

“How is the ambulance supposed to cross the sea?”

A Study of Healthcare Decisions away from home.

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Abstract

This bachelor thesis examines the health information-seeking behaviours of tourists in unfamiliar settings, with a case study on an island on Schiermonnikoog. It explores the scarcely researched field of how tourists' health literacy could be influenced by previous visits, distance from their usual residence, and age, and how this affects their health information-seeking behaviours and decision-making in healthcare situations. The research utilises a survey method with a convenient sampling strategy to collect data from tourists at three key locations on the island. In the end, the data of 53 participants were collected. After using multiple analysis methods, such as the binomial regression and chi-square test the findings indicate that there is no sign of significant correlation between the amount of additional healthcare information gathered by tourists and factors such as the perceived consequences of illness, distance from home, or previous visits to the island. However, there is a significant association between the age of tourists and their tendency to seek additional health information. This research sheds light on the complex health information-seeking behavioural processes of tourists regarding their healthcare, designing a platform for further studies with larger and more diverse samples to fully understand these health information-seeking behaviours.

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Introduction

The COVID-19 pandemic has significantly impacted the tourism industry, causing socio-cultural, economic, and psychological effects that are likely to persist for years. Tourists have experienced disruptions and health risks in their travel plans. This may include trip cancellations, loss of money, many disturbances, as well as quarantines and social distancing measures and stay-at-home orders (Sigala, 2020). For tourists planning a trip at this time, a lot of preparation was needed to research health-related information regarding their place of stay. Research conducted by Rittichainuwat & Chakraborty (2009) has shown that perceptions of risks may differ between groups of tourists with different aspects, for example, gender, native-, and destination-country, age, and the reason for their travel. Tourist behaviour can be classified into three stages, the decision-making process prior to the visit, the experiences encountered on-site, including the assessments of these experiences, and subsequent intentions and actions post-visit. (Chen and Tsai, 2007). Even though the tourism levels are not the same as before the COVID-19 pandemic, in The Netherlands the level of tourism is almost back to the place it was before (NBTC, 2023). Even though tourism has been affected a lot by the pandemic, limited research shows what the preparatory phase as indicated by Chen and Tsai, of the tourists regarding their healthcare currently entails.

It's important to note that while general literacy is connected to health literacy, possessing a high literacy level doesn't necessarily ensure sufficient health literacy. Literacy, broadly defined as the capacity to comprehend, assess, utilise, and interact with written materials for social engagement, goal achievement, and personal growth, is a valuable skill. However, it doesn't automatically translate to a comprehensive understanding of health-related information and concepts. (Jeong and Kim, 2016; Sørensen et al., 2012). Health literacy encompasses the capacity to comprehend and apply health information across various contexts. The significance of health literacy has grown within the domains of public health and healthcare, with a particular focus on enhancing communication between individuals and healthcare providers. Additionally, it plays a pivotal role in promoting improved health education and facilitating access to healthcare services. Consequently, the intricate interplay between health literacy and health outcomes has become a focal point of research efforts, prompting initiatives aimed at enhancing educational and healthcare practices (de Wit et al., 2020).

Furthermore, the search results for health literacy and tourism are limited and not extensive on their behaviour at all. The query in Google Scholar "**health literacy**" AND "**tourists**" AND "**behaviour**" gives less than a thousand hits, which might seem enough to be discussed on this topic. However, almost all do not cover the topic discussed in this paper. Web of Science, a tool promoted by the University of Groningen, gives 24 results for the query "**health literacy**" AND "**touris***". Even though a literature research is not needed, the few hits show that currently little research has been conducted on this topic. This finding underscores the urgent need for similar research in the realm of healthcare accessibility.

The space and place of this research will be located in the Wadden region, located and bordering the North Sea coastline. In recent decades, tourism has emerged as their economic linchpin, drawing over a million and a half visitors yearly. Currently, about 25% of all the organisations on the Dutch Wadden Islands are related to tourism, which accounts for 37% of all the workforce (CBS, 2014). However, one thing that is striking about the Dutch Wadden is the distance towards a hospital. The average distance to the hospital in The Netherlands is 7.3 km, with even 6 out of 10 Dutch Citizens living within 5km of a hospital. For 1 in 25, the distance is greater than 15km (CBS, 2009). When we break it down by specific islands we can see that the distances are way higher than the national average. For example, Texel residents have the lowest average distance which is more than double the national average, 16.7

kilometres, Schiermonnikoog residents have the third largest distance to the hospital of 57.7 kilometres. These distances represent the average distance travelled by all residents in each area to reach the nearest hospital, calculated based on road networks (CBS, 2023).

The primary mode of transportation to Schiermonnikoog is facilitated by ferries operating between the island and Lauwersoog, which is the starting point of the problem in this research. These ferries come in three variants: the regular service, express service, and the water taxi. The regular and express services are managed by Wagenborg Passagiersdiensten, while the water taxi service is operated by BMS. The regular ferry voyage, lasting 45 minutes, can accommodate up to 1000 passengers per crossing (WPD.nl, n.d.). On the other hand, the water taxi offers the quickest transportation, completing the journey in just 15 minutes. However, it is also the most expensive option, with fares ranging from 195 to 325 euros (VVVschiermonnikoog, n.d.). As there is no road to connect the island with a large hospital, there is therefore no way for an ambulance to cross the sea quickly after an emergency. However, the city of Leeuwarden has strategically stationed ambulance-helicopters dedicated to serving the Wadden Islands exclusively. In the event of an emergency, these helicopters swiftly respond by flying to one of the islands to transport the patient to the nearest hospitals. The decision on the destination hospital depends on the nature and severity of the incident (ANWB, n.d.).

Research problem

The main question for the bachelor thesis is based upon the question “How do tourists seek information in a strange, unfamiliar, location regarding their healthcare”. As health literacy is dependent on different variables as discussed in the theoretical framework, does another environment change the way they think and have a different information-seeking behaviour regarding their health? Particularly concerning accessing and comprehending health-related information. Given the fact that the situation regarding the access to hospitals is different than in the rest of The Netherlands.

In this bachelor thesis paper, the health literacy of tourists will be researched in regard to their health information-seeking behaviour, with the research question being:

"How does tourists' health information-seeking behaviour in an unfamiliar location, specifically regarding their health literacy, vary when visiting the Island of Schiermonnikoog?"

With the sub-questions being:

- Could the distance to Schiermonnikoog, amount of previous stays and risk factor predict if there has been extra information gathered?
- Is there a relationship between the travel distance and the minimum distance people start looking at their insurance?
- Is there a relationship between age and extra information gathered?
- Is there a relationship between the age of the tourists and the source of information gathered?

The aim of this study is to empirically examine the aspects that could influence tourist health information-seeking behaviour and explore potential interconnections between age, nationality, distance and health literacy, an area not yet extensively explored in existing literature if it is combined. This approach will allow for a more focused yet insightful exploration into how these determinants influence health information-seeking behaviour in practice and how that influences the health literacy levels of tourists.

Structure of the Thesis

A theoretical framework will be developed to test the already written literature to the main research question. The methodology section details the survey approach and data collection processes. The chapter thereafter presents and analyses the collected data, offering insights into the relationship between tourists' health literacy and their healthcare decision-making and also answering the sub-questions. The thesis concludes with a discussion of findings, limitations, and suggestions for future research, providing a comprehensive view of the study's implications and contributions to the field.

Theoretical framework

Information-seeking behaviour

Information-seeking behaviour is an active and engaging process occurring within a real-world setting, commonly known as the context. This context encompasses the ways in which individuals search for information, influenced by factors such as social networks, tools, different environments, and interactions with others (Sedghi et al., 2018). Kim (2015) identifies four key distinctions between the health information-seeking behaviour of people looking for health information online and people looking for regular information. **Purpose:** When people search for health information online, they usually want to learn more about a particular medical ailment, symptom, or health issue. **Relevance:** People looking for health-related information are more inclined to give online sources accuracy and relevance top priority. They explicitly want reliable, fact-based information that is relevant to their own health circumstances. **Sources:** To obtain accurate and current information, people looking for health information frequently turn to recognized medical websites, government health organisations, and online health groups. They could also look for material in peer-reviewed journals or speak with medical experts. **Literacy and skills:** A certain degree of digital and health literacy is necessary to comprehend and navigate health information online. Health information searchers must be able to navigate complicated healthcare websites, understand medical language, and critically assess the reliability of sources. The amount of specialist reading abilities required may not be the same for general information seekers.

Health literacy

Health literacy refers to the connection between individuals' literacy levels and their ability to comprehend and adhere to health-related information. This includes understanding medical instructions and prescriptions. Inadequate acquisition or comprehension of health-related information can have detrimental consequences on an individual's well-being and may contribute to health disparities. It further encompasses knowledge, behaviour and self-efficacy that the people have regarding their own health. (Jeong and Kim, 2016 and Nutbeam, 2000). For example, research indicates that poor functional health literacy can act as a substantial barrier in educating patients with chronic illnesses and may result in costly healthcare errors (De Wit et al., 2012; Sørensen et al., 2020). The World Health Organization (WHO) offers a definition of health literacy, as described by Nutbeam (2000). According to the WHO, health literacy encompasses cognitive and social skills influencing individuals' motivation and capability to access, comprehend, and utilise information for promoting and sustaining good health. This expansive definition incorporates elements of both interactive and critical literacy and broadens the scope of health education and communication.

The comprehension of health information has been further distinguished in three more in-depth definitions by Nutbeam in his paper that was published in 2000:

1. *Functional Health Literacy:* This pertains to fundamental reading and writing skills essential for comprehending and applying health information effectively in daily life.
2. *Interactive Health Literacy:* This encompasses advanced cognitive, literacy, and social skills, enabling individuals to engage in their healthcare and make informed choices actively.
3. *Critical Health Literacy:* This form of health literacy surpasses basic knowledge and skills. It involves the capacity to critically evaluate health information, grasp the social and economic factors influencing health, and take proactive measures to tackle health disparities.

Familiarity and source of information

In the study by Yasin et al. (2017), a distinction is drawn between first-time visiting tourists and repeat visitors, revealing notable differences in their health information-seeking behaviour. The research suggests that first-time visitors predominantly rely on external and online sources, including platforms such as social media, television, blogs, magazines, and newspapers, to gather information about destinations. In contrast, repeat visitors exhibit a preference for internal sources, such as suggestions from friends, past travel experiences, and recommendations from family members, when selecting travel information sources. According to Gursoy and McCleary (2004), the concept of familiarity of tourists with a place extends beyond the number of previous visits and encompasses the subjective perception of one's knowledge about the travel destination. Their research suggests that this sense of familiarity can significantly impact tourists' health information-seeking behaviour. The more familiar individuals feel with a destination, not only in terms of past visits but also in their subjective understanding of the location, the more it influences the way they seek information about a destination.

Awareness

In examining tourists' healthcare information-seeking behaviour during the pre-travel phase, Aziz et al. (2015) highlight the impact of individuals' perceptions of quality and their awareness of potential risks. This implies that the awareness and evaluation of healthcare information quality, coupled with travelers' intentions, significantly shape their health information-seeking practices. Huang et al. (2020) underscore the critical role of perceived susceptibility and perceived benefit in influencing preventative behaviours among tourists. This suggests that an individual's awareness of the potential risks, coupled with an understanding of the perceived benefits, plays a pivotal role in shaping their proactive health-related behaviours before visiting another place.

Insurance

The enactment of the Health Insurance Act in the Netherlands in 2006 represented a pivotal moment, mandating health insurance for all residents to improve healthcare quality and efficiency through managed competition, as proposed by Enthoven and Van de Ven (2007). Research as indicated by Mosca and Schut-Welkzijn (2007), reveals that the choice of health insurance in the Netherlands is influenced by various factors, encompassing socio-economic, geographical, and health-related aspects. Notably, citizens often grapple with understanding the information presented about health insurance, as emphasized by Holst et al. (2021). They further highlight the insights that suggest that while distance might not be a direct determinant in health insurance decision-making, it could indirectly impact choices through its interplay with socio-economic and health-related considerations.

Personal characteristics

In the paper of Jeong and Kim (2016) they discussed that there are health literacy determinants, such as culture, socio-economic status and education, but that also older age could be a predictor of inadequate health literacy. However, health literacy is not confined to a specific age cohort but can also describe geographic areas rather than certain populations. In 2021, during the COVID-19 pandemic, healthcare professionals and advocacy groups advocated for targeted vaccination campaigns in disadvantaged neighbourhoods. The low vaccination rates were further associated with geographic factors, particularly the challenges residents' "space and place", in these neighbourhoods faced when attempting to reach

vaccination sites located outside their immediate areas (NOS.nl, 2021). These difficulties were often attributed to transportation-, distance, and financial constraints. As previously discussed, and in line with the findings of Rittichainuwat & Chakraborty (2009), it's noted that awareness of risks can vary among tourist groups based on their distance from the destination. In this study, distance was measured in two contexts: the kilometres travelled to Lauwersoog and the point at which tourists begin to review their insurance, as suggested by Zalech (2000). These measurements regarding the distance before people start to think about insurance are aimed to explore variations in health information-seeking behaviour influenced by factors like age, the role of group organizers, and risk perception.

Conceptual model

Figure 1 illustrates the conceptual model concerning the variables previously discussed. The survey provided in Appendix 1 is created to test this conceptual model and ultimately address the research question. The research accentuates four key distinctions between within health information-seeking behaviour, drawing insights from Kim's study in 2015. Within this study, the evaluation of 'Sources' and 'Literacy and Skills' delves into specific personal characteristics of tourists, which will be tested by the age of the tourists. Simultaneously, the assessment of 'Relevance' and 'Purpose' are done by considering the number of variables that might differ from place to place, so it is dependent on the tourist's destination, such as distance familiarity and awareness. To answer the main research question, these four distinctions of health information-seeking behaviour will be evaluated against to the three levels of health literacy proposed by Nutbeam (2000).

Familiarity, in the context of this study, encompasses both the frequency of visits to the island and the duration of the current stay, acknowledging that familiarity tends to grow with extended durations. This dynamic is represented by the survey questions **Q3** and **Q4**.

Examining the mandatory nature of insurance in the Netherland on how this obligation impact tourists when venturing to a remote island. This inquiry probes into the purpose and relevance behind individuals seeking health-related information, Survey questions **Q12** and **Q13** delve into these variables related to insurance.

Huang et al. (2020) underscore the critical role of perceived susceptibility. This suggests that an individual's awareness of the potential risks, coupled with an understanding of the perceived benefits, plays a pivotal role in shaping their proactive health-related behaviours before visiting another place. This reflected by **Q8** and **Q10**.

Sub question 1: "Could the distance to Schiermonnikoog, amount of previous stays and risk factor predict if there has been extra information gathered?"

Holst et al. (2021) concluded the notion that distance does not serve as the exclusive determinant for insurance coverage. To test this perspective, the study employs a test using regular distance to examine whether a specific threshold exists. This investigative approach is encapsulated by survey questions **Q11** and **Q13**, strategically designed to explore potential relationships between insurance considerations and the regular distance factor.

Sub question 2: "Is there a relationship between the travel distance and the minimum distance people start looking at their insurance?"

Among all the personal characteristics, this study places particular emphasis on age, and distance, as well as nationality as personal characteristics discussed by Jeong and Kim (2016). These factors were selected due to their significance in evaluating health literacy and health information-seeking behaviour. This was tested against how likely tourists were to gather extra information and what their source would be if they did. In the survey, data related to these aspects is gathered through questions **Q1**, **Q2**, **Q11**, and **Q13**.

Sub question 3: “Is there a relationship between age and extra information gathered?”

Sub question 4: Is there a relationship between the age of the tourists and the source of information gathered?

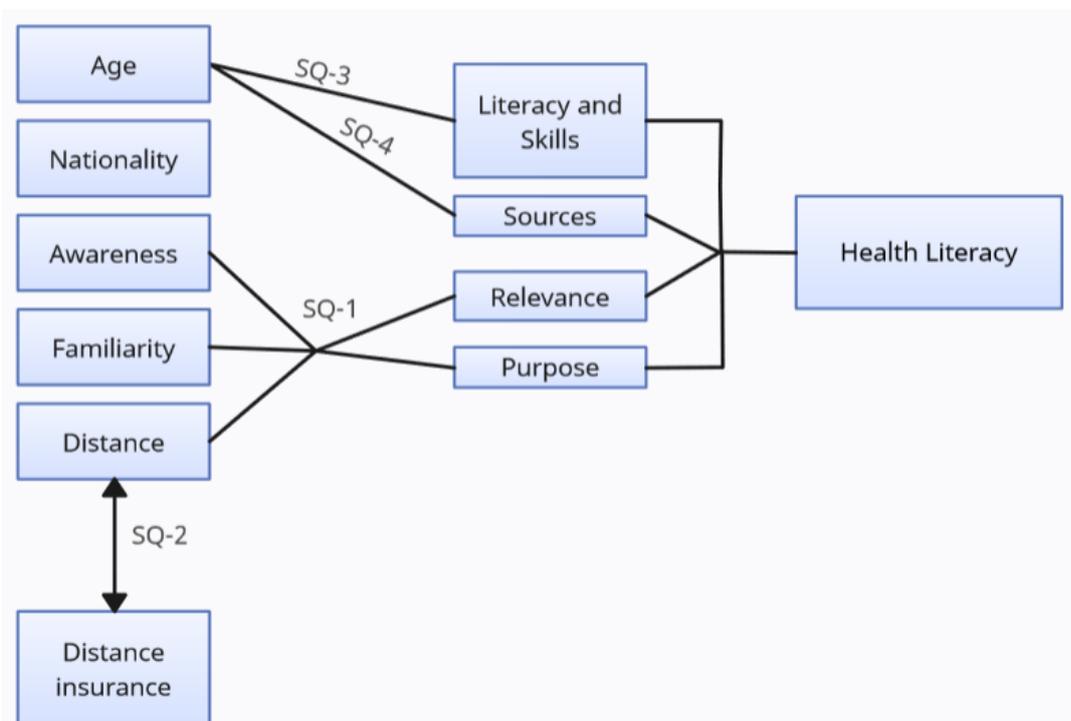


Figure 1: Conceptual model (made by author)

Methodology

Research design

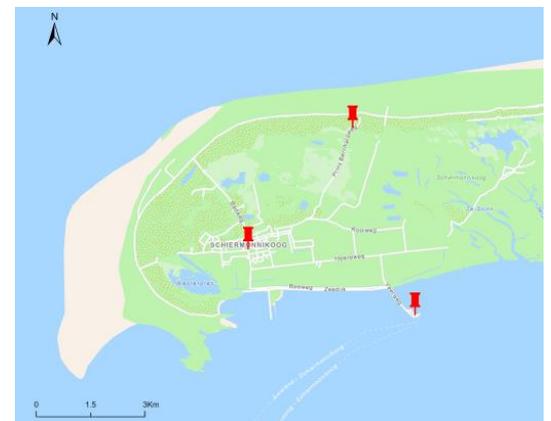
To address the main- and subsidiary research questions in this study, a quantitative approach is employed, involving the collecting and analysis of primary data. The design of this research is set up as a cross-sectional study.

Research instrument

The research instrument is designed to test the conceptual model, this is done by creating a survey. The survey questions were printed out and filled in during- or just after the small interview by the researcher. The survey can be found in Appendix 1.

The research was conducted during the Autumn holidays. Four days during a two-week period were used for conducting this research. This could probably have given a greater Dutch population compared to the other nationalities. However given the time schedule for this Bachelor Thesis, there was no alternative to take the survey another time. However, the assumption is that there will still be a big enough sample of other nationalities to counter this bias towards the Dutch nationality. Participants were identified by approaching them face to face.

For this research three locations that are busy places on the island were used for the gathering of the information, the locations can be seen on figure 2.. The locations on the island are all centrally located where people come together. The three locations are near the supermarket in the village, the harbour, and the last location is located far away from the village near a popular restaurant and the beach that attract a lot of tourists during the peak seasons.



*Figure 2: locations of the data collection
(Made by author)*

Respondents

In this study, tourists are defined as individuals who neither own property on the island nor are present for family visits. These tourists include those who may not stay overnight, acknowledging the prevalence of day tourism on the island. Furthermore, temporary residents of the island are also excluded from the survey. This covers a part of the population on the island that is only working there temporarily i.e. during the holidays. The research aims to capture insights from the entire tourist population, leading to the decision to interview individuals aged 18 and above. Even though it is not the most representative data collecting method, participants will be chosen through a convenient sampling technique. This is because of the time and financial constraints of the research.

Ethical Aspects

In this research, ethical considerations involving participants are a top priority. The protocols and data collection methods are all in line with the guidelines outlined in the Netherlands Code of Conduct for

Research Integrity (2018) and the Ethical Checklist of the Faculty of Spatial Sciences. To protect participants' privacy, all data collected will be anonymized thoroughly, ensuring that no personal information can be traced back to any individual after processing. Additionally, any sensitive data will be stored securely on a platform accessible only to the main researcher, which in the case of this research will be on the computer only the researcher has access to. Once the final thesis is submitted, all data will be permanently deleted. All participants will be provided with information explaining the purpose of the research prior to participating. Participants will also be made aware of their right to withdraw from the research at any moment.

The primary concern is the well-being and rights of the participants. For this research there is a commitment to treating all collected data with the utmost confidentiality, eliminating any potential legal or authoritative issues related to the shared information. At the start of the conversation this is made clear to the participant. If the participant says that they give consent, the data collecting phase will start.

Data

A total of 54 surveys were collected for this study. However, due to incomplete responses, 3 of these surveys were deemed unusable for the research and consequently excluded from the data set. This was because the participants left during the process of data collection, and therefore did not give complete and useable data for the research. The descriptive statistics of the remaining surveys are presented in Table 1, which can be referenced for the whole survey in Appendix 1. Among the participants, the majority, 45, were Dutch, followed by 5 Germans and 1 French individual. The duration of stay most commonly reported was between 1 to 4 days on the island. Regarding age demographics, the groups of 18-29 and 30-39 years were the least represented, with only 5 participants in each of these age categories.

Table 1: The descriptive statistics of the questionnaire

Variable	N	Missing	Mean	Median	St.Dev.	Min	Pet(25)	Pet(75)	Max
<i>Age</i>	51		3.55	4	1.270	1	3	5	5
<i>Duration</i>	51		2.29	2	1.101	1	2	3	5
<i>Previous visits</i>	51		3.04	3	1.442	1	2	4	5
<i>Extra information</i>	51		1.65	2	.483	1	1	2	2
<i>Place of Residence</i>	51		1.14	1	.401	1	1	1	3
<i>No information</i>	33	18	2.15	2	.712	1	2	2	3
<i>Information</i>	18	33	2.50	2	1.581	1	1	4.25	5
<i>Change Behaviour</i>	51		1.86	2	3.48	1	2	2	2
<i>Consequences</i>	51		1.24	1	.428	1	1	1	2
<i>Potential risk</i>	51		2.67	2	1.275	1	2	4	5
<i>Distance lauwersoog</i>	51		108.53	65	101.397	15	45	140	600

<i>Distance importance</i>	51		255.49	250	135.666	60	150	350	600
<i>Cross Country</i>	51		1.14	1	.348	1	1	1	2

Analysis

By utilising the SPSS software, a range of statistical tests will be conducted, aimed at addressing the four sub-questions. These sub-questions collectively contribute to the answer of the primary research question and are created to test the conceptual model in figure 1.

In addressing the first sub-question, "Could the distance to Schiermonnikoog, amount of previous stays and risk factor predict if there has been extra information gathered?" The approach involves utilising binomial logistic regression. This statistical method will allow us to explore the predictive power of various independent variables on a specific dependent variable (James Burt et al. 2009). In this context, the dependent variable is defined by the binary question: Did individuals seek additional information? The independent variables which are hypothesised to not influence this decision, include the length of stay, the distance relevant for insurance purposes, and the potential consequences involved. It is important to note that all three independent variables are categorised as categorical data. This classification is crucial for the analysis, as it shapes the way we interpret the interactions and relationships within the data set.

H_0 = There is no effect from the amount of previous stays, distance for insurance, and / or possible consequences on the extra information gathered.

H_A = There is an effect from the previous of stays, distance for insurance, and / or possible consequences on the extra information gathered.

The second test that will be used is for the sub-question: "Is there a relationship between the travel distance and the minimum distance people start looking at their insurance?" To investigate this, a Pearson correlation test will be employed. As outlined by James Burt et al. (2009), this test is widely recognized as the standard method for evaluating the relationship between two ratio variables. The Pearson correlation assesses both the strength and direction of the linear relationship between these variables. It is particularly suitable in scenarios where both variables under consideration are normally distributed or have more than 30 cases and exhibit a linear relationship. This test will enable us to determine if there is a statistically significant correlation between the travel distance and the point at which people start to pay attention to their insurance details, thus providing insights into health information-seeking behavioural patterns related to travel and insurance planning.

H_0 = There is no linear relationship between the distance travelled to Lauwersoog and the distance before people think about insurance

H_A = There is a linear relationship between the distance travelled to Lauwersoog and the distance before people think about insurance

The third research question, "Is there a relationship between age and extra information gathered" will be tested by a chi-square test of relevance. In preparation for this analysis, age groups have been categorised into three distinct segments: 18-39, 40-59, and 60+. This categorization ensures that each group is sufficiently large to yield meaningful and reliable results in the analysis. The chi-square test is

particularly adept at determining whether there is a statistically significant association between categorical variables—in this case, age groups and the likelihood of gathering extra information (James Burt et al. 2009). By applying this test, the aim is to uncover any potential correlations between age and the level of health information-seeking behaviour, thereby offering valuable insights into how different age demographics engage with information gathering in the context of our research topic.

H_0 = In the population of tourists on Schiermonnikoog, the age and extra information are not related.

H_A = In the population of tourists on Schiermonnikoog, the age and extra information are related.

For our final sub-question, “Is there a link between the age of the tourists and the source of information gathered”, a one-way analysis of variance (ANOVA) will be conducted. In this analysis, the dependent variable that is focused on is the source of information, while the independent variable is the age of the participant. The one-way ANOVA is an effective statistical tool for comparing means across multiple groups, in this case, different age groups, to see if there's a statistically significant difference in their preferences or tendencies regarding information sources (James Burt et al. 2009). Upon completing the ANOVA, it will be proceeded with a Least Significant Difference (LSD) post-hoc analysis. This step is crucial as it helps in identifying exactly which age groups differ from each other regarding their information source preferences. The LSD test is particularly useful for pairwise comparisons when a significant difference is found in the ANOVA (James Burt et al. 2009).

H_0 = There is no difference among the group means of information gathered based on age

H_A = There is a difference among the group means of information gathered based on age

Results

Statistical Analysis

A binomial test was run to test the first sub-question. The primary objective of this test was to determine whether the variables "consequences," "previous stays," and "distance for insurance" could significantly predict the amount of information gathered. The findings from this analysis are presented in Table 2. As indicated in this table, none of the p-values obtained from the binomial test fell below the threshold of 0.05, signifying that they are not statistically significant. Based on these results, the null hypothesis is accepted, which posits that there is no significant effect of the amount of previous stays, distance for insurance, and/or possible consequences on the amount of extra information gathered.

Table 2: Binomial logistic regression

	B	S.E.	Wald	df	Sig.	Exp (B)
Consequences of emergency	0.18	1.005	.000	1	.986	1.018
Previous stays			1.983	4	.739	
<i>Previous stays (1)</i>	.049	1.014	.992	1	.962	1.050
<i>Previous stays (2)</i>	.891	1.254	.505	1	.477	2.438
<i>Previous stays (3)</i>	.853	1.232	.479	1	.489	2.347
<i>Previous stays (4)</i>	1.509	1.286	1.378	1	.240	4.523
Distance for insurance	.000	.992	.035	1	.851	1.000
Constant	-.134	.999	.018	1	.894	.875

The second test aims to see if there is a linear relationship between the distance travelled to Lauwersoog but also the distance people start to think about their insurance. This was first done by analysing the Pearson correlation matrix, because this way you can test if there is a .

Upon reviewing the correlation matrix presented in Table 3, there are correlations between various variables. Notably, the strongest correlations were between Distance L and place (.654) and Conseq and change (-.654). However, these correlation coefficients are below the commonly used threshold of 0.7, which often suggests a strong correlation. Consequently, these findings indicate that these relationships are moderate and are unlikely to significantly impact our future analyses.

Regarding the specific relationship between the two distance variables as shown in Table 4, the correlation coefficient is .124 with a p-value of .386. This relatively low correlation coefficient, coupled with a p-value exceeding the conventional significance level of 0.05, leads us to accept the null hypothesis. This acceptance implies that there is no linear relationship between the distances travelled to Lauwersoog and the point at which individuals start to think about their insurance in our sample.

Table 3: Correlation matrix.

	Age	Place of Res.	Duratio n	Previous	Extra	No info	Info	Change	Conseq	Potenti al	Distanc e L	Distanc e I	Cross
Age	1.000												
Place of	.006	1.000											
Duratio n	-.075	.269	1.000										
Previou s	.032	-.321	-.045	1.000									
Extra	.029	-.158	-.403	.250	1.000								
No info	.234	.507	-.085	-.068	C	1.000							
Info	-.062	-.271	-.197	.162	C	C	1.000						
Change	.265	.450	.055	-.293	-.056	.332	.230	1.000					
Conseq .	-.242	-.663	-.022	-.663	-.171	-.326	.077	-.654	1.000				
Potenti al	.177	-.104	.214	-.025	-.162	-.103	-.515	.120	-.110	1.000			
Distanc e L.	-.088	.654	.274	-.214	-0.95	-.093	-.302	.159	.261	.017	1.000		
Distanc e I.	-.142	-.010	-.002	.169	.070	.041	.247	-.148	-.091	-.204	.124	1.000	
Cross	.188	.154	.154	-.091	-.302	.055	-.202	.159	-0.87	.647	-.491	.491	1.000

Table 4: Pearson correlation test

		Distance to Lauwersoog	Distance for insurance
Distance to Lauwersoog	Pearson Correlation	1	.124
	Sig. (2-tailed)		.386
	N	51	51
Distance for insurance	Pearson Correlation	.124	1
	Sig. (2-tailed)	.386	
	N	51	51

To test if there is a relationship between age and extra information gathered a chi-square test is used. The details of this analysis, including the crosstabulation, are presented in Table 5. Given that the p-value is below the threshold of 0.05, which can be seen in Table 6, the null hypothesis is rejected. This rejection allows us to assert that there is a statistically significant relationship between age and the

likelihood of extra information gathered. In other words, the age of the individuals in our study appears to influence the likelihood or extent to which they gather additional information.

Table 5: Cross table chi-square test

			Extra information gathered?		Total
			Yes	No	
Age (grouped)	18 - 39 years	Count	6	4	10
		Expected Count	3.5	6.5	10.0
	40 - 59 years	Count	5	22	27
		Expected Count	9.5	17.5	27.0
	60+ years	Count	7	7	14
		Expected Count	4.9	9.1	14.0
Total		Count	18	33	51
		Expected Count	18.0	33.0	51.0

Table 6: Chi-square test results

	Value	df	Asymptotic Sig. (2-sided)
Pearson Chi-Square	7.236	2	.026
Likelihood ratio	7.480	2	.024
Linear-By-Linear Association	0.31	1	.861
N of Valid Cases	51		

The last test is to determine whether there is a relationship between age and the source of information. The analysis of variance (ANOVA) results yielded a significance level of .913 (table 7). Furthermore, a Least Significant Difference (LSD) post-hoc analysis was carried out to examine pairwise comparisons between age groups (table 8). The findings from this post-hoc analysis also indicated that none of the age group comparisons were statistically significant, which was expected after the one-way ANOVA. This high p-value of both tests indicates that there is no statistically significant difference in the source of information preferences among different age groups in our sample.

Table 7: Results of the one-way ANOVA

	Sum of Squares	df	Mean square	F	Sig.
Between groups	2.869	4	.717	.235	.913
Within groups	39.631	13	3.049		
Total	42.500	17			

Table 8: LSD Post-hoc results.

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
18 - 29	30 - 39	.250	1.512	.871	-3.02	3.52
	40 - 49	1.500	1.746	.406	-2.27	5.27
	50 - 59	.667	1.594	.683	-2.78	4.11
	60+	.429	1.400	.764	-2.60	3.45
30 - 39	18 - 29	-.250	1.512	.871	-3.52	3.02
	40 - 49	1.250	1.512	.423	-2.02	4.52
	50 - 59	.417	1.334	.76	-2.46	3.30
	60+	.179	1.094	.873	-2.19	2.54
40 - 49	18 - 29	-1.500	1.746	.406	-5.27	2.27
	30 - 39	-1.250	1.512	.423	-4.52	2.02
	50 - 59	-.833	1.594	.61	-4.28	2.61
	60+	-1.071	1.400	.458	-4.10	1.95
50 - 59	18 - 29	-.667	1.594	.683	-4.11	2.78
	30 - 39	-.417	1.334	.760	-3.30	2.46
	40 - 49	.833	1.594	.610	-2.61	4.28
	60+	-.238	1.205	.846	-2.84	2.36
60+	18 - 29	-.429	1.400	.764	-3.45	2.6
	30 - 39	-.179	1.094	.873	-2.54	2.19
	40 - 49	1.071	1.400	.458	-1.95	4.10
	50 - 59	.238	1.205	.846	-2.36	2.84

Discussion

In this bachelor thesis, the focus was to understand how tourists behave in unfamiliar locations, specifically Schiermonnikoog, in terms of their healthcare-related information-seeking behaviour and how that affected the different levels of health literacy. The research utilised a survey method, collecting data from a total of fifty-one tourists at three different locations on the island to gain insights into their perspectives and health information-seeking behaviours. To answer the research question, four subsidiary questions were presented to eventually formulate a conclusion.

The conceptual model in figure 1 was created to test the main research question. Multiple personal characteristics were selected to assess the health information-seeking behaviour of tourists in Schiermonnikoog. However, due to the timing of the Dutch Autumn Holiday, the majority of survey participants were Dutch, leading to a limited variety in nationalities. This limited representation made it challenging to discern clear distinctions in behaviour across different nationalities. Therefore, in the conceptual model age was used to see if it was possible to predict a relationship between the “sources” and “literacy and skills” that were described by Kim (2015). With the statistical analysis this research was only able to show that age has an influence on the sources and not on the literacy and skills. The evaluation of "Purpose" and "Relevance" takes into account the number of prior trips to the island, knowledge of the absence of medical services. Furthermore, it includes the presence or absence of higher risk factors in the participants in the first test used for this research, labelled as the awareness variable. There was no relationship found with the statistical analysis, therefore purpose and relevance could not be predicted even though it was predicted in the conceptual model.

Looking back at the conceptual model, it becomes apparent that the current framework falls short in directly addressing the research question outlined in this bachelor thesis. As within the distance variables a relationship could not be found. The statistical analysis conducted to answer the sub-questions, aimed at supporting the four distinctions outlined by Kim (2015), lacks sufficient robustness to establish a clear connection with the diverse levels outlined by Nutbeam (2000) concerning health literacy.

Conclusion

Three of the four tests used in this research did not show any relationship, as the p-value was higher than the set margin of 0.05. This means that there was no statistical connection found within these three sub-questions:

- Could the distance to Schiermonnikoog, amount of previous stays and risk factor predict if there has been extra information gathered?
- Is there a relationship between age and extra information gathered?
- Is there a link between the age of the tourists and the source of information gathered?

The significant finding regarding the relationship between age and the collection of extra information is noteworthy. Grouping ages in the study was a necessary methodological choice, primarily due to the constraints of sample size and statistical robustness. By categorizing ages into broader groups, the study was able to achieve more meaningful, statistically significant results. By rejecting the null hypothesis it suggests that different age groups have varying approaches to gathering information in unfamiliar settings.

Given these results, it's impossible to draw definitive conclusions about the specific health information-seeking behaviours of tourists in unfamiliar locations regarding their own health literacy. The conceptual model is not able to test the research question. The complexity and variability of individual decision-making processes in such contexts are evident. The absence of clear patterns or dominant trends in the data underscores the need for further research.

Strength and limitations

This research aimed to address the knowledge gap concerning tourist health information-seeking behaviour in unfamiliar environments, an area that had not been extensively explored previously. The study serves as a foundational piece, highlighting the complexity and multitude of factors influencing tourist health information-seeking behaviour in these unique settings. The findings lay the groundwork for future research, indicating a wide range of aspects that could be further investigated to deepen our understanding of how tourists navigate and make decisions in unfamiliar territories..

However, it's crucial to acknowledge how omitting variables like culture, economic status, and education, as explored in Jeong and Kim's (2016) research, may have impacted the width of the conclusions. While including these different personal characteristics could have provided a richer understanding, their inclusion might have overly broadened the scope of the research, leading to a more heavy survey process and too broad of an answer of the research question.

Furthermore, the research faced limitations, notably the small and potentially non-representative sample size because of the convenient sampling method, which may have impacted the findings. A more extensive and diverse sample could provide more comprehensive insights and potentially reveal subtle patterns and relationships.

To combat this problem beforehand, during the initiating phase of the data collection process, an email was sent to Wagenborg Passagiersdiensten,. This is the ferry service operator between Lauwersoog and Schiermonnikoog mentioned in the introduction. Permission was asked to conduct research also on the ferry. This strategy was considered because the ferry is used by nearly all visitors to the island, presenting an excellent opportunity for data collection. The ferry environment was thought to be more successful for participation in the survey, as passengers might be less preoccupied compared to the other locations. Unfortunately, Wagenborg did not respond to the request, leading the study to focus on the three other locations previously defined.

Future research

Future research opportunities could include a comparative analysis of Dutch tourists' health information-seeking behaviour against other nationalities, both in domestic settings like Schiermonnikoog and in international contexts. Such studies would be valuable in understanding the nuances of health information-seeking behaviours across different cultural and national backgrounds. The absence of a dominant information source among tourists is an intriguing outcome, suggesting the need for further investigation into tourists' health information-seeking behaviours. Investigating this further could provide insights into how different groups of tourists prioritise and evaluate various sources of information, including digital platforms, local insights, or traditional media. The results of the future research could help in setting up communication strategies for tourism businesses and destination managers to effectively reach diverse tourist demographics regarding their healthcare.

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Appendix 1: Questionnaire

Question	Data Transformation
Q1: What is your age? (control)	1: 18 - 29 2: 30 - 39 3: 40 - 49 4: 50 - 59 5: 60 +
Q2: What is your place of residence? (control)	<i>(Depends on outcome survey if another nationality comes by often they will be added):</i> 1: Dutch 2: German 3: Other
Q3: How long is your stay on the island?	1: 1-2 day(s) 2: 3-4 days 3: 5-6 days 4: between 1 and 2 weeks 5: 2+ weeks
Q4: How many times have you visited the island before?	1: 1st - 2nd time 2: 3rd - 4th time 3: 5th - 6th 4: 7th - 8th 5: 9 or more times
Q5: Have you gathered information that could benefit you in preparation of your stay in regards to personal well-being?	1: Yes 2: No

Q6: If yes , where did you get this information?	1: Online 2: Friends/relatives 3: Television 4: Newspapers/magazines 5: Previous experiences on the island 6: other
Q7: If no , why not?	1: No interest 2: Did not think of it 3: Enough previous experiences 4: Other
Q8: Are you aware of any consequences that in case of emergency there is no hospital on the island, only a general practitioner?	1: Yes 2: No
Q9: Would this have changed your behavior regarding your preparation towards your well-being?	1: Yes 2: No
Q10: Do you classify yourself as someone with potential health risks?	1: Totally Disagree 2: Disagree 3: Neutral 4: Agree 5: Totally agree
Q11: How long was your commute to the harbour of Lauwersoog <i>in kilometers</i> ?	<i>Numeric kilometer distance provided will be used as a continuous variable.</i>
Q12: Do you need to cross country before thinking about your healthcare/insurance	1: Yes 2: No
Q13: From what distance do you think about healthcare/insurance <i>in kilometers</i> ?	<i>Numeric kilometer distance provided will be used as a continuous variable.</i>