

Assessing the Efficacy of Technical Lexicon in Tourist Communications: A Case Study on the Appropriateness of Using ‘Feral’ in Tourist Information Boards at Rabbit Island

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観光コミュニケーションにおける専門用語の有益性評価
—大久野島観光における英文観光情報案内表示について用語「Feral」
を採用する適切性に焦点を当てて—

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ABSTRACT

This study extensively explored the semantic impact of the term ‘feral’ on tourist perceptions, centering on Okunoshima Rabbit Island, a tourist destination visited by a large number of overseas visitors who come to interact with hundreds of residing rabbits, situated in Eastern Hiroshima, Japan. Through a comprehensive approach involving a tourist survey, statistical analysis, and advanced textual analysis, the research aimed to unveil nuanced associations and sentiments related to the term ‘feral’ among visitors of both native and non-native speakers of English. A pivotal finding revealed that the term ‘feral’ inadequately represents rabbits, indicating potential misinterpretations and negative connotations. This underscores the imperative of linguistic accuracy and cultural sensitivity in crafting tourist information, emphasizing the necessity for strategic communication transcending linguistic and cultural barriers. The contribution of this study lies in its application of advanced textual analysis to uncover subtle nuances in tourist perceptions, providing insights for refining communication strategies in diverse tourist settings.

Keywords: destination branding, tourist perceptions, feral, Rabbit Island,
cross-cultural communication strategies, semantic impact,
linguistic accuracy, textual analysis

1. Introduction

Tourists, as key decision-makers in the choice of destinations, play a central role in shaping the dynamics of the tourism industry. To capture the attention of these discerning individuals, destinations are adopting a multi-pronged approach, where the image and branding of the destination are emerging as powerful marketing tools.

The concept of a destination brand revolves around the image created in people’s minds, emphasizing the uniqueness and identity of the place and destination (Qu et. al., 2011; Romaniuk & Nenycz-

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Thiel, 2013). Comprising elements such as the name, symbol, logo or word, destination branding has the primary goal of evoking positive associations and distinctiveness, thereby differentiating a destination from its counterparts (Hanna & Rowley, 2011). It is crucial to recognize that the nomenclature, brand elements and overall profile of a destination go beyond symbolic representations. Instead, they serve as encapsulations of the place's identity and foster an emotional connection with potential visitors (Im et al., 2012). This interplay of elements plays a central role in shaping the perception of a destination and influencing the decisions of potential tourists.

In pursuit of this goal, effective communication within tourist destinations is of paramount importance. This communication serves a dual purpose: facilitating a meaningful visitor experience by conveying historical and conservation dimensions, and building an attractive image and positive identity for the destination. However, the challenge of communicating the destination branding in the context of diverse audiences is pervasive, as people with different language backgrounds may have different cultural conceptualizations (He & Su, 2022). Certain terminologies used in destination branding may not have universal resonance and in some cases may have negative connotations for foreign visitors (Clark, 2009; Light, 2013). This challenge highlights the need for nuanced communication strategies, particularly in destinations characterized by cultural and linguistic diversity.

Clark (2009) investigated the significance of accurate nomenclature, focusing on indigenous tourism in Victoria, Australia. Many sites with names attributed during the 1920s failed to meet visitor expectations, in particular there were instances where the term 'cave' was misleading for sites that were only shallow rock overhangs. Similarly, Eurocentric descriptive names, such as 'Cave of Ghosts', for a site with white pipeclay human figures, often conjured up inappropriate expectations in visitors, leading to disappointment, ridicule, and vandalism. Gunn (1984) emphasized the confusion caused by misleading or Eurocentric names, recommending new names tied to place or 'objective' description.

Aligning with these insights, the Saint-Ouen flea market (Les Puces de Saint-Ouen) strategically integrated 'Paris' into its name, becoming the Paris Saint-Ouen flea market (Les Puces de Paris Saint-Ouen). This adjustment leveraged the global recognition of Paris, functioning as a brand name to enhance the destination's appeal (Gravari-Barbas and Jacquot, 2019). This case illustrates how meticulous semantic choices can significantly influence perceptions and align a destination with desired images, echoing the broader imperative in destination branding.

Those instances vividly illustrate the pivotal importance of selecting the right terms in destination branding. Consider the case of Aboriginal art sites in Victoria, Australia, where even historically accurate terms fell short of universally resonating and representing the destination's true essence. This mismatch hindered the intended message from reaching tourists effectively, prompting the need for a meticulous examination of communication strategies, especially in destinations marked by diverse cultural and linguistic backgrounds. Collectively, these studies underscore the profound impact that well-chosen terms can have on forging meaningful connections between destinations and their visitors.

Building upon the aforementioned rationales, the current study focuses on Okunoshima Island, situated in the Inland Sea of Japan in the eastern Hiroshima, renowned globally as 'Rabbit Island' due to its thriving rabbit population. Despite its historical association with World War II poison gas production, the island has transformed into a tourist haven. Currently, the representation of Rabbit Island is a captivating area of exploration. At the forefront of this transformation is the Okunoshima Committee for Conservation and Sustainability, a dedicated alliance of both administrative entities and private stakeholders intricately navigating the multifaceted challenges confronting the island. With unwavering commitment, the committee is tirelessly engaged in elevating the natural landscape, bestowing national park status upon the island, and

catalyzing tourism in the surrounding areas. Their ingenious initiatives encompass the formulation of standardized visitation guidelines, meticulous oversight, and visionary projects geared towards enhancing the island's allure. Notably, discussions within the committee extend to the optimal portrayal of Rabbit Island's renowned rabbits, ensuring a delightful experience for not only the Japanese visitors but also for non-Japanese speaking tourists.

The primary objective of the present study is to evaluate the effectiveness of technical lexicon in tourist communications, specifically examining the use of the term 'feral' in describing Rabbit Island to global visitors. Drawing on the importance of understanding destination images from visitors' perspectives, the study conducted a tourist survey involving 500 non-Japanese respondents who visited Rabbit Island to gauge their opinions. This comprehensive approach aligns with previous studies advocating the incorporation of tourist inputs reflecting their expectations and experiences prior to the trip, during the trip, and after the trip (Manhas, Manrai, & Manrai, 2016; Oliveira and Panyik, 2015). Additionally, text analysis using Natural Language Processing (NLP) techniques was employed to delve deeper into the semantic associations of the term 'feral'. This study contributes to the broader discourse on destination branding and communication strategies, offering insights into the intricate dynamics of presenting a destination's identity to a diverse global audience.

2. Methods

2.1 Data Collection

Tourist Survey

A structured survey, designed for a diverse cohort of tourists, was distributed to visitors to Rabbit Island, specifically targeting non-Japanese speaking tourists drawn to witness the island's distinctive rabbit population. This survey comprised a combination of open-ended and Likert-scale questions aimed at gauging respondents' initial reactions, interpretations, and emotional associations concerning the term 'feral'. The survey was conducted every day between the period of 26 August through 23 September 2023 in conjunction with the port management agency, Kunoshima Co. Ltd. at Tadanoumi Port, one of the main gateway ports to the island. Further details of the survey sampler are given in Appendix A.

Respondent Profile

The survey aimed to gather insights from a randomly selected sample of 500 non-Japanese tourists, ensuring a diverse representation of cultural and linguistic backgrounds. Respondents hailed from 55 different countries, with the top five nationalities being the USA (20%), Taiwan (9.6%), Germany (8.0%), Australia (5.6%), and the UK (5.2%). Additionally, the survey captured the linguistic diversity among respondents, with 39 different languages identified. English emerged as the predominant language for 39.8% of respondents, followed by Chinese (all dialects combined) (16%), German (10.4%), French (5.0%), and Dutch (4.6%). Further details describing how respondents were distributed are given in Appendix B.

2.2 Analysis

The analysis comprises of two main stages consisting of Statistical and Text analysis. This methodology offers a nuanced understanding of how linguistic backgrounds influence the perception of term 'feral' among tourists on Rabbit Island, thereby shedding light on the intricacies of cross-cultural communication and semantic variations in tourist settings.

Stage 1 - Statistical Analysis

This stage involved a comprehensive statistical examination of the survey data. It encompassed various analytical techniques including Bivariate Analysis and Statistical Analysis, particularly

employing Welch Two Sample T-test to assess whether there was a significant disparity in the means of the sentiment score associated with the term ‘feral’ among English native and non-native respondents. Furthermore, to augment the understanding of the practical significance of any observed differences, Cohen’s d was calculated as a measure of effect size. The inclusion of Cohen’s d enhances the interpretation of the Independent Sample T-test results, offering valuable information about the substantive importance of any identified group differences. These statistical analyses collectively contribute to a comprehensive evaluation of the observed effects, combining assessments of both statistical significance and practical relevance.

Stage 2 - Text Analysis using Natural Language Processing (NLP) techniques

This stage utilized NLP technique called Word2Vec to delve deeper into the semantic associations of the term ‘feral’. Word2Vec is a popular NLP technique that is used to learn word embeddings, which are vector representations of words in a high-dimensional space. In the current study, the analysis involved the utilization of pre-trained word embedding models to explore contextual similarities and associated words. The Gensim models used in this text analysis were pre-trained on extensive datasets, each with its unique source.

Gensim stands as a versatile Python library widely employed in the domain of natural language processing and text analysis. This toolkit encompasses various tools for tasks such as topic modeling, document similarity analysis, and word vector representations. Within the context of examining semantic relationships and contextual similarities tied to the term ‘feral’ in Rabbit Island's tourist communication, three distinct pre-trained Gensim models are utilized:

- **Glove-Twitter-200:** Trained on Twitter data, this model captures language usage and semantics from tweets, thus reflecting informal and conversational language prevalent on the platform.
- **Word2Vec-Google-News-300:** Derived from Google News, this model is trained on a vast corpus of news articles, capturing a formal and diverse vocabulary used in journalistic content.
- **Glove-Wiki-Gigaword-300:** Trained on Wikipedia articles and Gigaword, this model encapsulates a broader spectrum of formal language and factual information.

As described, these models have undergone pre-training on extensive text corpora sourced from platforms like Twitter, Google News, and Wikipedia, imbuing them with a wide spectrum of linguistic knowledge and semantic understanding. Employing these models aims to reveal nuanced associations and contextual nuances related to the term ‘feral’, facilitating a comprehensive exploration of how tourists from diverse backgrounds perceive and interpret this term within Rabbit Island’s visitor communication.

To find the most similar words to ‘feral’ in the model’s embeddings, cosine similarity score was calculated between the vector for ‘feral’ and the vectors for all other words in the vocabulary. The words with the highest cosine similarity scores were considered the most similar words. In this analysis, the top 50 words that had the highest similarity scores from 3 Gensim models were retrieved as the outcomes.

3. Results and discussion

3.1 Bivariate Analysis Results

The bivariate analysis delved into respondents’ opinions and sentiments regarding the term ‘feral’ as applied to the rabbits on Rabbit Island. Table 1 presents the findings in response to the query, ‘Would you characterize the rabbits on Rabbit Island as feral?’ and respondents’ sentiments toward the term ‘feral’. The results, depicted in the table, indicate a notable alignment between the perspectives of native and non-native respondents. The majority of respondents from both groups concurred that the rabbits on Rabbit Island do

not exhibit feral characteristics, with percentages of agreement reaching 47.2% for native speakers and 46.2% for non-native speakers.

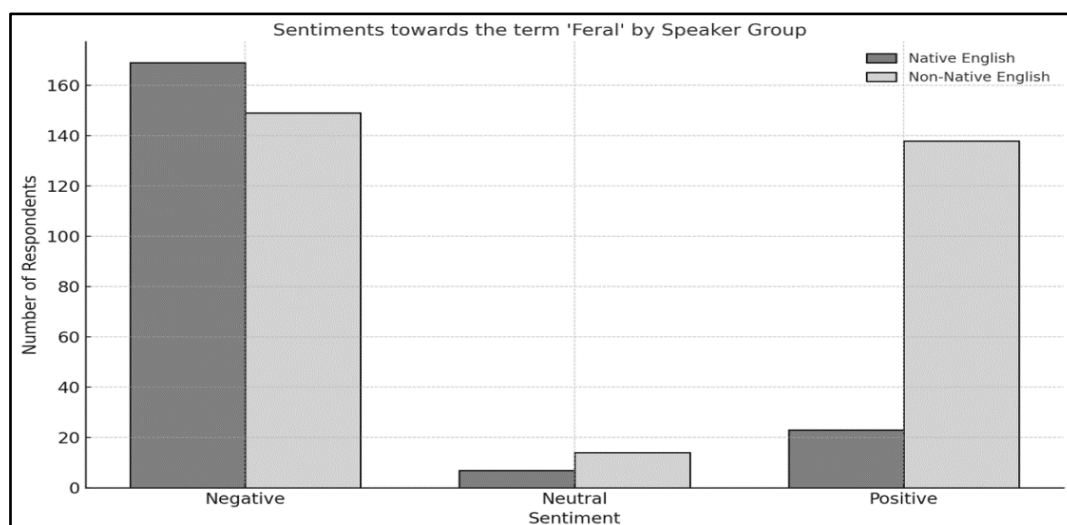
Table 1 Respondents' Opinions

Respondents	Would you describe/characterize the rabbits on Rabbit Island as feral?			Respondents' Sentiments toward term 'Feral'		
	DK	No	Yes	Negative	Neutral	Positive
Native English	87 (43.7%)	94 (47.2%)	18 (9%)	169 (84.9%)	7 (3.5%)	23 (11.6%)
Non-Native	76 (25.2%)	139 (46.2%)	86 (28.6%)	149 (49.5%)	14 (4.7%)	138 (45.8%)

Furthermore, the analysis of Table 1 reveals a nuanced variation in sentiments towards the term 'feral'. Specifically, when respondents were asked if they would characterize the rabbits on Rabbit Island as 'feral', a notable divergence emerged based on linguistic backgrounds. Among native English speakers, a predominant negative sentiment was observed, with 84.9% expressing such views, contrasted by a mere 3.5% neutrality and 11.6% positive sentiment. In stark contrast, non-native English speakers exhibited a more evenly distributed sentiment, with 49.5% negative, 4.7% neutral, and 45.8% positive responses. This variation underscores the significant impact of linguistic and cultural backgrounds on term interpretation, demonstrating that sentiments towards terms like 'feral' can vary substantially depending on the respondent's primary language.

3.2 Significance Test Analysis Results

In addition, a significance test was conducted to assess whether the frequency differences observed between native English speakers and non-native groups, as presented in Table 1, occurred by chance. The application of the Chi-squared test to the sentiment data revealed a marked difference in attitudes towards the term 'feral' between these two groups. The calculated Chi-squared statistic stands at 67.75, accompanied by a p-value of approximately $1.95e-15$ ($\chi^2 = 67.745$, $p \approx 1.95e-15$), which is significantly lower than the conventional significance threshold of 0.05. This result indicates a statistically significant variance in sentiments between native and non-native English speakers, a finding that is further illustrated through the visual representation in Figure 1.



*Figure 1 Significance Test Analysis Results:
Visual Representation of Chi-squared Test Showing a Statistic Significance*

Figure 1 features a bar graph that visually represents the sentiment distribution (Negative, Neutral, Positive) among both native and non-native English speakers derived from Table 1. The graph clearly highlights the differences in sentiment between the two groups: native English speakers predominantly express negative sentiments, while non-native speakers exhibit a more balanced distribution across negative, neutral, and positive sentiments. This variance in sentiment distribution between the two groups, underscored by the Chi-squared test, confirms that the difference is unlikely to be due to mere chance. Additional details regarding the Chi-squared test results can be found in Appendix C.

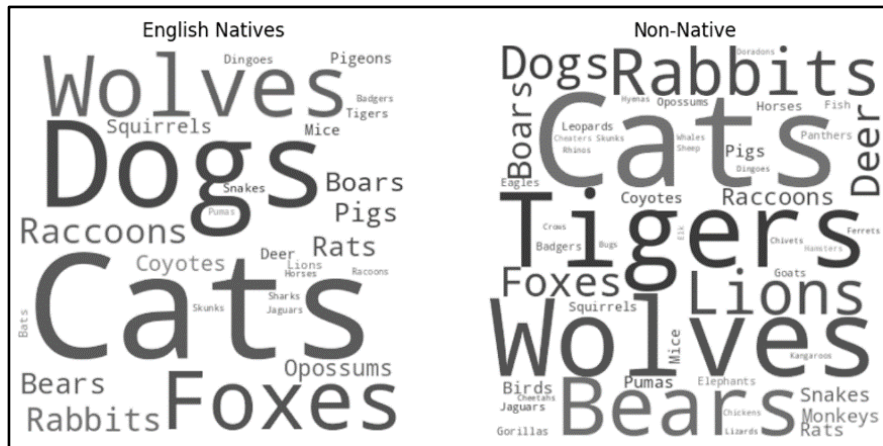


Figure 2 Wordcloud - Respondents' Opinions:
What animals do you primarily associate with the term 'feral'?

Concerning respondents' associations of animals with the term 'feral', the results revealed distinctions between native English speakers and non-native speakers. Native English speakers predominantly linked the term with cats, dogs, wolves, foxes, and raccoons, while non-native speakers associated it with cats, wolves, tigers, bears, and rabbits, as illustrated in Figure 2. These findings underscore the importance of cultural contexts in shaping semantic associations and reinforce the need for precision in destination branding to ensure clarity and avoid potential misinterpretations.

To gain a more comprehensive understanding of respondents' sentiments towards the term 'feral' and explore the semantic relationships and contextual similarities connected to the term, further analysis is warranted. Delving deeper into these aspects will contribute valuable insights into the nuanced perceptions and associations tied to the term within the studied context.

3.3 Statistical Analysis Results

The analysis aimed to uncover disparities in sentiment scores associated with the term 'feral' between native English speakers and non-native English speakers, using scores on a scale of 1 to 4. On this scale, lower scores indicate a more positive sentiment, while higher scores indicate a more negative sentiment.

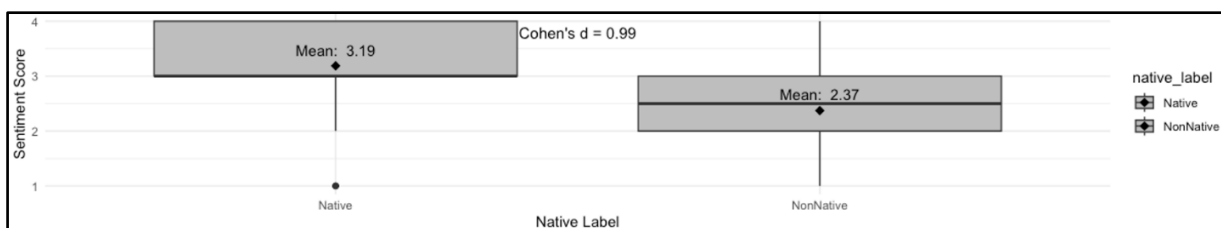


Figure 3 Statistical Analysis Results:
Sentiment Scores for native and non-native English Groups

The Welch Two Sample t-test revealed a substantial difference ($t = 11.258$, $df = 475.55$, $p < 2.2e-16$) between the groups. English native respondents exhibited a higher average sentiment score (mean = 3.187186) compared to non-native respondents (mean = 2.372093) (see Figure 3). This outcome indicates a significant divergence in sentiment perception, with English natives expressing a more negative sentiment toward the term ‘feral’ than non-native respondents.

Besides, Cohen’s d reinforced the magnitude of this difference ($d = 0.9880436$, 95% CI: 0.7983307 to 1.1777566), categorizing it as ‘large’. This underscores not only the statistical significance but also the practical importance of the observed sentiment disparity.

In summary, the findings highlight distinct sentiment associations with the term ‘feral’ among English native and non-native individuals, shedding light on nuanced perceptions linked to linguistic and cultural backgrounds. More details on the results of the t-test and Cohen’s d can be found in the Appendix D.

4. Text Analysis

The text analysis, as illustrated in Figure 4 Wordcloud, yielded a crucial revelation regarding the term ‘feral’. As illustrated in Figure 4 the term ‘feral’ did not distinctly represent ‘rabbit’, as evidenced by the contextual similarities unveiled through text analysis. The findings from the three Gensim models—Glove-Twitter-200, Word2Vec-Google-News-300, and Glove-Wiki-Gigaword-300—indicated that ‘feral’ exhibited nuanced associations with words such as ‘strays’, ‘rabid’, ‘feline’, ‘stoat’, ‘feral cat’, ‘wolflike’, ‘beast’, and ‘herd’. This outcome aligns closely with the results from the Bivariate Analysis, reaffirming that the term ‘feral’ can be misleading and lacks specificity in representing rabbits.



Figure 4 Text Analysis Result

The Gensim models Results: Words associated with the term ‘feral’

The observed contextual similarities and associations uncovered by the text analysis have significant implications, particularly in understanding the potential misinterpretation of the term ‘feral’ by tourists. The negative connotations revealed in the analysis, including terms such as ‘rabid’ and ‘beast’ further accentuate the challenges highlighted in the Bivariate Analysis and Statistical Analysis Results. Previous studies by Clark (2009) corroborate the impact of terms used in destination branding has associations and connotations on tourist perceptions, emphasizing that misleading terms can significantly impact visitor attitudes. In this context, the misleading nature of the term ‘feral’ not only fails to accurately represent the rabbits that inhabit Rabbit Island, but also risks conveying unintended negative associations to foreign visitors. This case illustrates how the significance of a tourist destination should consider the culture (and

language) of the tourist's origin (Craik, 1997), rather than focusing solely on the inherent qualities of the destination.

Building on the findings, it is imperative to reassess and enhance communication strategies for Rabbit Island. The significance of effective destination communication cannot be overstated, as tourists, when exposed to products, services, or informational content about a destination, craft a personalized amalgamation of impressions, imaginations, expectations, and emotional reflections, ultimately forming a distinctive 'image' (Rajesh, 2013). Consequently, the creation of a transparent and positive destination image through effective communication stands as a pivotal factor for the overall success of destinations. Former studies have consistently demonstrated that this destination image significantly influences tourists' decisions (Zhang et al., 2021; Chi et al., 2020). Therefore, strategic and precise communication, achieved through meticulous terminology selection and language nuances, not only shapes perceptions but also directly influences the choices tourists make, underlining the crucial role of linguistic precision in determining the destination's success.

5. Implications for tourism and communication

In light of the identified challenges and insights, the following practical recommendations are proposed to improve the effectiveness of tourism communication on Rabbit Island:

5.1 Tourism Marketing Nuances

Word choice in tourism marketing content is pivotal, influencing potential tourists' perceptions and shaping their expectations. The term 'feral' in the current study for instance, with its inherent undertones, may not align with the welcoming and serene imagery that Rabbit Island aspires to portray. It is imperative for destination managers to recognize the potential impact of such choices on the overall destination image. A more careful consideration of language nuances is essential to ensure that marketing materials evoke the desired emotional response from the target audience.

5.2 Linguistic Accessibility

In an era of global tourism, linguistic accessibility is a critical factor that directly influences the effectiveness of communication strategies. For non-native English speakers, especially those from regions where English is not the dominant language, comprehension of terms like 'feral' becomes challenging. This linguistic barrier has the potential to diminish the impact of bilingual signage, hindering the inclusive communication of the island's unique attributes. Destinations must be cognizant of linguistic diversity and strive for communication strategies that transcend language barriers, ensuring a more universally accessible and welcoming environment.

In response to the identified challenges, practical recommendations are proposed to enhance the effectiveness of tourist communication on Rabbit Island. One key recommendation involves the careful selection of terms with wider acceptance to mitigate the potential negative impact of specific language choices. Adopting alternative terms such as 'free-roaming', or 'native' rabbits can effectively convey the essence of the rabbits' state without carrying the potential negative connotations associated with 'feral'. These alternatives not only ensure the intended message is communicated effectively but also contribute to a more positive and inclusive destination image.

Another crucial recommendation involves establishing a continuous feedback loop for visitors. Creating a systematic mechanism for tourists to provide feedback on signage and other informational content is essential. This feedback loop serves as a valuable tool for destination managers, enabling them to gauge the effectiveness of communication strategies and ensure clarity and cultural appropriateness. Regular assessments and adjustments based on visitor feedback contribute to a dynamic and responsive

communication approach, aligning the destination's image with the evolving expectations and sensitivities of its diverse audience.

6. Conclusion

In summary, this study comprehensively explored the semantic impact of the term 'feral' on tourist perceptions with a focus on Rabbit Island, located in eastern Hiroshima. Utilizing a tourist survey, statistical analysis and advanced textual analysis, the study aimed to uncover nuanced associations and sentiments associated with the term among native and non-native English speakers.

A key finding highlighted that 'feral' inadequately represents rabbits, revealing potential misinterpretations and negative connotations. This underlines the importance of linguistic accuracy and cultural sensitivity in the crafting of tourist information, and highlights the need for strategic communication across linguistic and cultural barriers.

Furthermore, the analytical approach introduced in this paper can serve as a valuable template for the examination of other terms within tourism contexts, fostering a more comprehensive understanding of how language shapes tourist perceptions. Future research endeavors should explore additional terminology and extend the analysis to diverse tourist settings, enabling a broader comprehension of the intricate interplay between language, perception, and destination image.

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Appendix A

Survey questionnaire sampler

May we ask you a few quick questions?

We are unsure whether to use the term "feral" on informational panels intended for general tourists on the Island.

Q1: What animals do you primarily associate with the term "feral"?

Q2: On a scale of four, does the word "feral" have a positive or negative meaning to you?

POSITIVE 1 - 2 - 3 - 4 NEGATIVE

Q3: Would you describe / characterize the rabbits on Rabbit Island as "feral"?

YES / NO / Don't know

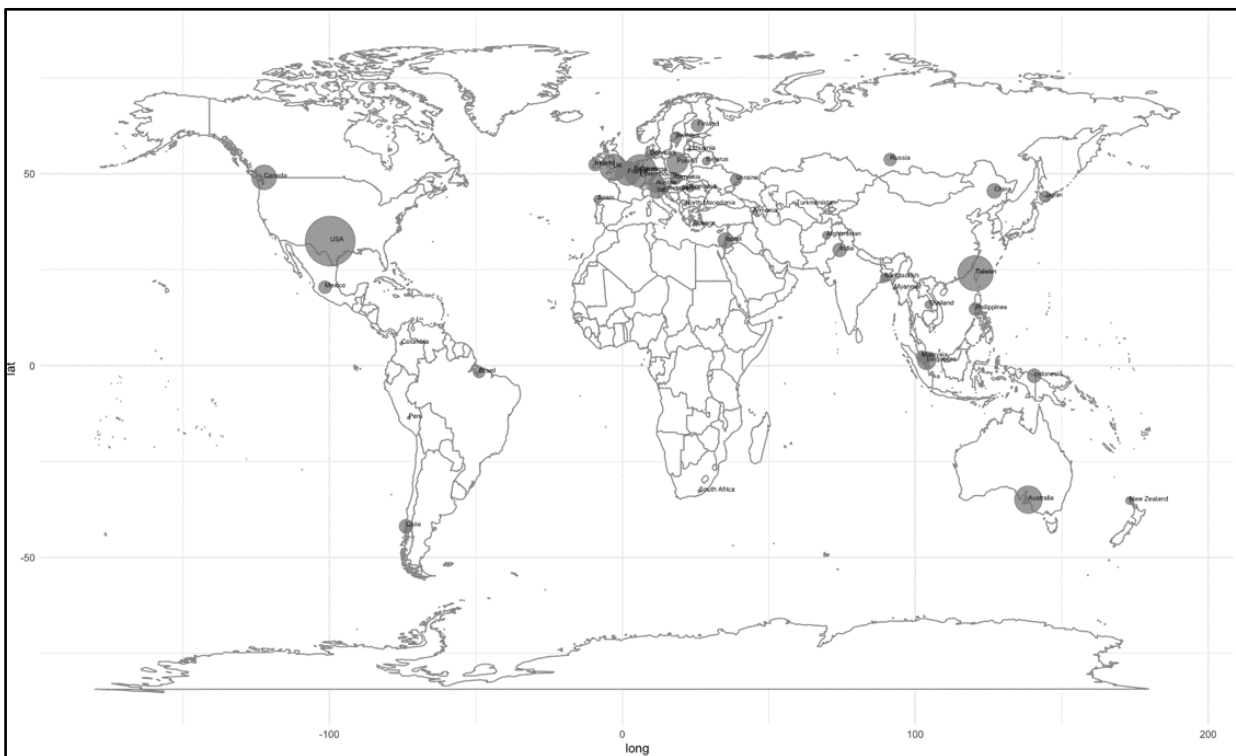
Q4: Your country of origin / residence / your mother tongue

ORIGIN	RESIDENCE	MOTHER TONGUE
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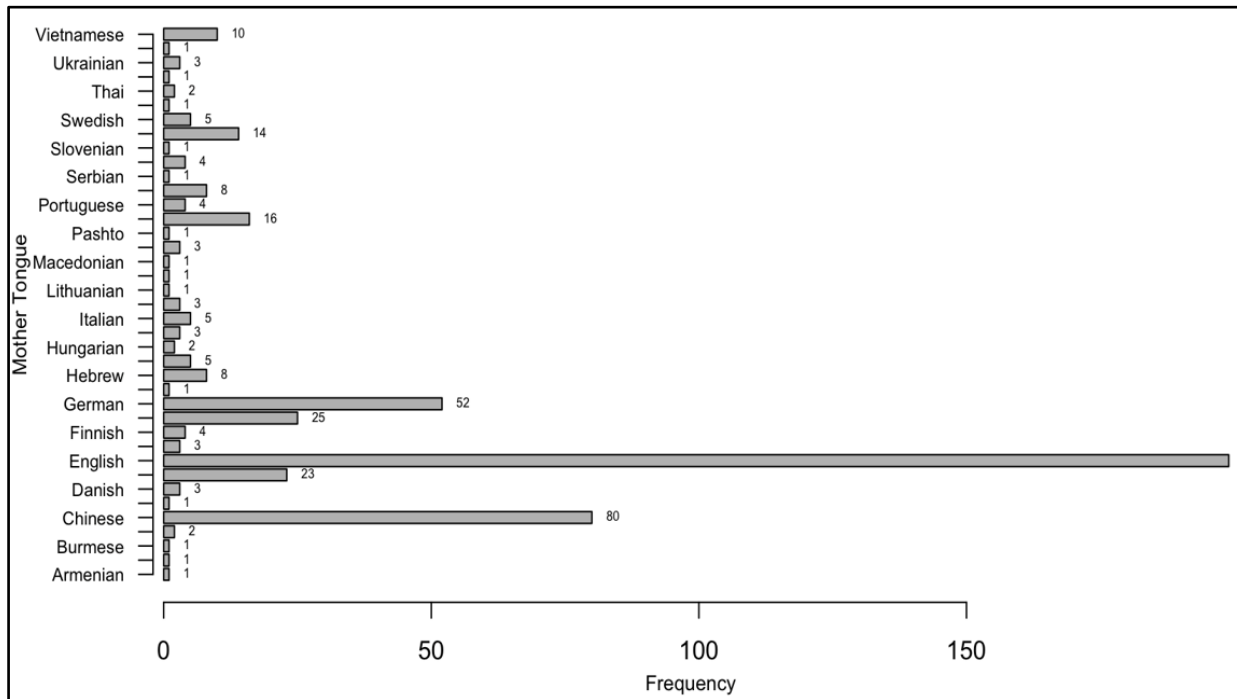
Thank you!
Port Management

Appendix B

Distribution of respondents' countries of origin



Distribution of respondents' mother tongues



Appendix C

Chi-squared test results

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( Negative Neutral Positive
0 169 7 23
1 149 14 138,
67.7453422755499,
1.946640871486929e-15,
2,
array([[126.564, 8.358, 64.078],
[191.436, 12.642, 96.922]]))
    
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The Chi-squared test was chosen for its suitability in analyzing categorical data, such as the sentiments (Negative, Neutral, Positive) expressed by different groups (Native and Non-Native English speakers). It is ideal for assessing whether the observed frequency of sentiments differs significantly from expected frequencies under the assumption of no association between language background and sentiment. The test assumes independence of each respondent's sentiment. With a relatively large sample size in this study, the Chi-squared test is both appropriate and reliable.

The result ($\chi^2 = 67.745$, $p \approx 1.95e-15$) indicates a highly significant difference in sentiment distribution between the two groups, confirming that the difference is unlikely to be due to chance.

Appendix D

Welch Two Sample t-test and Cohen's d

<pre> Welch Two Sample t-test data: data\$Q2 by data\$native_label t = 11.258, df = 475.55, p-value < 2.2e-16 alternative hypothesis: true difference in means between group Native and group NonNative is not equal to 0 95 percent confidence interval: 0.6728229 0.9573629 sample estimates: mean in group Native mean in group NonNative 3.187186 2.372093 </pre>	<pre> Cohen's d d estimate: 0.9880436 (Large) 95 percent confidence interval: lower upper 0.7983307 1.1777566 </pre>
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The choice of the Welch Two Sample t-test and Cohen's d in the statistical analysis aimed to rigorously assess sentiment score disparities linked to the term 'feral' among English native and non-native respondents. With an uneven distribution of respondents (119 Native and 301 NonNative), the Welch test was aptly selected for its ability to accommodate unequal variances, offering a robust comparison between the groups' sentiment means.

Complementing this, Cohen's d was calculated to quantify the effect size, providing valuable insights into the practical significance of observed differences. Together, these statistical tools were strategically employed to navigate the challenges posed by uneven sample sizes, ensuring a thorough examination of sentiment nuances associated with the term 'feral'.