Architecture Matters: Exploring Audiences’ Holistic Theatrical Experience through Social Media Reviews

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Abstract (250 words)

Purpose: Assessing performance art has shifted towards an audience-centric approach, with various factors impacting audiences’ holistic experiences in a theater. Existing theater marketing research has predominantly focused on servicescapes, leaving a research gap regarding audiences’ spatial experience within theater buildings.

Approach: To address this gap, this case study collected crowdsourced data from mainstream social media platforms, including rating scores, textual reviews, and reviewer-uploaded photos. The aim was to explore to what extent the theater architecture design impacted audiences’ theatrical experience. The old and new facilities of the case study theater were compared, and a series of quantitative and qualitative techniques were applied for data analysis, including statistics, content analysis, sentiment analysis, and thematic analysis.

Findings: The study identified five major themes in social review: the show, architectural design and attributes, staff and service, neighborhood and amenities, and financial consideration. Comments about theater architecture constituted a substantial portion of reviews, with seating comfort, intimacy, and stage visibility being frequently discussed features. Seven subthemes related to architectural design emerged as key contributors to audiences’ spatial experiences, including aesthetics, design, and spatial configuration; the bar and lobby; the new facility; seats; sets and stage; acoustics; and atmosphere and experience.

Implications: The study places the individual experiences of audience members as central and uses an inductive approach to analyze their self-generated data. The research results offer valuable insights into theater design and confirm the belief that architectural design has a significant impact on the overall theatrical experience of audiences.

Keywords: Arts Marketing, Arts Architecture, Theater Design, Case Study, Social Media Data, Post-Occupancy Evaluation

1. Introduction

Assessing quality in the performing arts has undergone a notable shift in recent years, moving beyond the traditional qualitative and quantitative indicators that heavily relied on critical reviews, honors and awards, or number of performances, subscribers, and earned income (Radbourne et al., 2009). Nowadays, audience reception and their overall theatrical experience have gained recognition as crucial indicators of quality in the performing arts.

Research has taken two paths in exploring the factors that influence audience reception. One line of inquiry has focused on the content of the performance from the audiences’ perspective, examining various components that may impact their reception, such as the play’s topic, the ensemble, and the design elements such as lighting and set design (Sauter et al., 1986). Another line of research has focused on the structural dimensions of the audience’s theatrical experience, which exhibit greater consistency across different types of performances. This line of research examines the audiences’ perceptual, cognitive, emotional, sensational, and communicative reactions during a performance as potential indicators of their
overall judgment of a theatrical event (Chan et al., 2017; Eversmann, 2004; Boerner et al., 2010). However, both tracks of research only focus on the performing arts itself, leaving a significant research gap regarding audiences’ holistic experience in the physical space where arts take place – the theater architecture.

This present study hypothesizes that the architectural attributes of the theater, including spatial programming, architecture and interior design, ornaments, and details, contribute to holistic theatrical experiences for audiences. Using a Shakespeare theater in Cincinnati OH as a case study, this study crowdsourced data of rating scores, textual review, and reviewer-uploaded photos from mainstream social media platforms and explored to what extent the architecture design impact the audiences’ theatrical experience.

2. Literature Review

2.1 Audience-Centric Theater Experience

Contemporary audiences have adapted to the habit of interacting with oversaturated media environments via streaming video on-demand services, gaming, and fully immersive virtual reality technology. Despite facing competition from other arts and entertainment markets, live theatrical performances continue to hold a strong appeal for contemporary audiences due to the unparalleled immersive experience and human connections that live theater offers (Alois, 2023). Hover and van Mierlo (2006, quoted in Getz, 2007, p. 181) identify three levels of experience offered by theater and performance arts, namely basal, memorable, and transforming experience, with the transforming experience as the highest level of impact, which affects “durable change on a behavioral or attitudinal level.”

The research firm Wolfbrown (2012) took audience-centric perspectives in a survey study that explores five intrinsic motivations and impacts of live theater; the five impacts include captivation, intellectual stimulation, emotional resonance, aesthetic enrichment, and social bridging and bonding (Brown & Ratzkin, 2012, p. 82). The top three motivations for contemporary audiences to visit live theaters are “to relax and escape,” “to be emotionally moved,” and “to discover something new” (p.71). Women reported higher impacts than men in emotional respondence regarding a performance; they are also more likely to be sole-decision makers and act as cultural guides to others. Younger audiences and infrequent visitors are more socially motivated to attend theatrical events (Brown & Ratzkin, 2012). The survey results also identified that post-performance engagement has great advantages when it comes to enhancing intellectual outcomes. The findings revealed a significant correlation between in-depth discussions among audiences and increased indicators of insight, learning, and self-reflection.

Placing individual audience experience as central to understanding the core impact of art, a few schools of thoughts explain the mechanisms of the impacts from different perspectives. The catharsis\(^1\) and flow\(^2\) concepts explain audiences’ emotional resonance and “absorbing experience” of performing arts (Radbourne et al., 2009). The Benefits Model, developed by McCarthy and colleagues (2004) and later updated by Brown (2006), categorized intrinsic and instrumental benefits of arts based on their value clusters, such as personal growth, social interaction, communal significance, and economic and social

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1 The concept of catharsis involves viewers projecting their own emotions onto the characters on stage, which then triggers a physical response, such as laughing or crying. This release of emotions helps individuals to let go of these feelings and move on (Scheff, 1979; Nussbaum, 1986).

2 The concept of flow by Csikszentmihalyi (1988) is essential when it comes to engaging audience experiences as it embodies the desire of individuals to be fully immersed in the present moment and lose track of time, characterized as a self-rewarding, ideal experience (1988).
capital benefits (Walmsley, 2013). Following the track of the Benefits Models, Brown (2008) defined the concept “enabler” and suggested further research into the connections between art impacts and enablers. An enabler is the factor that facilitates the occurrence of an art impact; one example of enabler relates to stage rituals, such as the stage curtain and applause, which play a crucial role in shaping the audience’s anticipation and the process of decoding or creating meaning (Bennett, 1997; Walmsley, 2013). While there is growing research interest exploring how the venue can improve audience experience, limited research has been published specifically focused on enablers per se.

2.2 Measuring Audience Experience

A substantial body of literature has developed various matrices intended to measure and quantify audience theatrical experience. Rather than directly engaging audiences, many of the measurements were conducted based on samples of theater professionals, critics, and educators work in the theater field. A widely recognized study by Eversmann (2004) established a four-dimension framework of audience experience, namely perceptual, emotional, cognitive, and communicative, based on interviews with 28 theater professionals. A few studies developed measurements or instruments to quantify audience experience as influenced by Eversmann’s (2004) structural framework. They usually start with qualitative studies via samples of theater professionals to develop a framework or a measurement scale, and then validate the scale using actual theatergoers. For example, Chan and colleagues (2017) developed a Theater Experience Scale based on interviews with professional theater practitioners and then validated them using a sample of 2,359 audience members in 17 productions. The scale measures five components of theater experiences, namely, cognition, emotion, sensation, authenticity, and coherence, which were found all significantly correlated with the audience’ overall enjoyment and likelihood of recommending the production to others (Chan et al., 2017). Such research process inevitably introduces bias since theater professionals may have insufficient understanding about the impacts of architecture and design on people’s emotional and behavior responses, leaving the framework or instruments heavily focusing on the performance per se.

Comparatively, Boerner and colleagues (2011) worked directly with actual theatergoers and developed an framework measuring nine determinants of audiences’ satisfaction with their subjective experience in theater, namely (1) the topic of the play, (2) stage direction, (3) the ensemble, (4) the principal performer, (5) stage design (i.e., costumes, requisites, and lighting), (6) music, (7) the service quality (i.e., infrastructure and service) provided by the theater, (8) visitors’ emotional response, and (9) visitors’ identification with the principal performer. However, only two out of the nine determinants were validated through a larger sample of audiences in the follow-up field study, namely audiences’ perception of stage direction and their emotional response to the performance (Boerner & Jobst, 2013). Up to date, the Boerner and colleagues’ (2011) nine-determinants framework has been one of the few studies that used audience-generated data to explore audiences’ theatrical experience regarding the physical space parameters. A significant research gap exists between the roles the theater architecture plays in audiences’ subjective evaluation of their experience in a theatrical event.

2.3 The Matter of Theater Architecture

Art marketing research has conducted studies about audience satisfaction and the built environments. However, most of the studies focused primarily on evaluating the “servicescape” (e.g., catering, parking, and transportation), while neglecting the essential experience audiences had in various architectural spaces in the theater (Bauer et al., 1997; Boerner & Jobst, 2013).
Regarding architectural design aspects, existing literature has discussed how stage design and seat arrangement may impact actor-audience relationships. As discussed by Barranger (2014), the proscenium stage contains a framed stage with movable scenery, lighting, and sound equipment, which accommodates a larger auditorium seating 500 to 1,500 or more. In contrast, the thrust stage is specifically designed to reduce the distance and separation between the actor and the audience, which is usually created by the proscenium arch and the recessed stage. In thrust stage theaters, the actor performs on a platform that extends into the audience, making it easier for the audience to feel a closer connection with the actor.

Mackintosh (1993) critically emphasized the importance of intimacy in a successful theater design: “The greed of today’s client who wants ever bigger seating capacities, plus comfort of course, is often compounded by the architect or consultant, who claim they can make a big theater or opera house intimate by some architectural device…. If success is to be attained for the live performance and the audience lured away from their hi-fi home video, more than lip service must be paid to intimacy” (p. 160). Machintosh (1993) also challenged the “imperative of perfect sightlines” – there seems a paradox that “good theaters have a proportion of seats with bad sightlines, while theaters with uniformly excellent sightlines are invariably bad theaters, disliked by both actor and audience …” (p. 160). It seems that contradictory thoughts emerge in the arrangement of seats and sightline design following the trend of audience-centric theater design, as Briscoe (2022) suggested that the theater space should make audiences comfortable and help them relax – “treat people with the same care and hospitality as if they were visiting your house”. It is worth further exploration of how seat and sightline design impact audiences’ overall evaluation of their experience in a theater.

2.4 Using Social Media Data to Explore Audience Experience

The changing dynamics between audiences and performers in the era of consumer-centric marketing have now given way to a new model – audiences contribute to the “co-creation of value” (Prahalad & Ramaswamy, 2004; Radbourne et al., 2009). As Barranger (2014, p.14) asserted, “a modern audience enters a theater lobby with an air of excitement and a sense of anticipation…. An audience is not an unruly crowd but a special group assembling for a special occasion; it is the final, essential participant in the creation of the theater event”. From the value-creation perspective, there has been a shift in the business world beyond a single product and one-time service to the human experience environments, where continuous engagement between the product/service and the consumer, enhanced interactions of individuals with each other and its expanded network of the product/service, and the online or offline places and spaces where those interactions take place (Ramaswamy, 2009).

In the society of information technology and digitization, social media has fulfilled the functions of an online human experience environment – people rate their experience, leave review comments, and exchange opinions via reactions to others’ rating (e.g., the like, dislike, helpful, and repost functions included in many social media platforms). Quantitative and qualitative analysis of social media data can help provide invaluable insights from the user-centered perspective regarding their experience of the product/service, and help business improve their service and make critical decisions (Sharma et al., 2020). Social media data might be in the form of text, image, and video. Due to the enormous amount of data generated by social media users, advanced computational algorithm, and artificial intelligence (AI),
represented by the natural language processing (NLP), could conduct sentiment analysis and help interpret reviewers’ positive or negative opinions in an efficient manner (Sharma et al., 2020).

When it comes to making investments or purchasing products, people often turn to their colleagues for advice and insights on the matter (Sharma et al., 2020). Feldman (1992) notes that this is a natural desire to share discoveries, as people want to understand how others will react to something in order to fully appreciate it (1992, p. 469). Individuals often read social media reviews for commercial or tourism attractions to make informed decisions. Additionally, photo sharing on social media has become an important part of the online social experience. In the theater and arts fields, Brown and Ratzkin (2012) discovered that reading previews and social media reviews before attending a live event has a slight but significant impact in increasing anticipation levels (Brown & Ratzkin, 2012). The use of social media data and crowdsourcing to study how people behave, perceive, and emotionally respond to the built environments has become a rapidly growing area of research (Song & Zhang, 2020). However, there is a lack of research that utilizes social media data to explore audiences’ theatrical experiences in the arts field.

3. Research Questions

Against above research background, there are significant research gaps among research that explores how architecture and spatial design invoke audiences’ resignation to the theatrical event hence impact their theatrical experience; what motivates people to visit a live theater and what factors impact the evaluation of audiences’ holistic theatrical experience. Audiences’ subjective opinions could be easily ignored if using traditional data collection method (i.e., survey or interview) due to time and financial constraints or a lack of research capacities. The current study aims at addressing the following research questions to fill out several research gaps:

- What consists of audiences’ holistic theatrical experience and to what extent does the theater architecture impact those experiences?
- How audiences evaluate and communicate their opinions regarding theatrical experiences in online human experience environments (i.e., social media platforms)? How was the contemporary design of the new theater received by audiences?
- What are audiences’ behavioral and usage patterns in the public spaces in the theater?
- How theater architecture and design attributes serve as “enablers” that evoke audiences’ perceptual, emotional, cognitive, and communicative responses to the art performance?

4. Methodology

4.1 Case Study Site

The case study theater was established in 1993 and initially operated inside a converted movie theater. The company moved to a new building in September 2017 and the new theater brought many changes, such as a contemporary architectural style and material palette. It converted the original proscenium stage to a thrust stage, which significantly reduced the distance from seats to stage for all audiences and expanded the auditorium to a maximum capacity of 299 seats, an increase of 60% from the original building (Figure 1). The public spaces were enhanced to provide better accessibility and amenities for

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3 Sentiment analysis, also known as opinion mining, is a computational process that identifies and categorizes emotions as positive, neutral, or negative in text. This process involves the use of artificial intelligence and deep learning techniques, natural language processing, text analysis, computational linguistics, and biometrics (Wikipedia, n.d.).
patrons and artists. The upgrades included an elevated rehearsal and event space, a classroom for educational programs, an enlarged lobby, a new bar, a separate box office, and increased restroom facilities (Figure 2A-B). Social media ratings and review comments were analyzed across design attributes, as well as between the old and new theater to reveal how the new programmed areas and contemporary design impact audiences’ evaluation of their experience in the theater.

Figure 1. The new case study theater changed the original proscenium stage to a thrust stage, which significantly reduced audiences’ distance to the stage and expanded the seat capacity.

Figure 2. (A) The new bar and a separate box office near the entrance of the new case study theater. (B) The interiors, lighting and projection, and decoration in the main lobby.

4.2 Quantitative Data and Analytics

Datasets were scraped from two social media platforms: Google Review and Yelp. The two platforms are popular sites where people leave numerical rating (i.e., 5-point scale with 5-star indicating the most positive experience), textual review, and photos to any commercial or tourism attraction. Ten years of data (2012-2022) were included in the analysis and resulted in 557 social media users and a total of 775 textual or imagery review data. Table 1 displayed the distribution of the numerical ratings, textual reviews, and photos (i.e., imagery reviews) by social media users from different platforms. All public data were acquired on December 7, 2022, and reviewers’ identifiable information were concealed before the data.
were analyzed. We conducted statistical analysis on the social media data using Microsoft Excel (Version 18.2305.1222.0).

**Table 1.** Distribution of numerical ratings, textual review, and photos by social media users from two mainstream platforms (2012-2022).

<table>
<thead>
<tr>
<th>Platform</th>
<th>Numerical Rating</th>
<th>Textual Review</th>
<th># of Users Included</th>
<th>Total # of Photos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>430</td>
<td>240</td>
<td>18</td>
<td>42</td>
</tr>
<tr>
<td>Yelp</td>
<td>127</td>
<td>127</td>
<td>64</td>
<td>408</td>
</tr>
<tr>
<td>Total</td>
<td>557</td>
<td>367</td>
<td>82</td>
<td>450</td>
</tr>
</tbody>
</table>

4.3 Qualitative Data Analyses

Content analysis is a research technique that involves categorizing and recognizing themes or patterns in textual data to subjectively interpret its content. This is achieved through a methodical coding process (Hsieh & Shannon, 2005). The content analysis approach used was inductive or grounded theory, which means that the procedure was a bottom-up approach to define the codes with memos (Corbin & Strauss, 1998). This approach did not use preconceived codes or theories, and all themes and patterns were grounded in the entire data set (Kyngäs, 2020).

The research team immersed in the data and scrutinized all textual and imagery reviews. Analytical notes were taken along with the scrutinization. The research team carefully examined all notes and developed the codebook. The codebook was applied to both Google and Yelp data analysis, then similar themes were re-grouped and updated to the final themes. Similarly, all photos were grouped according to the content in the photos and themes were generated from the groups of content. Quantitative approaches were also applied to the content analysis results, including descriptive statistics and correlational analysis between the numerical rating and textual/imagery review results (Mayring, 2014). Descriptive statistics were used to identify keywords and the frequency of mention in the textual comments by social media reviewers, namely keywords analysis.

Sentiment analysis on textual comments were analyzed manually and with the aid of MonkeyLearn, a web-based text analytics service powered by artificial intelligence and machine learning. Several studies have tested different open-access web services that offer sentiment analysis and found MonkeyLearn having the best performance regarding the data analysis accuracy, precision, recall, and mean square error (Basmmi et al., 2020).

5. Results

Social media users’ rating and review style vary according to different platforms. Yelp focuses on long-form reviews rather than short one-liners, promoting in-depth and thorough reviews. Comparatively, Google reviews are shorter with much fewer users leaving textual or imagery comments. The average word count per review is 137 words for Yelp but only 13 words for Google. It’s possible that Google is a place-based platform and users tend to access it via mobile devices and leave quick comments. Due to the differences between the two platforms, data were analyzed separately.

5.1 Numerical Ratings

We conducted descriptive statistics on the numerical ratings by social media users, including the count of 5-star rating and the mean score for the old and new theater. As indicated by Table 2, audiences’ numerical ratings for the new theater are generally better than the old setting. There were 92.9% Google
review users rated 5-star ratings for the new theater compared to 77.1% for the old one. A chi-square test of independence was performed to examine the relation between old/new theater and 5-star rating by Google review users. The relation between these variables was significant, $X^2 (1, N = 429) = 10.37, p = .0013$, at .5 significance level. Statistics confirmed that Google review users rated significantly more 5-starts to the new theater. The same test was conducted on Yelp data. Yelp users rated more 5-star for the new (84.5%) than the old theater (82.4%), but the results were not statistically significant.

**Table 2.** Count of 5-star rating for the old and new facility of the case study theater by different social medial platforms

<table>
<thead>
<tr>
<th>Social Media</th>
<th>Old/New Theater</th>
<th>Mean (SD)</th>
<th>5-Star (%)</th>
<th>4-Star (%)</th>
<th>3-Star (%)</th>
<th>2-Star (%)</th>
<th>1-Star (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>Old</td>
<td>4.69 (0.76)</td>
<td>27 (77.1%)</td>
<td>7 (20%)</td>
<td>0</td>
<td>0</td>
<td>1 (2.9%)</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>New</td>
<td>4.91 (0.41)</td>
<td>366 (92.9%)</td>
<td>24 (6.1%)</td>
<td>1 (0.3%)</td>
<td>1 (0.3%)</td>
<td>2 (0.5%)</td>
<td>394</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.89 (0.45)</td>
<td>393 (91.6%)</td>
<td>31 (7.2%)</td>
<td>1 (0.2%)</td>
<td>1 (0.2%)</td>
<td>3 (0.7%)</td>
<td>429</td>
</tr>
<tr>
<td>Yelp</td>
<td>Old</td>
<td>4.82 (0.39)</td>
<td>14 (82.4%)</td>
<td>3 (17.6%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>New</td>
<td>4.85 (0.36)</td>
<td>93 (84.5%)</td>
<td>17 (15.5%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.84 (0.37)</td>
<td>107 (84.3%)</td>
<td>20 (15.7%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>127</td>
</tr>
</tbody>
</table>

For Google mean scores, independent t-test for two samples (with equal variances assumptions fulfilled) revealed a statistically significant difference between the old and new theater, $t(427) = -2.799, p = .0053$, at .05 significance level. Google review users rated the new theater significantly higher than the old theater, and the difference in mean score was .22 (4.7%). For Yelp mean scores, two sample t-test (with equal variance assumptions fulfilled) was also conducted but the difference was not statistically significant. On average, Yelp users rated 4.85 on the new theater and 4.82 on the old one, and the increase in mean score was 0.02.

5.2 Content Analysis and Keyword Analysis on Textual Reviews

Two researchers conducted content analysis on the textual review posted by Google ($N = 240$) and Yelp ($N = 127$) social media users about the case study theater. Seven themes emerged from the content of the review comments, including (1) overall expression/recommendation, (2) the show, (3) architectural design and attributes, (4) staff and service, (5) neighborhood and parking, (6) events, socialization, and educational programs, and (7) financial considerations. Since the focus of the study is about the physical spaces of the theater, the third theme, namely architectural design and attributes, was further analyzed. Seven subthemes of architectural design and attributes were recognized, including (a) overall aesthetics and spatial configuration, (b) design renovation, (c) bar and lobby, (d) seats, (e) stage, lighting and set design, (f) acoustics, and (g) intimacy and atmosphere.

**Theme 1: Overall Expression and Recommendation**

Many one-liner comments by Google reviewers fall into this theme as users gave an overall expression about their theatrical experience. Additionally, reviewers expressed their willingness to revisit the theater or recommend the theater to others: in total 43.8% Google reviewers ($N = 105$) and 63.8% Yelp reviewers ($N = 81$) commented on their overall experience or made recommendations. Selective comments about this theme include:

“I highly recommend attending a show here whenever possible!”

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4 The assumption of normality and the equality of variances were checked prior to the independent t-tests for the data set.
“First time at this theater but won’t be the last!”
“Amazing experience! Will be back for more!”

Theme 2: The Show

The top mentioned theme in the textual reviews was the show: in total 68.8% \((N = 165)\) Google and 91.3% \((N = 116)\) Yelp reviewers commented on the show or the play, including many detailed discussions about the topics, acting, performance, and how the show related to their personal life experience.

“Always great plays and great acting, always incredible and I feel the topics, especially the ones that I would not have found interesting if looked into it first, have opened my view of life and the world.”

“Hamlet was nice, I had thought it would be boring and stuffy, but it was more fun and with some modern sensibilities. Reading Shakespeare in school tends to do it a disservice.”

“Just saw 1984 on opening night. It was an incredible theatrical production. The entire cast and crew should be proud!”

Theme 3: Architectural Design and Attributes

A large proportion of social media users commented on the architecture design and attributes, and how the built-environment factors impact their theatrical experience, including a total of 67.9% \((N = 163)\) Google users and 92.1% \((N = 117)\) Yelp reviewers. Diagram 1 revealed that the new theater attracted more discussions than the old theater regarding this theme: about 60.5% Google and 90.9% Yelp reviewers commented on the architectural design attributes of the new theater. Comparatively, the users who commented on the architecture aspects of the old theater were 55% from Google and 64.7% from Yelp.

Diagram 1: Top-ranked themes of textual reviews and frequency of mention by Google and Yelp users

Table 3 analyzes the subthemes about architectural design and attributes and the frequency of mention for each subtheme. For Google reviewers, many of them mentioned the overall aesthetics and spatial configuration of the theater (33.3%); the design renovation (18.3%) and seats (13.3%) also gained more attention than other features. Among Yelp reviewers, the topmost discussed subtheme was the intimate
atmosphere of the auditorium (63.8%), followed by the discussion about the seats (57.8%) and overall aesthetics and spatial configurations (56.9%).

Table 3. Subthemes of Architectural Design and Attributes and Descriptive Statistics

<table>
<thead>
<tr>
<th>Subtheme</th>
<th>Representative Quotes</th>
<th>Frequency of Mention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Aesthetics and Spatial</td>
<td>“The layout of the place is very modern and interesting.”</td>
<td>33.3% 56.9%</td>
</tr>
<tr>
<td>Configuration</td>
<td>“I also thought the design of the building was really pleasing to look at.”</td>
<td></td>
</tr>
<tr>
<td>Design Renovation</td>
<td>“The remodeling they’ve done makes it a much nicer experience.”</td>
<td>18.3% 20.7%</td>
</tr>
<tr>
<td>Bar and Lobby</td>
<td>“…completely blown away with just how extensive and upscale the renovation turned out.”</td>
<td></td>
</tr>
<tr>
<td>Seats</td>
<td>“The lobby area is very open and airy, allowing you to mingle a bit before the show and of course take beautiful pictures.”</td>
<td>5% 31.9%</td>
</tr>
<tr>
<td></td>
<td>“The lobby is so spacious and the large glass windows offer a perfect view of the park.”</td>
<td></td>
</tr>
<tr>
<td>Stage, Lighting and Set Design</td>
<td>“There isn’t a bad seat in there because everyone is so close. The seats were comfortable for the 2 hour show. There are cup holders in the back of the seats in front of you.”</td>
<td>13.3% 57.8%</td>
</tr>
<tr>
<td>Acoustics</td>
<td>“Very well staged and it was very involving as far as audience participation goes with plays. With the theater’s great sound effects and the creative use of the stage and lighting the story came to life in front of your eyes!”</td>
<td>3.3% 30.2%</td>
</tr>
<tr>
<td>Intimacy and Atmosphere</td>
<td>“With no use of mics, you could still hear everything in the room.”</td>
<td>1.7% 9.5%</td>
</tr>
<tr>
<td></td>
<td>“If you are under 80 and don't have significant hearing loss, I recommend you bring ear plugs/a hat/ earmuffs to protect yourself from the painfully loud sound effects, especially in the last 20 minutes of the show.”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“The theater itself is small and intimate which makes it feel more as if you are sitting in your living room with a group of friends.”</td>
<td>6.7% 63.8%</td>
</tr>
</tbody>
</table>

A series of keyword analyses were conducted on the textual review comments that belong to the architectural design and attributes subthemes. A total of 1022 keywords were identified after removing the stop words, special characters, and numbers. Among all keywords, the top mentioned keywords were listed and visualized in Diagram 2. The results revealed that audiences cited the seat, intimacy, and several areas in the public spaces of the theater as influential on their theatrical experience.
Diagram 2. Keyword analysis for Google and Yelp combined textual comments regarding Architectural Design and Attributes subthemes for the new theater.

Theme 4: Staff and Service

Staff and services also played a role in the audience’s experience. The comments about the servicescape in the theater were primarily about the ticket, valet, and bar staff members. 15% Google reviewers and 29.3% Yelp reviewers commented on staff and services. Selective quotes about this theme include:

“From the moment I walked thru the door I was greeted with a big smile and politeness by everyone working in there.”

“Great service and drinks! You can even pre-order your intermission drinks and they will have it ready for you!”

Theme 5: Neighborhood and Parking

In total 7.1% Google reviewers and 24.4% Yelp reviewers commented on their experience about parking and in the neighborhood. Some visitors found the location great, surrounded by many restaurants and local attractions.

“A great evening out in Cincinnati and a wonderful addition to the neighborhood!”

“The location, across from Washington Park, near music Hall, is a good one. Plenty of places for a pre-show dinner and drinks.”

Parking options and price gained some discussions, and a few conflicting reviews were found concerning neighborhood safety:

“The parking is on street or in high priced lots, so plan to walk or take advantage of the valet service you can purchase on their website.”
“Not the safest part of town, but a nice place.”

“It is within walking distance from all of the restaurants in Over the Rhine—as it is nestled right next to Music Hall and Memorial Hall. You can definitely find parking in the Washington Park garage across the street or in a few of the public parking lots around the theater. There is some street parking available as well. I felt completely safe walking to and from the show even though it was dark outside.”

Theme 6: Events, Socialization, and Educational Programs

According to the review content, opportunities for socialization or events could be the motivation to visit the theater. In total 5% Google reviewers and 7.3% Yelp reviewers mentioned they went to the theater for a night out with a date, friends, or as a family event. Educational programs were also mentioned by a few reviewers based on their personal experiences:

“We have had some very fun evenings going to dinner and seeing a play with friends.”

“I will see it again if I can get a friend to go with me.”

“With some friends and their children…the 4-year-old girl that was with us got to talk to everyone. She was so excited and the performers were all so sweet. She even got to take a pic with the prince and princess. Thank you so much for making a little girl’s night.”

“I’ve also been a part of the Groundlings program for youth actors and taken their summer camps and participated in the Project 38 showcase for many years.”

A few Yelp reviewers described their observations of others and how they socialized with the performers and other audiences.

“Talking with some of the other audience members, I will remind myself to keep updated on the new performances throughout the year at [name of the case study theater] as I’ve heard great things about some of the performances that I’ve not seen.”

“There were a lot of families with young children in attendance. Everyone really seemed to enjoy it.”

Theme 7: Financial Considerations

About 3.8% Google reviewers and 14.6% Yelp reviewers shared their opinions about the financial aspects of the theatrical event, such as the price for the ticket, services, snacks, and drinks. For those who commented on this theme (N = 12), 41.7% found the price points were reasonable, 41.7% had neutral opinions about price, and 16.6% found some services offered by the theater as pricy. The correlational analyses in the following section further reveal the impacts of different themes on audiences’ evaluations about the theatrical experience.

5.3 Sentiment Analysis

Among reviewers who left textual comments, in total 97.9% (N = 235) Google reviewers rated positive sentiment to their theatrical experience; about 1.25% (N = 3) reviewers held neutral attitude and only 0.8% (N = 2) reviewers held negative attitude. Yelp reviewers were slightly more critical than Google reviewers, with 93.7% (N = 119) positive, 3.9% (N = 5) neutral, and 2.4% (N = 3) negative sentiments.
Most of the neutral to negative sentiment comments focused on staff and service, the safety of surrounding neighborhood and parking. Some Yelp reviewers left critical comments about the show and a few negative comments related to the architectural design and attributes and the subthemes, such as the seat and sightline issues, acoustics, and the location of the bathroom.

5.4 Relationship between Textual Review Themes and Numerical Ratings

Statistical analyses were conducted to explore the impacts of seven review themes on audiences’ numerical ratings about the theater. The results were statistically significant between Theme 2 (The Show) regarding Yelp review scores as indicated by the liner regression analysis. The regression model explained a small proportion of variance in the numerical ratings, $R^2 = .06$, and the overall model was not statistically significant, $F(7, 119) = 1.06, p = .395$. However, the coefficient for the show factor (Theme 2 – The Show) demonstrated statistical significance ($p = 0.033$, at .05 significance level), indicating a positive relationship with the social media numerical ratings. The results indicated that audiences who posted detailed comments about the performance were found rating higher scores about the theater than those who didn’t comment on this theme. The model and coefficients were not statistically significant for Google dataset.

For Google reviewers, there was a trend that audiences who commented on the architectural design attributes since the opening of the new theater ($M = 4.94, SD = .32, N = 133$) tended to rate higher scores about the theater than those who didn’t comment on this theme ($M = 4.87, SD = .50, N = 87$), but the results were not statistically significant.

5.5 Thematic Analysis on Imagery Reviews

There were 64 Yelp and 18 Google reviewers who uploaded a total of 450 photos about their visit to the case study theater. The data were treated as imagery reviews and analyzed by the research team via thematic analysis techniques. In total 72.9% ($N = 328$) of photos featured the public spaces in the new theater, 14.4% ($N = 65$) were related to the stage, set, and seat in the auditorium, and 9.8% ($N = 44$) featured the ticket or brochure of the show. Diagram 3 further illustrated the themes of the photos according to the image content, descriptive statistics, and the example of the top ranked photo themes. The top ranked theme was the stage, set, and seat area in the auditorium (14.4%). Other than that, the public spaces of the theater gained high visual attention, including the bar (12.9%), projection, lighting, and decoration in the lobby (12%), tickets and brochures about the show (9.8%), the box office and posters nearby (9.1%), and the backdrops according to different shows that are installed in the lobby (7.1%). There are numerous interior design details that have become popular spots for selfies and photos, such as the Hamlet the Pig outside the theater entrance (4.7%) and art and murals throughout the space.

5.6 Heatmapping Analysis

Heatmapping techniques were applied to the imagery reviews, which linked the image content to the locations in the theater building. The original designer of the theater helped code the location information and the results were visualized via Python algorithm and data visualization packages (Anaconda Distribution Version 2023.3.0). The heatmap results indicated that the lobby space, surrounding the bar, and the statue outside the entrance attracted high volumes of foot traffic and audiences’ visual attention. Those features have become popular spots for visitors to take photos that reflect their theatrical

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5 The statistics applied in the analysis were independent t-test for two samples for Google review dataset. Yelp review dataset have imbalanced sample size, with only 11 reviewers (8.6%) didn’t comment on the architectural design attributes subthemes. Therefore, the independent t-test was not conducted on the Yelp dataset.
experience. Audiences actively engaged with various design features in the theater architecture. They were able to capture many design details and share their spatial experience on social media platforms.

Diagram 3. Themes and content featured in user-uploaded photos on Google and Yelp.

Diagram 4. Heatmapping analysis indicating the popular locations where social media photos were taken in the public spaces of the theater.

6 Photos taken from the auditorium were excluded in the heatmapping analysis because it was difficult to identify the precise locations due to the lack of context information or reference in the space.
6. Discussion

This study addressed a knowledge gap when it comes to audiences’ spatial experience in the theater architecture. It also explored how the architectural design and attributes of the theater impact audiences’ holistic theatrical experience. To address this gap, the study crowdsourced recent 10 years’ social media data from two mainstream platforms and analyzed reviewers’ numerical ratings, textual review, and reviewer-uploaded photos about the case study site. The theater moved to the new facility and reopened in 2019, so the study analyzed review comments with a focus on comparing comments before and after the new theater opened.

The study found that comments about the theater architecture were a significant proportion of audiences’ reviews and overall judgment about their theatrical experience. Since the new facility opened, the average rating scores and count of 5-star ratings about the theater improved significantly. Content analysis and keyword analysis on textual reviews identified seven themes in the social media data, among which the three top-ranked themes are the show, architectural design and attributes, and the overall expression and recommendation about the theater.

Seven subthemes of architectural design and attributes revealed rich details about reviewers’ spatial experiences in the theater. The overall aesthetics and spatial configuration of the theater, seats and views/sightlines to the stage, intimacy and atmosphere, and the bar in the lobby, were noticeably appreciated features. The thrust stage and updated seating layout of both theaters offer an immersive experience for viewers during performances. The seat subtheme gained significantly high frequency of mention; audiences commented on the comfort of the seat and views/sightline as a significant factor impacting their experience during the show. The intimate design atmosphere helped evoke emotional responses among audiences: “I laughed and cried and so did the friend I went with. We watched from the stage gallery, and the circular format of the stage gave way to a more intimate experience.” (Selective quote from a Yelp reviewer).

The positive impressions about architectural design and attributes increased significantly for the theater. Regression analysis between textual review themes and numerical ratings indicated a positive relationship: the audiences who posted detailed comments about the show were found rating higher scores about the theater than those who didn’t comment on the theme. A trend emerged that audiences who commented on the architectural design attributes tended to leave higher numerical scores about the theater, but the results need further exploration and data support.

Audiences were not passive receivers of the show, but active explorers in the public spaces throughout the theater. Imagery review analysis revealed that including a new bar in the lobby as an additional attraction for socialization and communication is an effective strategy. There were numerous social media hot spots throughout the public areas of the theater, including the projection and lighting design in the lobby, decorations such as the backdrop and posters near the box office, and the statue near the entrance, all of which gained high frequention and visual attention.

This study places the individual experiences of audience members as central and uses an inductive approach to analyze their self-generated data. Preliminary findings from the study validated Boerner and colleagues (2011) existing framework that measures audience experience in a show, including the physical dimensions of the theater architecture such as the stage direction and setting design. The research results offer a holistic perspective to examine audiences’ theatrical experiences. The study provides some
valuable insights into theater design and supports the belief that architectural design has a significant impact on the overall theatrical experience of audiences.

Reference


