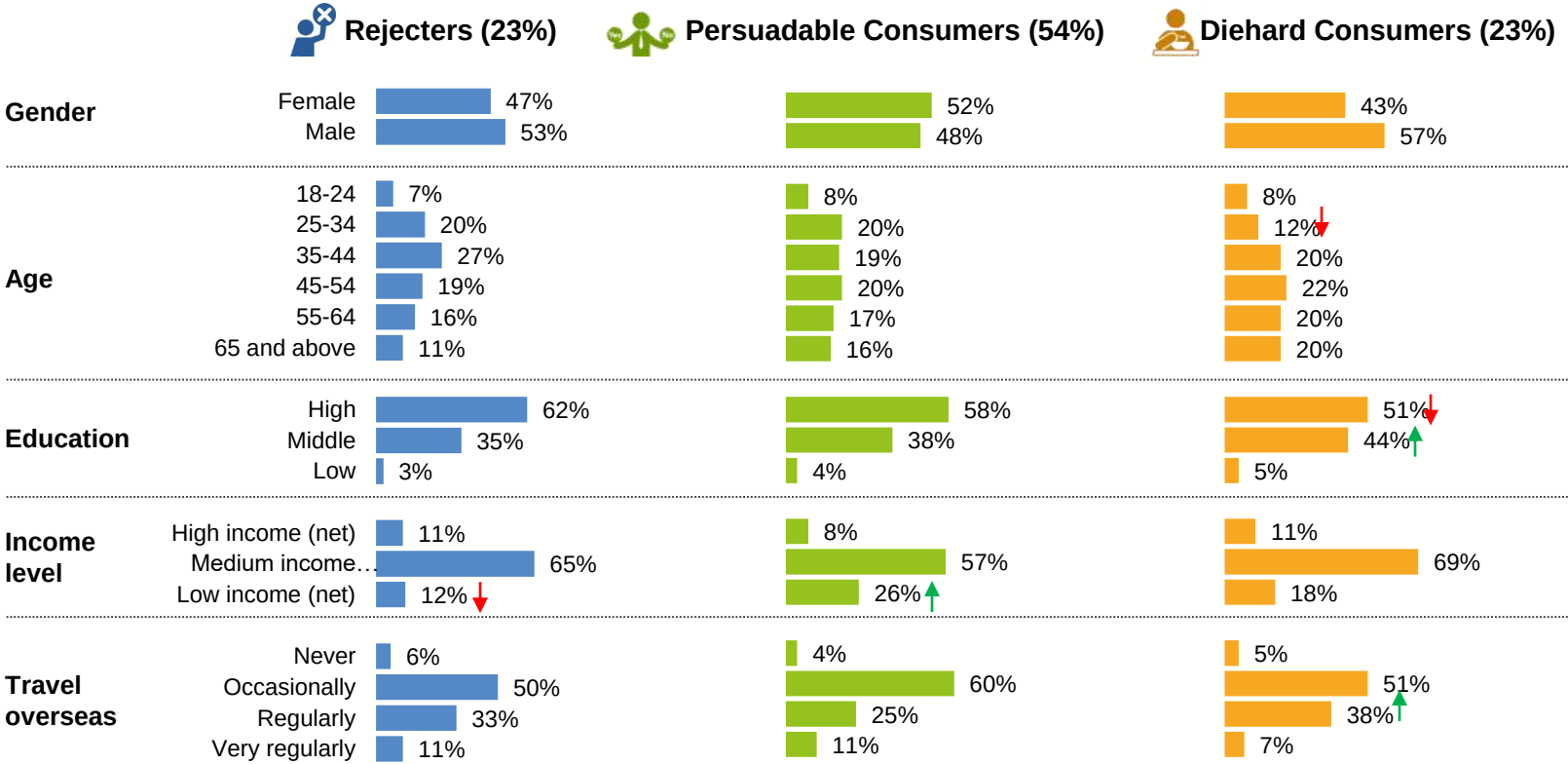
The segmentation analysis is based on various variables. The 8 behavioral variables and the 25 attitudes towards shark fin soup used to design the segmentation are indicated in the table below and on the right hand side:

Behavioral Indicators	Question #
Past frequency	Q4
Desired frequency	Q5
Role in decision making	Q8
Likelihood to support a campaign	Q19
Attitude towards sharks	Q13
Awareness	Q14
Future consumption	Q11
Future recommendation	Q12

Attitudes towards shark fin soup (Question 9)
Serving a shark fin dish is a sign of respect
Serving a shark fin dish is a tradition in the Chinese culture
The tradition of shark fin soup will soon fade out
Shark fin soup is served to please the elders, like my parents or grandparents
Shark fin soup is served in order to impress business partners
Offering shark fin soup indicates wealth
Shark fin soup tastes great
Shark fin soup is tasteless
Shark fin has a special texture that cannot be replaced by anything else
Shark fins contain high concentrations of mercury and other toxins
Shark fin dishes are troublesome to cook
Shark fins nurture and cure skin conditions
Shark fin soup in a set dinner can easily be substituted by something else of the same value
I would be disappointed if I am served a substitute dish instead of shark fin soup
Shark fins are harvested in a very cruel way
It is essential to protect sharks from extinction
When buying shark fin soup, quality is the most important
Often shark fin soup offered at restaurants are fake, i.e. do not contain shark fins
Eating shark fin soup brings luck and longevity
Shark fin soup enhances manliness and sex drive
A government ban on shark fin harvesting is absolutely necessary
People I respect have stopped eating shark fin soup altogether
I don't particularly like eating shark fin soup but I do so to please others
Serving my guests shark fin soup in banquets makes me look good.
When shark fin soup is included in a banquet, I prefer not to eat it, but I don't refuse it not to create embarrassment

Consumer Segments' Profile – Singapore

In Singapore, Persuadable Consumers represent more than half of the shark fin soup consumers. They are more skewed towards females of various ages, with middle/low income but higher education. On the other hand, Diehard Consumers are more skewed towards males, with middle income and middle education, aged above 45 and who travel regularly.



S2. Gender, S3. Age, S4. Education, Q23. Monthly Personal Income, Q28. Travel Behavior **– Weighted data**

Base: Singapore Segments: *n*=114 Rejecters, *n*=262 Persuadable, *n*=113 Diehard Consumers

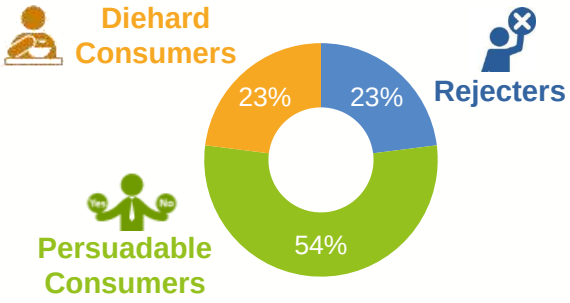
↑ ↓ Statistically significant difference: higher / lower at 95% confidence level vs Total

Consumer Segments

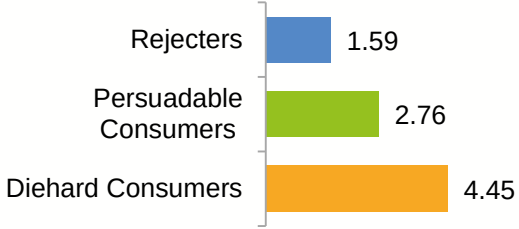
Prevalence, Shark Fin Soup Attractiveness Index and Frequency

The Shark Fin Soup Attractiveness Index score is significantly higher for Diehard Consumers vs the other segments. This reflects the consumption behavior of Diehard Consumers, who are mostly regular consumers, vs Rejecters and Persuadable Consumers who (had) consume(d) infrequently.

Segments' Representation in Singapore



Shark Fin Soup Attractiveness Index

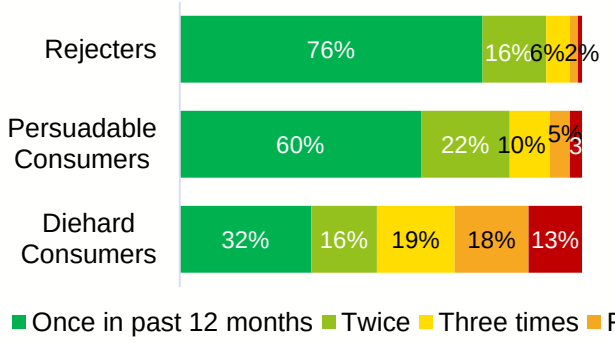


Consumption

The segmentation is based on Past 12 Months Consumers, i.e., **100% of the Rejecters, Persuadable Consumers and Diehard Consumers consumed shark fin soup in the past 12 months.**

However they consumed at different frequencies in the past 12 months…

Frequency of Consumption in the Past 12 Months

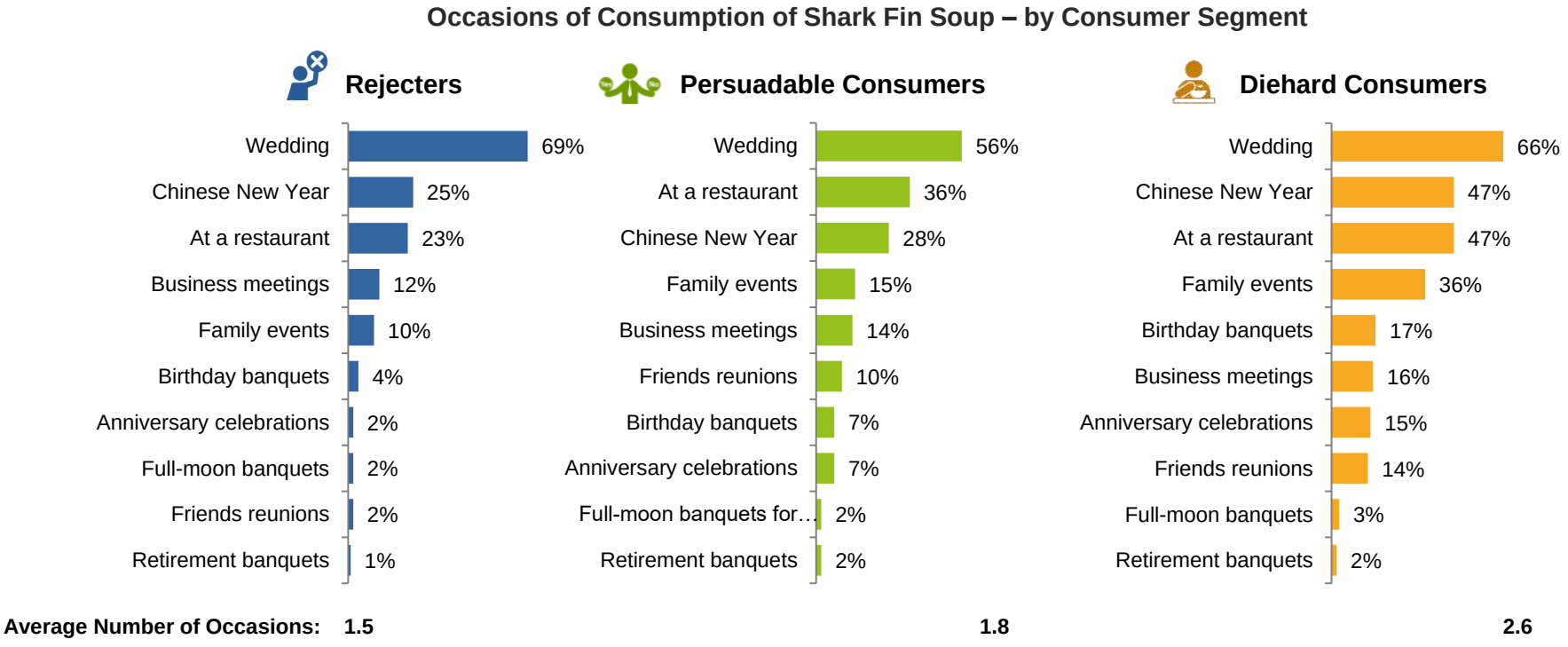


	Occasional consumers (1-2 times)	Regular consumers (3+ times)	Avg. frequency (# times in past 12 months)
Rejecters	92%	8%	1.4
Persuadable Consumers	82%	18%	1.7
Diehard Consumers	49%	51%	2.6

Q4. How often have you eaten shark fin soup in the past 12 months? – **Weighted data**
Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

Occasions of Consumption

Weddings are the main occasion to eat shark fin soup across all segments. It is worth noting that Diehard Consumers have significantly more occasions of consumption than Rejecters and Persuadable Consumers, particularly social occasions such as family events.

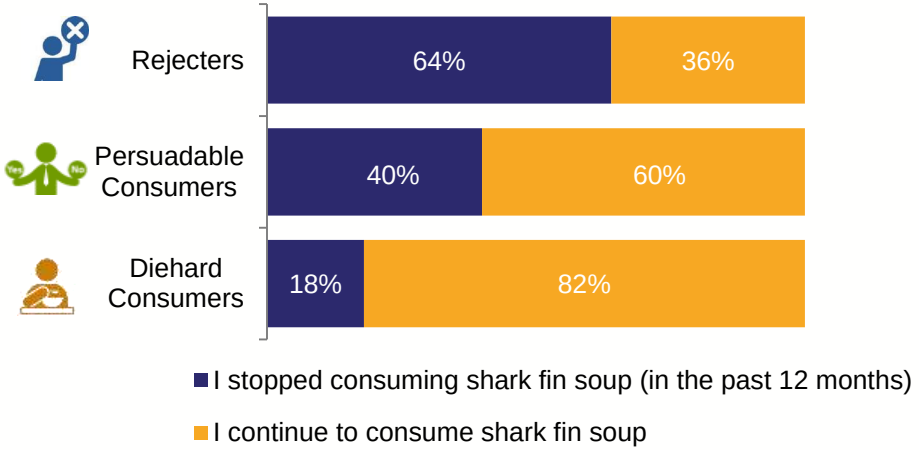


Q6a. In the past 12 months, on which of the following occasions have you eaten shark fin soup? – **Weighted data**
Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

Shark Fin Soup Past Consumption

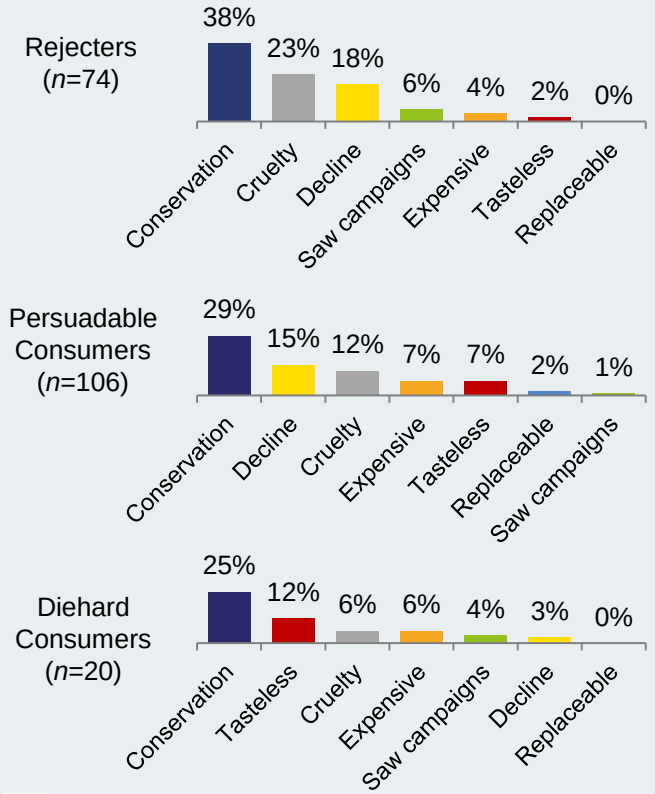
Six in ten Rejecters and four in ten Persuadable Consumers have decided to stop consuming shark fin soup in the past year *(Note: the behavior of Rejecters indicates that even if they have not decided to stop in the past, they intend to do so, or decrease their consumption in the future).* The main reason for deciding to stop is conservation / shark protection. Rejecters are more influenced by animal cruelty than the other segments.

Decision to Stop or Continue Consuming Shark Fin Soup (%)



Reasons for Deciding to Stop Consuming Shark Fin Soup

(Among those who stopped consuming in the past)



Q3a. You said that you consumed shark fin soup in the past. Have you stopped consuming shark fin soup?

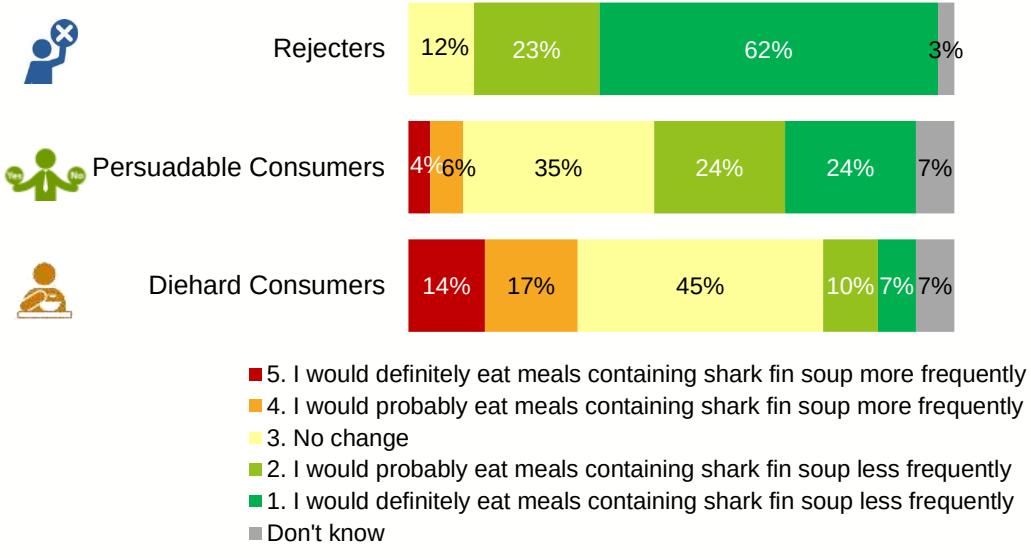
Q3b. You said that you decided to stop consuming shark fin soup. What were the reasons for taking this decision? – **Weighted data**

Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

Intended vs Expected Future Consumption of Shark Fin Soup

A majority of Rejecters and half of the Persuadable Consumers intend to eat less shark fin soup in the future in Singapore. This confirms the hypothesis that Persuadable Consumers have the potential to change. The most persistent consumers are the Diehard Consumers, with one in three who intend to eat more in the future.

Future Intention to Consume Shark Fin Soup



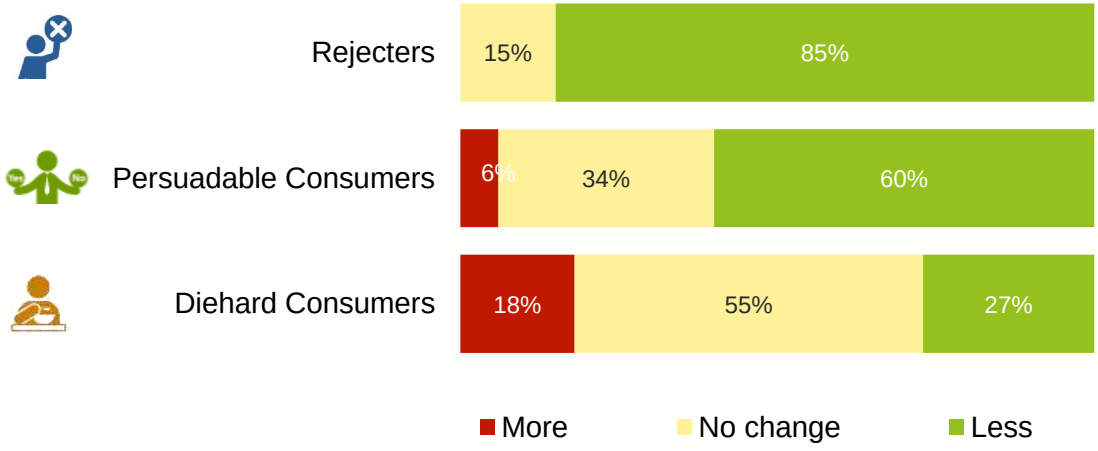
Top-2-Box: "Would definitely/ probably eat **more** frequently"	Bottom-2-Box: "Would definitely/ probably eat **less** frequently"
0%	85%
10%	48%
31%	17%

Q5. Would you choose to eat more frequently or less frequently any meal including shark fin soup if you had the opportunity? – **Weighted data**
Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

Intended vs Expected Future Consumption of Shark Fin Soup

While a majority of Rejecters and half of the Persuadable Consumers intend to eat less shark fin soup in the future in Singapore (see previous slide), their expected consumption is aligned with their intention. This confirms the hypothesis that Persuadable Consumers have the potential to change. The most persistent consumers are the Diehard Consumers, with one in three who intend – but do not necessarily expect – to eat more in the future.

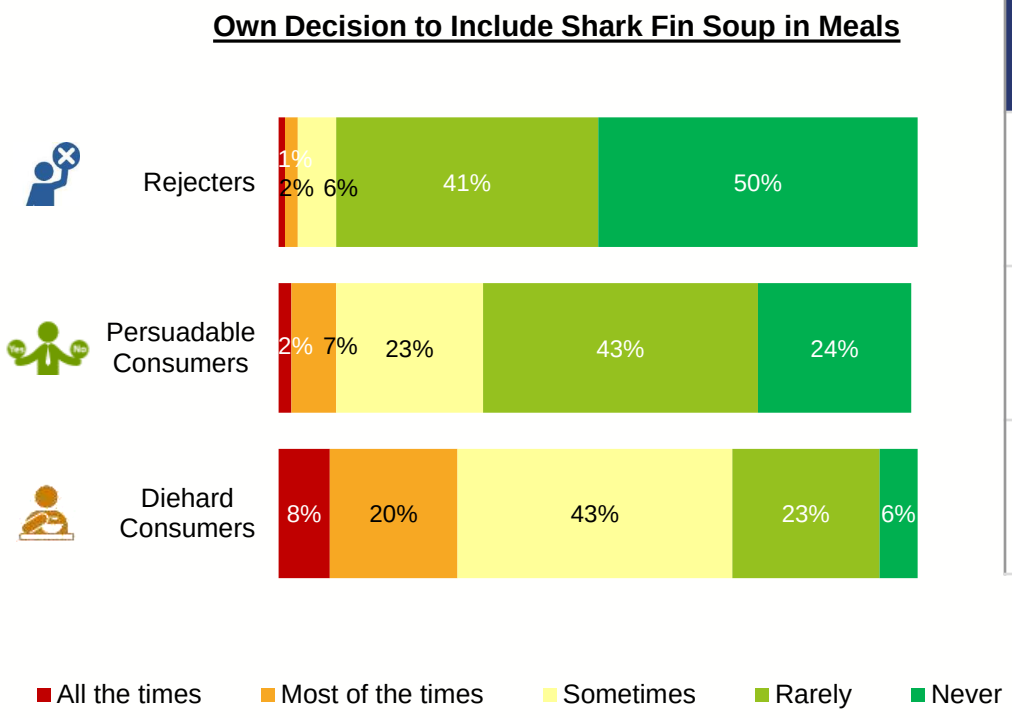
Expected Change in Consumption of Shark Fin Soup in the Next 12 Months



Q11. Thinking about the next 12 months, do you expect to eat shark fin soup more, less or the same number of times as in the past 12 months? – **Weighted data**
Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

Decision to Include Shark Fin Soup in Meals

In Singapore, the Decision-makers are most represented in the Diehard Consumers segment. Rejecters and Persuadable Consumers seldom make the decision to include shark fin soup in the meals that they help to organize.



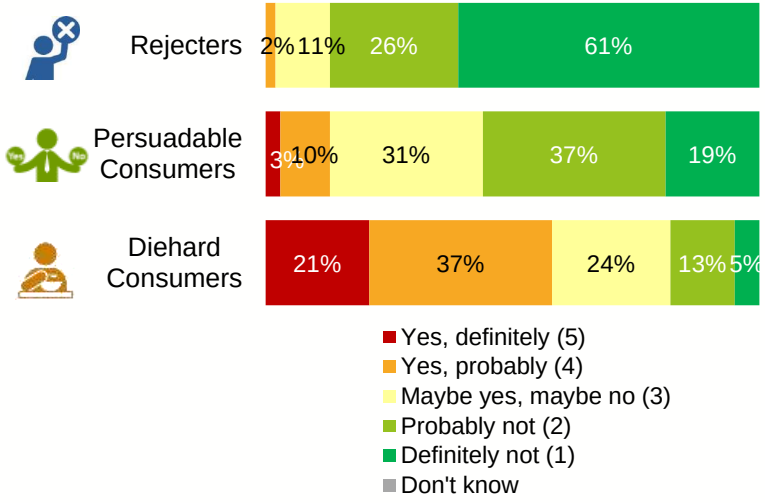
Decision-makers "All / most of the times"	Non Decision-makers "Sometimes/rarely/ never"
3%	97%
9%	90%
28%	72%

Q7. How often do you decide yourself to include shark fin soup in the meals that you help to plan or organize? – **Weighted data**
Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

General Perceptions of Shark Fin Soup Consumption

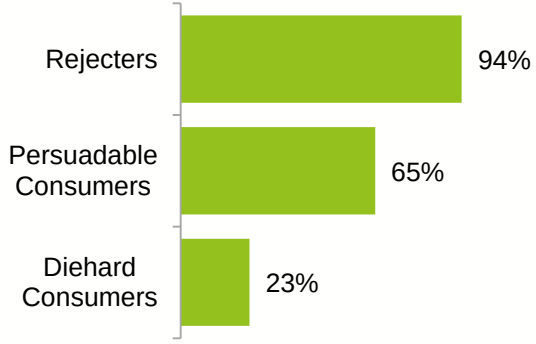
For Rejecters and Diehard Consumers, there is a positive correlation between the intention to include or recommend shark fin soup in banquets, the share of Decision-makers (see previous slide), and the general perception that shark fin consumption should be decreased. Although two-thirds of the Persuadable Consumers agree that shark fin soup consumption should be decreased, less than six in ten say they will not recommend or include shark fin soup in menus.

Intention to Include/ Recommend Shark Fin Soup in the Next 12 Months in Banquets or Other Eating Occasions



	Top-2-Box: "Yes definitely/ yes probably"	Bottom-2-Box: "Definitely not/ probably not"
Rejecters	2%	88%
Persuadable Consumers	13%	56%
Diehard Consumers	58%	18%

Do You Think Shark Fin Consumption Should be Decreased? % Yes



Q12. Thinking about next 12 months, do you expect to include or recommend to include shark fin soup in the menu of a banquet or other eating occasion? **– Weighted data**

Q13. Do you think that shark fin consumption should be decreased? – **Weighted data**

Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

Opinions on Shark Fin Soup Consumption – by Segment (Top 13)

The strongest opinions of Rejecters and Persuadable Consumers on shark fin soup are deterrents to consumption, i.e., conservation and cruelty are the main views. While Rejecters also strongly agree that a government ban is necessary, Persuadable Consumers are more inclined to think that consuming shark fin soup is a tradition. The dominant opinions of Diehard Consumers are all drivers of consumption, i.e., taste, quality and tradition.






Top 13 Opinions **MaxDiff Score (mean)**	*Most described opinions (Top 3)* *Least described opinions (Bottom 3)*	Rejecters	Persuadable Consumers	Diehard Consumers
It is essential to protect sharks from extinction		9.03	5.22	2.25
Shark fins are harvested in a very cruel way		8.99	4.77	1.45
A government ban on shark fin harvesting is absolutely necessary		8.48	4.00	1.23
Shark fin soup in a set dinner can easily be substituted		7.10	4.06	1.93
When buying shark fin soup, quality is the most important		1.81	3.36	5.58
Shark fin soup tastes great		1.36	3.55	6.45
Serving a shark fin dish is a tradition in the Chinese culture		2.79	4.28	5.46
The tradition of shark fin soup will soon fade out		5.39	3.43	1.39
In a banquet, I prefer not to eat it, but I don't refuse not to create embarrassment		5.23	2.50	1.00
People I respect have stopped eating shark fin soup altogether		4.32	2.22	0.99
Often shark fin soup offered at restaurants are fake		4.06	2.31	1.22
Serving a shark fin dish is a sign of respect		0.62	2.15	4.55
Shark fin soup is served to please the elders, like my parents/grandparents		2.76	3.32	3.57

Q9. Now we will focus on shark fins and its consumption. On the following screens we will provide you lists of various statements. For each screen, please select the statement which describes your opinion the most, and the statement which describes your opinion the least. – **Weighted data**

Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

Opinions on Shark Fin Soup Consumption – by Segment (Bottom 12)

Rejecters and Persuadable Consumers do not believe in the symbolic value of shark fin soup (i.e., “indicates wealth,” “brings luck and longevity”), as opposed to Diehard Consumers.






Bottom 12 Opinions **MaxDiff Score (mean)** *Most described opinions (Top 3)* *Least described opinions (Bottom 3)*	Rejecters	Persuadable Consumers	Diehard Consumers
Shark fin dishes are troublesome to cook	2.70	2.14	1.60
Shark fin has a special texture that cannot be replaced by anything else	0.64	2.08	5.03
I don't particularly like eating shark fin soup but I do so to please others	3.30	2.38	1.21
Shark fins nurture and cure skin conditions	0.48	1.45	3.10
Shark fin soup is served in order to impress business partners	1.34	2.13	3.08
Serving my guests shark fin soup in banquets makes me look good	0.43	1.93	4.29
Shark fin soup is tasteless	3.30	1.41	0.53
Shark fins contain high concentrations of mercury and other toxins	3.00	1.61	0.75
Offering shark fin soup indicates wealth	0.36	1.56	3.49
Eating shark fin soup brings luck and longevity	0.15	1.05	3.02
I would be disappointed if I am served a substitute dish instead of shark fin soup	0.38	1.37	3.37
Shark fin soup enhances manliness and sex drive	0.14	0.69	1.59

Q9. Now we will focus on shark fins and its consumption. On the following screens we will provide you lists of various statements. For each screen, please select the statement which describes your opinion the most, and the statement which describes your opinion the least. – **Weighted data**

Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

Legend: Messages

Extinction
An estimated 100 million sharks are killed every year with fins from up to 73 million used for shark fin soup, primarily to supply the markets in Asia. And 94.9 percent of shark species cannot maintain population stability if the harvest continues. The consumption of shark fins could lead to the extinction of sharks which have lived on this planet for over 400 million years.

Animal cruelty
Expensive fin soups are made of shark fins. During fishery activities, in order to stockpile the most shark fins, sharks are often captured, finned and abandoned. Sharks without fins cannot swim in the sea and will bleed to death.

Health
There is no scientific evidence that shark fins can be used to treat any medical condition. On the contrary, sharks contain high levels of mercury and other neurotoxins. Exposure to mercury – even small amounts – may cause serious health problems. Cooking does not eliminate mercury. In many countries, it is advised that pregnant women and children should avoid eating shark.

Illegality/extinction
Shark fin soup is widely consumed at wedding banquets as a high-end dish. Consumption of shark fin soup drives illegal fishing, which leads to a dramatic drop in shark populations and unsustainable species reproduction. Do not let your wedding day become the end of sharks.

Luxury/status
While including shark fin soup in a banquet seems to be a luxurious choice, it's an old-fashioned way to show people your respect and status. Nowadays, people respect those who are conscious on the environmental impact of their consumption.

Most Impactful Messages

The message on the topic of extinction is the preferred one for Rejecters and Persuadable Consumers, with a significant gap to the other messages. However, this message does not resonate as strongly amongst Diehard Consumers, for whom the message on luxury/ status is more likely to affect their intention to consume shark fin soup.

Most Impactful Messages (Summary of Rank 1) (%)

Messages (% Rank 1)	Rejecters	Persuadable Consumers	Diehard Consumers
Extinction	46%	35%	19%
Animal cruelty	29%	19%	20%
Illegality/ extinction	9%	15%	18%
Health	10%	15%	20%
Luxury/status	7%	17%	22%

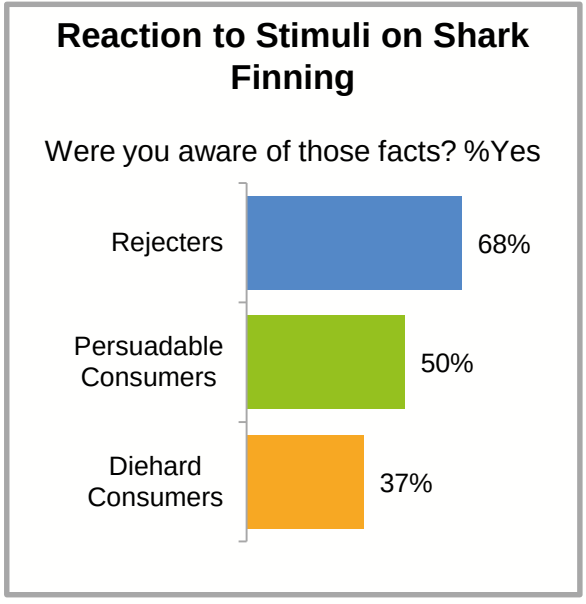
Top Preferred Message

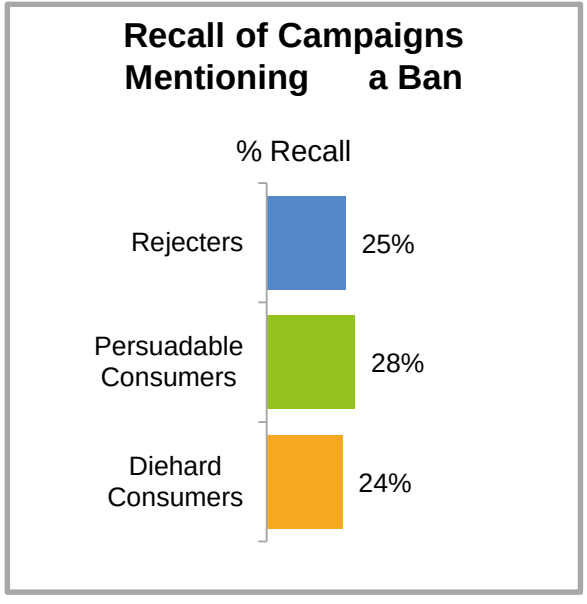
Q16. Now we will show you a list of various messages. Which one of the following messages affects your intention to consume shark fin soup the most? – **Weighted data**

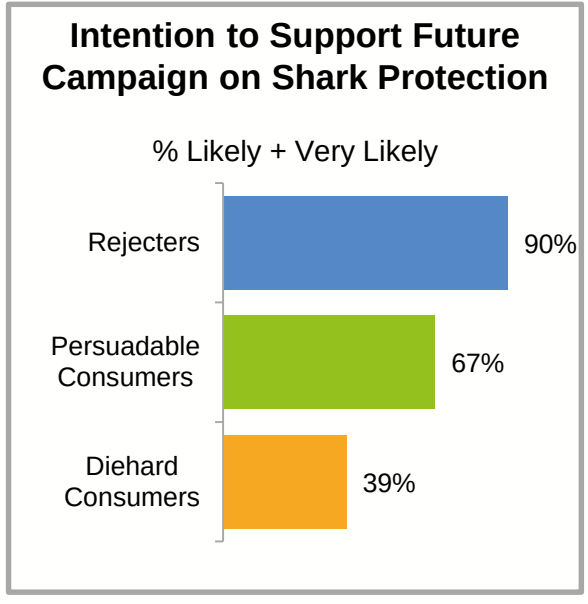
Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

Communication and Messengers

Although only two in ten to three in ten in each segment recall campaigns mentioning the banning of shark fin, Rejecters and Persuadable Consumers show relatively high intention to support future campaigns, suggesting the opportunity to further build awareness and visibility of the campaigns.



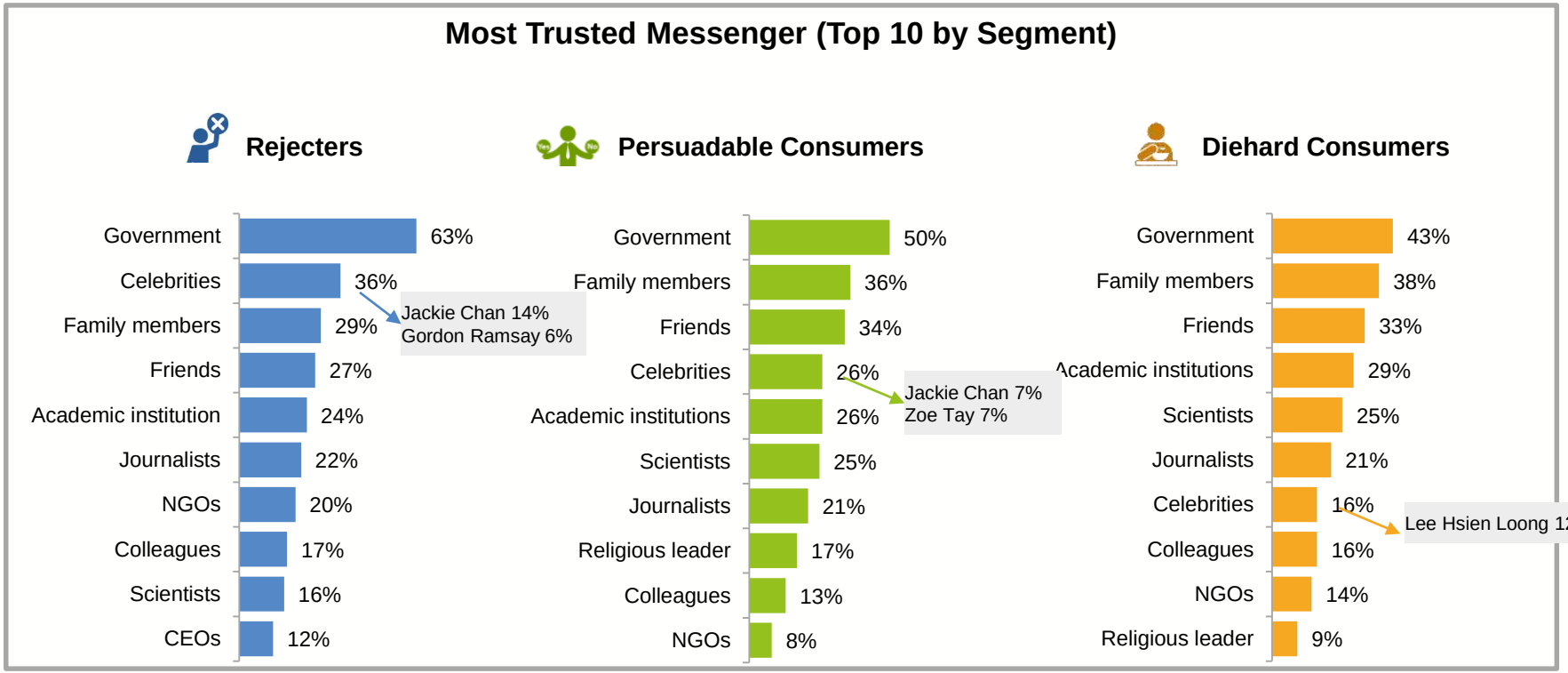




Q14. Were you aware of those facts? – **Weighted data**
Q18. Do you recall any previous campaigns mentioning the banning of shark fin? – **Weighted data**
Q19. How likely will you be to support a future campaign on shark protection? – **Weighted data**
Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113

Communication and Messengers

The government and family/friends are seen as credible messengers by Persuadable Consumers and Diehard Buyers, indicating the potential of these messengers to reach these target segments.



Q21a. Please indicate who you think would be the most trusted messenger to tell this message. – **Weighted data**

Q21b. Please indicate which popular figure or celebrity you think would be the most trusted person to tell this message. Please give the actual name of this (well-known)
person. – **Weighted data**

Base: Segments in Singapore: Rejecters *n*=114, Persuadable Consumers *n*=262, Diehard Consumers *n*=113



3.2 Shark Fin Soup Consumption Indicators and Consumption Behavior

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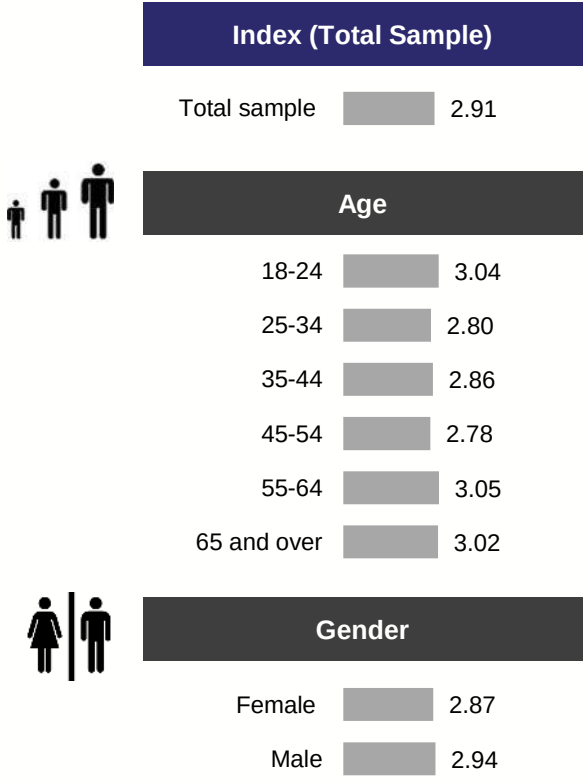
Shark Fin Soup Attractiveness Index

The Shark Fin Soup Attractiveness Index by age shows the highest scores are for the 55+ age group, but they are also high among the younger consumers aged 18-24. For these groups of consumers, tradition is a main driver (see chapter 3.3). Shark fin soup is also significantly more attractive to the Decision-makers. While attractiveness is higher among those with low education, there are no significant differences by income level.

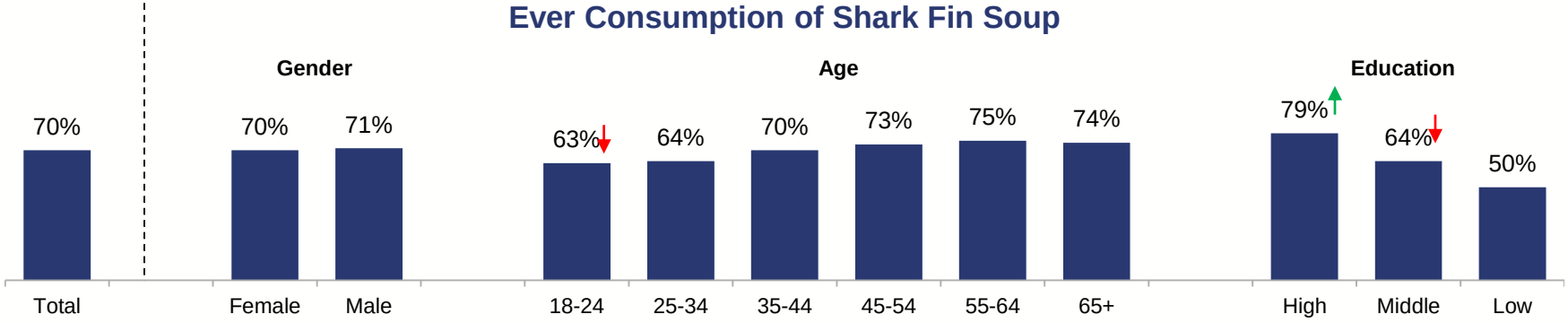


Consumption Incidence – Shark Fin Soup

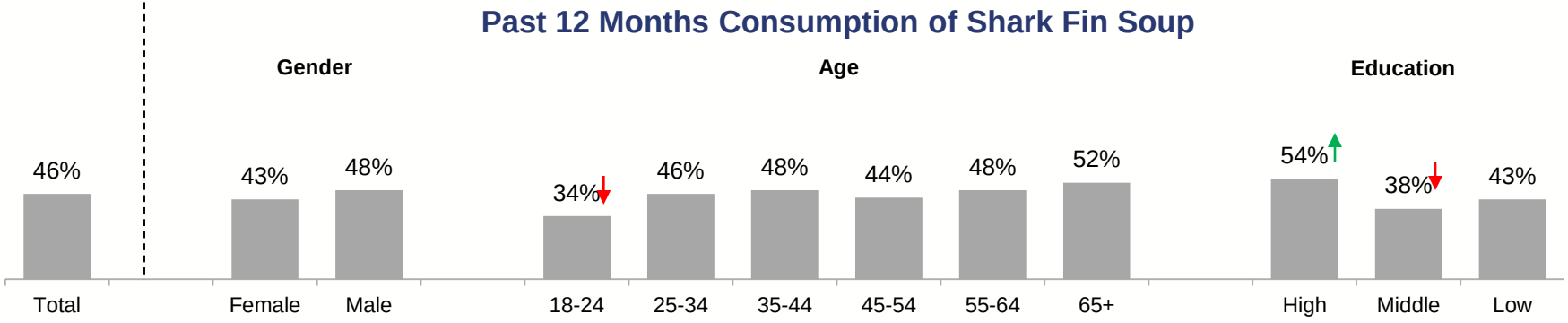
Based on General Population Representative Sample

In Singapore, close to half have consumed shark fin soup in the past 12 months. This consumption is mostly driven by the high-education consumers, whereas it is significantly lower among young people. Consumption of shark fin soup is not gender-specific.

Ever Consumption of Shark Fin Soup



Past 12 Months Consumption of Shark Fin Soup



Q1. Have you ever eaten any of the following foods? Shark fin soup– **Weighted data**

Q2/Q2a. In the past 12 months, have you eaten anything of the following, even if only once? Shark fin soup – **Weighted data**

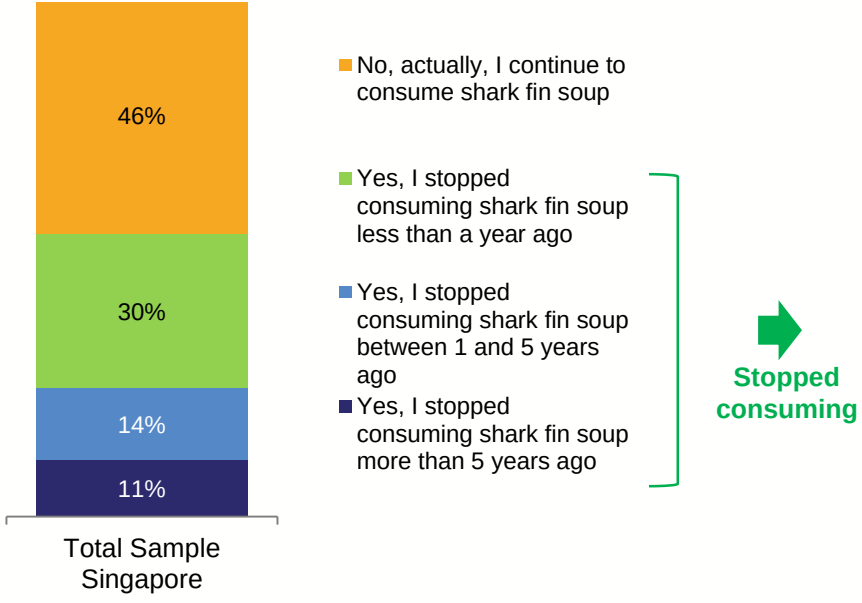
Base: Total General Population Representative Sample, *n*=1156 in Singapore

↑↓ Statistically significant difference: higher / lower at 95% confidence level vs Total – *Note: Incidence levels not comparable with other surveys*

Shark Fin Soup Past Consumption

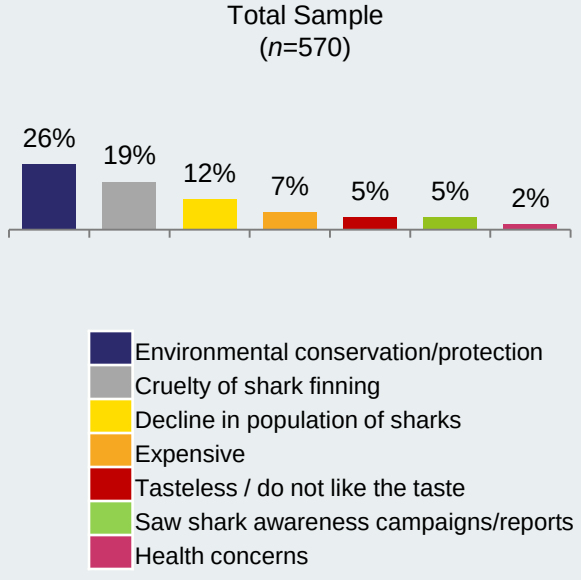
Among those who claim that they have ever consumed shark fin soup in the past, more than half (54%, with rounding) have decided to stop consuming it in Singapore. Most of these decisions to stop have been made in the past year, indicating a recent significant change of behavior. The main reason for deciding to stop is conservation / shark protection and animal cruelty.

Decision to Stop or Continue Consuming Shark Fin Soup (%)



Reasons for Deciding to Stop Consuming Shark Fin Soup (Amongst the options provided)

(Among those who stopped consuming in the past)



Q3a. You said that you consumed shark fin soup in the past. Have you stopped consuming shark fin soup? – **Weighted data**

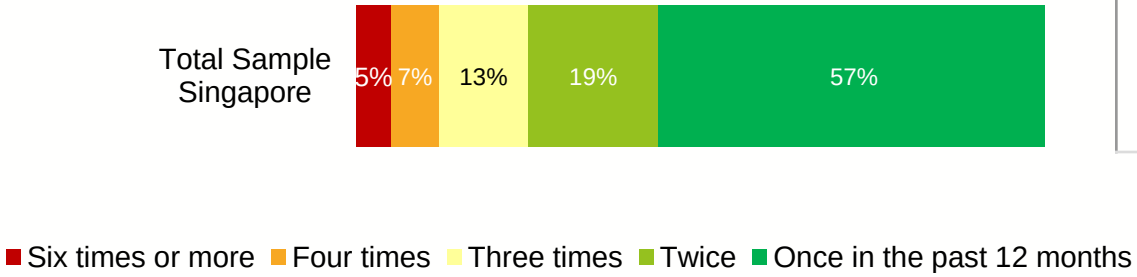
Q3b. You said that you decided to stop consuming shark fin soup. What were the reasons for taking this decision? – **Weighted data**

Base: Ever Consumers of shark fin soup, *n*=811 in Singapore

Past vs Expected Frequency of Consumption of Shark Fin Soup

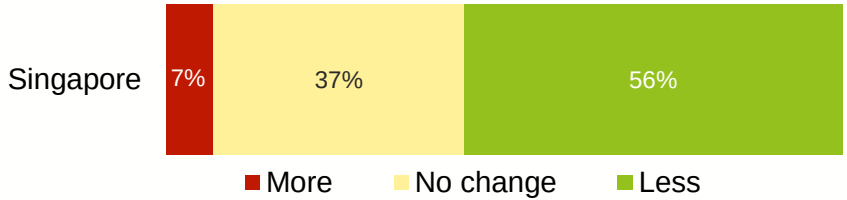
While nearly eight in ten are infrequent consumers in Singapore, close to six in ten expect to consume less shark fin soup in the next 12 months.

Frequency of Consumption of Shark Fin Soup in the Past 12 Months



Occasional consumers (1-2 times)	Regular consumers (3+ times)	Avg. frequency (# times in past 12 months)
76%	24%	1.9

Expected Change in Consumption Frequency of Shark Fin Soup in the Next 12 Months



Q4. How often would you say you have meals including shark fin soup? – **Weighted data**

Q11. Thinking about the next 12 months, do you expect to eat shark fin soup more, less or the same number of times as in the past 12 months? – **Weighted data**

Base: Past 12 months shark fin soup consumers: *n*=528 in Singapore

Past vs Expected Frequency of Consumption of Shark Fin Soup

While nearly eight in ten are infrequent consumers in Singapore, close to six in ten expect to consume less shark fin soup in the next 12 months. Decision-makers are significantly more likely to be regular consumers than other groups, and a third of them even expects to increase their consumption frequency in the next 12 months. Likewise, the most affluent consumers (high income) are also significantly more regular consumers than low/middle income consumers (among which, a vast majority are occasional consumers).

Frequency of Consumption of Shark Fin Soup in the Past 12 Months

		Gender		Age						Education			Income			Shark fin soup Decision-maker	
Past 12 Months Frequency of Consumption	Total Sample	Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High	Decision-maker	Non Decision-maker
	n=496	*n*=244	*n*=252	*n*=42	*n*=86	*n*=104	*n*=97	*n*=89	*n*=79	*n*=24	*n*=200	*n*=272	*n*=108	*n*=298	*n*=46	*n*=62	*n*=432
Occasional consumers (1-2 times)	76%	78%	74%	74%	80%	69%	82%	80%	69%	67%	74%	78%	80%↑	76%	56%↓	44%↓	80%
Regular consumers (3+ times)	24%	22%	26%	26%	20%	31%	18%	20%	31%	33%	26%	22%	20%	24%	44%↑	56%↑	20%
Avg. frequency (# times in past 12 months)	1.9	1.8	2.0	2.0	1.8	2.1	1.6	1.8	2.0	1.8	1.8	2.7↑	1.8	1.9	2.3↑	2.9↑	1.7

Expected Change in Consumption Frequency of Shark Fin Soup in the Next 12 Months

		Gender		Age						Education			Income			Shark fin soup Decision-maker	
Next 12 Months Frequency of Consumption	Total Sample	Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High	Decision-maker	Non Decision-maker
	n=528	*n*=255	*n*=273	*n*=44	*n*=96	*n*=111	*n*=101	*n*=93	*n*=84	*n*=24	*n*=212	*n*=292	*n*=108	*n*=298	*n*=46	*n*=64	*n*=464
Will consume more often	7%	7%	6%	5%	6%	10%	5%	5%	8%	8%	7%	6%	6%	7%	11%	30%↑	4%↓
Will consume less often	56%	55%	58%	44%	58%	55%	69%↑	57%	45%	53%	55%	57%	53%	56%	57%	32%↓	59%

Q4. How often would you say you have meals including shark fin soup? – **Weighted data**

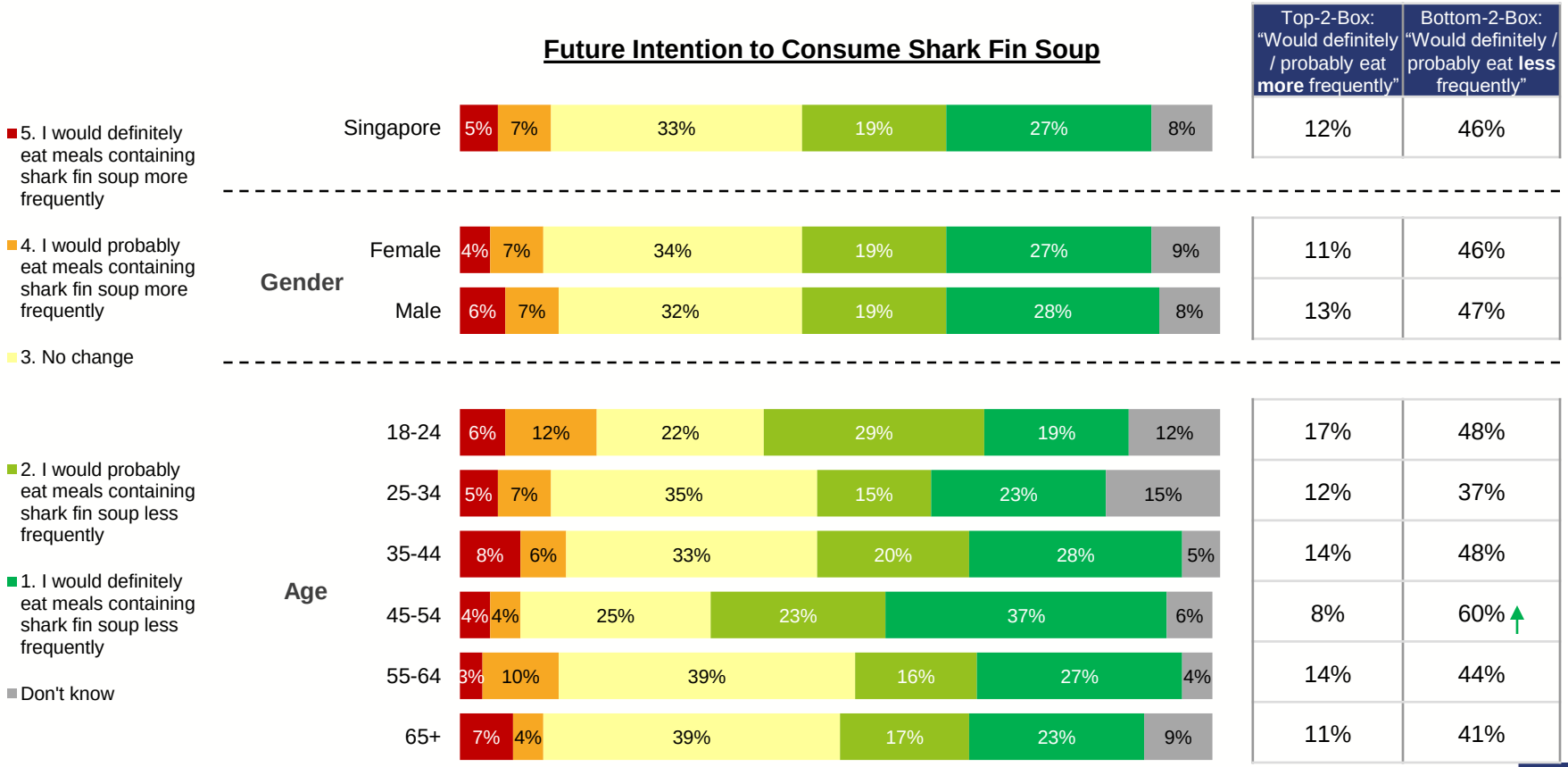
Q11. Thinking about the next 12 months, do you expect to eat shark fin soup more, less or the same number of times as in the past 12 months? – **Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

↑↓ Statistically significant difference: higher / lower at 95% confidence level vs Total

Future Consumption of Shark Fin Soup

Half of the consumers intend to eat less shark fin soup in the future in Singapore.



Q5. Would you choose to eat more frequently or less frequently any meal including shark fin soup if you had the opportunity? – **Weighted data**

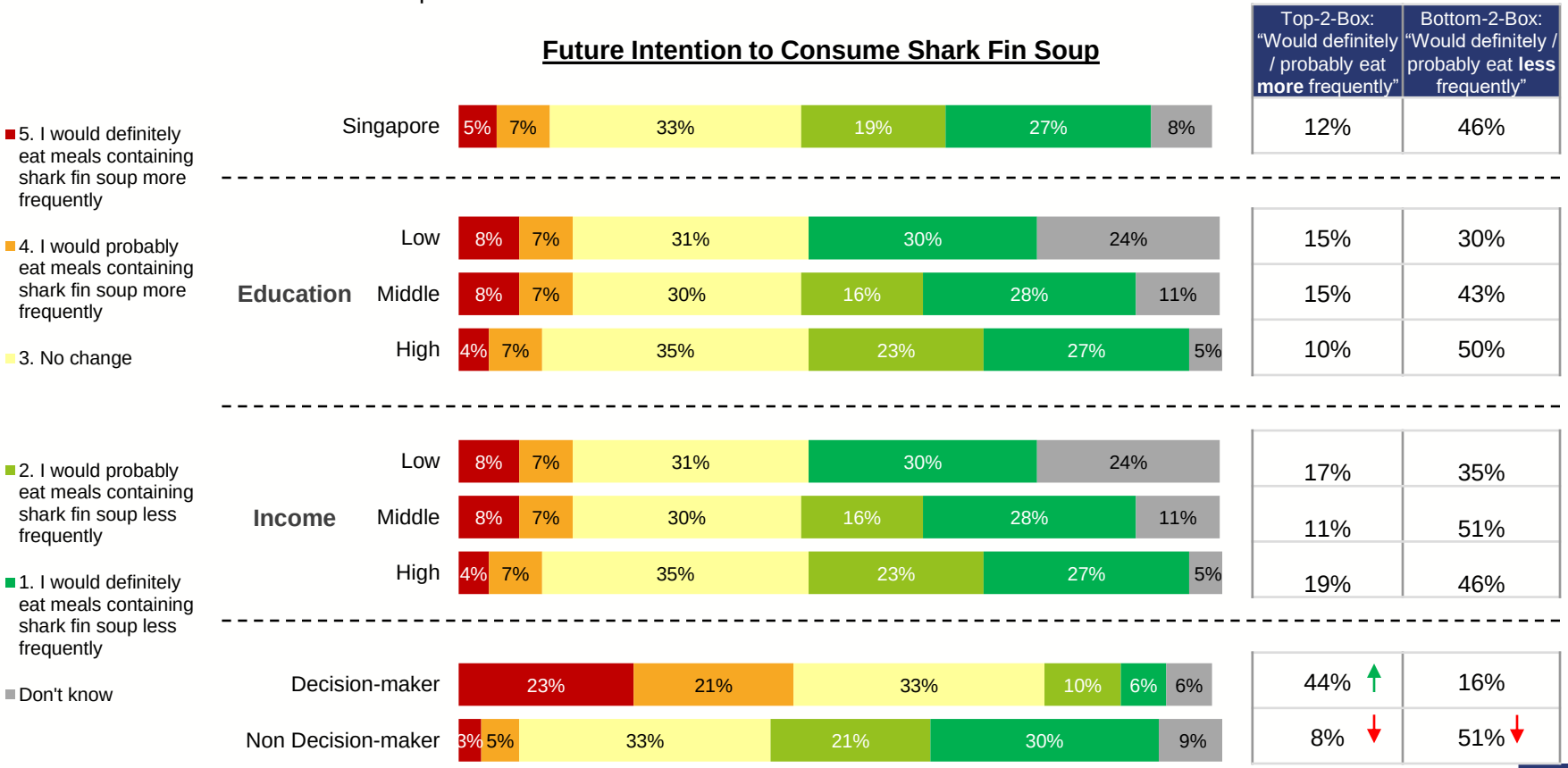
Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

Statistically significant difference: higher / lower at 95% confidence level vs Total

Future Consumption of Shark Fin Soup

Decision-makers are mostly driving future consumption, with in total eight in ten intending to consume either more often or to continue consuming as often as in the past. Although there is no difference by income level, it is worth noting that one in four low-income consumers are uncertain of their future consumption.

Future Intention to Consume Shark Fin Soup



	Top-2-Box: "Would definitely / probably eat **more** frequently"	Bottom-2-Box: "Would definitely / probably eat **less** frequently"
Singapore	12%	46%
Education – Low	15%	30%
Education – Middle	15%	43%
Education – High	10%	50%
Income – Low	17%	35%
Income – Middle	11%	51%
Income – High	19%	46%
Decision-maker	44% ↑	16%
Non Decision-maker	8% ↓	51% ↓

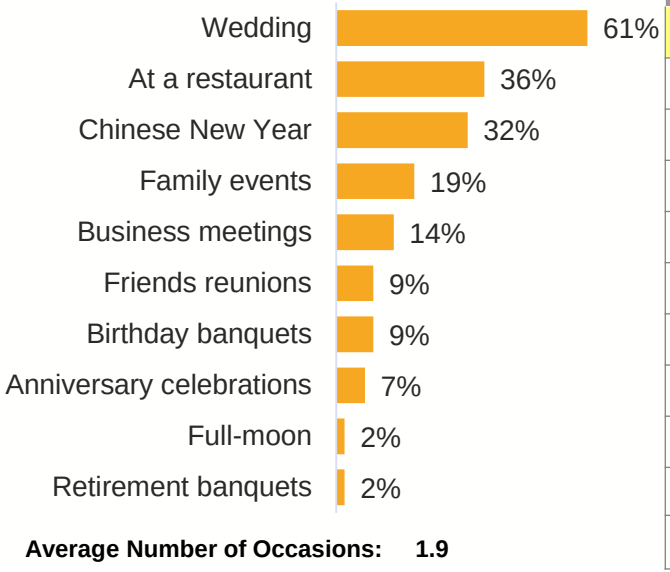
Q5. Would you choose to eat more frequently or less frequently any meal including shark fin soup if you had the opportunity? – **Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

↑↓ Statistically significant difference: higher / lower at 95% confidence level vs Total

Occasions of Consumption

Weddings are the main occasions where consumers eat shark fin soup across all age, gender and education groups. It is worth noting that Decision-makers on shark fin soup and high-income consumers have significantly more occasions of consumption than the other sub-groups, particularly social occasions (i.e., family events, friends reunions), indicating their potential influence on consumption. Low-income consumers have limited occasions, mostly weddings, which reflects their occasional consumption profile.



Average Number of Occasions: 1.9

Occasions of Consumption of Shark Fin Soup – by Demographics

	Gender		Age						Education			Income			Shark fin soup Decision-maker	
	Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High	Decision-maker	Non Decision-maker
	n=255	*n*=273	*n*=44	*n*=96	*n*=111	*n*=101	*n*=93	*n*=84	*n*=24	*n*=212	*n*=292	*n*=108	*n*=298	*n*=46	*n*=64	*n*=464
Wedding	59%	63%	46%	59%	62%	58%	61%	72%	61%	60%	61%	52%	67%	63%	59%	61%
At a restaurant	34%	38%	22%	37%	32%	33%	43%	42%	40%	37%	34%	37%	33%	55%↑	46%	34%
Chinese New Year	32%	32%	32%	27%	32%	26%	32%	45%	8%	31%	35%	21%	35%	43%	51%↑	29%
Family events	18%	20%	22%	20%	17%	14%	17%	26%	17%	18%	20%	14%	20%	24%	40%↑	16%
Business meetings	15%	14%	18%	16%	22%	19%	10%	0%	0%	15%	15%	9%	16%	26%↑	27%↑	12%
Friends reunions	10%	9%	3%	12%	14%	6%	11%	4%	0%	11%	9%	0%↓	11%	18%↑	26%↑	7%
Birthday banquets	9%	9%	9%	9%	9%	5%	8%	15%	0%	10%	9%	6%	10%	17%	25%↑	7%
Anniversary celebrations	8%	7%	5%	4%	11%	8%	11%	4%	0%	9%	7%	1%	9%	17%↑	25%↑	5%
Full-moon	1%	3%	6%	2%	2%	2%	2%	0%	0%	2%	2%	2%	2%	7%↑	7%↑	1%
Retirement banquets	1%	3%	0%	3%	2%	2%	1%	6%	0%	3%	2%	0%	3%	7%↑	8%↑	2%
Average Number of Occasions:	**1.9**	**2.0**	**1.7**	**1.9**	**2.0**	**1.7**	**2.0**	**2.1**	**1.3**	**2.0**	**2.0**	**1.4**	**2.1**	**2.8**↑	**3.2**↑	**1.8**

Main Occasion

Q6a. In the past 12 months, on which of the following occasions have you eaten shark fin soup? – **Weighted data**

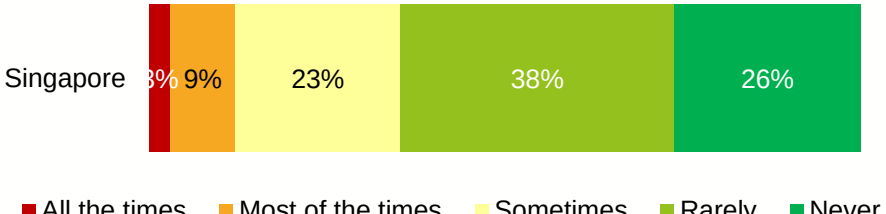
Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

↑↓ Statistically significant difference: higher / lower at 95% confidence level vs Total

Decision to Include Shark Fin Soup in Meals

Overall, a majority of consumers seldom make the decision to include shark fin soup in the meals that they help to organize in Singapore. This pattern is observed across all gender, age and education sub-groups. It is worth noting that the main differentiation in terms of demographics and socio-economic sub-groups is income, i.e., high income consumers are significantly more likely to be Decision-makers vs low-/middle-income consumers, a vast majority of whom are passive consumers (95%).

Own Decision to Include Shark Fin Soup in Meals



Decision-makers "All/most of the times"	Non Decision-makers "Sometimes/ rarely/never"
12%	87%

By Demographics

Next 12 Months Frequency of Consumption	Total Sample	Gender		Age						Education			Income		
		Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High
	n=528	*n*=255	*n*=273	*n*=44	*n*=96	*n*=111	*n*=101	*n*=93	*n*=84	*n*=24	*n*=212	*n*=292	*n*=108	*n*=298	*n*=46
Decision-makers "All/most of the times"	12%	11%	14%	5%	12%	14%	8%	17%	13%	8%	13%	12%	5%↓	13%	32%↑
Non Decision-makers "Sometimes/rarely/ never"	87%	89%	86%	95%	88%	85%	92%	83%	88%	92%	88%	88%	95%	86%	69%↓

Q7. How often do you decide yourself to include shark fin soup in the meals that you help to plan or organize? – **Weighted data**

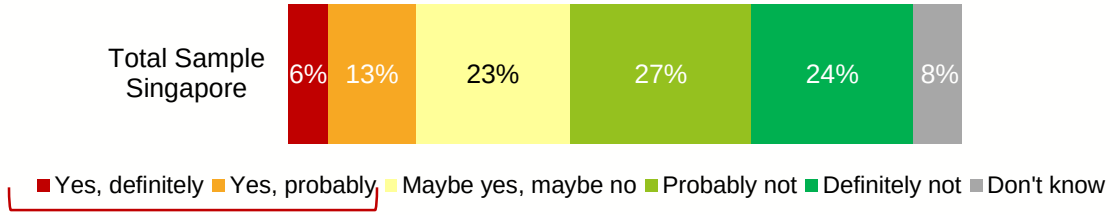
Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

↑↓ Statistically significant difference: higher / lower at 95% confidence level vs Total

Next 12 Months Intended Inclusion/ Recommendation of Shark Fin Soup in Menus

While half of the consumers of shark fin soup do not intend to include or recommend this dish in menus in the next 12 months, six in ten also agree that overall, consumption has to decrease. This opinion is shared within the age, gender and education consumer groups, but not by Decision-makers.

Intention to Include/Recommend Shark Fin Soup in the Next 12 Months in Banquets or Other Eating Occasions



% Yes, definitely + Yes, probably

	Gender		Age						Education			Income			Shark fin soup Decision-maker	
Total Sample	Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High	Decision-Maker	Non Decision-Maker
n=528	*n*=255	*n*=273	*n*=44	*n*=96	*n*=111	*n*=101	*n*=93	*n*=84	*n*=24	*n*=212	*n*=292	*n*=108	*n*=298	*n*=46	*n*=64	*n*=464
19%	20%	19%	12%	17%	22%	16%	21%	23%	8%	20%	19%	10%	23%	24%	57% ↑	14% ↓

Q12. Thinking about next 12 months, do you expect to include or recommend to include shark fin soup in the menu of a banquet or other eating occasion? **– Weighted data**

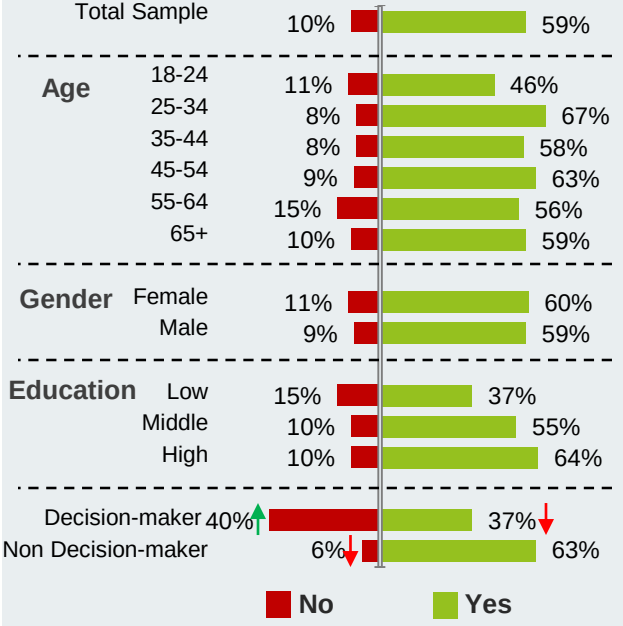
Q13. Do you think that shark fin consumption should be decreased? – **Weighted data**

Base: Past 12 months shark fin soup consumers: *n*=528 in Singapore

↑↓ Statistically significant difference: higher / lower at 95% confidence level vs Total

General Opinion on Shark Fin Soup Consumption

Do you think shark fin soup consumption should be decreased?





3.3 Drivers and Deterrents of Shark Fin Soup Consumption

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MaxDiff Methodology – as Used in the Research Program

What Is the MaxDiff Methodology?
MaxDiff is a research methodology which allows us to understand the strength of an attribute relative to the other attributes rated. Respondents can only select one attribute which best describes their opinion or behavior among a list of five, and one which describes their opinion the least in the same list of five. Respondents see several different screens with five attributes selected randomly by the model, and have to repeat this process for each screen ten times or more. Hence, it gives the chance for each attribute to be selected as the preferred one, and to be compared with the others. This method gives a much better differentiation than rating each attribute.

Question Using MaxDiff in This Survey
The question on drivers and deterrents (Q9) uses MaxDiff. This question was asked in the local language to each respondent who qualified as a past 12 months shark fin soup consumer.

Q9. Now we will focus on shark fins and its consumption. On the following screens we will provide you lists of various statements. For each screen, please select the statement which describes your opinion the most, and the statement which describes your opinion the least.
Please select one statement from each box. We will repeat this question several times with different sets of statements to choose from.

How to Interpret the Results
The results for this question are reported based on the MaxDiff score. It is a relative score, reported as a measure of importance (Note: The MaxDiff score is not a percentage).
These attitudes can provide a baseline understanding of the drivers of shark fin soup consumption and the public's perception of specific shark-related issues, and outline the parameters of which dimensions might be communicated on through the messages/ campaigns.

Comparison with Other Surveys

A MaxDiff score cannot be compared to other methodologies. For a fair comparison, it is advised to look at the ranking of the attributes and not to compare their scores.

Design and Analyses – Path Analysis

Path Analysis Design for All Markets Surveyed

Path Analysis

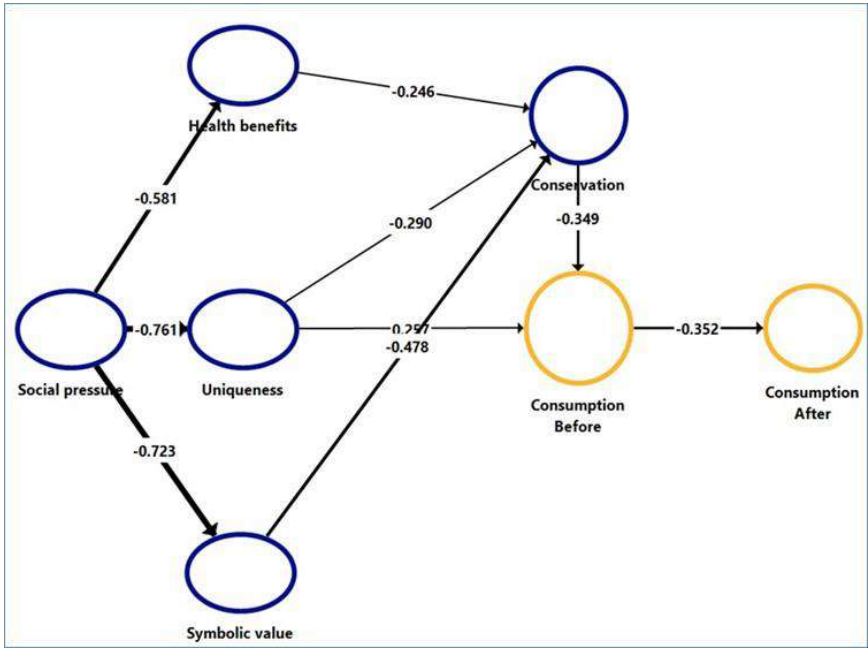
In order to understand the interplay between different groups of motives and attitudes in driving the intention to consume shark fin soup, we built a predictive model and explored it using Path Analysis framework.

Path Analysis, in a way, is a hybrid of factor and regression analysis. The former helps identify latent constructs (e.g., combinations of individual attributes); the latter, to explore the strength of causal relationships in predicting the outcome of interest (e.g., intended consumption). Path modeling, compared to multiple regression analysis, helps uncover both direct and indirect causal effects.

On the path diagram for Singapore (see below), perceived symbolic value does not drive intended consumption directly. However, it very strongly impacts consumption by weakening the perceived need for conservation of sharks (strong negative driver -.478).

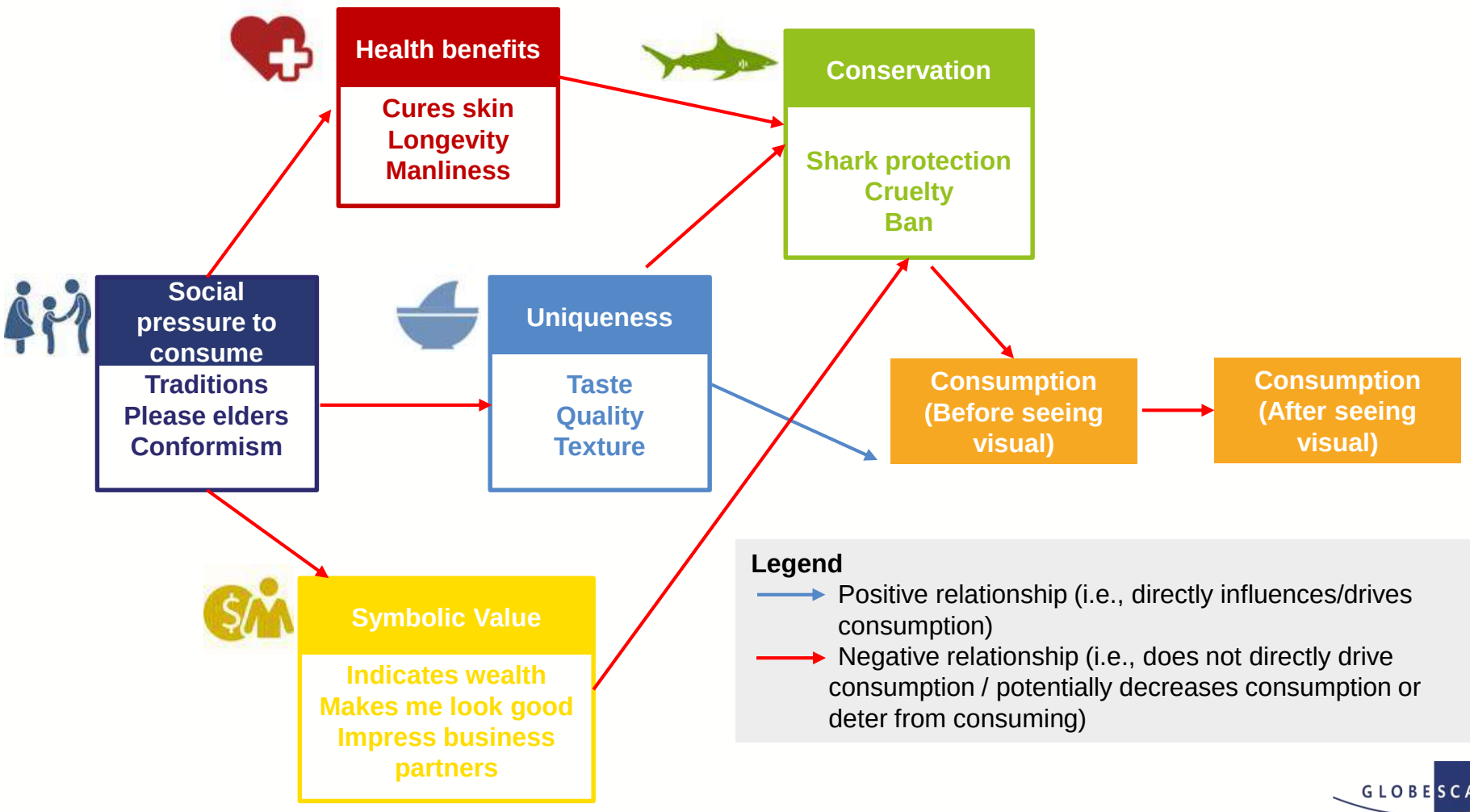
Path Model Structure (Factors*):

- Conservation (attitudes toward conservation of sharks)
- Perceived health benefits
- Perceived social pressure
- Perceived symbolic value
- Perceived uniqueness
- Intended consumption before exposure to visual stimuli
- Intended consumption after the exposure



** Please refer to the appendix for the detailed definition of factors*

Drivers and Deterrents Summary – Main Relationships



Drivers and Deterrents Summary (1)

In order to understand the importance of, and linkages among various beliefs, attitudes and concerns that relate to intent to consume shark fin soup, GlobeScan conducted two types of statistical analyses: a MaxDiff Analysis and a Path Analysis (Structural Equation Modeling).

The MaxDiff analysis tests a series of predictors to determine which ones are most influential. While there are nuances that need to be taken into account, certain drivers were found to be applicable across the markets studied. Each of the drivers is composed of an aggregate of a number of individual variables grouped using factor analysis.

In Singapore, the leading opinions on shark fin soup consumption are deterrents to consumption. In this analysis, conservation is found to be the strongest influencer of shark fin soup (non) consumption among Past 12 Months Consumers, followed by the awareness of animal cruelty and a government ban. These attributes are all deterrents to consumption.

- **Together, these three drivers suggest a sense of urgency and highlight the awareness of consumers that shark fin soup consumption is a direct threat to sharks. It suggests that actions need to be taken to save sharks from extinction, mostly by the government (i.e., a ban) or by consumers themselves (i.e., use a substitute in a set dinner/banquet, stop eating).**

But strong drivers of consumption remain, and are also dominant opinions

When focusing on specific attributes which drive the consumption of shark fin soup, the leading drivers are related to tradition and to the uniqueness of shark fin soup, particularly its taste and quality, in Singapore.

- **In Singapore, there is a significant share of "deciders" (or Decision-makers). Their consumption is considered "active" as they make the decision to eat shark fin soup driven by a specific need. The main drivers for active consumption are culinary aspects and uniqueness of shark fin soup, i.e., taste and quality. However, the belief that serving shark fin soup is part of Chinese tradition and the fact that it is served to please the elders are important drivers as well, but they mostly drive passive consumption.**

Drivers and Deterrents Summary (2)

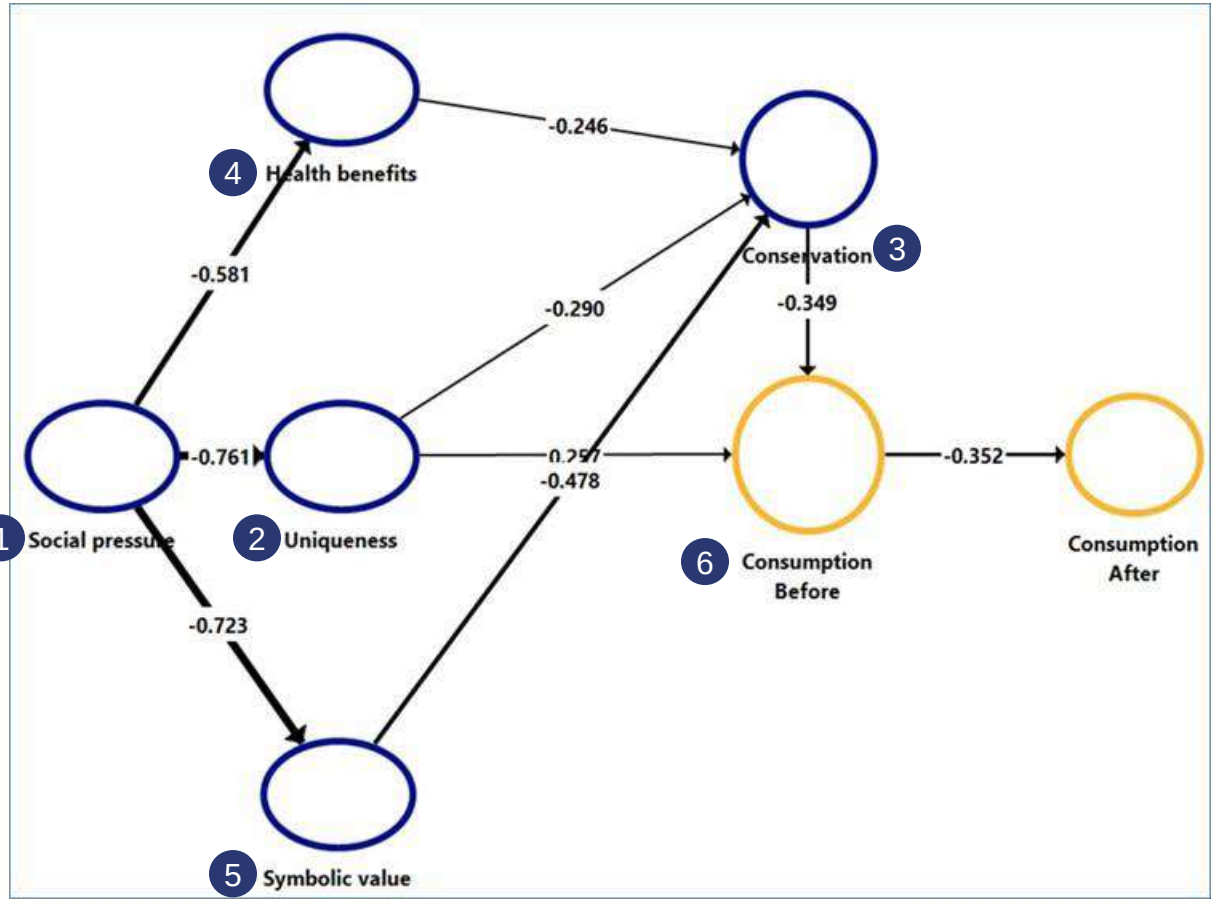
Furthermore, to better understand intent to consume shark fin soup and the interaction of perceptions of shark fin soup and various social values, we also conducted a path analysis (see next page). Using structural equation modeling, the path analysis uncovers both direct and indirect drivers of key beliefs and behaviors that lead to the outcomes that this study seeks to advance.

In this path analysis, first, multiple variables were grouped into factors, or clusters of related attitudes, values and behaviors using principal components analysis.

1. The first cluster in the diagram (see next page) relates to the social pressure consumers face when it comes to consuming shark fin soup, more specifically, to respect the tradition, respect the elders, being conformist and caring about what others think.
2. The second cluster refers to positive associations with shark fin soup, including its “great” taste, its quality and unique texture.
3. The third cluster captures attitudes towards conservation and concerns about animals and sharks specifically. These attitudes are all negative views on shark fin soup consumption, i.e., deterrents.
4. The fourth cluster represents the health benefits related to shark fin soup consumption, such as the belief that it cures skin conditions.
5. The fifth cluster represents symbolic values associated with shark fin soup consumption, such as the particular status conferred to the consumer and the indication that the consumer is wealthy.
6. The sixth cluster illustrates our key outcomes of intent to consume (after seeing a visual on shark finning).

Note: Cluster numbers are indicated in the path analysis in the next page

Path Analysis – Singapore

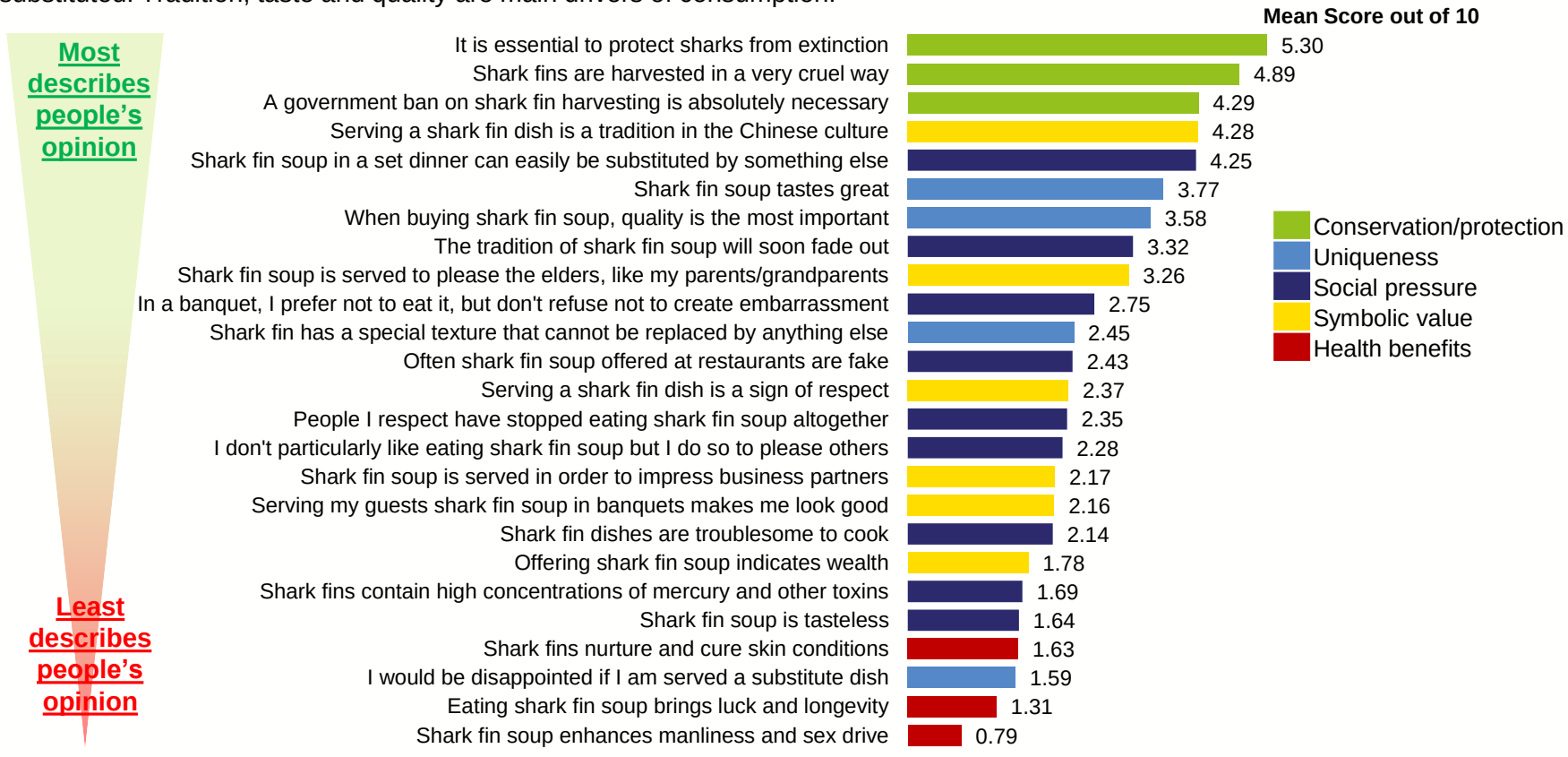


Main Relationships and Learnings

- **In Singapore, uniqueness is the only driver with a positive relationship on consumption 'Before'.**
- Symbolic value is not a major driver, i.e., the perceived uniqueness of shark fin soup counter-balances the symbolic value, meaning that consumers are more likely to consume shark fin soup because they like its taste, texture or for its quality (all unique attributes to shark fin soup) rather than being influenced by its symbolic value (i.e., tradition, makes me look good, indicates status).
- The negative relation between consumption before and after exposure of the stimuli shows that **consumption is mostly driven by lack of awareness of how shark fins are harvested. The exposure to the visual amplifies the intention to eat less.**

Opinions on Shark Fin Soup Consumption

In Singapore, the opinions expressed are primarily in favor of shark conservation, a government ban on shark fin harvesting and against cruelty. While serving a shark fin dish is perceived as a tradition, consumers also think that shark fin soup can easily be substituted. Tradition, taste and quality are main drivers of consumption.



Q9. Now we will focus on shark fins and its consumption. On the following screens we will provide you lists of various statements. For each screen, please select the statement which describes your opinion the most, and the statement which describes your opinion the least. – **Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers : *n*=528 in Singapore

Opinions on Shark Fin Soup Consumption – Singapore (top 12)

All age groups are strongly in favor of shark protection and are against cruelty, while the tradition of consuming shark fin is a stronger driver for those aged 55+. Millennials aged 25–34 do not think that shark fin soup enhances their status, however they are the ones who feel the social pressure the most, i.e., eating shark fin soup in banquets not to create embarrassment. Uniqueness (taste, quality) is particularly important for low-education consumers and for Decision-makers. High-income consumers give less importance to tradition.

Top 12 Opinions
MaxDiff score (mean)
Ranked on Total Sample

Most described opinions (Top 3)
Least described opinions (Bottom 3)

	Total	Age						Education			Income			Shark fin soup Decision-maker	
		18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High	Yes	No
It is essential to protect sharks from extinction	5.30	5.75	5.74	5.55	5.43	4.77	4.70	3.86	5.04	5.61	4.93	5.35	5.38	3.07 ↓	5.61
Shark fins are harvested in a very cruel way	4.89	5.59	5.42	4.79	5.02	4.58	4.20	3.60	4.56	5.23	4.66	4.88	4.79	2.83 ↓	5.17
A government ban on shark fin harvesting is absolutely necessary	4.29	4.25	4.86	4.54	4.49	3.72	3.72	3.41	4.04	4.55	3.89	4.38	4.37	2.25 ↓	4.57
Serving a shark fin dish is a tradition in the Chinese culture	4.28	4.73	4.08	4.08	4.04	4.43	4.65	3.23	4.42	4.26	4.78	4.21	3.50 ↓	4.43	4.26
Shark fin soup in a set dinner can easily be substituted	4.25	3.84	4.53	4.38	4.14	4.51	3.83	1.90	4.11	4.55	3.82	4.31	4.15	2.56 ↓	4.49
Shark fin soup tastes great	3.77	4.37	3.34	3.65	3.72	4.35	3.52	4.27	3.85	3.67	3.73	3.76	3.69	5.42 ↑	3.54
When buying shark fin soup, quality is the most important	3.58	3.87	3.31	3.35	3.40	4.05	3.75	3.99	3.65	3.50	3.70	3.53	3.59	4.40 ↑	3.47
The tradition of shark fin soup will soon fade out	3.32	2.53	3.25	3.75	3.48	3.11	3.30	2.13	3.43	3.34	2.65 ↓	3.59	2.89	2.31 ↓	3.46
Shark fin soup is served to please the elders, like my parents/grandparents	3.26	3.49	3.35	3.26	3.28	3.09	3.19	3.01	3.22	3.31	3.53	3.22	2.62	3.10	3.28
In a banquet, I prefer not to eat it, but I don't refuse not to create embarrassment	2.75	2.30	3.31 ↑	2.94	2.43	2.47	2.81	2.78	2.55	2.89	2.50	2.78	2.88	1.80 ↓	2.88
Shark fin has a special texture that cannot be replaced by anything else	2.45	2.89	2.03	2.21	2.49	2.60	2.80	2.76	2.52	2.38	2.67	2.43	2.58	4.30 ↑	2.20
Often shark fin soup offered at restaurants are fake	2.43	2.52	2.47	2.54	2.17	2.55	2.37	1.64	2.35	2.55	2.39	2.39	1.97	1.45 ↓	2.56

Q9. Now we will focus on shark fins and its consumption. On the following screens we will provide you lists of various statements. For each screen, please select the statement which describes your opinion the most, and the statement which describes your opinion the least. – **Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers : *n*=528 in Singapore - Statistically significant difference: higher / lower at 95% confidence level vs Total

Opinions on Shark Fin Soup Consumption – Singapore (bottom 13)

Decision-makers have different views on the consumption of shark fin soup compared to the general consumers, i.e., the symbolic value of shark fin soup is significantly more important for them compared to the other consumer groups (e.g., indicates wealth, is a sign of respect, to impress business partners, serving shark fin soup makes me look good), and they also find it more unique (cannot be replaced, *see previous slide*) while not giving credit to potential negative effects it could have on health.

Bottom 13 Opinions
MaxDiff score (mean)
Ranked on Total sample

Most described opinions (Top 3)
Least described opinions (Bottom 3)

	Total	Age						Education			Income			Shark fin soup Decision-maker	
		18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High	Yes	No
Serving a shark fin dish is a sign of respect	2.37	2.56	2.27	2.27	2.30	2.51	2.47	2.78	2.51	2.24	2.22	2.46	2.36	3.29 ↑	2.25
People I respect have stopped eating shark fin soup altogether	2.35	1.70 ↓	2.68	2.39	2.39	2.25	2.34	2.45	2.29	2.39	2.09	2.42	2.78	1.77 ↓	2.44
I don't particularly like eating shark fin soup but I do so to please others	2.28	1.91	2.57	2.54	2.45	2.05	1.88	2.24	2.17	2.37	2.13	2.35	2.26	1.82	2.35
Shark fin soup is served in order to impress business partners	2.17	2.33	1.70 ↓	2.48	2.25	2.33	1.97	3.02	2.06	2.19	1.90	2.27	2.52	3.07 ↑	2.05
Serving my guests shark fin soup in banquets makes me look good	2.16	2.44	1.64 ↓	2.14	2.23	2.51	2.19	3.29	2.19	2.05	2.03	2.33	2.03	3.57 ↑	1.97
Shark fin dishes are troublesome to cook	2.14	2.08	2.27	2.10	2.02	2.28	2.09	2.10	2.03	2.23	2.33	2.09	2.14	1.76 ↓	2.20
Offering shark fin soup indicates wealth	1.78	1.87	1.67	1.83	1.73	1.92	1.69	2.63	1.70	1.77	1.91	1.74	1.87	2.40 ↑	1.69
Shark fins contain high concentrations of mercury and other toxins	1.69	1.51	1.67	2.02	1.88	1.43	1.44	1.03	1.52	1.87	1.40	1.84	1.76	1.30	1.75
Shark fin soup is tasteless	1.64	1.62	1.82	1.60	1.64	1.52	1.63	0.86	1.67	1.69	1.61	1.68	1.73	1.01 ↓	1.73
Shark fins nurture and cure skin conditions	1.63	1.68	1.69	1.53	1.58	1.64	1.72	2.42	1.71	1.51	1.92	1.52	2.01	2.39 ↑	1.53
I would be disappointed if I am served a substitute dish	1.59	1.51	1.28	1.36	1.67	1.70	2.08	1.71	1.69	1.51	1.55	1.68	1.61	2.89 ↑	1.41
Eating shark fin soup brings luck and longevity	1.31	1.50	1.27	1.22	1.42	1.27	1.30	2.26	1.44	1.14	1.54	1.26	1.52	2.31 ↑	1.17
Shark fin soup enhances manliness and sex drive	0.79	0.68	0.82	0.71	0.86	0.69	0.96	1.70	0.84	0.68	1.00	0.72	1.03	1.48 ↑	0.69

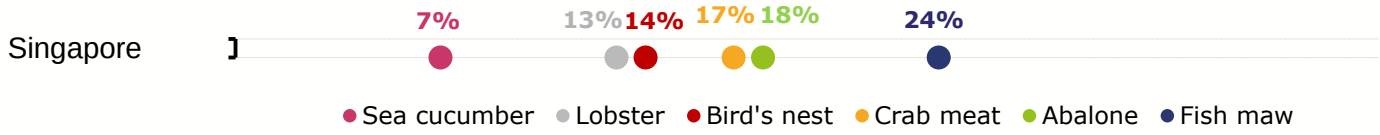
Q9. Now we will focus on shark fins and its consumption. On the following screens we will provide you lists of various statements. For each screen, please select the statement which describes your opinion the most, and the statement which describes your opinion the least. – **Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers : *n*=528 in Singapore - Statistically significant difference: higher / lower at 95% confidence level vs Total

Potential Replacement Dish for Shark Fin Soup

While fish maw is perceived to be the main substitute for shark fin soup overall, there are underlying differences by age group: i.e., particularly abalone, significantly more popular among those aged 25–34, and fish maw among the 55–64 age group.

Best Replacement Dish for Shark Fin Soup in Traditional Banquets (%)



Nothing can replace shark fin soup: 7%

	Total Sample	Gender		Age						Education			Income			Shark fin soup Decision-maker	
		Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High	Decision-maker	Non Decision-maker
	n=528	*n*=255	*n*=273	*n*=44	*n*=96	*n*=111	*n*=101	*n*=93	*n*=84	*n*=24	*n*=212	*n*=292	*n*=108	*n*=298	*n*=46	*n*=64	*n*=464
Fish maw	24%	25%	23%	20%	17%	28%	19%	36%↑	20%	30%	21%	25%	21%	24%	30%	21%	24%
Abalone	18%	16%	20%	20%	27%↑	14%	16%	16%	16%	0%	16%	21%	14%	21%	16%	18%	18%
Crab meat	17%	18%	16%	13%	17%	22%	23%	14%	9%	33%	19%	14%	14%	18%	17%	18%	17%
Bird's nest	14%	14%	15%	21%	12%	12%	15%	8%	23%	0%	18%	13%	17%	12%	18%	12%	14%
Lobster	13%	12%	14%	17%	21%↑	12%	12%	9%	9%	8%	11%	15%	12%	13%	12%	13%	13%
Sea cucumber	7%	9%	5%	3%	5%	7%	8%	7%	8%	7%	6%	7%	9%	5%	7%	6%	7%
Nothing can replace shark fin soup	7%	6%	8%	6%	1%↓	5%	8%	8%	14%	14%	9%	5%	11%	7%	0%↓	10%	6%

Leading substitute

Q17. Thinking about different foods, which of the following would be the best replacement dish for shark fin soup on traditional banquets? – **Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

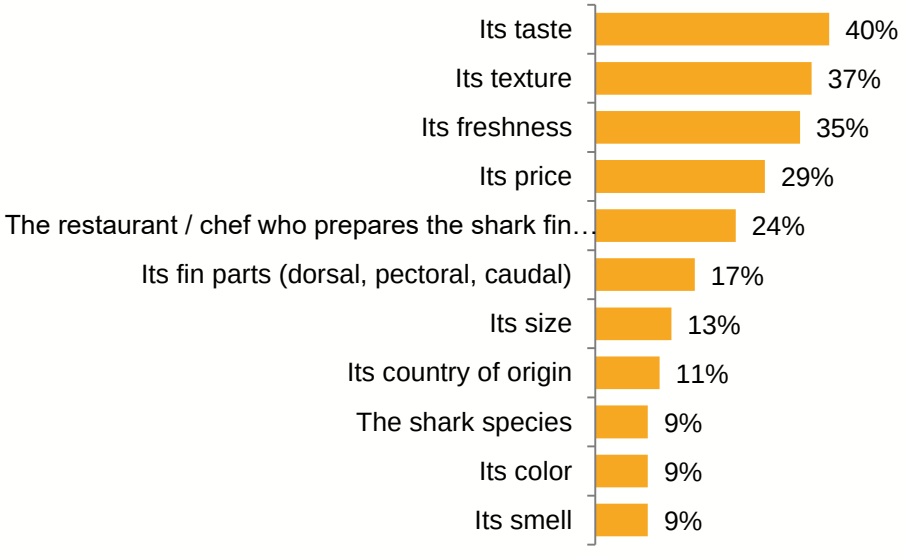
↑↓ Statistically significant difference: higher / lower at 95% confidence level vs Total

Definition of the Quality of Shark Fins

Qualitative and Quantitative Findings

Overall, the quality of shark fin is determined mostly by its taste, its texture and its freshness. Taste is also considered to be the best way to determine quality for more than half of the Decision-makers.

Best Ways to Determine the Quality of Shark Fin (% Rank 1-3)



	Shark fin soup Decision-maker	
	Decision-maker	Non Decision-maker
	n=64	*n*=464
Its taste	55% ↑	38%
Its texture	44%	36%
Its freshness	45%	34%
Its price	25%	29%
The restaurant / chef who prepares the shark fin…	35%	23%
Its fin parts (dorsal, pectoral, caudal)	20%	17%
Its size	15%	12%
Its country of origin	11%	12%
The shark species	19% ↑	8%
Its color	10%	9%
Its smell	10%	9%

Q10. Now we would like to ask you to rank the three best ways for you to determine the quality of shark fin [soup]. – **Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

↑↓ Statistically significant difference: higher / lower at 95% confidence level vs Total



3.4 Test of Concept Messages and Communication

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Introduction to the Section: Stimuli Offered in the Survey

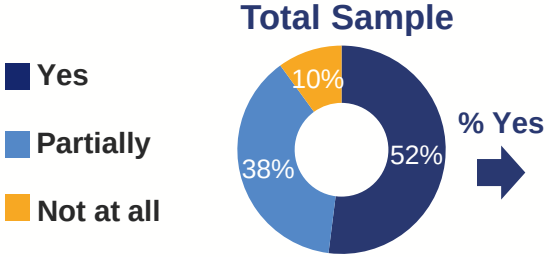
Before answering the questions on the concept messages, respondents saw a screen with the facts and images shown below. This stimuli aims to provide background information on shark finning to respondents. This helped to gather and gauge their reactions after seeing an impactful visual. While these visuals show animal cruelty, they illustrate what is described in the 'animal cruelty' message tested later. However, when compared to qualitative results, these visuals don't seem to have significantly influenced the preference for this message.



Reaction to Stimuli

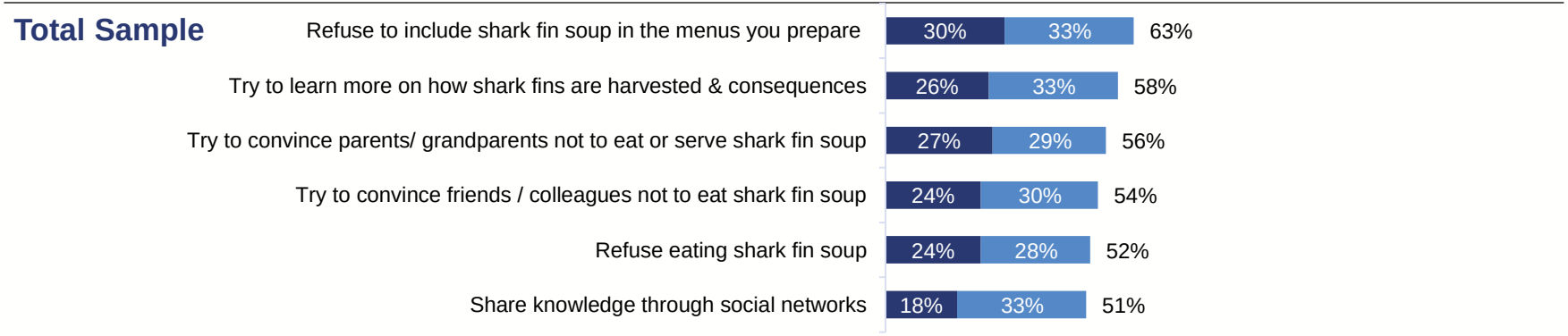
Over half of shark fin soup consumers claim to be fully aware of shark finning, particularly those aged 18–24. The main reaction of consumers after seeing the stimuli is to change their own consumption behavior and refuse to include shark fin soup in menus they prepare.

Were you aware of these facts?



Gender		Age						Education			Shark fin soup Decision-maker	
Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Decision-maker	Non Decision-maker
n=255	*n*=273	*n*=44	*n*=96	*n*=111	*n*=101	*n*=93	*n*=84	*n*=24	*n*=212	*n*=292	*n*=64	*n*=464
51%	52%	66%	56%	48%	56%	45%	47%	45%	48%	55%	53%	51%

Reactions after seeing the stimuli: Knowing this, how likely will you be to…



Q14. Were you aware of those facts? Q15. Knowing this, how likely will you be to… – **Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers *n*=528 in Singapore

Statistically significant difference: higher / lower at 95% confidence level vs Total

Legend: Messages

Extinction
An estimated 100 million sharks are killed every year with fins from up to 73 million used for shark fin soup, primarily to supply the markets in Asia. And 94.9 percent of shark species cannot maintain population stability if the harvest continues. The consumption of shark fins could lead to the extinction of sharks which have lived on this planet for over 400 million years.

Animal cruelty
Expensive fin soups are made of shark fins. During fishery activities, in order to stockpile the most shark fins, sharks are often captured, finned and abandoned. Sharks without fins cannot swim in the sea and will bleed to death.

Illegality/extinction
Shark fin soup is widely consumed in wedding banquets as a high-end dish. Consumption of shark fin soup drives illegal fishing, which leads to a dramatic drop in the shark population and unsustainable species reproduction. Do not let your wedding day become the end of sharks.

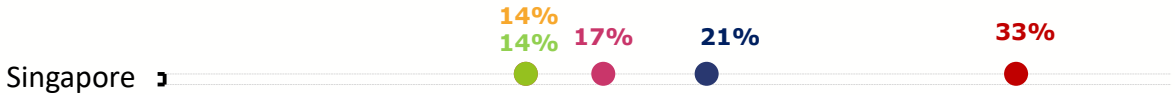
Luxury/status
While including shark fin soup in a banquet seems to be a luxurious choice, it's an old-fashioned way to show people your respect and status. Nowadays, people respect those who are conscious on the environmental impact of their consumption.

Health
There is no scientific evidence that shark fins can be used to treat any medical condition. On the contrary, sharks contain high levels of mercury and other neurotoxins. Exposure to mercury – even small amounts – may cause serious health problems. Cooking does not eliminate mercury. In many countries, it is advised that pregnant women and children should avoid eating shark.

Ranking of Preferred Messages

The message on the topic of extinction is the most impactful in Singapore among those aged 18–54, with a significant gap to the other messages. The message on animal cruelty also resonates with consumers, particularly among the 55–64 age group. For Decision-makers, however, the message on luxury/status has the most impact on their intention to consume shark fin soup.

Preferred Messages (Summary of Rank 1) (%)



	Total Sample	Gender		Age						Education			Shark fin soup Decision-maker	
		Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Decision-maker	Non Decision-maker
	n=528	*n*=255	*n*=273	*n*=44	*n*=96	*n*=111	*n*=101	*n*=93	*n*=84	*n*=24	*n*=212	*n*=292	*n*=64	*n*=464
Extinction	33%	36%	31%	38%	33%	42%	36%	24%	26%	47%	35%	31%	19% ↓	35%
Cruelty	21%	23%	19%	19%	23%	22%	22%	26%	13%	23%	19%	23%	26%	21%
Luxury/status	17%	13%	20%	12%	9% ↓	13%	8% ↓	21%	38% ↑	16%	22%	13%	28% ↑	15%
Illegality	14%	13%	15%	13%	15%	12%	15%	15%	15%	14%	12%	16%	18%	14%
Health	14%	14%	15%	18%	19%	11%	18%	14%	8%	0%	12%	17%	9%	15%

Leading Message

Q16. Now we will show you a list of various messages. Which one of the following messages affects your intention to consume shark fin soup the most? – **Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

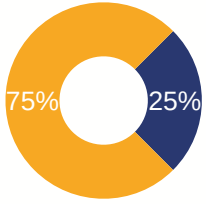
↑↓ Statistically significant difference: higher / lower at 95% confidence level vs Total

Campaign Recall (Spontaneous)

Past campaigns mentioning the banning of shark are recalled by one in four in Singapore, with no significant difference by consumer sub-groups. Among those who have heard about a campaign, there is no specific campaign or element that stands out (i.e., recall is relatively vague). The messages on conservation / shark protection and cruelty had the strongest impact in general.

Do you recall any previous campaigns mentioning the banning of shark fin? ■ **Yes** ■ **Cannot recall any campaign**

Total Sample



% Yes

Gender		Age						Education			Income			Shark fin soup Decision-maker	
Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High	Decision-maker	Non Decision-maker
n=255	*n*=273	*n*=44	*n*=96	*n*=111	*n*=101	*n*=93	*n*=84	*n*=24	*n*=212	*n*=292	*n*=108	*n*=298	*n*=46	*n*=64	*n*=464
26%	24%	32%	27%	19%	24%	22%	30%	26%	24%	17%	30%	22%	32%	29%	24%

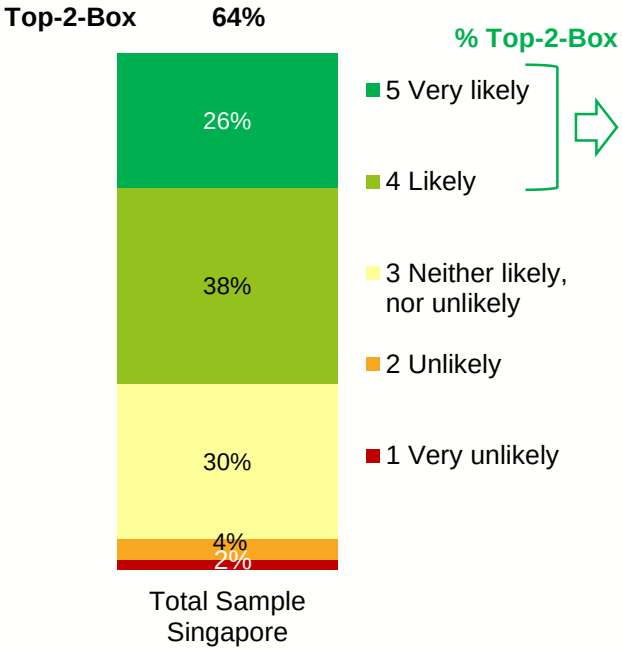
Top five campaigns/elements of campaigns recalled spontaneously – Among those who recall campaigns (*n*=132)

Animal/shark protection / conservation messages	**14%**
Cruelty of shark finning	**7%**
News	**6%**
Name of NGOs / animal rights organizations (e.g., WWF, WildAid)	**5%**
Online/social media platform (e.g., Facebook, WeChat, Weibo)	**5%**
Irrelevant description/no description	***30%***

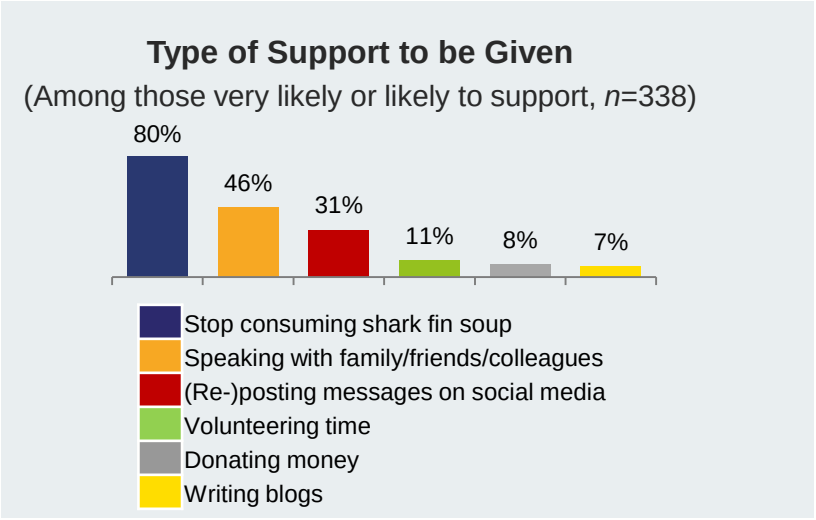
Q18. Do you recall any previous campaigns mentioning the banning of shark fin? Please indicate anything that comes to your mind. **Open-ended – weighted data**
Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore
↑↓ Statistically significant difference: higher / lower at 95% confidence level vs Total

Intention to Support Campaigns

With four in ten consumers either unsure or who do not intend to support a campaign, there is room to further build consumers' awareness of campaigns. There are no significant differences by age, gender, education, income or Decision-maker sub-groups.



	Gender		Age						Education			Income			Shark fin soup Decision-maker	
% Top-2-Box	Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High	Decision-maker	Non Decision-maker
	n=255	*n*=273	*n*=44	*n*=96	*n*=111	*n*=101	*n*=93	*n*=84	*n*=24	*n*=212	*n*=292	*n*=108	*n*=298	*n*=46	*n*=64	*n*=464
	66%	62%	62%	70%	62%	70%	55%	61%	59%	63%	65%	62%	65%	69%	52%	66%



Q19. How likely will you be to support a future campaign on shark protection?
Q20. What type of support would you give? – **Weighted data**
Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore
Statistically significant difference: higher / lower at 95% confidence level vs Total

Trusted Messengers

The government is the most trusted to deliver messages on shark protection (except for the 18–24 age group). Friends and relatives are also seen as trusted messengers, indicating the importance of word of mouth. Those with high education trust their colleagues significantly more, and NGOs significantly less than the other consumer groups when it comes to delivering these messages.

Most Trusted Popular Figure / Celebrity* to Deliver This Message

(Among those who selected "Popular figures / celebrities")



Jacky Chan 9%



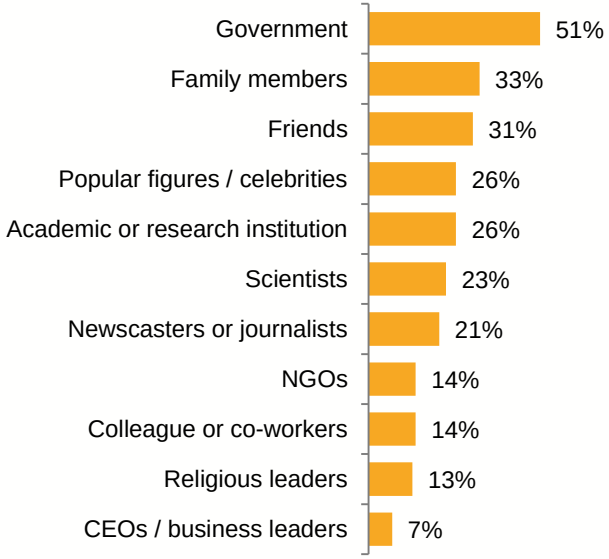
Zoe Tay 6%



Lee Hsien Loong 4%

**No significant differences by gender, age, education, decision maker sub-groups*

Most Trusted Messengers



Gender		Age						Education			Income			Shark fin soup Decision-maker	
Female	Male	18-24	25-34	35-44	45-54	55-64	65+	Low	Middle	High	Low	Middle	High	Decision-maker	Non Decision-maker
n=255	*n*=273	*n*=44	*n*=96	*n*=111	*n*=101	*n*=93	*n*=84	*n*=24	*n*=212	*n*=292	*n*=108	*n*=298	*n*=46	*n*=64	*n*=464
48%	53%	36%	46%	55%	56%	52%	51%	48%	52%	75%	54%	50%	48%	43%	52%
38%	29%	39%	37%	31%	29%	34%	34%	35%	30%	47%	31%	34%	41%	37%	33%
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12%	15%	13%	21%	15%	12%	10%	10%	18%	8%	8%	16%	14%	8%	10%	14%
17%	11%	11%	16%	23%	10%	10%	12%	14%	13%	34%	6%	15%	14%	19%	13%
10%	16%	3%	10%	13%	15%	18%	16%	12%	16%	0%	12%	13%	14%	9%	14%
6%	8%	7%	9%	6%	6%	6%	8%	9%	6%	0%	3%	8%	10%	5%	7%

Most Trusted Messenger

Q21a. Please indicate who you think would be the most trusted messenger to tell this message. – **Weighted data**

Q21b. Please indicate which popular figure or celebrity you think would be the most trusted person to tell this message. Please give the actual name of this (well-known) person. – **Weighted data**

Base: Past 12 Months Shark Fin Soup Consumers: *n*=528 in Singapore

Statistically significant difference: higher / lower at 95% confidence level vs Total



4. Manta Ray / Mobula Ray Gills Consumption

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Introduction to the Section: Manta and Mobula Ray Gills Consumption

Background and Objective

The state of affairs of mobula ray gill consumption has always been unclear. Compared to sharks, less research has been conducted and this species has not gained as much attention, although it is used as an ingredient in Traditional Chinese Medicine (TCM), and this has increased in importance in recent years.

In order to uncover the key drivers of consumption and consumption behavior, some questions focusing on mobula ray gills were added at the end of the questionnaire, and were asked to respondents who indicated that they had ever consumed manta and devil ray / mobula ray gills (as ingredients in Traditional Chinese Medicine).

Questionnaire

More specifically, the questions focusing on mobula ray gills consumption are the following:

- Screening questions, “Ever” and “Past 12 Months” consumption of manta and devil ray / mobula ray gills (as an ingredient in Traditional Chinese Medicine) – *Based on the General Population Representative Sample*
- Questions on TCM containing manta ray / mobula ray gills: frequency of usage in the past 12 months, drivers of usage, general perception, intended consumption in the future, intended recommendation – *Based on Ever Consumers of TCM containing mobula ray gills*

Respondents and Sample

The following sample of Ever Consumers of TCM containing mobula ray gills were obtained:

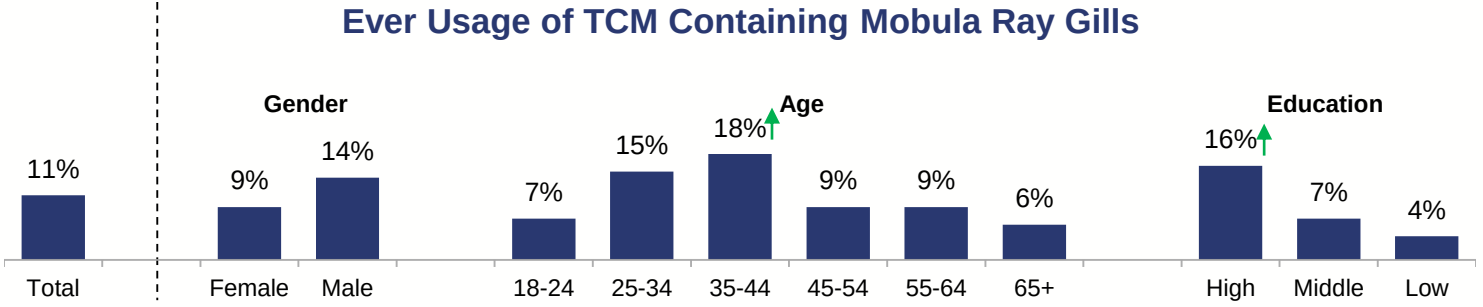
- *n*=71 in Singapore

Consumption Incidence – TCM Including Mobula Ray Gills

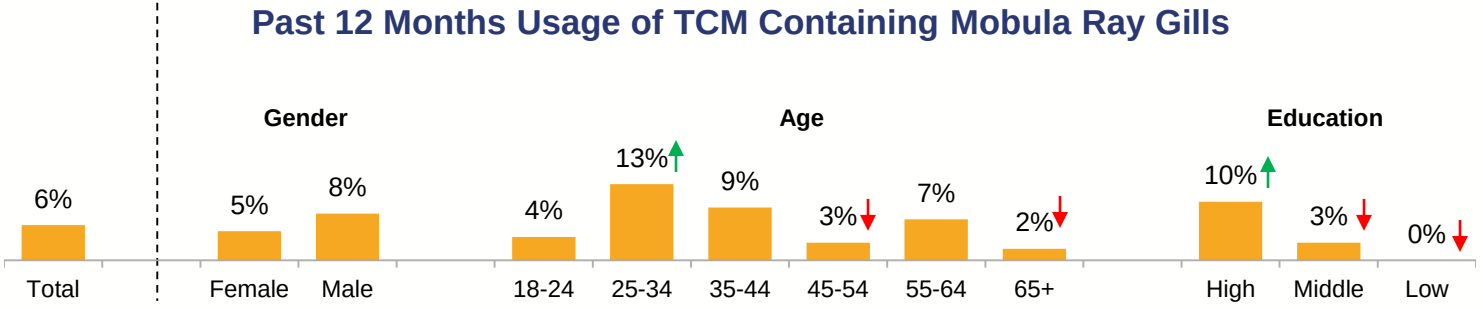
Based on General Population Representative Sample

In Singapore, the incidence of TCM containing mobula ray gills varies by demographics, with consumers aged 25–34 and those with high education driving past 12 months consumption.

Ever Usage of TCM Containing Mobula Ray Gills



Past 12 Months Usage of TCM Containing Mobula Ray Gills



Q1. Have you ever eaten any of the following foods? Manta and devil ray / mobula ray gills (as ingredient in TCM) – **Weighted data**

Q2. In the past 12 months, have you eaten anything of the following, even if only once? Manta ray / mobula ray gills (as ingredient in TCM) – **Weighted data**

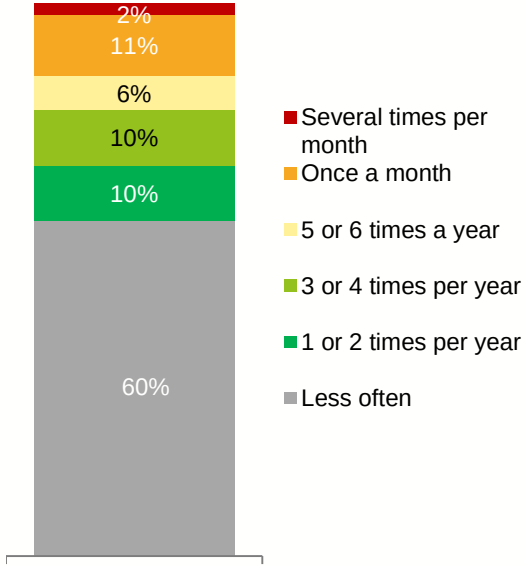
Base: Total General Population Representative Sample, *n*=1156 in Singapore

↑ ↓ Statistically significant difference: higher / lower at 95% confidence level vs Total - *Note: Incidence levels not comparable with other surveys*

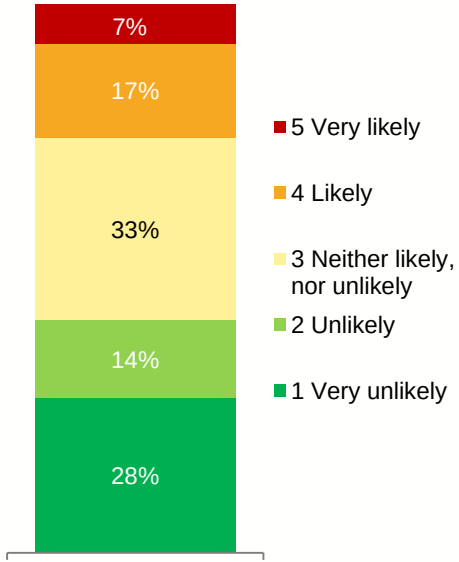
Consumption/Recommendation of TCM Containing Mobula Ray Gills

Usage of TCM containing mobula ray gills is relatively infrequent (60% use it less often than once a year). However, usage intention is slightly higher, with two in ten consumers intending to use this medicine in the future, and two in ten intending to recommend it to family and friends (out of a base of *n*=129 ever users).

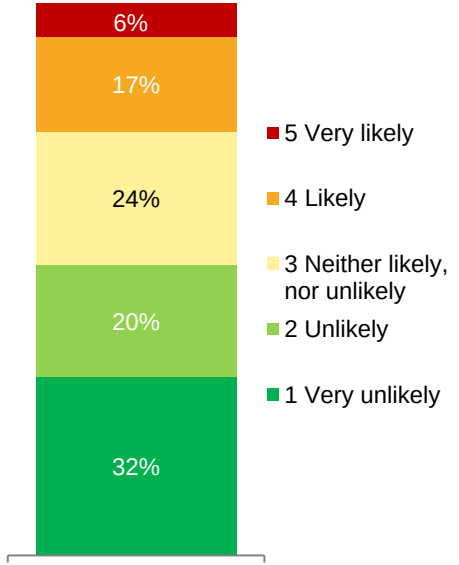
Frequency of Usage of TCM Containing Mobula Ray Gills (%)



Intention to Use TCM Containing Mobula Ray Gills in the Future (%)



Intention to Recommend Using TCM Containing Mobula Ray Gills in the Future (%)



Q30. How often would you say you used Traditional Chinese Medicine containing manta ray / mobula ray gills in the past 12 months? – **Weighted data**

Q33. How likely will you be to use Traditional Chinese Medicine containing manta ray / mobula ray gills in the future? – **Weighted data**

Q34. How likely will you be to recommend using Traditional Chinese Medicine containing manta ray / mobula ray gills to family members or friends in the future? – **Weighted data**

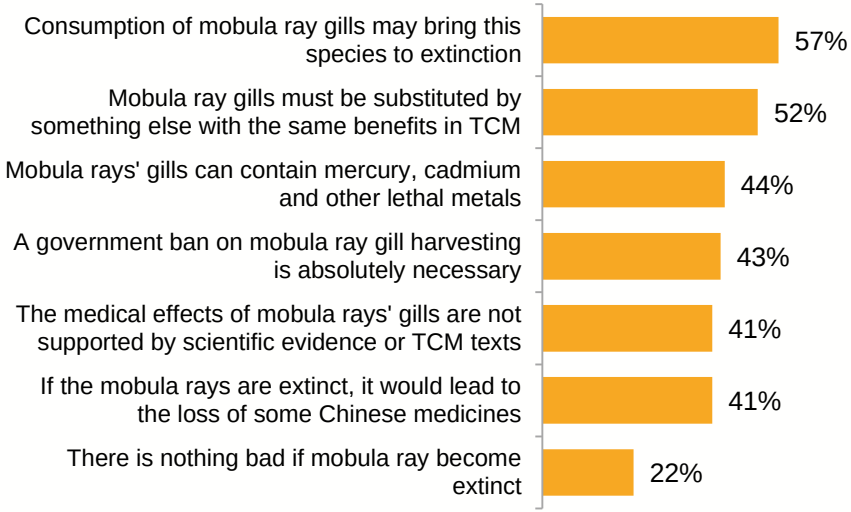
Base: Ever users of TCM containing mobula ray gills: *n*=129 in Singapore

Perception and Drivers of Usage of TCM Containing Mobula Ray Gills

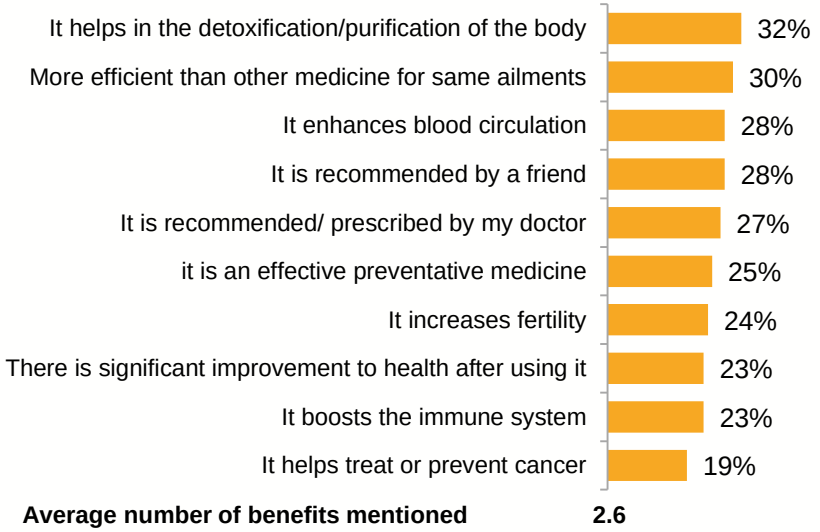
The strongest perception on mobula ray gills consumption is its potential impact on species extinction. Consumers also agree that this medicine should be substituted with something else that delivers the same benefits.

Usage of TCM containing mobula ray gills is driven by both general reasons, such as being “more efficient than other medicines” and by perceived benefits, i.e., “helps in the detoxification of the body” and “enhances blood circulation.”

Perception of Manta Ray / Mobula Ray Gills
(% Top-2-Box, 4+5 Strongly Agree)



I Use Traditional Chinese Medicine Containing Manta Ray / Mobula Ray Gills Because…
(% Top-2-Box, 4+5 Strongly Agree)



Q31. Now we will focus on Traditional Chinese Medicine containing manta ray / mobula ray gills. Please indicate to what extent you agree or disagree with each of the following statements. – **Weighted data**

Q32. Now we are going to focus on mobula ray and mobula ray gills in general. Please indicate to what extent you agree or disagree with each of the following statements. – **Weighted data**

Base: Ever users of TCM containing mobula ray gills: *n*=129 in Singapore



5. Appendix

- Acknowledgements
- Methodological Details
- Additional Information Slides

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Acknowledgments

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References

Organization	Topic	Year
WildAid	Sharks in Crisis	Feb-18
Nature	**Article:** DNA analysis of traded shark fins and mobulid gill plates reveals a high proportion of species of conservation concern	Aug-17
Frontiers	Article**:** Chinese Trader Perceptions on Sourcing and Consumption of Endangered Seafood	Jun-17
Current Biology - MiniReview	**Article:** Challenges and Priorities in Shark and Ray Conservation	Jun-17
TRAFFIC	The Shark and Ray Trade in Singapore	May-17
WildAid	Shark Fin Demand in Thailand	2017
BLOOM	Rapid survey of mobulid gill plate trade and retail patterns in Hong Kong and Guangzhou markets	Sep-16
TRAFFIC	Shark fin and mobula ray gill plate trade in mainland China, Hong Kong and Taiwan	Jun-16
BLOOM	Comparison Report: The 2009 and 2014 surveys on shark consumption habits and attitudes in Hong Kong	Jun-16
Hong Kong Shark Foundation	Chinese New Year Hong Kong Restaurant Shark Fin Survey 2016	2016
GreenPeace	Made in Taiwan: Government Failure and Illegal, Abusive and Criminal Fisheries	Apr-16
Aquatic Conservation	**Article:** Characterization of the trade in manta and devil ray gill plates in China and South-east Asia through trader surveys	Mar-16
WWF	SINGAPORE: Shark Fin Consumer Survey	Feb-16
BLOOM	Survey on shark consumption habits and attitudes in Hong Kong 2009/2010	Aug-15
Biological Conservation	**Article:** Chinese market responses to overexploitation of sharks and sea cucumbers	Jan-15
WildAid	Evidence of Declines in Shark Fin Demand in China	Jul-14
WildAid	The continuing threat to manta and mobula rays: 2013-14 market surveys, Guangzhou, China	2014
China Aquatic Products Processing and Marketing Association	China Sharks Industry Report	Apr-13
WildAid	Manta Ray of Hope 2011 Report: The Global Threat to Manta and Mobula Rays	2011

Detailed Methodology: Weighting, Rounding and Sample Quality

Weighting

- After fieldwork was closed and the final data quality checks were performed (e.g., removal of bad records with incomplete answers), a weighting by age, gender and education was applied on the total sample in order to fully match the quotas and to correct (small) deviations in the end sample compared to the quota set.
- The reason for weighting the data after fieldwork – even if the quotas have been well monitored – is to fully align the demographic sub-groups with the quotas, in order for the total sample to be representative of the target population by age, gender and education. Income has been monitored in order to align with the average income by market, but was not used as a hard quota (meaning that the income levels can be slightly lower/higher than the average income by market).
- This report presents only weighted results/data, and all the sample sizes indicated are weighted samples.

Questionnaire and Respondents Quality

- For the respondents to answer honestly and be “neutral” when they are qualified for the survey, it is important that the survey topic was not mentioned in the invitation. The email received by the potential respondents only mentions the general topic of “lifestyle and eating habits.” This technique is in line with other similar methods employed in surveys around sensitive topic areas.
- After the respondents answered the screening questions and if they qualified for this survey, the first question in the main questionnaire asked if they have ever consumed a list of foods, in which shark fin soup was included. This was to avoid putting too much emphasis on the topic of shark fin soup in the beginning of the questionnaire.

Detailed Methodology: Reported Data and Sample Sizes

Reported Data

- The data is weighted based on demographic variables, i.e., age, gender and education. It is not weighted based on shark fin soup consumption, as these incidence numbers are outputs of the survey and should be based on a representative sample (for each chart, the sample is indicated at the bottom of the slide, i.e., general population representative sample, shark fin soup consumers, etc.).
- For questions with answers on a 5-point scale, the top-2 box is reported in some cases. The top-2 box is the sum of the scores for code 4 and code 5, e.g., a sum of all the positive responses.
- Several sub-groups have been analyzed in the survey sample. More precisely, the data has been analyzed at total level, and more specifically by demographic groups (i.e. gender, age), behavioral/attitudinal groups (i.e., travelers), or consumer segments. In case there are significant differences, results per sub-group are reported.

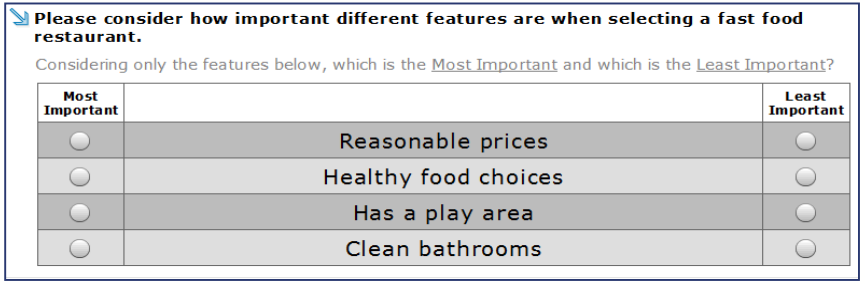
Rounding

- All numbers and percentages shown at first decimal in tables and graphs in this report are the result of rounding. Rounding to the nearest integer has been applied and may add up to more or less than 100%.
- To illustrate, if the digit in the tenths place is less than 5, then the number is rounded down (e.g. 20.2% becomes 20%). If the digit in the tenths place is 5 or greater, then the number is rounded up (e.g. 20.5% becomes 21%).
- In this way, the rounded total is consistent with the sum of the rounded addends (except for small rounding differences), and may add up to more or less than 100% (+/- 1%point).

Uncovering Drivers and Deterrents of Consumption Using the MaxDiff Technique

MaxDiff Description

- MaxDiff (Maximum Differentiation Scaling) builds upon a long-established theory about how people make choices. It assumes that respondents' choices are rather relative/comparative than absolute.
- MaxDiff is an approach for capturing relative scores (e.g., importance, preference, agreement, attitude) for a set of items.
- With MaxDiff, respondents are shown a set of items and are asked to indicate the item that best describes their opinion, and the item that least describes their opinion, for example:



Please consider how important different features are when selecting a fast food restaurant.

Considering only the features below, which is the Most Important and which is the Least Important?

Most Important		Least Important
○	Reasonable prices	○
○	Healthy food choices	○
○	Has a play area	○
○	Clean bathrooms	○

- The items are grouped using MaxDiff algorithm, in order to ensure that each item and each pair of items is shown an equal number of times. Usually respondents see each pair of items at least two or three times. A list of 20–21 attributes typically requires from 10 to 16 sets/screens.
- Item scores are then estimated on a respondent level using a Hierarchical Bayes (HB) method, and transformed to a numeric scale, e.g., 5- or 10-point scale. The larger the score, the higher the importance of the item for this particular respondent.

Rationale for Using MaxDiff in this Survey

Reasons for Using MaxDiff in this Research

Using MaxDiff provides a better differentiation between the item importance compared to rating scales, mainly because:

- With rating scales, there can be many straight-line answers, such as giving ratings of 3 to all 20 items on a 5-point scale.
- Cultural biases in the use of the scale. For example, respondents in mainland China tend to use the top portion of the scale, while respondents in Germany tend to use the middle or bottom portions of the scale.
- Research has shown that importance scores obtained with MaxDiff range from 0 to 10 compared to the range from 5 to 8 obtained with stated importance ratings (e.g., everything is important).

What Can We Do with MaxDiff Scores?

MaxDiff scores could be reported in a similar way to reporting rating scales (e.g., averages, percentages, crosstabs, bar charts). With MaxDiff, we can measure importance, preference, performance and many other variables.

MaxDiff scores, if they result from “most important” versus “least important” scales, could replace other predictive modeling, e.g., regression and path analyses which we normally use to extract derived importance scores. This is due to the fact that this method, in this particular case, already indicates importance in driving the desired outcome. MaxDiff scores allow any for kind of statistical analysis we could consider doing with responses obtained using rating scales.

Design and Analyses – Path Analysis (Details)

Factors Definition
For the purpose of the path analysis, several drivers and attributes were grouped into bigger clusters (using factor analysis) to surface statistical patterns and facilitate interpretation of the analysis. The clusters obtained were defined as:

- **Conservation:** Based on attributes from Q9:
  - ✓ It is essential to protect sharks from extinction
  - ✓ A government ban on shark fin harvesting is absolutely necessary
  - ✓ Shark fins are harvested in a very cruel way
- **Health benefits:** Based on attributes from Q9:
  - ✓ Eating shark fin soup brings luck and longevity
  - ✓ Shark fins nurture and cure skin conditions
  - ✓ Shark fin soup enhances manliness and sex drive
- **Social pressure (to consume and to avoid consuming):** Based on attributes from Q9:
  - ✓ Shark fin soup is tasteless
  - ✓ When shark fin soup is included in a banquet, I prefer not to eat it, but I don't refuse it not to create embarrassment
  - ✓ Shark fin soup in a set dinner can easily be substituted by something else of the same value
  - ✓ People I respect have stopped eating shark fin soup altogether
  - ✓ Shark fins contain high concentrations of mercury and other toxins
  - ✓ The tradition of shark fin soup will soon fade out
  - ✓ Often shark fin soup offered at restaurants is fake, i.e., does not contain shark fins
  - ✓ I don't particularly like eating shark fin soup but I do so to please others
  - ✓ Shark fin dishes are troublesome to cook

Design and Analyses – Path Analysis (Details)

Factors Definition, continued

- **Symbolic value:** Based on attributes from Q9:
  - ✓ Serving my guests shark fin soup in banquets makes me look good
  - ✓ Serving a shark fin dish is a sign of respect
  - ✓ Offering shark fin soup indicates wealth
  - ✓ Shark fin soup is served in order to impress business partners
  - ✓ Serving a shark fin dish is a tradition in the Chinese culture
  - ✓ Shark fin soup is served to please the elders, like my parents or grandparents
- **Uniqueness:** Based on attributes from Q9:
  - ✓ I would be disappointed if I am served a substitute dish instead of shark fin soup
  - ✓ When buying shark fin soup, quality is the most important
  - ✓ Shark fin soup tastes great
  - ✓ Shark fin has a special texture that cannot be replaced by anything else
- **Intended consumption before:** Based on:
  - ✓ Q12. Intention to include or recommend shark fin soup in the menu of a banquet or other eating occasion
  - ✓ Q5. Would you choose to eat more frequently or less frequently any meal including shark fin soup if you had the opportunity?
  - ✓ Q7. How often do you decide yourself to include shark fin soup in the meals that you help to plan or organize?
- **Consumption after:** Based on Q15:
  - ✓ Refuse eating shark fin soup
  - ✓ Try to convince your friends / colleagues not to eat shark fin soup
  - ✓ Refuse including shark fin soup in the menus you prepare
  - ✓ Try to convince your parents/grandparents/elders not to eat or expect serving shark fin soup

Margin of Error

Margin of Error: Definition

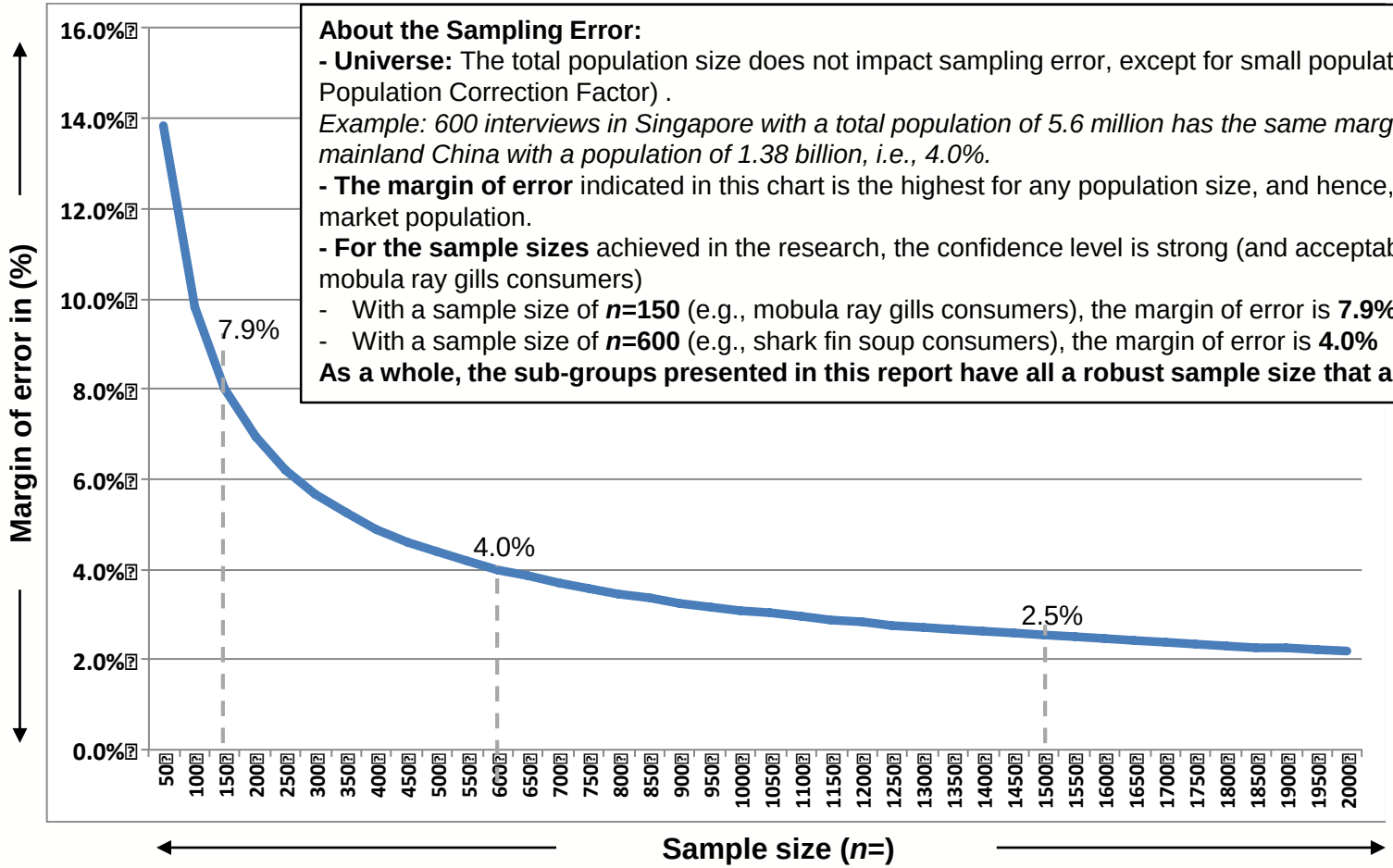
- In reports on public opinion polls, a “margin of error” is often stated. The margin of error estimates the accuracy of the sample compared with the entire population. A margin of error of plus or minus 3% at a 95% confidence interval would mean that if we examined 100 truly random samples of a particular size, in 95 of such samples the figures would be within three percentage points of the “true” answer that would result from interviewing the entire population. Generally speaking, the larger the sample, the lower the margin of error (see illustration in the next slide).

- However, calculated margin of error is valid only upon the assumption that the sample is truly random, with every member of the population having an equal chance of being included in the survey. This assumption is not met in the majority of contemporary opinion polls, because the samples are drawn using complex systems of stratification and quotas or are obtained from panels of volunteers, as in the case of this study.

- The survey samples for the current study are not strictly random and, therefore, no estimates of sampling error can be calculated. Even though margin of error is not applicable to non-random samples, it can be used as a rough tool to assess patterns in the collected data. For example, a five percentage point difference between males and females in a sample of 1,000 respondents may indicate a pattern, while a ten-point difference in opinion between smaller demographic groups may not.

- The sampling methodology for this study was tailored to the overall objective of understanding the drivers of demand for ivory and how to reduce that demand. Industry standards and best practices suited to geographic realities have been applied throughout.

Margin of Error in Surveys



About the Sampling Error:

- Universe: The total population size does not impact sampling error, except for small populations (Finite Population Correction Factor) .

Example: 600 interviews in Singapore with a total population of 5.6 million has the same margin of error as in mainland China with a population of 1.38 billion, i.e., 4.0%.

- The margin of error indicated in this chart is the highest for any population size, and hence, is valid for any market population.

- For the sample sizes achieved in the research, the confidence level is strong (and acceptable for the sample of mobula ray gills consumers)

- With a sample size of ***n*=150** (e.g., mobula ray gills consumers), the margin of error is **7.9%**
- With a sample size of ***n*=600** (e.g., shark fin soup consumers), the margin of error is **4.0%**

As a whole, the sub-groups presented in this report have all a robust sample size that allow analysis.

ADM Capital Foundation is an impact driven foundation focused on making change in Asia. Through research, ADM Capital Foundation identifies environmental challenges then work towards solutions across five key areas: marine ecology, water security, air quality, wildlife trade and forestry conservation finance.

TRAFFIC, the wildlife trade monitoring network, is the leading non-governmental organization working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development. TRAFFIC is a strategic alliance of WWF and IUCN.
www.traffic.org

WWF is one of the world‘s largest and most respected independent conservation organizations, with over 5 million supporters and a global network active in over 100 countries. WWF’s mission is to stop the degradation of the Earth‘s natural environment and to build a future in which humans live in harmony with nature, by conserving the world’s biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.
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