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The Evolving Relationship Between Ship Attributes and Expert Ratings of the Overall Cruise Experience from 1999 to 2019

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Abstract

Consumers of hospitality products are faced with an array of choices from a variety of information sources. As a result, they can feel overwhelmed and try to simplify their purchase decisions effectively and efficiently. This is often the case in the cruise industry. Leisure cruise consumers frequently use expert reviews for guidance when comparing ships, accommodations, food, service, and entertainment. This study utilizes expert review data to analyze the relationships between ship attributes and ratings of the overall cruise experience. A novel contribution of this paper is the examination of these relationships across three different points in time (1999, 2009, and 2019) to explore the influences of product changes on expert reviews. The results show that certain ship characteristics are related to experience ratings, but their effects have changed over time. The findings allow cruise operators to focus their efforts on the ship attributes that experts deem most important for success and help cruisers better identify the “perfect” ship for their vacations.

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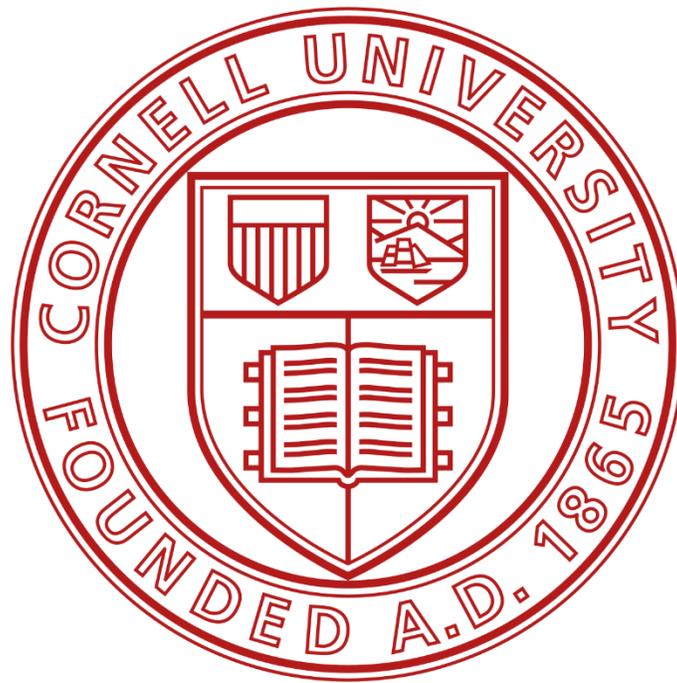
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**The Evolving Relationship Between
Ship Attributes and Expert Ratings of the
Overall Cruise Experience from 1999 to 2019**



Justin Hunter Leff

Cornell University's School of Hotel Administration

May 2019

**The Evolving Relationship Between Ship Attributes and
Expert Ratings of the Overall Cruise Experience from 1999 to 2019**

By

Justin Hunter Leff

A thesis submitted in partial satisfaction of the

requirements for the degree of

Bachelor of Science

in

Hotel Administration

from the

School of Hotel Administration

at

Cornell University

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ABSTRACT

The Evolving Relationship Between Ship Attributes and Expert Ratings of the Overall Cruise Experience from 1999 to 2019

By

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Bachelor of Science

Cornell University

Dr. Crocker Liu, Chair

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Consumers of hospitality products are faced with an array of choices from a variety of information sources. As a result, they can feel overwhelmed and try to simplify their purchase decisions effectively and efficiently. This is often the case in the cruise industry. Leisure cruise consumers frequently use expert reviews for guidance when comparing ships, accommodations, food, service, and entertainment. This study utilizes expert review data to analyze the relationships between ship attributes and ratings of the overall cruise experience. A novel contribution of this paper is the examination of these relationships across three different points in time (1999, 2009, and 2019) to explore the influences of product changes on expert reviews. The results show that certain ship characteristics are related to experience ratings, but their effects have changed over time. The findings allow cruise operators to focus their efforts on the ship attributes that experts deem most important for success and help cruisers better identify the “perfect” ship for their vacations.

AUTHOR'S BIOGRAPHY

Justin Leff is graduating from Cornell University's School of Hotel Administration with a major in hospitality management and a minor in real estate with a concentration in finance.

Justin has been an active student since the moment that he first stepped onto Cornell's campus as a freshman. He had the privilege to serve as the Director of Human Resources for the 93rd Hotel Ezra Cornell (HEC), an annual weekend-long conference that is held for the world's hospitality and real estate leaders. In addition, he was the Assistant Director of Human Resources for HEC 92 and a manager-in-training for HEC 91. Justin was a teaching assistant for six courses: Finance, Managerial Accounting, Strategic Management, Competitive Strategies, Introduction to Foodservice Management, and Foodservice Management Essentials. He, also, was an Orientation Supervisor to welcome first-year students to campus.

This past summer, Justin interned in the Finance department at Hilton's global corporate headquarters in McLean, Virginia. During the summer of 2017, he interned in Hilton's Sales Analytics department. In the summer of 2016, Justin interned at the Nautilus, a SIXTY Hotel in Miami, Florida. His internships in hospitality (both on-property and at the corporate level) gave him a unique perspective of the dynamic hotel industry and helped him appreciate the value of building a brand one guest at a time through outstanding service.

Justin made the Dean's List every semester and was inducted into Ye Hosts Honorary Society as a junior. He was named a Merrill Presidential Scholar in the spring of 2019. Merrill Presidential Scholars are selected from the top one percent in each of Cornell's colleges based on scholastic achievement, intellectual drive, and leadership abilities. Justin will represent the Hotel School as its Second Degree Marshal in the May Commencement Ceremony.

After graduation, Justin will join Pebblebrook Hotel Trust as a financial analyst.

DEDICATION

To my family, friends, and professors
for their encouragement and support
throughout this journey.

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I would like to thank Dr. Robert Kwortnik for the time and effort he devoted to my thesis. I appreciated him sharing his expertise on the global leisure cruise industry and teaching me about the different aspects of the field. I always felt comfortable asking Dr. Kwortnik questions, and I especially enjoyed contributing to his thought processes. I valued the confidence that he showed in me, allowing me to gain invaluable skills that I will use throughout my career. It was great to have an advisor and mentor who is so knowledgeable, approachable, hardworking, and fun. I look forward to working with Dr. Kwortnik again in the future!

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SECTION I: INTRODUCTION

Consider this decision challenge facing a new cruiser debating between a 7-night Western Caribbean sailing in mid-December aboard the *Carnival Breeze* or *Norwegian Gem*. Both ships depart from Miami, Florida, visit the same ports of call, and offer comparably-priced cabins. However, the *Carnival Breeze* is nearly 40% larger than the *Norwegian Gem*, and the vessel carries 1,296 more passengers. On the other hand, the *Carnival Breeze* is newer having entered service in 2012, while the *Norwegian Gem* entered service in 2007. Assuming all else equal (i.e. onboard dining, shopping, gaming, and entertainment), which ship should the new cruiser pick?

Consumers do not have enough time to deliberate many decisions in their lives by researching all available alternatives and selecting the best option. The bounded rationality theory suggests that humans are cognitively-limited agents, irrespective of their intelligence level (Simon, 1972). This concept disputes the notion of *homo economicus* (or “economic man”) which portrays humans as perfectly rational individuals who meticulously seek utility-maximizing outcomes and act on complete knowledge (Mill, 1848). Many customers are “cognitive misers” and are restricted in their capacity to process information (Fiske & Taylor, 1991). One notable experiment that supports the “cognitive miser” idea involved participants being presented with the following problem: “A bat and a ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost?” (Frederick, 2005). Many people behaved like “cognitive misers” and responded with the answer that first came to mind: 10 cents. The correct answer is 5 cents as the bat would cost \$1.10 if the ball were to cost 10 cents (\$1.00 more), which would produce a total cost of \$1.20 instead of \$1.10. This study demonstrates that humans have a tendency to simplify decisions and avoid critical thinking when solving problems.

Consumers frequently try to save time and effort in their decision-making actions by settling for satisfactory rather than optimal choices. Consequently, there is an effort-accuracy tradeoff as less effort-demanding search strategies lead to less accurate results (Kuo, Chu, Hsu, & Hsieh, 2004). Customers regularly simplify their purchase behavior through heuristics as opposed to calculating ideal solutions. Heuristics are simple rules of thumb that are used to help individuals form judgements and make decisions quickly (Zaichkowsky, 1991). Examples of common heuristics include consumers only buying the cheapest, newest, or most highly-rated product, as these mental shortcuts facilitate timely decisions.

In the hospitality and tourism industry, expert reviews can serve as a heuristic. Consumers assume that better products earn better expert reviews, and, thus, they can simply rely on expert reviews instead of spending time investigating alternative products. Experts with authoritative knowledge can transmit valuable information about products of uncertain quality to customers, and, therefore, they can influence demand for experience goods (Reinstein & Snyder, 2005). With technological innovations and the ease of the Internet, expert reviews have become prevalent in the marketplace, and, hence, it is not surprising that consumers now read expert reviews before reaching a purchase decision (Cheng, Brisson, & Hay, 2014). Expert reviews are growing in importance as customers are overloaded with product choices and need guidance when shopping, and businesses must adapt to this new normal to profit.

This paper focuses on expert reviews for the cruise sector of the hospitality and tourism industry. The Cruise Lines International Association (CLIA) found that only around 24% of the United States' population has ever taken a cruise, thus leaving this vacation type with opportunities to expand its customer base (2016). Pew Research Center concluded that first-time consumers are the individuals who most often check reviews prior to buying an item (Smith &

Anderson, 2016). As a result, it can be inferred that expert reviews are frequently used in the cruise sector because new cruisers make up the majority of its passenger mix (Rodrigue & Notteboom, 2013). Once people cruise, they tend to enjoy the experience, so the real challenge for cruise lines rests in attracting guests aboard for the first time (Sun, Feng, & Gauri, 2014). Positive expert reviews can help cruise lines overcome this obstacle by simplifying the complex cruise selection process, which creates a large barrier to entry among cruise potentials.

This report looks at expert reviews from Douglas Ward, the author of the annual *Berlitz Complete Guide to Cruising & Cruise Ships* for 34 years. Ward considers himself the “world’s foremost authority on cruising” since he has spent over 6,300 days at sea and traveled on more than 1,100 cruises. Consumer reviews from cruise-oriented review websites such as Cruise Critic can be unreliable and biased as they tend to overrepresent the most extreme viewpoints (Klein, Marinescu, Chamberlain, & Smart, 2018). Customers usually only take the time and effort to provide reviews for products that they either absolutely love or hate (Aral, 2014). For instance, an individual is more likely to write a review about a ship on which he or she has a wonderful or awful experience as opposed to a mediocre one. On the other hand, according to Ward’s own explanation, his reviews are more reliable because he applies standardized evaluation criteria. In addition, Ward is independent and not supported by sponsorship or advertising. Furthermore, Ward provides reviews for nearly 300 cruise ships rather than for only the ones on which he has a strong opinion. Consequently, consumers can utilize Ward’s reviews in their cruise decision-making process when comparing ships, accommodations, food, service, and entertainment. It is important to note that this paper assumes that better reviews correspond with higher ratings and that Ward and other cruise experts have similar ship assessments.

The objective of this thesis is to discover which, if any, elements of ship “hardware” and “software” have consistently influenced expert ratings of the overall cruise experience over time. Specifically, this paper analyzes the relationships between Ward’s reviews and a cruise ship’s size, age, spatial density, and service level across 20 years. As Ward explained, “The evaluation of cruise ships is about as contrary to soccer as you can get. In soccer, the goalposts are always in the same place. But with cruise ships, they keep changing as the industry evolves” (2018). The cruise business becomes more complex every day, so it is important to consider evaluations over time. This report inspects Ward’s reviews in 10-year increments (1999, 2009, and 2019). The findings will allow cruise operators to concentrate their efforts on the ship attributes that experts deem most important for success and help cruisers better identify the ship that is right for them.

This thesis is divided into five main sections. After this introduction, a literature review details the effects of select ship characteristics on the overall cruise experience. The next section describes the data sample and collection and analysis processes in terms of Ward’s reviews relative to the four aforementioned ship features. The following section explains the statistical results of the study through interpretations of regression outputs, residual histograms, and scatterplots. The final section presents a discussion on derived insights, practical implications for cruise operators and consumers, and limitations and directions for future research.

SECTION II: LITERATURE REVIEW

Based on a review of the relevant literature, the next four subsections examine common characteristics of cruise ships (size, age, spatial density, and service level) and how they impact experts' overall cruise experiences. Each subsection ends with two appropriate hypotheses, one revolving around the expected relationship between a particular ship attribute and expert ratings of the overall cruise experience, and the other revolving around that relationship over time.

An analogous academic work to this paper is Conlon et al.'s 2004 study titled, "The Effects of Physical and Social Context on Evaluations of Captive, Intensive Service Relationships." One of the main objectives of Conlon et al.'s report was to "assess whether physical and social aspects of a service context differentially affect evaluators with different perspectives" (2004). The researchers used cruise ships as an example of a service context with high captivity and intensity, meaning that guests cannot easily leave and receive a wide range of services while at sea. Conlon et al. analyzed evaluations made by passengers, government regulators, and industry experts to obtain different perspectives on cruises. The authors utilized Ward's 1999 reviews as a source of industry expert evaluations. Conlon et al. looked at ship size, age, spatial density, and staffing as the physical and social aspects that most affect cruise evaluations. The results of their investigation showed that ship size was positively related to overall expert evaluations, ship age and spatial density were negatively related to overall expert evaluations, and ship staffing was not related to overall expert evaluations. These findings suggested that there are factors that cruise operators can control to affect the cruise experience.

Although Conlon et al. built a strong foundation, their work was limited in that it only inspected cruise evaluations from one year. Thus, instead of analyzing evaluations from passengers, government regulators, and industry experts, this paper focuses solely on Ward's

expert evaluations at 10-year increments (1999, 2009, and 2019) because his are the only ones from the exact same reviewer at different points in time. The cruise industry has rapidly evolved within the past quarter of a century. As Ward summed up, “The cruise concept has been improved, refined, expanded, and packaged for ease of consumption. Cruising today attracts people of all ages, socioeconomic backgrounds, and tastes. It is no longer the shipping business, but the hospitality industry” (2018). Hence, a unique contribution of this thesis is its time dimension, and its ability to capture insights regarding how the cruise industry has changed.

Ship Size

Cruises are a unique vacation type since travelers are restricted to a limited amount of space for a long period of time. The concern about a confining ship environment is one of the most common objections to cruising (Mancini, 2010). Larger ships provide guests with more opportunities to explore and discover new areas which can reduce monotony while sailing at sea (Conlon, Van Dyne, Milner, & Yee Ng, 2004). For instance, on the 167,725-gross-ton *Norwegian Joy*, passengers can ride hovercraft bumper cars one day and play virtual reality arcade games the next. Therefore, as cruise ships are being built larger, they are beginning to be viewed as vacationers’ final destinations rather than actual ports of call due to their plethora of onboard dining, shopping, gaming, and entertainment options.

A ship’s gross tonnage is one measure of its size. The International Maritime Organization specified gross tonnage as the molded volume of all enclosed spaces of a ship (1969). Larger ships are able to offer passengers more options in terms of activities, shows, stores, restaurants, bars, and lounges. For example, Royal Caribbean’s 228,081-gross-ton *Symphony of the Seas* (which is currently the world’s largest cruise ship) has 23 dining venues,

42 bars and lounges, and 19 swimming pools. Thus, guests can enjoy a medley of onboard experiences to create memorable getaways.

Gross tonnage is also a reflection of stature as the size of a physical setting conveys status (Pfeffer, 1998). Consequently, people may perceive larger ships as having higher levels of prestige. The size of an asset can oftentimes be viewed as a symbol of either personal success or failure (Bitner, 1992). This concept is best evidenced by the *Titanic* and how prominent members of the upper class traveled to Southampton, England in 1912 to sail on the world's largest cruise ship to signify their high statuses in society. The sheer size of larger ships inherently fosters a greater degree of excitement and heightens passengers' anticipated and real pleasure.

In recent years, there has been a trend in the cruising industry for supersized ships. Thomas Faddegon, the Web Content Manager at Cruiseline.com, considered this time period to be “an escalating ‘arms race’ to crank out the largest ships possible” (Jordan, 2018). This is best exhibited by Carnival, Royal Caribbean, and Norwegian all introducing their largest ships to date in 2018 with the debuts of the *Carnival Horizon*, *Symphony of the Seas*, and *Norwegian Bliss*. This echoes a key selling point for cruise lines: “bigger is better.” Colleen McDaniel, the Senior Executive Editor of Cruise Critic, commented that “megaships can be great for families and multi-generational groups looking for something for each member to enjoy—a bustling waterpark, relaxing spa, or Broadway-style shows... those ‘biggest ships at sea’ deliver what a lot of first-time cruisers are looking for: plenty to do and fun features for them to try once aboard” (Jordan, 2018). Larger ships with more amusement aspects and state-of-the-art technologies help cruise lines compete with land-based resorts (i.e. Las Vegas' Caesars Palace) and theme parks (i.e. Orlando's Walt Disney World). This size boom is set to continue with

many new ships on order in the 200,000-plus-gross-ton range such as Royal Caribbean's fifth *Oasis*-class ship which is scheduled to enter service in spring 2021.

Although some passengers may find large ships to be overwhelming, confusing, and hard to navigate, there is no research to support the idea that larger ship size negatively affects the overall cruise experience. In addition, industry practice suggests that larger ships offer better experiences because cruise lines would be unlikely to build larger ships, a trend that started in the early 2000s and has continued ever since, if the passenger experience suffers as a result.

H1a. The greater a cruise ship's size, the greater the expert ratings of the overall cruise experience.

H1b. The positive relationship between ship size and expert ratings has remained constant over time.

Ship Age

New ships have great "marketing muscle" because they attract positive publicity for their unique innovations (Dawar, 2013). Positive information is capable of significantly affecting individuals' beliefs, attitudes, and purchase intentions (Griffin, Babin, & Attaway, 1991). By differentiating the activities that are available onboard ships, cruise lines can increase their revenues and profits by generating enthusiasm for their products. For instance, the *Carnival Mardi Gras* will feature the first-ever roller coaster at sea when the vessel launches in 2020. Studies have shown that cruisers' top reason to take a vacation is to see and do new things, and onboard innovations can satisfy that desire (CLIA, 2018). With the advent of cutting-edge technologies, future first-at-sea innovations may even include indoor ski slopes, Ferris wheels, paintball fields, flight simulators, and wave pools.

The main measure of a ship's age is the time since its maiden voyage date. The United Nations Conference on Trade and Development described a maiden voyage as the first sailing of a vessel (Hoffmann & Sirimanne, 2017). It can be theorized that ships which have made their maiden voyages more recently contain newer innovations because they were constructed later. For example, Royal Caribbean is renowned for installing first-at-sea innovations onboard its new ships such as ziplines, 10-story waterslides, skydiving machines, surf simulators, carousels, ice-skating rinks, robotic bartenders, and observation capsules that ascend over 300 feet above sea level. As technology progresses, newer ships will include more savvy facilities and amenities that ultimately contribute to unforgettable vacation experiences.

Cruise lines spur demand through onboard innovations. The cruise sector has been the fastest-growing segment of the leisure travel industry for many years and has achieved more than 5,300% growth since 1970 when only approximately 500,000 people took a cruise (Brida & Zapata-Aguirre, 2009). Kwortnik argued that “the popularity of cruises on ever busier ships suggests not only that many cruisers find pleasure in these experiences, but also that a new definition of what a cruise really is may be emerging” (2008). Cruises used to be viewed as just a mode of transportation, but they are now seen as a vacation in themselves. New bells and whistles permit cruise lines to charge price premiums, so vessels will continue to push the limit of what is possible at sea for years to come. However, critics of today's “floating cities” believe that ships are trending in the wrong direction as cruise lines focus on adding more innovations. Ward epitomized this perspective by stating that the cruise industry increasingly “provides little connection to nature and the sea... almost everything is designed to keep [guests] inside of a ship—to spend money, therefore increasing onboard revenue and shareholder dividends” (2004). Innovations make ships more appealing, wooing solo travelers to families with children.

Although some passengers may find new ships to be less nostalgic and too advanced for comfort, there is no research to support the idea that ship newness negatively affects experts' overall cruise experiences. Besides newer ships containing innovations, they also have less wear and tear. As ships get older, they inevitably suffer damage as a result of use and the effects of salt water. Consumers tend to be happier with newer, attractive products (Bellezza, Ackerman, & Gino, 2017). Hence, newer and improved ships with more aesthetically-pleasing designs likely maximize passengers' satisfaction while cruising.

H2a. The lesser a cruise ship's age, the greater the expert ratings of the overall cruise experience.

H2b. The negative relationship between ship age and expert ratings has remained constant over time.

Ship Spatial Density

Cruise ships are enclosed environments, and a vessel's passenger space ratio is a measure of its spatial density. *Condé Nast Traveler* defined the passenger space ratio as the amount of gross tonnage per guest on a cruise ship (Stoddart, 2017). The higher a ship's passenger space ratio, the lower a ship's spatial density, since guests have more space per person. It is important to point out that larger ships do not necessarily have higher passenger space ratios, as a large ship with 1,000 passengers onboard may feel just as spacious to a guest as a small ship with only 100 passengers onboard. When a ship's passenger space ratio is low and more passengers are held in smaller spaces, "social aspects of the setting such as crowding, noise, privacy, and the quality of personal interactions are [negatively] affected" (Conlon et al., 2004). For instance, a ship with a low passenger space ratio may result in passengers having a more difficult time finding a seat at

the poker table, locating a chair at the pool, and obtaining a stool at the bar. These interactions can hinder passengers' fun, relaxation, comfort, and overall experience.

Baum and Koman found that crowding in service environments can lead to considerable displeasure, psychological distress, and increased aggression (1976). Furthermore, crowding can cause unwanted or unexpected social interactions which can prompt frustration (Oldham, Cummings, & Zhou, 1995). Cruise ships may amplify the negative effects of a low passenger space ratio by creating crowded situations that passengers cannot prevent like embarkation and debarkation, both of which produce extended durations of insufficient privacy. Thus, it can be supposed that a low passenger space ratio negatively influences overall trip satisfaction.

Low passenger space ratios can hurt travelers' emotional and behavioral responses to the servicescape. Guests may be physically and psychologically uncomfortable when they are forced to sit or stand too close to others around them (Wakefield & Blodgett, 1994). Moreover, cramped quarters likely restrict and interfere with passengers' abilities to attain their goals (Machleit, Eroglu, & Mantel, 2000). For example, a family onboard the *Disney Fantasy* may be unable to ride the AquaDuck waterslide due to consistently long lines, potentially giving rise to unmet expectations and a misaligned service promise and system. Hui and Bateson suggested that crowding can change consumers' perceptions of control, a critical component to satisfaction (1991). Passengers in crowded ship environments are faced with decreased levels of positive emotion and increased levels of negative emotion, a poor combination for the success of cruises.

Although some passengers may find that a high passenger space ratio creates a less intimate atmosphere, there is no research to support the idea that a high passenger space ratio negatively affects experts' overall cruise experiences. In addition, there is no research to support the idea that the relationship between spatial density and expert reviews has changed over time.

H3a. The lesser a cruise ship's spatial density, the greater the expert ratings of the overall cruise experience.

H3b. The negative relationship between ship spatial density and expert ratings has remained constant over time.

Ship Service Level

Service can be measured by a variety of customer-defined dimensions; however, an objective measure is the staffing level, in particular a ship's passenger-to-crew ratio. The Florida-Caribbean Cruise Association labeled the passenger-to-crew ratio as the number of passengers per crew member on a cruise ship (2018). It can be surmised that ships with lower passenger-to-crew ratios allow for more prompt, attentive, and personalized service as less passengers are served by a single crew member. Theoretically, requests regarding such matters as shore excursions, dining arrangements, and show reservations should be resolved more effectively and efficiently on a ship with a lower passenger-to-crew ratio, pleasing guests and employees alike. Luxury ships tend to have the lowest passenger-to-crew ratios, followed by premium and then contemporary ships (Kamery, 2004). For instance, the luxury *Crystal Esprit* has a passenger-to-crew ratio of 0.6 while the premium *Celebrity Edge* and contemporary *Carnival Vista* have passenger-to-crew ratios of 2.2 and 2.7. This is understandable since luxury cruise lines charge consumers higher prices for many attributes including better and more personalized service.

The relationships between passengers and crew members are fundamental to travelers' vacation satisfaction. The interactions between guests and employees play a significant role in how a cruise is perceived (Testa & Sullivan, 2002). Parasuraman, Zeithaml, and Berry deduced that consumers primarily use five dimensions when assessing service quality: reliability, responsiveness, empathy, assurance, and tangibility (1985). A ship's passenger-to-crew ratio

innately affects service encounters in terms of these criteria because staff on vessels with lower passenger-to-crew ratios can more adequately fulfill guests' needs, wants, and desires.

Nonetheless, cruise personnel must still be carefully hired and trained for them to most positively impact passengers' experiences. By establishing exceptional trips for guests through high service quality, cruise lines can build trust and confidence in their vacations, which can promote consumer loyalty and referrals and ultimately generate a growing customer base.

Guests and employees typically form close bonds with one another during cruises since they are in a contained environment together for an extended period of time. Passengers and crew members engage in "commercial friendships" as cruise ships provide structural opportunities for sociability (Price & Arnould, 1999). For example, cabin stewards, waiters, and bartenders commonly bond with guests by taking such actions as folding towel animals, remembering special preferences, and using first names. User cjm61 of New York posted a review to Cruise Critic about the *Carnival Magic* which read, "The crew throughout the ship was warm, friendly, polite, courteous, and professional... in each area of the ship that I spent time, I was always treated like a welcomed returning family member" (2018a). More specifically, user 1crafter of New Jersey expressed, "We loved the staff in the dining room immensely... our main waiters went above and beyond to make our cruise so very enjoyable" (2018b). Hence, it is evident that superb service encounters improve cruising experiences.

Although some passengers may find that a low passenger-to-crew ratio creates a more intrusive atmosphere, there is no research to support the idea that more staff negatively affects experts' overall cruise experiences. In addition, as ships get larger and carry more passengers, it is logical that service levels will be better when each crew member can attend to fewer guests.

H4a. The lesser a cruise ship's passenger-to-crew ratio, the greater the expert ratings of the overall cruise experience.

H4b. The negative relationship between passenger-to-crew ratio and expert ratings has remained constant over time.

SECTION III: METHOD

This paper uses secondary data to determine which, if any, elements of ship “hardware” and “software” have consistently influenced expert ratings of the overall cruise experience over time. The next three subsections describe the data sample and collection and analysis processes.

Data Sample

There are three data sources for this thesis: Douglas Ward’s 1999, 2009, and 2019 *Berlitz Complete Guide to Cruising & Cruise Ships*. In each publication, Ward evaluated over 400 separate ship factors, all of which were departmentalized into 20 major areas, each worth a possible 100 points. As a result, the maximum score for any ship could have been 2,000 points. Scores were further divided into six main categories: ship, accommodation, food, service, entertainment, and cruise experience. **Table 1** shows the major areas classified under each main category (see **Appendix A**).

Table 1: Berlitz Scoring Criteria*	
Main Category	Major Area
Ship	Hardware/Maintenance/Safety
	Outdoor Facilities/Space
	Interior Facilities/Space/Flow
	Décor/Furnishings/Artwork
	Spa/Fitness Facilities
Accommodation	Suites
	Cabins
Food	Dining Venues/Cuisine
	Casual Eateries/Buffets
	Quality of Ingredients
	Tea/Coffee/Bar Snacks
Service	Dining Rooms
	Bars
	Cabins
	Open Decks
Entertainment	Entertainment Program
Cruise Experience	Activities Program
	Movies/Television Program
	Hospitality Factor
	Product Delivery

*Adapted from Ward’s *Berlitz Cruising & Cruise Ships 2019*

Based on the above groupings and the fact that each major area was worth a possible 100 points, the following weights were placed on each main category: 25% for ship, 10% for accommodation, 20% for food, 20% for service, 5% for entertainment, and 20% for cruise experience. **Table 2** displays the complete *Berlitz* scoring guide with the aforementioned items.

Table 2: <i>Berlitz</i> Scoring Guide*				
Main Category	Major Area	Possible Points	Total Points Available	Category Weight
Ship	Hardware/Maintenance/Safety	100	500	25%
	Outdoor Facilities/Space	100		
	Interior Facilities/Space/Flow	100		
	Décor/Furnishings/Artwork	100		
	Spa/Fitness Facilities	100		
Accommodation	Suites	100	200	10%
	Cabins	100		
Food	Dining Venues/Cuisine	100	400	20%
	Casual Eateries/Buffets	100		
	Quality of Ingredients	100		
	Tea/Coffee/Bar Snacks	100		
Service	Dining Rooms	100	400	20%
	Bars	100		
	Cabins	100		
	Open Decks	100		
Entertainment	Entertainment Program	100	100	5%
Cruise Experience	Activities Program	100	400	20%
	Movies/Television Program	100		
	Hospitality Factor	100		
	Product Delivery	100		
TOTAL			2,000	100%

*Adapted from Ward's *Berlitz Cruising & Cruise Ships 2019*

Once a ship was assigned a certain score, an appropriate star rating and cruise experience expectation were applied. **Table 3** exhibits the *Berlitz* score meanings.

Table 3: <i>Berlitz</i> Score Meanings*		
Achieved Points	Star Rating	Cruise Experience Expectation
1,851-2,000	★★★★★+	“Outstanding, Top-Class Cruise Experience”
1,701-1,850	★★★★★	“Excellent, Memorable Cruise Experience”
1,551-1,700	★★★★+	“High-Quality Cruise Experience”
1,401-1,550	★★★★	“Very Good-Quality Cruise Experience”
1,251-1,400	★★★+	“Decent-Quality Cruise Experience”
1,101-1,250	★★★	“Reasonably Decent, Middle-of-the-Road Cruise Experience”
951-1,100	★★+	“Average Cruise Experience”
801-950	★★	“Modest-Quality Cruise Experience”
651-800	★+	“Most Basic Cruise Experience”
501-650	★	“Bottom-of-the-Barrel Cruise Experience”

*Adapted from Ward's *Berlitz Cruising & Cruise Ships 2019*

A plus sign (“+”) indicates that a ship earned a little more than the number of stars attained.

Data Collection

Ward evaluated 223 ships for the 1999 book, 272 ships for the 2009 book, and 296 ships for the 2019 book. **Table 4** conveys the information that was gathered from *Berlitz* for each vessel besides its ship, accommodation, food, service, entertainment, cruise experience, and overall scores.

Ship Name	Number of Crew Members
Cruise Line	Passenger-to-Crew Ratio (Basis 2)*
Lifestyle	Total Number of Cabins
Gross Tonnage	Number of Cabins for One Person
Builder (Shipyards)	Number of Cabins with Balcony
Maiden Voyage Date	Number of Wheelchair Accessible Cabins
Number of Passengers (Basis 2)*	Number of Swimming Pools
Number of Passenger Decks	Casino Gaming Tables (Yes/No)
Number of Passenger Elevators	Self-Service Launderette (Yes/No)
Passenger Space Ratio (Basis 2)*	Library (Yes/No)
*Basis 2 = 2 lower beds/berths per cabin, plus all cabins for solo occupancy	

Although all of these points of information were accumulated for every ship assessed in each of the 3 years to establish a 21,411-piece dataset, this paper examines only gross tonnage, maiden voyage date, passenger space ratio, and passenger-to-crew ratio due to their predicted critical importance on experts' overall cruise experiences. As Conlon et al. explained, "The proponents of recent typologies have argued for the importance of physical and social elements in service behavior settings. Physical aspects reflect the tangible, immutable aspects of contexts, while social aspects incorporate characteristics of individuals in the context of a specific setting" (2004). In keeping with this logic, this thesis employs size (as represented by gross tonnage) and age (as represented by maiden voyage date) as important physical aspects of the cruise ship context for evaluator perspectives, in addition to spatial density (as represented by passenger space ratio) and service level (as represented by passenger-to-crew ratio) as important social aspects of the cruise ship context for evaluator perspectives.

To statistically measure the effect of size on expert reviews, the gross tonnage for each ship was observed. To statistically measure the effect of age on expert reviews, the months in service for each ship was calculated by subtracting the maiden voyage date from the book publication date for that respective dataset, and then dividing that number by 30. The publication dates for Ward's 1999, 2009, and 2019 *Berlitz Complete Guide to Cruising & Cruise Ships* are November 1998, October 2008, and November 2018. To statistically measure the effect of spatial density on expert reviews, the passenger space ratio for each ship was calculated by dividing the gross tonnage by the number of passengers. To statistically measure the effect of service level on expert reviews, the passenger-to-crew ratio for each ship was calculated by dividing the number of passengers by the number of crew members.

Lifestyle served as the control variable in each regression as a proxy for price and the expectation that experts rate the overall experience better on luxury versus premium versus standard cruises. Similarly, Conlon et al. utilized the average cost per day for cruising on each ship as the control variable in their 2004 study. Ward designated a lifestyle ranging from standard to luxury for each ship depending on its price point (see **Appendix B**). Lifestyles for the 2019 data were gathered from Ward's *Berlitz Cruising & Cruise Ships 2016* as that edition is the last to feature lifestyle assignments. For the purposes of this research, combined lifestyles (i.e. "premium/standard," "luxury/premium," etc.) were modified to one of the three main lifestyles (standard, premium, or luxury) based on brand association (see **Appendix C**). Furthermore, the 50 ships that appear in Ward's *Berlitz Cruising & Cruise Ships 2019* but not in Ward's *Berlitz Cruising & Cruise Ships 2016* were assigned a lifestyle based on brand association (see **Appendix D**). However, the lifestyles for eight of these ships were unclear, and, as a result, they were left blank, and these vessels were omitted from the 2019 regression analysis.

Data Analysis

A linear regression model with overall score as the response variable and gross tonnage, months in service, passenger space ratio, passenger-to-crew ratio, and lifestyle as the predictor variables was run for each of the three years. The regression equation was as follows:

$$\text{Overall Score} = \beta_0 + \beta_1(\text{Gross Tonnage}) + \beta_2(\text{Months in Service}) + \beta_3(\text{Passenger Space Ratio}) + \beta_4(\text{Passenger-to-Crew Ratio}) + \beta_5(\text{Lifestyle [Luxury]}) + \beta_6(\text{Lifestyle [Premium]}) + \varepsilon$$

Overall score, gross tonnage, months in service, passenger space ratio, and passenger-to-crew ratio were continuous variables, while lifestyle was a categorical variable. The lifestyle reference category was standard, and, consequently, “Lifestyle [Luxury]” refers to the average number of overall score points a luxury ship earned more than a standard ship while “Lifestyle [Premium]” refers to the average number of overall score points a premium ship earned more than a standard ship.

Normality was assessed by visually interpreting the residual histogram for each of the three regression models (see “Section IV: Results”). Multicollinearity was assessed by computing the variance inflation factor (VIF) for each variable in each of the three regression models. **Table 5** illustrates a summarized comparison of the 1999, 2009, and 2019 VIFs, all of which were less than the 10.00 cutoff.

Table 5: Year-By-Year Variance Inflation Factors (VIFs) Comparison			
	1999 Data	2009 Data	2019 Data
Gross Tonnage	1.26	1.82	2.11
Months in Service	1.59	1.86	1.82
Passenger Space Ratio	1.31	1.61	1.60
Passenger-to-Crew Ratio	1.49	1.83	2.39
Lifestyle [Luxury]	2.66	2.80	3.22
Lifestyle [Premium]	2.44	2.44	2.49

SECTION IV: RESULTS

The following section examines the statistical analyses for Ward’s 1999, 2009, and 2019 datasets which were performed in the software program JMP.

1999 Data

The data from 201 ships were used for this analysis ($N = 201$). Although Ward evaluated 223 ships, he did not include an overall score for 19 ships and a maiden voyage date for 3 ships. Therefore, 22 ships were omitted from this analysis.

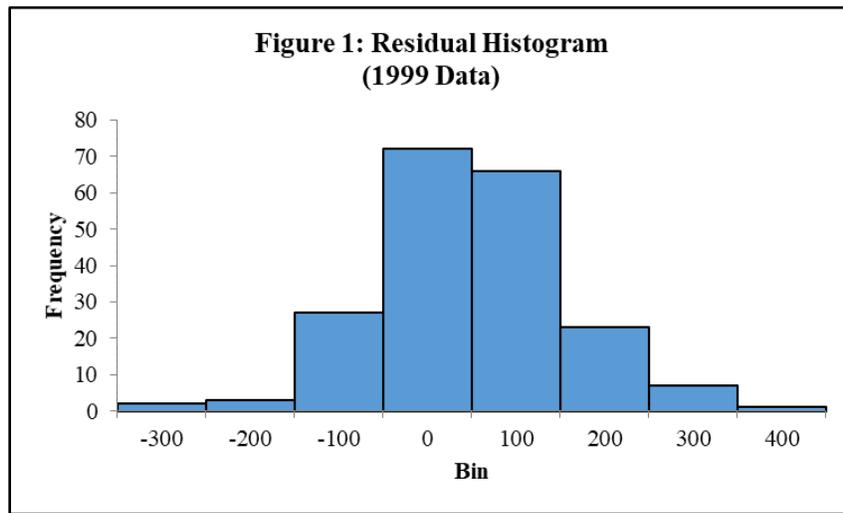
Descriptive statistics were calculated for each variable. **Table 6** shows the means and standard deviations that were reported for each continuous variable, in addition to the counts and percentages that were reported for each categorical variable.

Table 6: Year-By-Year Descriptive Statistics Comparison						
	1999 Data ($N = 201$)		2009 Data ($N = 261$)		2019 Data ($N = 277$)	
	\bar{x}	σ	\bar{x}	σ	\bar{x}	σ
Overall Score	1,377.61	221.01	1,361.98	235.92	1,356.91	160.49
Gross Tonnage	28,741.37	24,353.26	49,587.26	39,478.33	74,002.84	46,938.70
Months in Service	231.21	190.52	201.90	159.30	212.43	141.74
Passenger Space Ratio	35.26	22.09	37.81	18.24	41.84	13.47
Passenger-to-Crew Ratio	2.20	0.64	2.27	0.61	2.26	0.52
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Standard Ships	136	67.66%	197	75.48%	193	69.67%
Premium Ships	45	22.39%	42	16.09%	56	20.22%
Luxury Ships	20	9.95%	22	8.43%	28	10.11%

For overall score, the mean was 1,377.61 and the standard deviation was 221.01 ($\bar{x} = 1,377.61, \sigma = 221.01$). For gross tonnage, the mean was 28,741.37 and the standard deviation was 24,353.26 ($\bar{x} = 28,741.37, \sigma = 24,353.26$). For months in service, the mean was 231.21 and the standard deviation was 190.52 ($\bar{x} = 231.21, \sigma = 190.52$). For passenger space ratio, the mean was 35.26 and the standard deviation was 22.09 ($\bar{x} = 35.26, \sigma = 22.09$). For passenger-to-crew ratio, the mean was 2.20 and the standard deviation was 0.64 ($\bar{x} = 2.20, \sigma = 0.64$). For lifestyle,

there were 136 standard ships ($n = 136, 67.66\%$), 45 premium ships ($n = 45, 22.39\%$), and 20 luxury ships ($n = 20, 9.95\%$).

Residuals were extracted and assessed for normality from a linear regression with overall score as the response variable and gross tonnage, months in service, passenger space ratio, passenger-to-crew ratio, and lifestyle as the predictor variables. **Figure 1** exhibits the roughly symmetric bell-shaped curve of the residuals, indicating that the data were normally distributed.

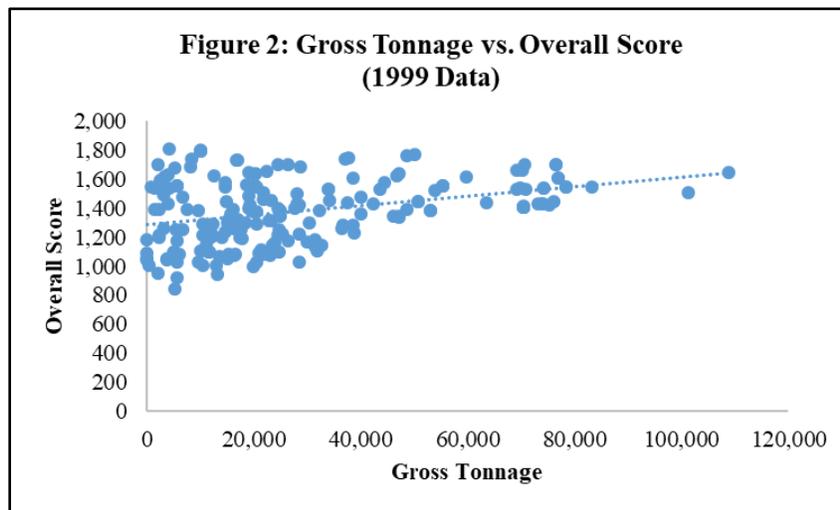


In this model, the R -squared was 0.7777, meaning that 77.77% of the variation of overall score was explained by all five predictors (gross tonnage, months in service, passenger space ratio, passenger-to-crew ratio, and lifestyle). On average, a luxury ship earned an overall score that was 373.11 points higher than a standard ship ($p < 0.01$) while a premium ship earned an overall score that was 177.34 points higher than a standard ship ($p < 0.01$), reinforcing the validity of the control variable. **Table 7** displays the regression outputs.

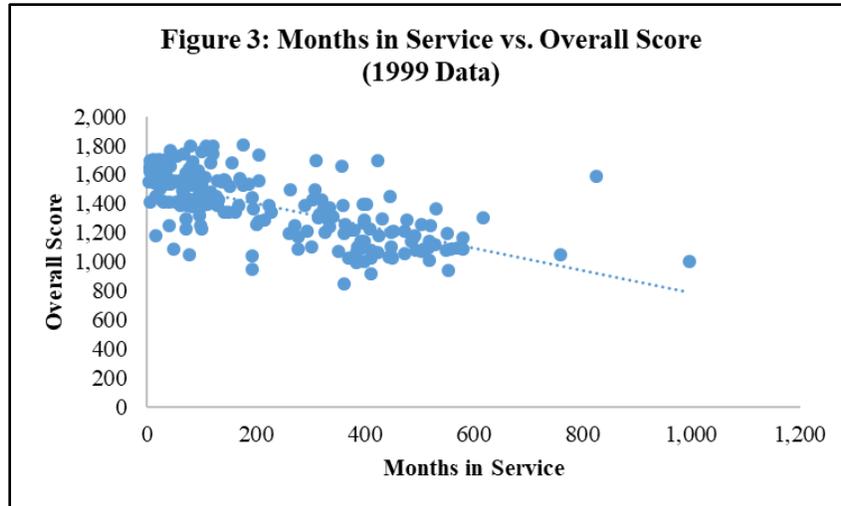
Table 7: Year-By-Year Regression Outputs Comparison			
	1999 Data (N = 201)	2009 Data (N = 261)	2019 Data (N = 277)
Intercept	1,472.45**	1,546.42**	1,480.55**
Gross Tonnage	0.00167**	0.00209**	0.00037
Months in Service	-0.50**	-0.49**	-0.47**
Passenger Space Ratio	-0.38	0.13	0.43
Passenger-to-Crew Ratio	-40.62**	-110.59**	-51.95**
Lifestyle [Luxury]	373.11**	377.90**	274.26**
Lifestyle [Premium]	177.34**	163.95**	96.78**
R-Squared	77.77%	74.99%	54.51%

Unstandardized beta coefficients are shown
Lifestyle reference category was standard
* $p < 0.05$
** $p < 0.01$

Hypothesis 1a predicted that ship size is positively related to expert ratings of the overall cruise experience. The significant positive beta coefficient for gross tonnage supports this hypothesis. For every additional 1,000 gross tons, experts' overall score increased by 1.67 points ($p < 0.01$). **Figure 2** visualizes this relationship.

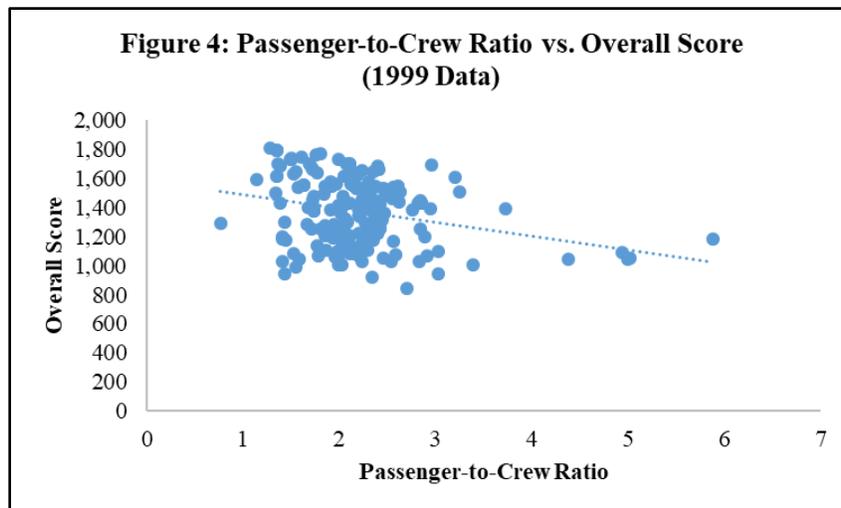


Hypothesis 2a predicted that ship age is negatively related to expert ratings of the overall cruise experience. The significant negative beta coefficient for months in service supports this hypothesis. For every additional month in service, experts' overall score decreased by 0.50 points ($p < 0.01$). **Figure 3** visualizes this relationship.



Hypothesis 3a predicted that ship spatial density is negatively related to expert ratings of the overall cruise experience. The insignificant beta coefficient for passenger space ratio does not support this hypothesis ($p = 0.32$).

Hypothesis 4a predicted that passenger-to-crew ratio is negatively related to expert ratings of the overall cruise experience. The significant negative beta coefficient for passenger-to-crew ratio supports this hypothesis. For every additional passenger-to-crew ratio unit, experts' overall score decreased by 40.62 points ($p < 0.01$). **Figure 4** visualizes this relationship.



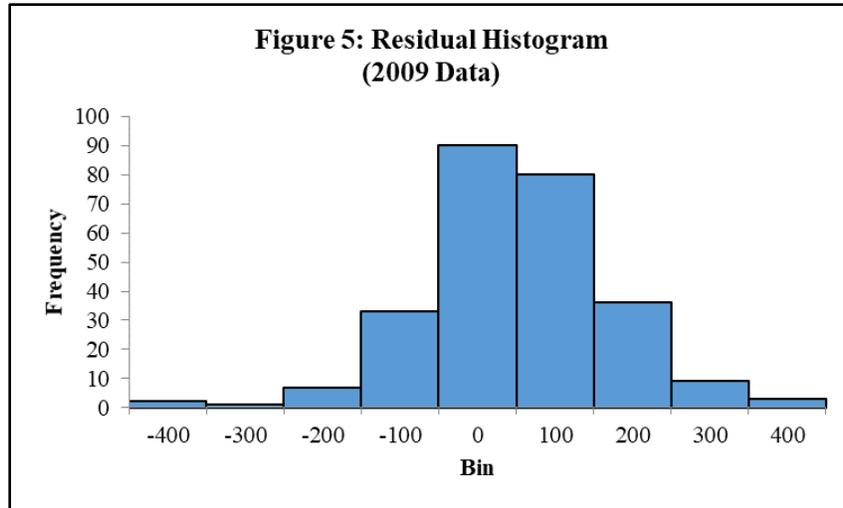
2009 Data

The data from 261 ships were used for this analysis ($N = 261$). Although Ward evaluated 272 ships, he did not include an overall score for 11 ships. Therefore, 11 ships were omitted from this analysis.

Descriptive statistics were calculated for each variable. **Table 6** shows the means and standard deviations that were reported for each continuous variable, in addition to the counts and percentages that were reported for each categorical variable.

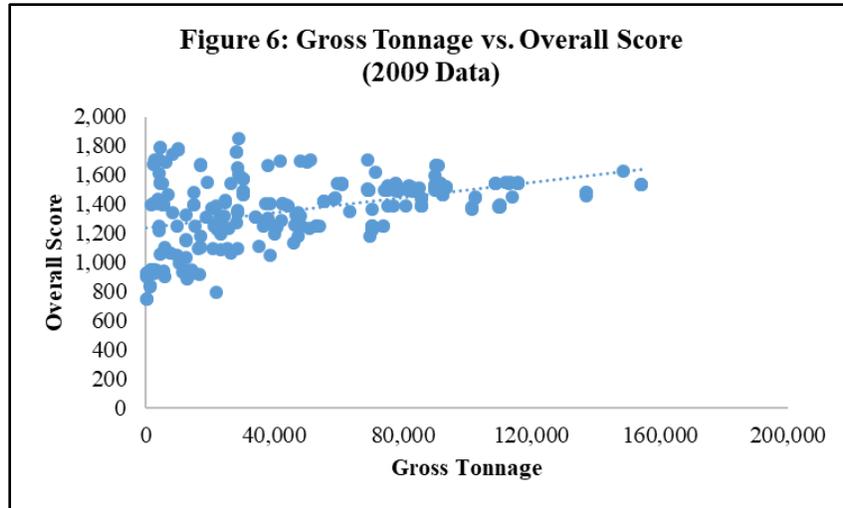
For overall score, the mean was 1,361.98 and the standard deviation was 235.92 ($\bar{x} = 1,361.98$, $\sigma = 235.92$). For gross tonnage, the mean was 49,587.26 and the standard deviation was 39,478.33 ($\bar{x} = 49,587.26$, $\sigma = 39,478.33$). For months in service, the mean was 201.90 and the standard deviation was 159.30 ($\bar{x} = 201.90$, $\sigma = 159.30$). For passenger space ratio, the mean was 37.81 and the standard deviation was 18.24 ($\bar{x} = 37.81$, $\sigma = 18.24$). For passenger-to-crew ratio, the mean was 2.27 and the standard deviation was 0.61 ($\bar{x} = 2.27$, $\sigma = 0.61$). For lifestyle, there were 197 standard ships ($n = 197$, 75.48%), 42 premium ships ($n = 42$, 16.09%), and 22 luxury ships ($n = 22$, 8.43%).

Residuals were extracted and assessed for normality from a linear regression with overall score as the response variable and gross tonnage, months in service, passenger space ratio, passenger-to-crew ratio, and lifestyle as the predictor variables. **Figure 5** exhibits the roughly symmetric bell-shaped curve of the residuals, indicating that the data were normally distributed.

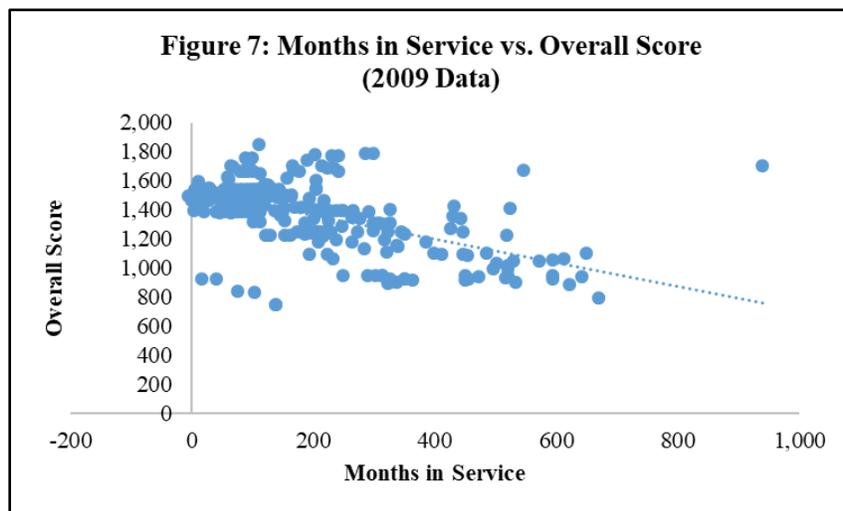


In this model, the *R*-squared was 0.7499, meaning that 74.99% of the variation of overall score was explained by all five predictors (gross tonnage, months in service, passenger space ratio, passenger-to-crew ratio, and lifestyle). On average, a luxury ship earned an overall score that was 377.90 points higher than a standard ship ($p < 0.01$) while a premium ship earned an overall score that was 163.95 points higher than a standard ship ($p < 0.01$), reinforcing the validity of the control variable. **Table 7** displays the regression outputs.

Hypothesis 1a predicted that ship size is positively related to expert ratings of the overall cruise experience. The significant positive beta coefficient for gross tonnage supports this hypothesis. For every additional 1,000 gross tons, experts' overall score increased by 2.09 points ($p < 0.01$). **Figure 6** visualizes this relationship.

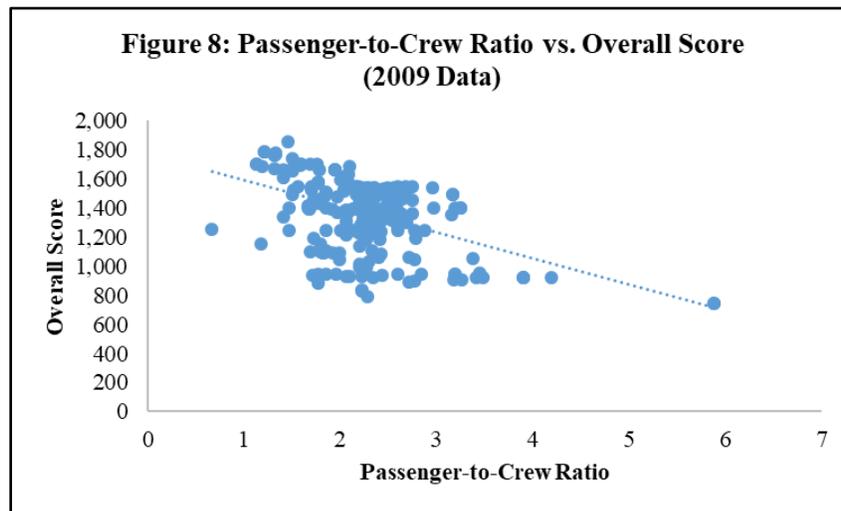


Hypothesis 2a predicted that ship age is negatively related to expert ratings of the overall cruise experience. The significant negative beta coefficient for months in service supports this hypothesis. For every additional month in service, experts' overall score decreased by 0.49 points ($p < 0.01$). **Figure 7** visualizes this relationship.



Hypothesis 3a predicted that ship spatial density is negatively related to expert ratings of the overall cruise experience. The insignificant beta coefficient for passenger space ratio does not support this hypothesis ($p = 0.80$).

Hypothesis 4a predicted that passenger-to-crew ratio is negatively related to expert ratings of the overall cruise experience. The significant negative beta coefficient for passenger-to-crew ratio supports this hypothesis. For every additional passenger-to-crew ratio unit, experts' overall score decreased by 110.59 points ($p < 0.01$). **Figure 8** visualizes this relationship.



2019 Data

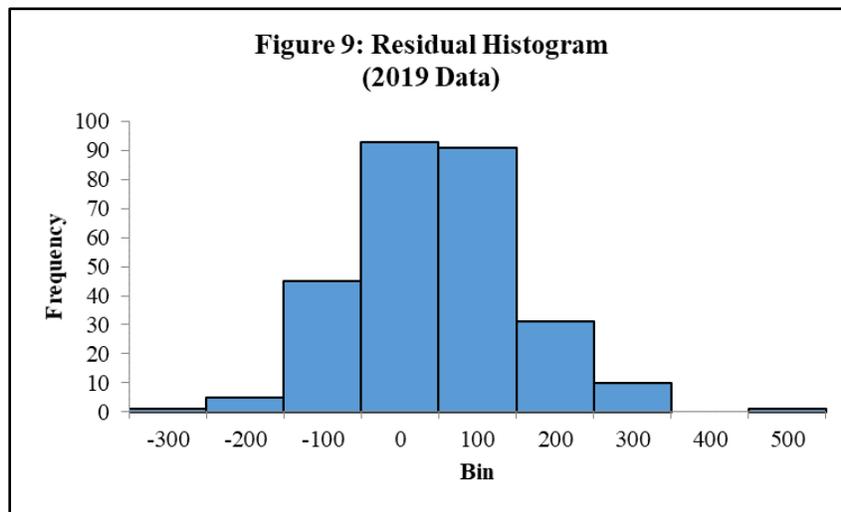
The data from 277 ships were used for this analysis ($N = 277$). Although Ward evaluated 296 ships, he did not include an overall score for 11 ships and a lifestyle for 8 ships. Therefore, 19 ships were omitted from this analysis.

Descriptive statistics were calculated for each variable. **Table 6** shows the means and standard deviations that were reported for each continuous variable, in addition to the counts and percentages that were reported for each categorical variable.

For overall score, the mean was 1,356.91 and the standard deviation was 160.49 ($\bar{x} = 1,356.91$, $\sigma = 160.49$). For gross tonnage, the mean was 74,002.84 and the standard deviation was 46,938.70 ($\bar{x} = 74,002.84$, $\sigma = 46,938.70$). For months in service, the mean was 212.43 and the standard deviation was 141.74 ($\bar{x} = 212.43$, $\sigma = 141.74$). For passenger space ratio, the mean was 41.84 and the standard deviation was 13.47 ($\bar{x} = 41.84$, $\sigma = 13.47$). For passenger-to-crew

ratio, the mean was 2.26 and the standard deviation was 0.52 ($\bar{x} = 2.26, \sigma = 0.52$). For lifestyle, there were 193 standard ships ($n = 193, 69.67\%$), 56 premium ships ($n = 56, 20.22\%$), and 28 luxury ships ($n = 28, 10.11\%$).

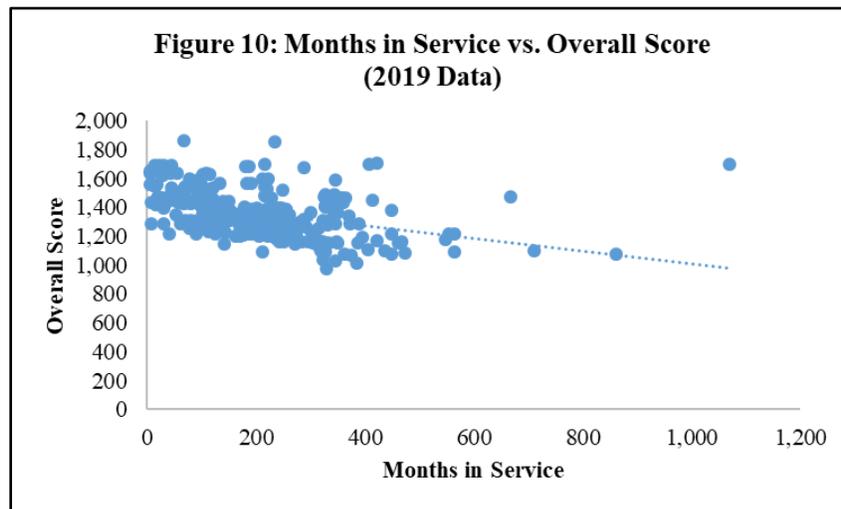
Residuals were extracted and assessed for normality from a linear regression with overall score as the response variable and gross tonnage, months in service, passenger space ratio, passenger-to-crew ratio, and lifestyle as the predictor variables. **Figure 9** exhibits the roughly symmetric bell-shaped curve of the residuals, indicating that the data were normally distributed.



In this model, the R -squared was 0.5451, meaning that 54.51% of the variation of overall score was explained by all five predictors (gross tonnage, months in service, passenger space ratio, passenger-to-crew ratio, and lifestyle). On average, a luxury ship earned an overall score that was 274.26 points higher than a standard ship ($p < 0.01$) while a premium ship earned an overall score that was 96.78 points higher than a standard ship ($p < 0.01$), reinforcing the validity of the control variable. **Table 7** displays the regression outputs.

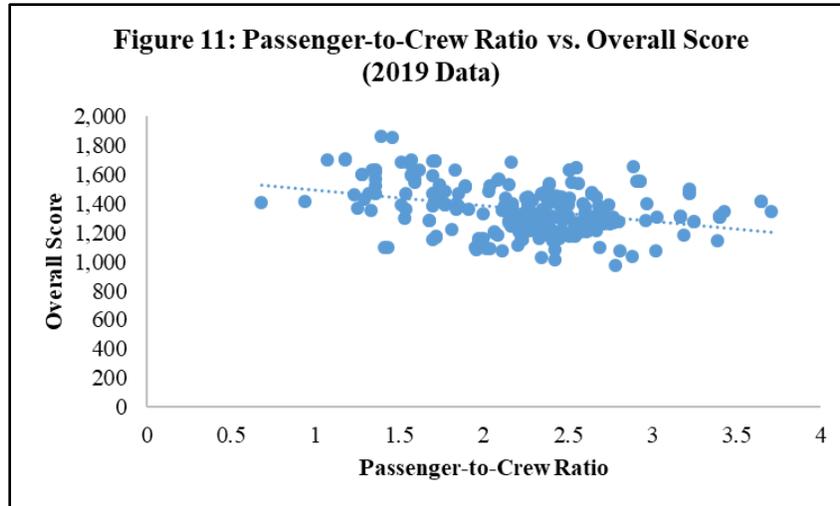
Hypothesis 1a predicted that ship size is positively related to expert ratings of the overall cruise experience. The insignificant beta coefficient for gross tonnage does not support this hypothesis ($p = 0.07$).

Hypothesis 2a predicted that ship age is negatively related to expert ratings of the overall cruise experience. The significant negative beta coefficient for months in service supports this hypothesis. For every additional month in service, experts' overall score decreased by 0.47 points ($p < 0.01$). **Figure 10** visualizes this relationship.



Hypothesis 3a predicted that ship spatial density is negatively related to expert ratings of the overall cruise experience. The insignificant beta coefficient for passenger space ratio does not support this hypothesis ($p = 0.49$).

Hypothesis 4a predicted that passenger-to-crew ratio is negatively related to expert ratings of the overall cruise experience. The significant negative beta coefficient for passenger-to-crew ratio supports this hypothesis. For every additional passenger-to-crew ratio unit, experts' overall score decreased by 51.95 points ($p < 0.01$). **Figure 11** visualizes this relationship.



Year-By-Year Comparisons

Hypothesis 1b predicted that the positive relationship between ship size and expert ratings has remained constant over time. The significant positive beta coefficients for gross tonnage in the 1999 and 2009 regression results support this hypothesis while the insignificant beta coefficient for gross tonnage in the 2019 regression results does not support this hypothesis.

Hypothesis 2b predicted that the negative relationship between ship age and expert ratings has remained constant over time. The significant negative beta coefficients for months in service in the 1999, 2009, and 2019 regression results support this hypothesis.

Hypothesis 3b predicted that the negative relationship between ship spatial density and expert ratings has remained constant over time. The insignificant beta coefficients for passenger space ratio in the 1999, 2009, and 2019 regression results do not support this hypothesis.

Hypothesis 4b predicted that the negative relationship between passenger-to-crew ratio and expert ratings has remained constant over time. The significant negative beta coefficients for passenger-to-crew ratio in the 1999, 2009, and 2019 regression results support this hypothesis.

The variation of overall score was less explained by all five predictors (size, age, spatial density, service level, and lifestyle) between 1999 and 2019, suggesting a weaker relationship between the independent and dependent variables over time.

SECTION V: DISCUSSION

The next three subsections present a discussion on derived insights, practical implications for cruise operators and consumers, and limitations and directions for future research.

Derived Insights

The objective of this thesis was to discover which, if any, elements of ship “hardware” and “software” have consistently influenced expert ratings of the overall cruise experience over time. Specifically, this paper analyzed the relationships between Ward’s reviews and a ship’s size, age, spatial density, and service level, and how these relationships have changed throughout the past 20 years.

The first hypothesis addressed the question of the effect of ship size on expert ratings of the overall cruise experience over time. The regression results showed that size was positively related to overall score in the 1999 and 2009 datasets, but size was not statistically significant in the 2019 dataset. The overall score increased by more points for every additional gross ton between 1999 and 2009. The regression outputs indicate that experts used to favor larger ships, but they tend to no longer do so.

The second hypothesis addressed the question of the effect of ship age on expert ratings of the overall cruise experience over time. The regression results showed that age was negatively related to overall score in the 1999, 2009, and 2019 datasets. The overall score decreased by less points for every additional month in service between 1999 and 2019. The regression outputs indicate that experts tend to favor newer ships.

The third hypothesis addressed the question of the effect of ship spatial density on expert ratings of the overall cruise experience over time. The regression results showed no statistically significant relationship between spatial density and overall score in the 1999, 2009, and 2019

datasets. The regression outputs indicate that experts tend not to favor ships based on spatial density.

The fourth hypothesis addressed the question of the effect of passenger-to-crew ratio on expert ratings of the overall cruise experience over time. The regression results showed that passenger-to-crew ratio was negatively related to overall score in the 1999, 2009, and 2019 datasets. Although the overall score decreased for every additional passenger-to-crew ratio unit between 1999 and 2009, the overall score decreased less for every additional passenger-to-crew ratio unit between 2009 and 2019. The regression outputs indicate that experts tend to favor ships with lesser passenger-to-crew ratios.

A comparison of these results with Conlon et al.'s results offers interesting insights as the cruise industry has rapidly evolved since the time of their 2004 study. The authors found that ship size was positively related to overall expert evaluations, ship age and spatial density were negatively related to overall expert evaluations, and ship staffing was not related to overall expert evaluations. The regression results of this thesis support Conlon et al.'s findings on size (for the 1999 and 2009 datasets) and age (for the 1999, 2009, and 2019 datasets), but the regression results do not support the researchers' findings on spatial density (for the 1999, 2009, and 2019 datasets) and staffing (for the 1999, 2009, and 2019 datasets). One possible explanation for the discrepancy in findings is that this thesis utilized lifestyle as the control variable while Conlon et al. utilized average cost per day for cruising as the control variable, causing the two papers to reduce the effect of confounding variables in different ways.

Practical Implications for Cruise Operators

The first inference that can be deduced from the regression outputs is that ship size may no longer be a source of competitive advantage. Many cruise lines sell that "bigger is better."

However, large ships have evidently lost some of their mystique as they have become more commonplace in the industry. To demonstrate the growth that cruise ships have undergone in just the last 50 years, two of the lifeboats onboard the *Symphony of the Seas*, Royal Caribbean's newest ship in 2018, can hold more passengers than the entire *Song of Norway*, Royal Caribbean's first ship in 1970 (Goldner, 2018). Cruise operators may want to rethink a pipeline of ships in the 200,000-plus-gross-ton range. Small ships can produce more operating income per capita than large ships. For example, for the Royal Caribbean Cruises Ltd. parent company, Celebrity's *Xpedition* class ships, which each have a capacity of less than 100 passengers, produce more operating income per capita than Royal Caribbean's *Oasis* class ships, which each have a capacity of more than 6,500 passengers (Abel, 2018). Moreover, *Xpedition* class ships' "per diem" rates generally average \$1,000 while *Oasis* class ships' "per diem" rates generally average \$150-200. Thus, it can be reasonably concluded that consumers are willing to pay higher rates for more intimate sailings that can induce more memorable experiences.

The second inference that can be deduced from the regression outputs is that cruise ships have a limited useful life. Since the average lifespan for a cruise ship is 25 years, cruise operators may want to encourage refurbishments before vessels reach that age and promote their efforts (Tamis, 2018). For instance, Royal Caribbean recently spent over \$90 million to upgrade the *Mariner of the Seas*. The vessel now contains countless new innovations including the "Sky Pad" virtual reality bungee trampoline and the "Battle for Planet Z" laser tag arena. It is rare for a cruise line to invest such a large amount of money into a 15-year-old ship that only operates 3- and 4-night Bahamas cruises (Weiss, 2018). Nevertheless, the *Mariner of the Seas* refurbishment has been a success for the firm. Royal Caribbean frequently promotes the modernization to differentiate the ship and appeal to passengers who seek newer vessels and shorter itineraries.

Consumers are willing to spend more money to sail on refurbished ships, and, consequently, cruise lines can charge price premiums for new hardware (Duffin & Tolkin, 2016). Hence, it is no surprise that Royal Caribbean will invest a total of \$900 million to “amplify” 10 ships between 2018 and 2021 (including the *Mariner of the Seas*). Cruise operators may want to instill a similar refurbishment model as Royal Caribbean to achieve maximum success.

The third inference that can be deduced from the regression outputs is that spatial density is unrelated to expert ratings. A ship’s passenger space ratio does not significantly impact experts’ overall cruise experiences. Although crowding is a common concern for cruisers, it appears that cruise lines have done a good job in relieving feelings of confinement on ships as crowding is not an important factor at the time of evaluation. Cruise lines have taken many actions to mitigate perceptions of crowding. For example, ships offer multiple spacious common areas such as atriums, dining rooms, and theaters to foster open atmospheres. In addition, ships offer more balcony cabins than ever before to avert staterooms from seeming claustrophobic. Balcony cabins are also the most profitable stateroom type for cruise lines when compared to interior and outside view cabins (Goldner, 2018). Furthermore, ships offer numerous showtimes, dining times, and activity times to reduce cramped quarters. Moreover, ships offer restaurant capacity boards (electronic seating guides that display real-time restaurant availability) to prevent passengers from forming long lines at busy eateries. As ships rarely sail with a less than 90% occupancy, cruise operators may want to continue placing similar crowding impediments on future vessels to bestow guests with more space per person (Whealy, 2018).

The fourth inference that can be deduced from the regression outputs is that staffing levels are critical to expert ratings. A ship’s passenger-to-crew ratio affects experts’ overall cruise experiences. As a result, cruise operators may want to strategically hire and retain as many

crew members as possible (within budgetary, logistical, and capacity constraints) to deliver personalized service to passengers. The recruitment and retention practices of Royal Caribbean epitomize this viewpoint. For instance, in 2017 alone, the cruise line hired over 10,000 new staff members and promoted more than 9,000 workers (Budden, 2018). Also, between 2010 and 2018, Royal Caribbean reduced its average tenure duration prior to a promotion from 2.8 years to less than just 0.6 years (Budden, 2018). In addition, more than 50% of the company's current onboard hotel directors began their careers with the organization as a busboy, server, housekeeper, or laundry attendant (Budden, 2018). These figures reveal Royal Caribbean's thorough understanding of the importance of hiring and retaining large numbers of personnel who provide better-than-average service and exceed guest expectations. By sufficiently staffing ships with crew members who genuinely care about making passengers happy, cruise lines can build trust and confidence in their vacations, which can promote repeat business and referrals.

Practical Implications for Cruise Consumers

Consumers can apply the findings from this thesis when they are feeling ambivalent about a cruise decision. Based on the regression results, there are shortcuts that individuals can use to simplify their cruise decision-making process and achieve the most satisfying overall cruise experience. Most importantly, consumers can focus on ship age and service level when comparing vessels. After potential cruisers establish a consideration set with respect to price and itinerary, they can utilize ships' maiden voyage dates and passenger-to-crew ratios as the two major predicting indicators of cruise contentment assuming all else equal (i.e. onboard dining, shopping, gaming, and entertainment). For example, the new cruiser mentioned at the start of this paper debating between a 7-night Western Caribbean sailing in mid-December aboard the *Carnival Breeze* or *Norwegian Gem* can center his or her decision around the *Carnival Breeze*

having entered service more recently or the *Norwegian Gem* having more personalized service. The size and spatial density differences between the *Carnival Breeze* and *Norwegian Gem* are less important as these ship characteristics are not diagnostic of the overall cruise experience. Consequently, if the new cruiser is concerned about the larger size and higher spatial density of the *Carnival Breeze* negatively affecting his or her vacation, he or she can feel reassured because the regression results suggest that neither size nor spatial density impacts cruise satisfaction nowadays. Although consumers face complicated decisions with complex products in terms of cruises, they can take comfort in knowing that they can make optimal choices and save time and effort in their cruise decision-making actions by merely prioritizing ship age and service level.

Today, there are aspects besides gross tonnage, maiden voyage date, passenger space ratio, and passenger-to-crew ratio that sway expert reviews. Based on the regression results, the effect of these four characteristics on experts' overall cruise experiences has diminished over time. Other possible influential factors on evaluations may include a ship's builder, sustainability practices, and presence of a casino. Regarding builders, there are four main shipyards that construct cruise ships: Meyer Werft, Meyer Turku, Fincantieri, and STX France. Does one of these builders manufacture superior vessels compared to the others, therefore influencing expert reviews? Regarding sustainability practices, cruise lines are determined to minimize their environmental impact on the water by undertaking endeavors such as installing wastewater treatment systems. Do the quality and quantity of a ship's sustainability practices influence expert reviews? Regarding the presence of casinos, gambling tends to create more lively, fun, and enjoyable atmospheres. Does the presence of slot machines and table games on a ship influence expert reviews? As the cruise industry evolves, it is evident that the ship factors that are most important to passengers evolve as well.

Limitations and Directions for Future Research

There are three data sources for this thesis: Ward's 1999, 2009, and 2019 *Berlitz Complete Guide to Cruising & Cruise Ships*. Thus, this paper analyzes quantitative reviews from only one expert over time. Future research could examine reviews from multiple experts over time to gain additional insights. Furthermore, future research could observe qualitative and quantitative expert reviews over time to conduct a more comprehensive study. Moreover, future research could probe whether there are differences between lifestyle tiers (standard, premium, and luxury) in terms of the effects of gross tonnage, maiden voyage date, passenger space ratio, and passenger-to-crew ratio on expert reviews over time to yield intriguing conclusions. Also, future research could look at consumer reviews over time to extract supplementary findings. Data could be obtained from cruise-oriented review websites such as Cruise Critic. The research could employ geographic, demographic, psychographic, and behavioral segmentation on the consumer reviews. For instance, is gross tonnage most influential to consumers of a certain state, country, or continent? Is maiden voyage date most influential to consumers of a certain age, gender, or income? Is passenger space ratio most influential to consumers who appreciate a certain activity, interest, or opinion? Is passenger-to-crew ratio most influential to consumers who travel on cruises for a certain occasion, benefit, or use? Finally, future research could inspect the importance of other factors besides gross tonnage, maiden voyage date, passenger space ratio, and passenger-to-crew ratio (i.e. a ship's builder, sustainably practices, and presence of a casino) on expert and/or consumer reviews over time to gather a richer understanding of the cruise industry.

REFERENCES

- Abel, B. (2018). "Cruise Product Development." Introduction to the Global Leisure Cruise Industry, 08 February 2018, Cornell University, Ithaca, NY. Lecture.
- Aral, S. (2014). "The Problem with Online Ratings." *MIT Sloan Management Review*, 55(2), 47.
- Baum, A., & Koman, S. (1976). "Differential Response to Anticipated Crowding: Psychological Effects of Social and Spatial Density." *Journal of Personality and Social Psychology*, 34(3), 526.
- Bellezza, S., Ackerman, J. M., & Gino, F. (2017). "'Be Careless with That!' Availability of Product Upgrades Increases Cavalier Behavior Toward Possessions." *Journal of Marketing Research*, 54(5), 768-784.
- Bitner, M. J. (1992). "Servicescapes: The Impact of Physical Surroundings on Customers and Employees." *The Journal of Marketing*, 57-71.
- Brida, J. G., & Zapata-Aguirre, S. (2009). "Cruise Tourism: Economic, Socio-Cultural, and Environmental Impacts." *International Journal of Leisure and Tourism Marketing*, 1(3), 205-226.
- Budden, D. (2018). "Cruise Human Resources." Introduction to the Global Leisure Cruise Industry, 01 March 2018, Cornell University, Ithaca, NY. Lecture.
- Cheng, T., Brisson, H., & Hay, M. (2014). "The Role of Content in the Consumer Decision Making Process." *The Nielsen Company*, New York.
- CLIA (2016). "State of the Cruise Industry Outlook 2016." Retrieved from <https://cruising.org/-/media/research-updates/research/featured/2016-clia-state-of-the-industry.pdf>.
- CLIA (2018). "Cruise Travel Report 2018." Retrieved from <https://cruising.org/docs/default-source/research/clia-2018-consumer-research.pdf>.

- Conlon, D. E., Van Dyne, L., Milner, M., & Yee Ng, K. (2004). "The Effects of Physical and Social Context on Evaluations of Captive, Intensive Service Relationships." *Academy of Management Journal*, 47(3), 433-445.
- Cruise Critic (2018a). "Carnival Magic Cruise Reviews." Retrieved from <https://www.cruisecritic.com/memberreviews/memberreview.cfm?EntryID=638853>.
- Cruise Critic (2018b). "Carnival Magic Cruise Reviews." Retrieved from <https://www.cruisecritic.com/memberreviews/memberreview.cfm?EntryID=640318>.
- Dawar, N. (2013). "When Marketing is Strategy." *Harvard Business Review*, 91(12), 100-108.
- Duffin, K., & Tolkin, A. (2016). "Cruise Corporate Strategy." Introduction to the Global Leisure Cruise Industry, 07 April 2016, Cornell University, Ithaca, NY. Lecture.
- Fiske, S. T., & Taylor, S. E. (1991). *Social Cognition*. McGraw-Hill.
- Florida-Caribbean Cruise Association (2018). "Economic Contribution of Cruise Tourism to the Destination Economies." *Business Research and Economic Advisors*.
- Frederick, S. (2005). "Cognitive Reflection and Decision Making." *Journal of Economic Perspectives*, 19(4), 25-42.
- Goldner, M. (2018). "Cruise Revenue Management." Introduction to the Global Leisure Cruise Industry, 15 February 2018, Cornell University, Ithaca, NY. Lecture.
- Griffin, M., Babin, B. J., & Attaway, J. S. (1991). "An Empirical Investigation of the Impact of Negative Public Publicity on Consumer Attitudes and Intentions." *ACR North American Advances*.
- Hoffmann, J., & Sirimanne, S. N. (2017). "Review of Maritime Transport 2017." *United Nations Publication*.

- Hui, M. K., & Bateson, J. E. (1991). "Perceived Control and the Effects of Crowding and Consumer Choice on the Service Experience." *Journal of Consumer Research*, 18(2), 174-184.
- International Maritime Organization (1969). "The International Convention on Tonnage Measurement of Ships." *Admiralty and Maritime Law Guide*.
- Jordan, A. E. (2018). "Cruise Line 'Arms Race' Continues." *The Maritime Executive*.
- Kamery, R. H. (2004). "An Overview of the Cruise Industry: An Alternative to Land-Based Vacations." *Academy of Legal, Ethical, and Regulatory Issues*, 145.
- Klein, N., Marinescu, I., Chamberlain, A., & Smart, M. (2018). "Online Reviews Are Biased. Here's How to Fix Them." *Harvard Business Review*.
- Kuo, F. Y., Chu, T. H., Hsu, M. H., & Hsieh, H. S. (2004). "An Investigation of Effort-Accuracy Trade-Off and the Impact of Self-Efficacy on Web Searching Behaviors." *Decision Support Systems*, 37(3), 331-342.
- Kwortnik, R. J. (2008). "Shipscape Influence on the Leisure Cruise Experience." *International Journal of Culture, Tourism, and Hospitality Research*, 2(4), 289-311.
- Machleit, K. A., Eroglu, S. A., & Mantel, S. P. (2000). "Perceived Retail Crowding and Shopping Satisfaction: What Modifies This Relationship?" *Journal of Consumer Psychology*, 9(1), 29-42.
- Mancini, M. (2010). *The CLIA Guide to the Cruise Industry*. Nelson Education.
- Mill, J. S. (1848). *Principles of Political Economy*.
- Oldham, G. R., Cummings, A., & Zhou, J. (1995). "The Spatial Configuration of Organizations: A Review of the Literature and Some New Research Directions." *Research in Personnel and Human Resource Management*, 13, 1-37.

- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). "A Conceptual Model of Service Quality and Its Implications for Future Research." *The Journal of Marketing*, 41-50.
- Pfeffer, J. (1998). *Understanding Organizations: Concepts and Controversies*. McGraw-Hill.
- Price, L. L., & Arnould, E. J. (1999). "Commercial Friendships: Service Provider-Client Relationships in Context." *The Journal of Marketing*, 38-56.
- Reinstein, D. A., & Snyder, C. M. (2005). "The Influence of Expert Reviews on Consumer Demand for Experience Goods: A Case Study of Movie Critics." *The Journal of Industrial Economics*, 53(1), 27-51.
- Rodrigue, J. P., & Notteboom, T. (2013). "The Geography of Cruises: Itineraries, Not Destinations." *Applied Geography*, 38, 31-42.
- Simon, H. A. (1972). "Theories of Bounded Rationality." *Decision and Organization*, 1(1), 161-176.
- Smith, A., & Anderson, M. (2016). "Online Shopping and E-Commerce." *Pew Research Center*.
- Stoddart, V. (2017). "Cruise Ships Will be Bigger and Better in 2018." *Condé Nast Traveler*.
- Sun, X., Feng, X., & Gauri, D. K. (2014). "The Cruise Industry in China: Efforts, Progress, and Challenges." *International Journal of Hospitality Management*, 42, 71-84.
- Tamis, M. (2018). "Cruise Hotel Operations." Introduction to the Global Leisure Cruise Industry, 13 March 2018, Cornell University, Ithaca, NY. Lecture.
- Testa, M. R., & Sullivan, K. (2002). "Customer Satisfaction, Quality in Cruise Industry." *Hospitality Review*, 20(2), 1.
- Wakefield, K. L., & Blodgett, J. G. (1994). "The Importance of Servicescapes in Leisure Service Settings." *Journal of Services Marketing*, 8(3), 66-76.
- Ward, D. (1998). *Berlitz Complete Guide to Cruising & Cruise Ships 1999*. Berlitz Publishing.

- Ward, D. (2004). *Berlitz Ocean Cruising & Cruise Ships 2005*. Berlitz Publishing.
- Ward, D. (2008). *Berlitz Complete Guide to Cruising & Cruise Ships 2009*. Berlitz Publishing.
- Ward, D. (2015). *Berlitz Cruising & Cruise Ships 2016*. Berlitz Publishing.
- Ward, D. (2018). *Berlitz Cruising & Cruise Ships 2019*. Berlitz Publishing.
- Weiss, J. (2018). "Cruise Digital Marketing." Introduction to the Global Leisure Cruise Industry, 08 March 2018, Cornell University, Ithaca, NY. Lecture.
- Whealy, B. (2018). "Cruise Demand Management." Introduction to the Global Leisure Cruise Industry, 01 February 2018, Cornell University, Ithaca, NY. Lecture.
- Zaichkowsky, J. L. (1991). "Consumer Behavior: Yesterday, Today, and Tomorrow." *Business Horizons*, 34(3), 51-58.

APPENDIX A: BERLITZ SCORING CRITERIA DESCRIPTIONS

The following scoring criteria descriptions were taken directly from Ward's *Berlitz Cruising & Cruise Ships 2019*.

SHIP

- ***Hardware/Maintenance/Safety***—This score reflects the general profile and condition of the ship, its age, exterior paint, decking and caulking; swimming pool and surrounds; deck furniture; shore tenders; and lifeboats and other safety items. It also reflects interior cleanliness (public restrooms, elevators, floor and wall coverings, stairways, passageways, and doorways); food-preparation areas and refrigerators; and garbage handling, compacting, incineration, and waste-disposal facilities.
- ***Outdoor Facilities/Space***—This score reflects the overall open deck space; swimming pools/hot tubs and their surrounds; congestion; type of deck lounge chairs (with or without cushioned pads) and other deck furniture; sports facilities; shower enclosures; changing facilities; towels; and quiet areas.
- ***Interior Facilities/Space/Flow***—This score reflects the use of public spaces; flow and congestion; ceiling height; lobby, stairways, and hallways; elevators; public restrooms and facilities; signage, lighting, air conditioning, and ventilation.
- ***Décor/Furnishings/Artwork***—This score reflects the overall interior décor and soft furnishings; carpeting (color, pattern, and practicality); chairs (comfort); ceilings and treatments; artwork (paintings, sculptures, and atrium centerpieces); and lighting.
- ***Spa/Fitness Facilities***—This score reflects the spa, wellness, and fitness facilities, including location, accessibility, lighting and flooring materials. Also: fitness machines and fitness programs; sports facilities and equipment; indoor pools; hot tubs; grand baths;

hydrotherapy pools; saunas; steam rooms; treatment rooms; changing facilities; jogging and walking tracks; and open promenades.

ACCOMMODATION

- ***Suites and Cabins***—This score reflects the design, layout, balconies and partitions (whether full floor-to-ceiling partition or part partitions), bed/berths, cabinetry, and other fittings; closet and drawer space, bedside tables and reading lights; vanity unit, bathroom facilities, cabinets and storage for toiletries; lighting, air conditioning, and ventilation; audio-visual facilities; artwork; insulation, noise, and vibration. Suites should not be so designated unless the bedroom is completely separated from the living area. Also covers cabin service directory of services, interactive TV; paper and personalized stationery; telephone information; laundry lists; tea- and coffee-making equipment; flowers; fruit; bathroom personal amenities kits, bathrobes, slippers, and the size and quality of towels.

FOOD

- ***Dining Venues/Cuisine***—This score reflects the physical structure of dining rooms, layout, seating, and waiter stations; lighting and ambience; table setups; linen, china, and cutlery quality and condition. Also: menus, food quality, creativity, appeal, taste, texture, presentation (garnishes and decorations); tableside cooking (if any); wine list; price range; and service. Alternative dining venues are also checked for menu variety, food and service, ambience, décor, seating, noise levels, china, cutlery, and glassware.
- ***Casual Eateries/Bufets***—This score reflects hot and cold display units and sneeze guards, “active” stations, tongs and other serving utensils; food displays; temperatures; labeling; deck buffets; decorative elements; and staff communication.

- ***Quality of Ingredients***—This score reflects taste, consistency, and portion size; grades of meat, fish, and fowl; and the price paid by the cruise line for food per passenger per day.
- ***Tea/Coffee/Bar Snacks***—This score reflects the quality and variety of teas and coffees, including afternoon tea/coffee and presentation; whether mugs or cups and saucers are used; whether milk is served in the correct containers or in sealed packets; whether self-service or served. It also reflects the quality of cakes, scones, and pastries, bar/lounge snacks, hot and cold canapés, and hors d’oeuvres.

SERVICE

- ***Dining Rooms***—This score reflects staff professionalism: the maître d’hôtel (restaurant manager), section headwaiters, waiters and assistants (busboys), sommeliers and wine waiters; place settings, cutlery, and glasses; and proper service (serving, taking from the correct side), communication skills, attitude, flair, uniform, appearance, and finesse. Waiters should note whether passengers are right- or left-handed and, when tables are assigned, make sure that cutlery and glasses are placed on the side of preference.
- ***Bars***—This score reflects lighting and ambience; seating; noise levels; attitude and communication skills, personality, and service.
- ***Cabins***—This score reflects the cleaning and housekeeping staff, butlers (for suites), supervisory staff, bedding/bathrobe changes, language and communication skills.
- ***Open Decks***—This score reflects the service for beverages and food items; placement and replacement of towels on deck lounge chairs, and tidiness of associated equipment.

ENTERTAINMENT

- ***Entertainment Program***—This score reflects the overall entertainment program and its appeal, show lounge (stage/bandstand); technical support, lighting, sound systems;

production shows (story, plot, cohesion, costumes, quality, choreography, and vocal content); cabaret acts, bands and solo musicians. Aboard specialist ships such as those offering expedition cruises, or sail-cruise ships such as *Sea Cloud*, where entertainment is not a feature, the score relates to the lecture program, library, movies on demand, videos, and use of water-sports items such as jet skis, windsurfers, kayaks, and snorkeling gear.

CRUISE EXPERIENCE

- ***Activities Program***—This score reflects social activities and events; cruise director and staff (visibility, professionalism, and communication); special-interest programs; port, shopping, and enrichment lectures; water-sports equipment, instruction, marina or retractable water-sports platforms, and any enclosed swimming area.
- ***Movies/Television Program***—This score reflects movies' picture and sound quality; in-cabin infotainment system and audio channels.
- ***Hospitality Factor***—This score reflects the hospitality and professionalism of officers, middle management, cruise staff, and crew; appearance; and communication skills.
- ***Product Delivery***—This score reflects the quality of the overall cruise as a vacation: what the brochure states and promises, and what is delivered.

APPENDIX B: BERLITZ LIFESTYLE DESCRIPTIONS

The following lifestyle descriptions were taken directly from Ward's *Berlitz Complete Guide to Cruising & Cruise Ships 2009*.

LIFESTYLE

Designated as standard, premium, or luxury, according to a general classification into which segment of the market the ship falls.

- **Standard**—The least expensive, offering the basic amenities, food, and service.
- **Premium**—More expensive than standard, have generally better food, service, facilities, amenities, more attention to detail, and differentiation of suites (with butler service) and standard accommodation.
- **Luxury**—More expensive than premium or standard, and provide more personal comfort, space, open or one-seating dining, much better food (no processed items, more menu creativity, and everything made fresh), and highly trained staff.

THE OATMEAL FACTOR: LUXURY BY DEGREE

The Oatmeal Factor shows how various cruise ships will provide a passenger with a basic item such as a bowl of oatmeal. The difference can be found in its presentation. In the cruise industry, there are ships that provide one of four levels of oatmeal presentation.

- **Standard**—Hot oatmeal (supermarket brand oats) mixed with water, with little or no chance of obtaining tahini to add taste to the oatmeal. You get it from a soup tureen at the buffet and put it into a plastic or inexpensive china bowl yourself (or it may be served in the dining room by a waiter/waitress); it is eaten with plastic or basic canteen cutlery. In other words, it's basic, basic, basic.

- **Premium**—Hot oatmeal, water, salt, and little olive oil; served in a higher quality bowl, by a waiter or waitress, with hotel-quality (or better) cutlery. It's possible that the ship will have tahini, to add taste and creaminess. It's also possible that the waiter/waitress will ask if you'd like hot or cold milk with your oatmeal. There may even be a doily between the oatmeal bowl and base plate.
- **Luxury**—Hot oatmeal (medium or large flakes), water, salt, tahini, a little (extra virgin) olive oil and nutmeg, with a dash of blended Scotch (whisky); served in a high-quality brand name bowl (Versace), with base plate and doily, and Hepp- or Robbe & Berking-quality silverware. Naturally, the waiter/waitress will ask if you'd like hot or cold milk with your oatmeal.
- **Incomparable**—Hot Scottish (large flakes, hand ground) oatmeal, water, sea salt, tahini, and nutmeg (grated at the table), high-quality cold-pressed olive oil and a layer of rare single malt Scotch; served in small production hand-made china, with base plate and doily, and sterling silver cutlery. The waiter/waitress will ask if you'd like hot or cold milk (or anything else) with your oatmeal.

Naturally, there are variations and some crossover depending on the ship, supplies available, staff training, etc. Also, the setting and presentation play a large part in determining quality.

Noise level, décor, chairs, table height, table settings, and overall comfort are all part of the total equation, and, thus, the evaluation process.

APPENDIX C: LIFESTYLE ADJUSTMENTS

The following lifestyle adjustments were made based on brand association.

1999 Data Lifestyle Adjustments			
Ship Name	Cruise Line	Lifestyle (Given)	Lifestyle (Modified)
Queen Elizabeth 2	Cunard Line	Luxury/Premium	Luxury
2009 Data Lifestyle Adjustments			
Ship Name	Cruise Line	Lifestyle (Given)	Lifestyle (Modified)
Asuka II	Asuka Cruises	Luxury/Premium	Luxury
Crystal Serenity	Crystal Cruises	Luxury/Premium	Luxury
Crystal Symphony	Crystal Cruises	Luxury/Premium	Luxury
Europa	Hapag-Lloyd Cruises	Utterly Exclusive	Luxury
Queen Mary 2	Cunard Line	Luxury/Premium/Standard	Luxury
SeaDream I	SeaDream Yacht Club	Exclusive	Luxury
SeaDream II	SeaDream Yacht Club	Exclusive	Luxury
Seven Seas Mariner	Regent Seven Seas Cruises	Luxury/Premium	Luxury
Seven Seas Navigator	Regent Seven Seas Cruises	Luxury/Premium	Luxury
Seven Seas Voyager	Regent Seven Seas Cruises	Luxury/Premium	Luxury
2019 Data Lifestyle Adjustments			
Ship Name	Cruise Line	Lifestyle (Given)	Lifestyle (Modified)
Asuka II	Asuka Cruises	Luxury/Premium	Luxury
Crystal Esprit	Crystal Yacht Cruises	Luxury/Premium	Luxury
Crystal Serenity	Crystal Cruises	Luxury/Premium	Luxury
Crystal Symphony	Crystal Cruises	Luxury/Premium	Luxury
Queen Elizabeth	Cunard Line	Premium/Standard	Premium
Queen Mary 2	Cunard Line	Luxury/Premium/Standard	Luxury
Queen Victoria	Cunard Line	Premium/Standard	Premium
Seven Seas Mariner	Regent Seven Seas Cruises	Luxury/Premium	Luxury
Seven Seas Navigator	Regent Seven Seas Cruises	Luxury/Premium	Luxury
Seven Seas Voyager	Regent Seven Seas Cruises	Luxury/Premium	Luxury

APPENDIX D: LIFESTYLE ASSIGNMENTS

The following lifestyle assignments were made based on brand association.

2019 Data Lifestyle Assignments		
Ship Name	Cruise Line	Lifestyle (Assigned)
AIDAnova	AIDA Cruises	Standard
AIDAperla	AIDA Cruises	Standard
Astoria	Cruise & Maritime Voyages	Standard
Azamara Pursuit	Azamara Club Cruises	Premium
Carnival Horizon	Carnival Cruise Line	Standard
Celebrity Edge	Celebrity Cruises	Premium
Celestyal Nefeli	Celestyal Cruises	Standard
Columbus	Cruise & Maritime Voyages	Standard
Deutschland	Semester at Sea	Premium
Empress of the Seas	Royal Caribbean International	Standard
Genting Dream	Dream Cruises	—
Grand Classica	Bahamas Paradise Cruise Line	Standard
HANSEATIC Nature	Hapag-Lloyd Cruises	Luxury
Kapitan Khlebnikov	Quark Expeditions	Standard
Le Bougainville	PONANT	Premium
Le Champlain	PONANT	Premium
Le Lapérouse	PONANT	Premium
Majestic Princess	Princess Cruises	Standard
Majesty of the Seas	Royal Caribbean International	Standard
Marella Celebration	Marella Cruises	Standard
Marella Discovery	Marella Cruises	Standard
Marella Discovery 2	Marella Cruises	Standard
Marella Dream	Marella Cruises	Standard
Marella Explorer	Marella Cruises	Standard
Marella Explorer 2	Marella Cruises	Standard
Mein Schiff 5	TUI Cruises	Standard
Mein Schiff 6	TUI Cruises	Standard
MSC Bellissima	MSC Cruises	Standard
MSC Meraviglia	MSC Cruises	Standard
MSC Seaside	MSC Cruises	Standard
MSC Seaview	MSC Cruises	Standard
Nieuw Statendam	Holland America Line	Premium
Norwegian Bliss	Norwegian Cruise Line	Standard
Norwegian Joy	Norwegian Cruise Line	Standard
Pacific Explorer	P&O Cruises Australia	Standard
Roald Amundsen	Hurtigruten	—
Scenic Eclipse	Scenic	—
Sea Spirit	Poseidon Expeditions	—
Seabourn Encore	Seabourn Cruise Line	Luxury
Seabourn Ovation	Seabourn Cruise Line	Luxury
Silver Muse	Silversea Cruises	—
Sirena	Princess Cruises	Standard
Spirit of Discovery	Saga Cruises	—
Symphony of the Seas	Royal Caribbean International	Standard
Viking Jupiter	Viking Ocean Cruises	Premium
Viking Orion	Viking Ocean Cruises	Premium
Viking Sea	Viking Ocean Cruises	Premium
Viking Sun	Viking Ocean Cruises	Premium
World Dream	Dream Cruises	—
World Explorer	Quark Expeditions	—