

Singaporean Consumers' Perception of the Nutritional Value and Potential Health Benefits of Seaweeds

Grace Gardner 120166826 Food Marketing and Nutrition BSc Honours



Supervisor: Dr Iain Brownlee

Introduction

- Seaweeds are eaten by coastal dwellers around the world.
- They have a unique nutritional profile and distinctive taste.
- Seaweed consumption is linked to reduced risk of non communicable diseases such as high blood pressure, stomach cancer and stroke.
- Represent a currently untapped, sustainable source of food that could significantly benefit health in the UK and Europe.

Aims

- To investigate the perception of edible seaweeds as a food source among Singaporeans.
- To assess levels of awareness of the nutritional value and health benefits of seaweeds.
- To explore the range of seaweed products available in Singapore.
- To identify ways in which edible seaweeds could be promoted to UK consumers.

Methods

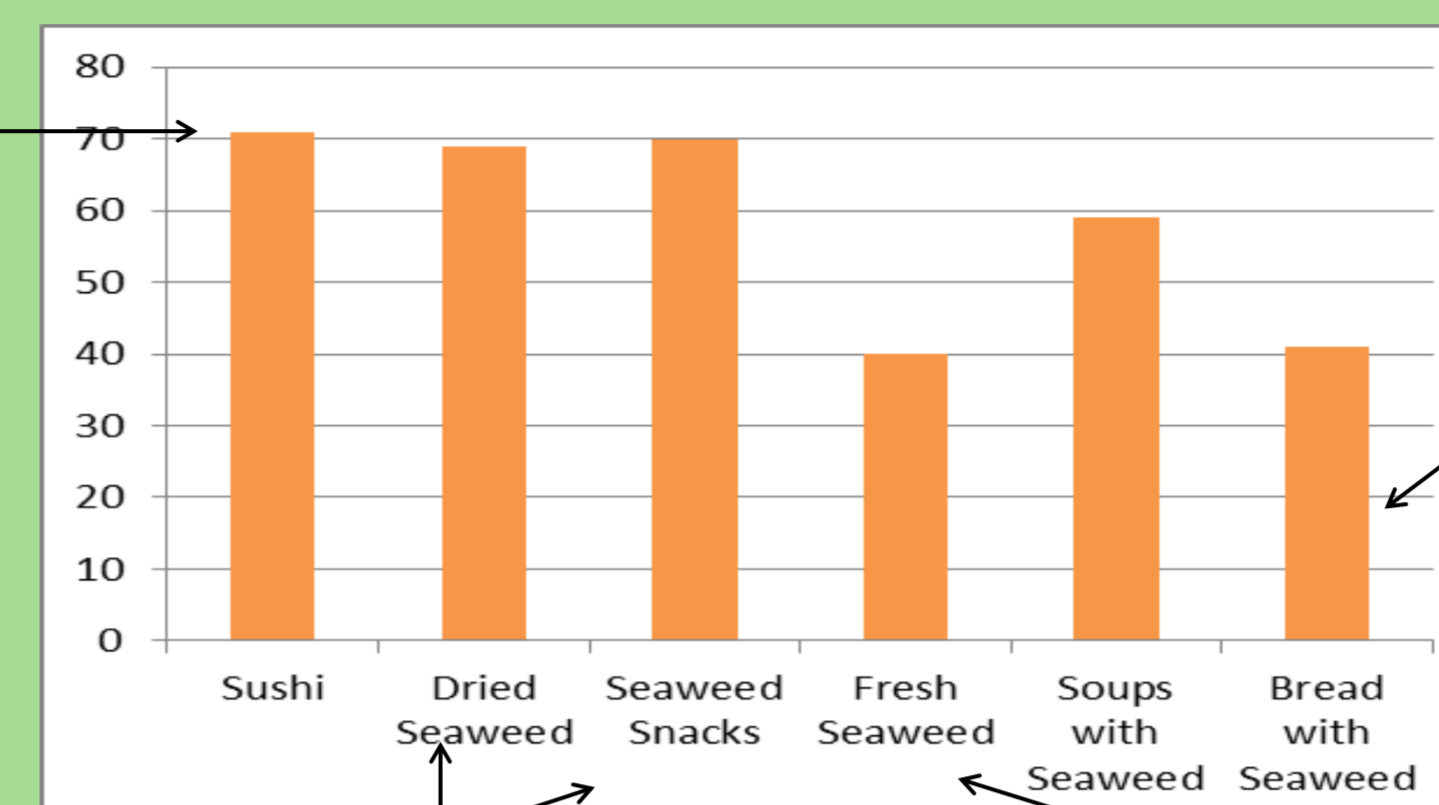
- Questionnaires captured consumers' perceptions of seaweed and reasons for their food choices.
- Perceived benefits and risks of eating seaweed and barriers to eating more were examined.
- A beta test was carried out and adjustments were made to acknowledge language barriers and cultural variations.
- Sample obtained of eighty Singaporean consumers.
- Audit conducted of seaweed-based products available in Singaporean outlets.

Acknowledgements

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Results

- 47 females and 33 males took part in the survey and only three had never eaten seaweed.
- Most popular seaweed product was sushi with 71 people having eaten it. Next were seaweed snacks and dried seaweed products. Fresh seaweed was least popular.
- Dried seaweed products were the most readily available in supermarkets.
- 28% of respondents reported that they ate seaweed products on a fortnightly basis, 29% on a monthly basis. First-hand observation suggested the frequency of consumption was higher than that reported.
- Nine primary factors influenced food choice. These were health, convenience, price, sensory appeal, natural content, mood, familiarity, ethical control and contribution to weight control.
- 'Very important' factors were that food is nutritious and healthy; smells, looks and tastes nice; is good value for money; and is available locally.
- Political approval of a country exporting seaweed was seen to be 'not at all important' (n=21).



- Regarding risk, around half of the respondents knew it was possible for seaweed to be contaminated with heavy metals, with 43% being aware it could be contaminated with mercury and just over a quarter knew it could be contaminated with arsenic.

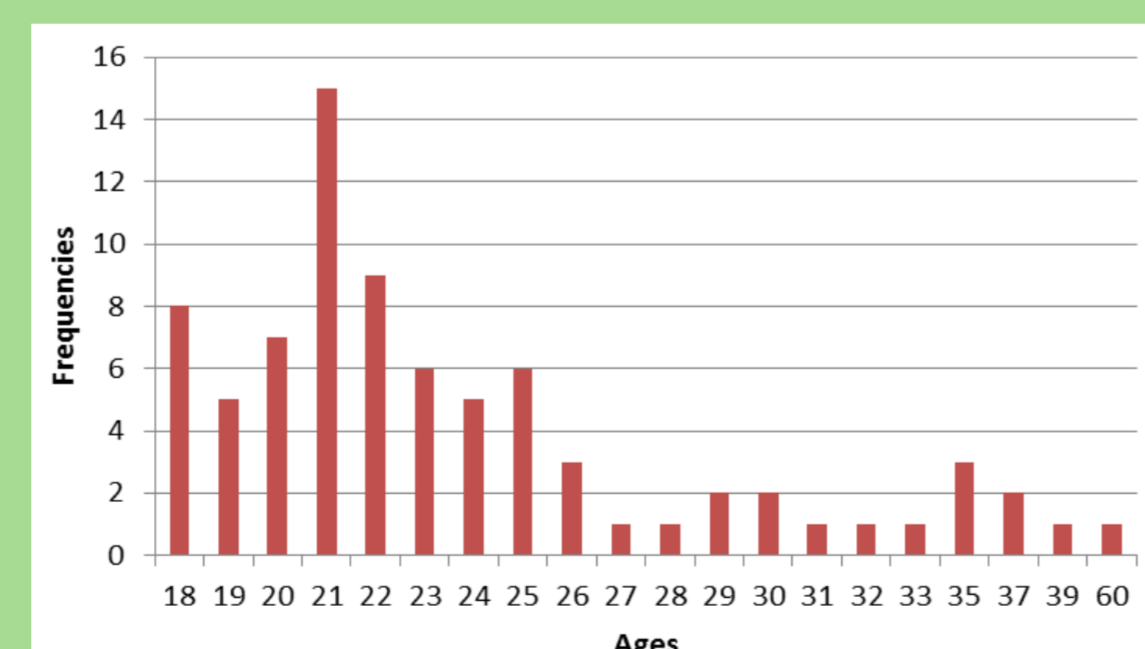
- Less than one quarter (n=18) were aware that eating too much seaweed can provide too much iodine which can lead to health, particularly thyroid, problems.

- Most respondents were aware that seaweed is nutritious, with 74% agreeing that eating seaweed could have potential health benefits. Good awareness that it is a good source of dietary fibre (63%), while 50% agreed it is a good source of vitamins and 67% knew it is a good source of minerals.

- Over half recognised seaweed as a good source of iron in the diet while over a third (n=33) knew seaweed provides a good source of iodine, and 38% knew that seaweed could be a replacement for salt.
- Food safety does not appear to be an issue of concern for seaweed in Singapore as 75% of respondents disagreed with the statement 'I don't think seaweed is safe to eat.'
- Trust in those in authority is important as 78% of respondents believed that Singaporean legislation would protect them from any risks.
- Those who eat seaweed viewed it as a generally healthy, natural food product, with 55% agreeing that it is cheap to buy and 57% agreeing that it is easy to cook. 42 respondents intended to eat more seaweed in future.

Singaporean's Snack Foods Consumption Frequency

Age (years) of surveyed seaweed consumers



Age Group	Titbits (fried salty snacks etc) Mean daily intake (grams)	Gender	Titbits (fried salty snacks etc) Mean daily intake (grams)
18-29	23.6	Males	13.5
30-39	14.0		
40-49	10.1	Females	13
50-59	8.0		
60-69	4.3		

Table 1: Mean daily intake of Titbits (fried salty snacks etc) (weight in grams) among adult Singaporeans, by age groups and gender

Based on (*The National Nutrition Survey, Singapore, 2004*), young adults (18 - 29 year olds) would be the main target market of seaweed products, which fit into the category of 'titbits' as fried salty snacks. This is supported by the research carried out, as 18-29 year olds surveyed were the biggest consumers of seaweed products, with 21 year olds being the respondents who eat them the most.

Discussion and Conclusion

- When seaweed is readily available and accessible and promoted positively it is a popular food choice.
- Agencies charged with public safety should provide information on both benefits and risks associated with foods like seaweed, to protect health, preserve trust and build confidence.
- The promotion of seaweeds and seaweed products as good sources of minerals and as alternatives to salt in the diet, could build consumption on health grounds.
- Increased consumption of seaweed in the UK could contribute to improved overall health when used as a salt replacement, particularly in the snack food market where demand for salty foods is high.
- Improved techniques to treat seaweeds to eliminate any potential contaminants and build confidence in their safety as a food product could increase demand in new markets.
- Further UK research is recommended as there are good supplies of seaweed currently available and it would be useful to examine potential for growing a market for seaweed locally, based on the proven nutritional and health benefits.