University Student Satisfaction: Online Text Review of Private University in Surabaya

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ABSTRACT
In the contemporary educational landscape, online platforms have become crucial in assessing student satisfaction, which is an essential indicator of educational quality. This study investigates student satisfaction at private universities in Surabaya, Indonesia, through the lens of online text reviews. Utilizing a dataset of 1548 reviews, this research employs a co-occurrence network analysis to identify key factors influencing student perceptions. Our findings reveal that aspects such as campus facilities, quality of education, and economic considerations significantly impact satisfaction levels. The implications of these insights are substantial for institutional strategies aimed at improving student experience and enhancing educational outcomes. The study contributes to the understanding of student satisfaction in a digital era, highlighting the role of online reviews in shaping educational improvement efforts.

Keywords: Student Satisfaction, Private Universities, Online Reviews, Co-occurrence Network Analysis, Educational Quality, Surabaya

INTRODUCTION
The educational landscape is undergoing a significant transformation, driven by the digital revolution and changing global trends in higher education. This transformation is particularly evident in the realm of student feedback and satisfaction assessment, where online platforms have emerged as pivotal forums for expression and evaluation. In this context, the city of Surabaya, known for its vibrant educational sector and competitive higher education environment, offers a unique case study to explore the dynamics of
student satisfaction through the lens of online text reviews. This paper endeavors to delve into this novel area of academic inquiry, aiming to shed light on the factors influencing student satisfaction at private universities in Surabaya. By examining these insights, the study seeks to contribute to the broader discourse on educational quality and effectiveness in the digital age.

In recent years, the influence of digital platforms on higher education has been profound and multifaceted, affecting everything from teaching methodologies to student recruitment strategies. Among these changes, the rise of online reviews has been particularly significant. As prospective students increasingly turn to the internet to gather information about educational institutions, online reviews have become a critical source of insight into student experiences and satisfaction (Chevalier & Mayzlin, 2006; Ye et al., 2009). This trend underscores the importance of understanding and managing student satisfaction in a digital context, especially in competitive educational markets such as Surabaya’s. Surabaya, Indonesia’s second-largest city, is home to a diverse array of private universities that compete for students not only based on academic offerings but also through the perceived quality and student experience. In this competitive context, online reviews posted by current and former students play a crucial role in shaping institutional reputations and attracting prospective students (Lu & Stepchenkova, 2015). Thus, analyzing these online text reviews offers valuable insights into the factors that contribute to student satisfaction, providing a basis for targeted improvements in educational quality and institutional effectiveness.

Student satisfaction is a multifaceted construct that encompasses various aspects of the educational experience, from academic support and campus facilities to social integration and personal development opportunities (Elliott & Healy, 2001; Douglas et al., 2006). Research has consistently highlighted the importance of student satisfaction as a key indicator of academic quality and institutional success. Satisfied students are more likely to persist in their studies, achieve higher academic outcomes, and develop a lasting loyalty to their alma mater (Kuh et al., 2008; Braxton, 2019). Moreover, in the specific context of private universities in Surabaya, student satisfaction acquires an added dimension of significance due to the highly competitive nature of the higher education market. With numerous institutions vying for a limited pool of students, the ability to deliver a satisfying and enriching educational experience can be a decisive factor in attracting and retaining students. Therefore, understanding and enhancing student satisfaction is not only a matter of educational quality but also a strategic imperative for institutional survival and growth (Hennig-Thurau et al., 2010).

This paper aims to analyze online text reviews of private universities in Surabaya to assess student satisfaction levels and identify the key factors influencing these perceptions. By systematically examining the content of online reviews, the study seeks to uncover the specific attributes and experiences that contribute to or detract from student satisfaction. The goal is to provide actionable insights that can guide universities in enhancing the quality of the educational experience and achieving higher levels of student satisfaction. In pursuit of this objective, the paper is structured in introduction, the next section reviews the literature on student satisfaction in higher education, with a particular focus on the role of online reviews in shaping perceptions of educational quality. The methodology section then describes the approach used to collect and analyze online reviews of private universities in Surabaya. The findings section presents the results of this analysis, highlighting the main factors influencing student satisfaction. Finally, the discussion and conclusion sections interpret these findings in the context of existing research, offering recommendations for practitioners and suggesting directions for future research. In conclusion, the advent of digitalization and the proliferation of online platforms have significantly altered the landscape of student feedback and satisfaction assessment in higher education. By focusing on the case of private universities in Surabaya, this paper seeks to contribute to the understanding of how online reviews can serve as a lens through which student satisfaction can be gauged and enhanced. As the study unfolds, it is anticipated that the insights gleaned will not only enrich the academic discourse on
LITERATURE REVIEW
Student's Satisfaction

Student satisfaction within the realm of higher education has garnered significant attention as a crucial determinant of academic institutions' success and sustainability. As universities endeavor to increase student enrollment and retention, understanding the multifaceted nature of student satisfaction becomes imperative. This literature review delves into various factors that influence student satisfaction, including the university selection process, service quality, dining options, and interpersonal interactions, while also highlighting some of the tools developed to measure satisfaction levels. The decision to attend a particular university is influenced by a myriad of factors, ranging from academic reputation and career opportunities to financial considerations and personal preferences. Three-phase model, the choice process encompasses predisposition, search, and choice stages, each influenced by different factors (Wong & Chapman, 2023). This complex decision-making process reflects the economic, sociological, and marketing mix models that prospective students consider. According to Denvir & McMahon (1992), the economic model emphasizes the cost-benefit analysis students undertake, weighing the economic returns of their educational investment against the costs (Vicente-Ramos & Cano-Torres, 2022). Sociological factors, such as family background and societal norms, also play a crucial role, as do elements of the marketing mix—product, price, place, and promotion—that universities employ to attract students (Douglas et al., 2006).

Beyond the initial university choice, the quality of services provided by the institution significantly impacts student satisfaction. The importance of service quality in educational settings is well-documented, with numerous studies affirming its impact on overall student satisfaction (Alexandris et al., 2004). One specific aspect of service quality that affects student satisfaction is the variety and quality of dining services. For instance, Kincaid et al. (2010), found that menu variety in college cafeterias plays a substantial role in student satisfaction, highlighting the need for institutions to cater to diverse dietary preferences and ensure high standards of food quality (Elliott & Healy, 2001). Interpersonal interactions within the university context significantly influence student satisfaction. Interactionalist theory posits that student retention is closely linked to the quality of social and academic integration in the university environment (Kuh et al., 2008). This theory underscores the importance of fostering positive interactions among students and between students and faculty as key to enhancing student satisfaction. Distinguishing between formal academic interactions, such as those occurring in the classroom or with academic advisors, and informal social interactions, such as peer group engagements. Both forms of interaction are associated with different dimensions of student satisfaction, suggesting that universities must facilitate a supportive and engaging community to foster overall satisfaction (Farrés-Tarafa et al., 2021).

Given the complexity of student satisfaction, accurately measuring it is crucial for universities seeking to improve their services and student experiences. The development of specialized tools, such as the University Students Satisfaction Scale (U-SSS), reflects efforts to quantify satisfaction levels comprehensively. The U-SSS, as proposed by Elliott and Shin (2002), encompasses various dimensions of the university experience, from academic and administrative services to social and environmental aspects, providing a multifaceted understanding of student satisfaction (Elliott & Healy, 2001). Such tools are invaluable for institutions aiming to identify areas of strength and opportunities for improvement.

Online Text Review

The digital era has significantly transformed consumer behavior, including the way prospective students gather information about higher education institutions. Online text reviews, serving as a digital form of word-of-mouth, have emerged as a pivotal influence
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on prospective students’ decision-making processes. This section explores the role of online text reviews in higher education, their impact on student satisfaction and institutional reputation, and the attendant challenges and opportunities. Online reviews have become a vital source of information across various sectors, including higher education. The substantial influence of online reviews on consumers’ perceptions and decisions, attributed to their peer-generated, trustworthy nature. In the higher education context, prospective students utilize online reviews to gain insights into the experiences of current and former students, aiding them in making informed enrollment decisions (Chevalier & Mayzlin, 2006). The anonymity and aggregated nature of online reviews lend a perceived objectivity, making them a critical element in university selection processes (Dellarocas, 2003).

Online text reviews significantly affect student satisfaction and the reputation of institutions. Positive online reviews could enhance prospective students’ expectations and satisfaction by providing social proof of an institution’s quality (Ye et al., 2009). Conversely, negative reviews can tarnish an institution’s reputation, leading to reduced interest and enrollment rates. The substantial impact of negative word-of-mouth, including online reviews, on perceptions of institutional quality, underscoring the importance for universities to actively manage their online reputation (Godes & Mayzlin, 2004). Employing text and sentiment analysis techniques on online reviews can offer valuable insights for higher education institutions aiming to understand and improve student satisfaction. Sentiment analysis can reveal nuanced insights into student experiences, enabling institutions to address specific issues and enhance the overall educational experience (Fan et al., 2017).

While online reviews offer opportunities for enhancing student satisfaction and institutional reputation, they also present challenges. The potential for unverified or misleading reviews can unjustly affect an institution’s reputation. Moreover, the volume of reviews across various platforms can overwhelm institutions’ monitoring and response efforts. However, these challenges also offer opportunities for engagement and improvement. Institutions that actively manage their online presence and address concerns raised in reviews can demonstrate responsiveness and a commitment to quality, potentially turning negative perceptions into positive outcomes. Higher education institutions can use online text reviews as a tool for continuous improvement, making data-driven decisions to enhance their services and address student concerns (Liu et al., 2017). This approach can lead to improved recruitment, retention, and alumni relations, offering a significant strategic advantage in a competitive higher education landscape. Online text reviews play a crucial role in shaping the reputations of higher education institutions and influencing student satisfaction levels. Analyzing these reviews provides valuable insights that can guide universities in improving their offerings and addressing student concerns. Despite the challenges associated with online feedback management, the opportunities for institutional engagement, improvement, and strategic adaptation are substantial. As digitalization continues to influence consumer behaviors, the significance of online reviews in higher education decision-making processes is likely to increase, highlighting the importance of effective online reputation management and continuous improvement efforts based on student feedback.

METHODS

The investigation into student satisfaction at private universities in Surabaya via online text reviews necessitates a detailed and methodical approach. This research adopts a mixed-methods strategy, integrating quantitative web crawling techniques with qualitative co-occurrence network analysis to extract and analyze data from online reviews. The methodology is structured to ensure a comprehensive understanding of student satisfaction factors as expressed in online reviews. The initial phase involved the collection of 1,548 online reviews from Google, focusing on four prestigious private universities in Surabaya: Petra Christian University, Universitas Ciputra Surabaya, Universitas 17 Agustus 1945 Surabaya, and Universitas Wijaya Kusuma Surabaya. These
institutions were selected based on their academic reputation and significance in the region's higher education landscape. A tailored web crawler was developed for this purpose, designed to automate the extraction of review texts, ratings, and posting dates. To ensure the analysis's relevance, only reviews posted within the recent three-year period were collected. This approach aligns with Krippendorff's (2018) recommendation for ensuring data recency and relevance in content analysis. Following collection, the dataset underwent preprocessing to clean and prepare the text for analysis. This involved removing irrelevant information, standardizing abbreviations, and correcting typographical errors, in line with the preprocessing steps outlined by Gao et al. (2018). Sentiment analysis was then applied to categorize the reviews into positive, neutral, or negative sentiments, employing algorithms that reflect the sentiment categorization methodology suggested by Liu (2012).

The centerpiece of our methodological approach is the co-occurrence network analysis by Higuchi (2016). This technique is pivotal for identifying and visualizing the relationships between words within the text data, providing insights into the thematic structures underlying the reviews. Applying Natural Language Processing (NLP) techniques, key terms and phrases frequently appearing in the dataset were identified. This step is crucial for pinpointing the specific aspects of university experience discussed in the reviews, adhering to the keyword extraction methodologies discussed by Chen & Xie (2004). Building the Co-occurrence Matrix capturing the frequency with which pairs of keywords appear together in the same review was constructed. This matrix serves as the foundation for understanding the thematic connections between different aspects of the student experience (Newman, 2006). Utilizing the co-occurrence matrix, a network graph was generated, where nodes represent keywords, and edges denote the co-occurrence relationships. By examining the network graph, clusters of closely related keywords were identified, revealing the core themes emergent from the online reviews. The final analytical step involved interpreting the identified thematic clusters to uncover the underlying factors of student satisfaction. Aiming to translate the complex network data into actionable insights for improving student experiences. This research methodology, combining data collection, preprocessing, and co-occurrence network analysis, offers a robust framework for exploring student satisfaction through online text reviews. By dissecting the nuanced relationships between different aspects of the university experience, the study aims to unearth actionable insights for enhancing student satisfaction at private universities in Surabaya.

RESULT

The investigation into the essence of student satisfaction and institutional reputation among private universities in Surabaya, as gleaned from 1,548 online reviews, yields a rich tapestry of insights. This exploration, centered around the top 20 most frequently mentioned words, unveils nuanced understandings of student priorities, preferences, and perceptions regarding their educational journey. The significance of the physical environment, infrastructure, and overall educational experience quality shines through the recurrent themes within these online narratives (Brown et al., 2021). The analysis prominently highlights the importance of physical infrastructure and the learning environment as central to student satisfaction. The words campus and building not only underscore the value placed on physical infrastructure but also suggest that the aesthetic appeal and functionality of university facilities are pivotal in shaping student perceptions. Further emphasis on terms such as clean and beautiful reveals a collective appreciation for cleanliness and aesthetic beauty in the university setting. These elements are seen as integral to fostering a conducive and inviting learning atmosphere. Moreover, mentions of spacious and comfortable reflect the students' valuation of ample and comfortable physical spaces for learning and socialization, underscoring the importance of physical comfort and quality of life on campus. This emphasis on the physical attributes of universities points to their critical role in not just attracting students but also in enhancing their daily experiences and satisfaction.
The general sense of satisfaction, captured through the frequent use of the word good, transcends specific aspects to encompass the overall university experience. This broad sentiment of approval suggests that the universities in Surabaya are largely successful in meeting or even exceeding student expectations across various dimensions, including academic programs, faculty engagement, and campus life. The analysis further draws
attention to the significance of facilities and resources, as denoted by the mention of facility and parking, highlighting the direct impact of these elements on convenience and satisfaction levels. The atmosphere of the university, described with words like cool and nice, reflects the social climate and overall vibe of the institution. A positive and welcoming atmosphere is deemed crucial for nurturing a sense of community and belonging among students, which, in turn, influences their overall satisfaction and engagement with the university (Lalas et al., 2019). The role of academic staff, evidenced by mentions of faculty and lecturer, is highlighted as a key determinant of the educational experience. The quality of teaching, the approachability of staff, and the support provided are pivotal in shaping students' academic satisfaction and success (Hagenauer et al., 2023). Moreover, the emphasis on the term student in the reviews underscores the centrality of student experiences and perspectives, suggesting that universities are primarily evaluated based on their responsiveness to student needs and aspirations.

Comparative assessments, as indicated using best, reveal a competitive assessment of universities, suggesting a perception of excellence among the options available in Surabaya. This competitive nature of the higher education landscape underscores the desire among students for high-quality education and the importance of continuous improvement and differentiation strategies for institutions. The findings from this analysis provide actionable insights for stakeholders in higher education, particularly administrators and policymakers of private universities in Surabaya. By understanding and addressing the factors that significantly impact student satisfaction and institutional reputation, universities can enhance their educational offerings, campus facilities, and overall student experience (Miotto et al., 2020). This targeted approach not only promises to elevate student satisfaction but also positions these institutions competitively in the higher education market, ultimately contributing to increased enrollment and retention rates.

The extensive analysis of online reviews for private universities in Surabaya has unveiled a multifaceted picture of student satisfaction, with various factors contributing to the educational landscape's perception. The co-occurrence network, based on the top 60 words, provides a visual and analytical representation of the themes that resonate with students, reflecting their priorities, experiences, and expectations. The term campus emerges as a nucleus in the network of student satisfaction, indicating the significant role the university's physical space plays in the student experience. The size and comfort of the campus, as evidenced by adjacent terms such as spacious and comfortable, are crucial for students, denoting their preference for a learning environment that is not only aesthetically pleasing but also conducive to their academic and social activities (Ackah-Jnr & Danso, 2019). The repeated mentions of clean alongside beautiful highlight the importance of cleanliness and well-maintained facilities, suggesting that a tidy and attractive campus is a key component of student contentment. Adjacent to this cluster, the word good appears prominently, often in proximity to campus, suggesting a general positive sentiment toward the university's facilities and services. This positive descriptor points to a broader satisfaction with the quality of education and campus life, encompassing various aspects of the student experience from academic to extracurricular.

Notably, the word best is closely linked with private and university, illustrating a sense of pride and a competitive edge among students who view their choice of university as a superior one. This word association might reflect the marketing efforts of these institutions as well as the students' own perceptions of quality and prestige associated with their educational choice. The academic aspect of university life is also given considerable emphasis, with words such as education, graduate, teaching, program, and faculty featuring prominently. These terms form a sub-network that underscores the importance of academic rigor and the quality of instruction as determinants of student satisfaction. The presence of faculty and lecturer in this context suggests that the caliber of teaching staff and their ability to engage and inspire students are critical factors in shaping the educational experience. Infrastructure and facilities are further highlighted through terms like building, facility, parking, and canteen (Nurhuda et al., 2023). These words form a
sub-network that points to the practical considerations of students, who value comprehensive and accessible facilities that enhance their daily university life. A well-facilitated campus with ample parking, diverse canteen options, and modern buildings is evidently important to students, impacting their overall satisfaction levels.

The network also reveals the importance of the social and security aspects of university life, with words like security, friendly, and staff interlinked. This suggests that students place a high value on a secure campus environment where they can engage with friendly and supportive staff, fostering a sense of community and safety. Interestingly, economic considerations are also visible in the network, with expensive and cheap appearing alongside fees and tuition (Murphy et al., 2019). This indicates that financial factors play a significant role in student satisfaction, with students weighing the cost of education against the perceived value it offers. The findings from this network analysis of online reviews are indicative of a complex interplay of factors that contribute to student satisfaction in private universities in Surabaya. The physical environment, the quality of education, the level of facilities, the economic factors, and the social and security climate are all integral to shaping students’ perceptions and experiences. These insights offer valuable implications for university administrators and policymakers, emphasizing the need for a holistic approach to enhancing student satisfaction and maintaining the reputation of their institutions. By focusing on these key areas, universities can foster an environment that not only attracts prospective students but also retains and satisfies current ones, thereby sustaining their competitive edge in the education sector.

CONCLUSION

This study embarked on an exploratory journey to decipher the sentiments and perceptions of students, as conveyed through their online reviews, about private universities in Surabaya. The comprehensive analysis of 1,548 reviews unearthed a wealth of information regarding what factors contribute to student satisfaction and, conversely, what aspects are sources of discontent. The textured narrative that emerges from this data...
offers a valuable blueprint for institutional enhancement and strategic planning in higher education. The central tenet of student satisfaction, as revealed by the data, hinges on a confluence of academic, environmental, and administrative factors. Academically, students place a premium on the quality and diversity of educational programs, the expertise and approachability of faculty, and the practicality of the curriculum in preparing them for future endeavors. Environmentally, the importance of a safe, well-maintained, and aesthetically pleasing campus cannot be overstated, as it contributes significantly to the overall university experience. Administratively, efficient services, transparent fee structures, and responsive management practices were underscored as pivotal to student satisfaction.

The prevalence of certain keywords within the reviews, such as comfortable, clean, and modern facilities, in conjunction with affordable fees and qualified lecturers, illuminates a student body that is discerning and demands a holistic value proposition from their chosen institutions. It is evident that students are not mere passive recipients of education but are actively engaged in a dynamic exchange where they assess the value of their investment against the backdrop of their experience. The implications of these findings are manifold. For university administrators, the insights offered by this study serve as a clarion call for an integrated approach to enhancing student satisfaction. It is imperative that universities do not merely concentrate their efforts on academic excellence but also devote attention to creating and maintaining an environment that is conducive to learning, personal growth, and well-being. This involves strategic investment in campus infrastructure, regular review and adaptation of academic programs to meet evolving industry standards and student interests, and fostering a vibrant campus life that supports a sense of community among students.

Moreover, the study highlights the critical role of communication and engagement with the student body. Universities that actively solicit feedback, respond to student concerns, and implement changes based on student input are likely to engender a sense of belonging and loyalty among their students. This two-way dialogue is not only beneficial for continuous improvement but also for building a robust university brand that resonates with current and prospective students. The practical applications of these findings are vast. Universities could adopt a more data-driven approach to decision-making, where student reviews are regularly analyzed to inform policy and practice. Initiatives such as student satisfaction surveys, focus groups, and open forums could be institutionalized to ensure that the student voice is not only heard but also acted upon. Additionally, leveraging the power of social media and online platforms to showcase improvements and celebrate achievements could further augment student engagement and satisfaction.

One of the limitations of this study, however, is its reliance on self-reported data, which can be subject to bias and may not capture the full spectrum of the student experience. Furthermore, the study was limited to private universities in Surabaya, and thus, the findings may not be generalizable to other contexts or types of institutions. Future research could address these limitations by incorporating a broader range of data sources, including in-depth interviews, longitudinal studies, and comparative analyses across different types of higher education institutions. In conclusion, the insights gleaned from the online reviews offer a compelling narrative about what matters to students in their university experience. Private universities in Surabaya, and indeed higher education institutions worldwide, are presented with a unique opportunity to refine their offerings to align with the needs and expectations of their students. By adopting a holistic, student-centered approach to education, universities can not only enhance student satisfaction but also elevate their institutional stature and contribute meaningfully to the development of future generations. This study acts as a foundational step towards a more nuanced understanding of student satisfaction, paving the way for a more responsive and dynamic higher education landscape.
REFERENCES


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