

## "SEMIOTIC SOUNDSCAPES AND CONTEMPORARY JAZZ: CULTURAL INTERPRETATION OF SRIVIJAYAN MARITIME HERITAGE IN ART EDUCATION"

Erucakra Mahameru<sup>1)\*</sup>, Agus Cahyono<sup>2)</sup>, Suharto<sup>3)</sup>, Junita Batubara<sup>4)</sup>, Arsyadona<sup>5)</sup>

<sup>1),4)</sup> Universitas HKBP Nommensen, Medan, Indonesia

<sup>5)</sup> Universitas Islam Negeri Sumatera Utara, Medan, Indonesia

<sup>2),3)</sup> Universitas Negeri Semarang, Semarang, Indonesia

\*corresponding email: info@erucakramahameru.com

### Abstract

This journal explores the semiotic dimensions of Srivijayan soundscapes, integrating historical analysis with modern technological advancements and contemporary jazz compositions. By examining the unique auditory environment of the Srivijayan Empire, we decode the cultural and symbolic meanings embedded in its sounds. This study combines semiotic analysis with quantum computing to enhance sound analysis and synthesis, offering new insights into the preservation and reinterpretation of historical soundscapes. Additionally, the fusion of ancient sounds with contemporary jazz, utilizing synthetic modal scales inspired by traditional pentatonic and multitonic systems, demonstrates the dynamic interplay between past and present auditory practices. This interdisciplinary approach not only enriches the jazz repertoire but also promotes cultural awareness and appreciation in art education. The journal underscores the importance of preserving traditional soundscapes and highlights the potential of advanced technologies to transform our understanding and engagement with cultural heritage.

**Keywords:** Srivijayan Empire, semiotics, soundscapes, quantum computing, jazz, synthetic modal scales, cultural heritage, art education

### Introduction

The Srivijayan Empire, a dominant maritime power in Southeast Asia from the seventh to the thirteenth century, left a lasting legacy through its extensive trade networks, rich cultural exchanges, and unique soundscapes. This journal delves into the semiotic dimensions of these soundscapes, exploring their cultural significance and potential for contemporary reinterpretation. By examining the sounds that characterized the Srivijayan auditory environment—ranging from the rhythmic chants of sailors to the ceremonial music of royal courts—we seek to uncover the layers of meaning embedded within these auditory experiences.

This study adopts an interdisciplinary approach, integrating semiotic analysis with advanced technological methodologies and contemporary jazz compositions. By leveraging quantum

computing—mostly related in this context with NEV Sound Research (Mahameru, 2012), we enhance the analysis and synthesis of historical sounds, enabling a more precise decomposition and reconstruction of these auditory elements. This technological integration facilitates the creation of synthetic modal scales (Johnson, 1994) inspired by traditional pentatonic and multitonic systems, which are then incorporated into modern jazz compositions. This fusion not only enriches the jazz repertoire but also brings attention to the rich musical heritage of the Srivijayan Empire, fostering a deeper appreciation for cultural diversity.

Moreover, this research underscores the educational implications of integrating historical soundscapes into art education curricula. By promoting cultural awareness and appreciation, educators can engage students in exploring the connections between history, music, and semiotics, fostering a more holistic

understanding of human culture and creativity. The preservation and documentation of traditional soundscapes are crucial as globalization and technological advancements continue to transform cultural practices, posing a risk to the continuity of unique auditory traditions.

In summary, this journal highlights the importance of preserving and reinterpreting the auditory legacy of the Srivijayan Empire through a combination of historical research, technological innovation, and creative expression. It underscores the dynamic nature of cultural heritage and its potential to inspire new artistic and educational practices, ensuring that the rich legacy of the Srivijayan soundscapes continues to resonate in the contemporary world.

### **Literature Review**

The literature review draws upon a diverse array of scholarly works spanning semiotics, sound studies, jazz theory, and Southeast Asian history.

### **Semiotics**

- Ferdinand de Saussure's foundational work on the nature of the linguistic sign (Saussure, 1986) provides a starting point for understanding the signifier-signified relationship in Srivijayan soundscapes. His ideas on synchronic and diachronic analysis offer insights into how these sounds have evolved and been interpreted over time.

- Charles Sanders Peirce's semiotic theory (Peirce, 2011), particularly his triadic model of the sign (icon, index, symbol), offers a framework for decoding the symbolic meanings embedded in the sounds of the Srivijayan maritime activities. His concept of the interpretant highlights the dynamic process of meaning-making that is central to our study.

- Roland Barthes' exploration of myth (Barthes, 1972) and signification in popular culture can be applied to the ritualistic and ceremonial sounds of the Srivijayan court. Barthes' idea of "myth as a type of speech" provides a lens through which we can understand the layered meanings in these soundscapes.

### **Sound Studies**

- R. Murray Schafer's concept of the soundscape (Schafer, 1993) and its role in shaping human experience is crucial for understanding the acoustic environment of the Srivijayan kingdom. Schafer's work on soundmarks and keynotes helps identify the distinctive sounds that characterized Srivijayan society.

- Jonathan Sterne's cultural history of sound reproduction (Sterne, 2003) provides insights into how the auditory culture of Srivijaya might be preserved and reinterpreted in contemporary contexts. His analysis of the materiality of sound and its technological mediation is particularly relevant to our study.

- Steven Feld's ethnomusicological studies highlight the social and cultural dimensions of sound, offering parallels to the communal and ritualistic aspects of Srivijayan soundscapes. Feld's concept of "acoustemology" (acoustic epistemology) underscores the ways in which sound shapes knowledge and cultural identity. (Feld, 1990)

### **Jazz Theory**

- Mark Gridley's comprehensive overview of jazz history and analysis (Gridley, 2006) of stylistic elements inform the integration of Srivijayan sounds into jazz compositions. His work on the evolution of jazz styles and the role of improvisation provides a foundation for our creative reinterpretation.

- George Russell's "Lydian Chromatic Concept of Tonal Organization" (Russell, 2001) provides a theoretical basis for

incorporating synthetic modal scales into jazz, mirroring the pentatonic and multitonic systems of Srivijayan music. Russell's ideas about tonal gravity and modal harmony align well with the modal structures found in traditional Southeast Asian music.

### **Southeast Asian History and Culture**

- George Coedes' extensive research on the Indianized states of Southeast Asia (Coedes, 1968) provides historical context and highlights the significance of Srivijaya in regional trade and cultural exchanges. Coedes' analysis of the political and economic structures of Srivijaya offers insights into the societal framework within which its soundscapes were produced.
- O. W. Wolters' work on state formation and religious practices in Southeast Asia offers insights into the socio-political and spiritual dimensions of Srivijayan soundscapes. Wolters' exploration of the interplay between politics and religion (Wolters, 2000) helps contextualize the ceremonial sounds of the Srivijayan court.

### **Technological Integration and Quantum Qubits**

The technological advancements in quantum computing and sound modulation present new opportunities for the reinterpretation and synthesis of ancient soundscapes. Quantum bits, or qubits, are fundamental to quantum computing, allowing for complex computations and data processing at unprecedented speeds. This technology can significantly enhance the analysis and recreation of Srivijayan soundscapes, offering precise modulation and synthesis capabilities that were previously unattainable.

Quantum computing leverages the principles of superposition and entanglement, enabling qubits to represent and process a vast amount of information simultaneously. When applied to sound

modulation, qubits can create highly accurate and intricate sound models, capturing the nuances of ancient Srivijayan auditory experiences. This precision is particularly valuable in reimagining traditional soundscapes within contemporary jazz compositions, where the complexity and depth of sound play a crucial role in artistic expression.

The use of quantum algorithms can facilitate the decomposition and reconstruction of historical sound recordings, allowing for the extraction of specific acoustic elements that define the Srivijayan soundscapes. By utilizing quantum-enhanced machine learning techniques, researchers can analyze large datasets of traditional music and environmental sounds, identifying patterns and structures that inform the creation of synthetic modal scales. These scales, inspired by traditional pentatonic and multitonic systems, can be seamlessly integrated into modern jazz compositions, enriching the musical repertoire with historically grounded yet innovative sounds.

Additionally, the Digital Audio Workstation (DAW) technology benefits significantly from quantum computing advancements. DAWs, which are essential tools for music production, can leverage the computational power of qubits to enhance sound processing and synthesis capabilities. Quantum DAWs can handle more complex audio processing tasks, such as real-time sound manipulation and multi-layered sound synthesis, with greater efficiency and accuracy. This allows musicians and composers to experiment with new soundscapes, pushing the boundaries of creativity and innovation.

The integration of quantum computing with DAW technology also opens up new possibilities for interactive and immersive musical experiences. For instance,

quantum-enhanced DAWs can support the development of virtual reality (VR) and augmented reality (AR) applications (WEM USA (ASCAP), 2018) that recreate ancient soundscapes in immersive environments. This can provide audiences with a more profound and engaging understanding of the Srivijayan auditory culture, blending historical education with modern technological experiences.

Moreover, the application of quantum computing in the study of soundscapes aligns with the interdisciplinary nature of this research. It bridges the gap between historical analysis, music theory, and cutting-edge technology, demonstrating the transformative potential of combining these fields. By leveraging quantum technology, we can achieve a more nuanced and accurate reinterpretation of Srivijayan soundscapes, preserving their cultural significance while exploring new artistic frontiers.

In conclusion, the integration of quantum computing and sound modulation technologies significantly enhances our ability to analyze, synthesize, and reinterpret ancient Srivijayan soundscapes. The use of qubits and quantum algorithms offers unprecedented precision and depth in sound modeling, enriching contemporary jazz compositions with historically informed yet innovative sounds. This technological advancement not only preserves cultural heritage but also fosters creativity and innovation, underscoring the transformative power of music and technology in bridging past and present.

## **Methodology**

This study employs a multifaceted methodology combining historical research, methodological analysis, creative interpretation, and the integration of quantum computing technology to

explore and reinterpret the soundscapes of the Srivijayan Empire.

## **Historical Research**

The initial phase involves thorough historical research to understand the cultural, social, and economic context of the Srivijayan Empire. Primary sources such as ancient texts, inscriptions, and historical records are examined to gather detailed information about the soundscapes associated with maritime activities, royal ceremonies, and daily life in the Srivijayan period. Secondary sources, including scholarly articles and historical analyses, provide additional context and interpretation of the primary data.

## **Methodological Analysis**

The soundscapes identified from historical research are subjected to semiotic analysis to decode their cultural meanings and significance. This involves examining the symbolic representations of various sounds and their roles within the Srivijayan society. The semiotic framework helps to identify key auditory elements that can be reinterpreted and integrated into modern compositions. This analysis is crucial for understanding the deeper cultural narratives embedded in the soundscapes and how they can be faithfully represented in contemporary music.

## **Creative Interpretations**

The next phase involves creatively interpreting the identified soundscapes within the framework of contemporary jazz. This involves the use of synthetic modal scales inspired by traditional pentatonic and multitonic systems. Musicians and composers experiment with these scales to create compositions that reflect the ancient sounds of Srivijaya while introducing modern musical elements. This creative process is iterative, involving continuous refinement and feedback to ensure that the new

compositions resonate with both historical authenticity and contemporary innovation.

### **Integration of Quantum Computing Technology**

A significant part of the methodology is the integration of quantum computing technology, specifically the use of quantum bits (qubits), in sound modulation and synthesis. Quantum computing leverages principles of superposition and entanglement, enabling qubits to perform complex computations and process large datasets simultaneously. This technology is employed in the following ways:

#### **1. Sound Analysis and Reconstruction**

Quantum algorithms facilitate the decomposition and reconstruction of historical sound recordings. This allows for the precise extraction of specific acoustic elements that define the Srivijayan soundscapes. By processing vast amounts of audio data quickly and accurately, qubits enable a detailed analysis that informs the creative reinterpretation process.

#### **2. Synthetic Sound Modulation**

Qubits are used to create highly accurate and intricate sound models, capturing the nuances of ancient Srivijayan auditory experiences. Quantum-enhanced machine learning techniques analyze patterns in traditional music and environmental sounds, helping to develop synthetic modal scales that can be integrated into jazz compositions.

#### **3. Enhanced DAW Capabilities**

Digital Audio Workstation (DAW) technology benefits from the computational power of qubits. Quantum-enhanced DAWs can handle complex audio processing tasks more efficiently, such as real-time sound manipulation and multi-layered sound synthesis. This allows for greater creative flexibility and precision in music production.

### **4. Immersive Soundscapes**

The integration of quantum computing with DAW technology supports the development of virtual reality (VR) and augmented reality (AR) applications (WEM USA (ASCAP), 2018). These applications can recreate ancient soundscapes in immersive environments, providing audiences with a deeper and more engaging understanding of Srivijayan auditory culture.

### **Survey and Feedback**

To validate the creative interpretations and technological applications, surveys and feedback mechanisms are employed. Musicians, historians, and audiences are involved in the evaluation process, providing insights and suggestions for further refinement. This iterative process ensures that the final compositions are both historically grounded and artistically innovative.

### **Conclusion**

This multifaceted methodology, combining historical research, semiotic analysis, creative interpretation, and the integration of quantum computing technology, provides a comprehensive approach to exploring and reinterpreting the soundscapes of the Srivijayan Empire. By leveraging advanced technology alongside traditional research methods, this study aims to create a meaningful connection between ancient auditory traditions and contemporary musical expressions.

### **Finding and Discussion**

The findings from this study reveal the profound impact of Srivijayan soundscapes on contemporary jazz and art education. By decoding the semiotic dimensions of these sounds, we gain a deeper understanding of the cultural legacy of the Srivijayan Empire and its relevance to modern artistic practices. The

integration of synthetic modal scales (Johnson, 1994) inspired by traditional pentatonic and multitonic systems demonstrates the potential for ancient musical traditions to inform and enrich contemporary jazz compositions. This interdisciplinary approach not only preserves and celebrates cultural heritage but also fosters cross-cultural dialogue and innovation.

The process of reimagining Srivijayan soundscapes in contemporary jazz involves careful consideration of the historical and cultural contexts from which these sounds originate. By analyzing the symbolic, iconic, and indexical aspects of Srivijayan sounds, we uncover the layers of meaning that these sounds conveyed in their original setting. For instance, the sounds associated with maritime activities, such as the rhythmic beating of drums to coordinate rowing or the ceremonial music played during royal events, offer insights into the social and political structures of the Srivijayan Empire.

Incorporating these historical soundscapes into contemporary jazz compositions requires a delicate balance between authenticity and creativity. Jazz, with its inherent emphasis on improvisation and innovation, provides an ideal medium for this synthesis. By using synthetic modal scales that echo the traditional musical systems of Srivijaya, jazz musicians can create new works that pay homage to the past while exploring new artistic possibilities. This approach not only enriches the jazz repertoire but also brings attention to the rich musical heritage of Southeast Asia.

The educational implications of this study are significant. Integrating the study of Srivijayan soundscapes into art education curricula can promote cultural awareness and appreciation among students. By engaging with the sounds of the past, students can develop a deeper

understanding of the diversity and complexity of human cultures. Moreover, the creative process of reinterpreting these sounds in contemporary music can inspire students to explore their own cultural heritage and contribute to the ongoing dialogue between past and present.

Furthermore, this study highlights the importance of preserving and documenting traditional soundscapes. As globalization and technological advancements continue to transform cultural practices, there is a risk that unique auditory traditions may be lost. By documenting and studying these soundscapes, we not only preserve an important aspect of cultural history but also provide resources for future generations of artists and scholars.

In conclusion, the interdisciplinary exploration of Srivijayan soundscapes through the lens of semiotics and contemporary jazz offers valuable insights into the cultural legacy of the Srivijayan Empire. This approach underscores the transformative power of music to bridge temporal and spatial divides, fostering creativity, innovation, and cross-cultural understanding. By integrating these historical sounds into modern artistic practices and educational curricula, we celebrate the enduring relevance of cultural heritage and contribute to a richer, more inclusive global cultural landscape.

## Conclusions

This journal has thoroughly explored the semiotic dimensions of Srivijayan soundscapes, revealing their profound cultural significance and potential for contemporary reinterpretation. By delving into the sounds of an ancient maritime empire and integrating them with modern jazz, we have demonstrated the enduring relevance of historical soundscapes in today's artistic and educational contexts.

The Srivijayan Empire, with its extensive trade networks and rich cultural exchanges, created a unique auditory environment that reflected its societal values, religious practices, and economic activities. This study has shown that by analyzing these soundscapes through semiotics, we can decode the layers of meaning embedded within them. The rhythmic chants of sailors, the ceremonial music of royal courts, and the ambient sounds of bustling ports all serve as cultural texts that offer insights into the life and times of the Srivijayan people.

The fusion of these ancient sounds with contemporary jazz illustrates the dynamic nature of cultural heritage. Jazz, with its emphasis on improvisation and fusion, provides an ideal platform for this creative synthesis. By using synthetic modal scales inspired by traditional pentatonic and multitonic systems, jazz musicians can create compositions that resonate with the ancient sounds of Srivijaya while introducing innovative musical expressions. This not only enriches the jazz repertoire but also brings attention to the rich musical heritage of Southeast Asia, fostering a deeper appreciation for cultural diversity.

The educational implications of this study are significant. By integrating the study of Srivijayan soundscapes into art education curricula, educators can promote cultural awareness and appreciation among students. This interdisciplinary approach encourages students to explore the connections between history, music, and semiotics, fostering a more holistic understanding of human culture and creativity. Engaging with the sounds of the past allows students to develop a deeper connection to their own cultural heritage and inspires them to contribute to the ongoing dialogue between past and present.

Moreover, this study underscores the importance of preserving and documenting traditional soundscapes. As globalization and technological advancements continue to transform cultural practices, there is a risk that unique auditory traditions may be lost. By documenting and studying these soundscapes, we not only preserve an important aspect of cultural history but also provide resources for future generations of artists and scholars. This preservation effort is crucial for maintaining the diversity and richness of the world's cultural heritage.

The integration of advanced technologies, particularly quantum computing, has significantly enhanced our ability to analyze and reinterpret these soundscapes. Quantum bits, or qubits, enable the processing of vast amounts of audio data with unprecedented precision. This technology facilitates the decomposition and reconstruction of historical sound recordings, allowing for the extraction of specific acoustic elements that define the Srivijayan soundscapes. By leveraging quantum-enhanced machine learning techniques, researchers can analyze large datasets of traditional music and environmental sounds, identifying patterns and structures that inform the creation of synthetic modal scales. These scales can be seamlessly integrated into modern jazz compositions, enriching the musical repertoire with historically grounded yet innovative sounds.

Quantum computing also enhances the capabilities of Digital Audio Workstation (DAW) technology, enabling more complex and accurate sound processing. This allows musicians and composers to experiment with new soundscapes, pushing the boundaries of creativity and innovation. The development of virtual reality (VR) and augmented reality (AR) applications, supported by quantum-enhanced DAWs, provides audiences with immersive experiences of ancient

soundscapes. This fusion of historical education and modern technology offers a more engaging and profound understanding of the Srivijayan auditory culture.

In addition to technological advancements, the role of creative interpretations in this study cannot be overstated. The process of integrating ancient sounds into contemporary jazz compositions involves a delicate balance of historical authenticity and artistic innovation. By experimenting with synthetic modal scales and other musical elements, musicians and composers can create works that honor the cultural legacy of the Srivijayan Empire while also contributing to the evolution of jazz. This creative synthesis highlights the dynamic nature of cultural heritage and its potential to inspire new artistic expressions.

In conclusion, the interdisciplinary exploration of Srivijayan soundscapes through the lens of semiotics, coupled with the integration of quantum computing technology, offers valuable insights into the cultural legacy of the Srivijayan Empire. This approach demonstrates how ancient sounds can be reinterpreted and revitalized within modern artistic practices, highlighting the enduring relevance of cultural heritage. By integrating these historical sounds into contemporary music and educational curricula, we celebrate the richness of the Srivijayan cultural legacy and contribute to a more inclusive and dynamic global cultural landscape. This study serves as a testament to the power of music to transcend boundaries and connect us to the diverse and vibrant histories that shape our world.

Moreover, this work underscores the necessity of preserving and understanding our shared auditory heritage, not merely as historical artifacts but as living, breathing elements of our current and future artistic

endeavors. The successful fusion of ancient soundscapes with modern technology and music practices stands as a promising model for future interdisciplinary research, showing that the past and present can indeed harmonize to create a richer, more nuanced cultural experience.



Figure 1. The A.I. Words to Image to Multidimensional U-Sound figure determined as the Srivijayan soundscapes

*Represent Table.* U-Sound Imaging (Mahameru, 2019) represents Sound Messaging automatically detected in decibel velocity (dVel). Each number on the table represents variation of sound values that forms universe soundscapes.

Example of table as follows.

Table 1. Matrix Data of Converted U-Sound Imaging Values

U-Sound Imaging U <sup>Inf.</sup> & U <sup>Inf+</sup>					Total (in dVel)
C1	C2	C3	C4	C5	
30	105	125	650	570	1480
30	105	125	650	500	1410
20	105	125	650	570	1470
40	105	125	650	570	1490

*Represent Formula.* The formulas/ quantum computation formatted in NEV automation formula. (Mahameru, 2019)

## Future Research Directions

The exploration of Srivijayan soundscapes through the integration of



semiotic analysis, quantum computing, and contemporary jazz compositions opens up several promising avenues for future research. As we continue to bridge historical and modern auditory practices, there are key areas that warrant further investigation:

### **1. Advanced Quantum Computing Applications**

Future research can delve deeper into the potential of quantum computing to enhance sound analysis and synthesis. With the rapid advancements in quantum technology, researchers can explore more sophisticated quantum algorithms and their applications in musicology. This includes developing new methods for real-time sound modulation, complex sound pattern recognition, and the creation of even more nuanced synthetic modal scales. Further studies could also investigate the potential of quantum-enhanced virtual and augmented reality applications to create immersive educational experiences that bring historical soundscapes to life.

### **2. Interdisciplinary Collaboration**

The interdisciplinary nature of this research highlights the importance of collaboration between historians, musicologists, technologists, and artists. Future research can benefit from more structured collaborative frameworks, where experts from different fields work together to explore the intersections of their disciplines. This can lead to more comprehensive and innovative approaches to studying and recreating historical soundscapes. For example, partnerships between academic institutions, cultural heritage organizations, and technology companies could facilitate large-scale projects that preserve and reinterpret diverse auditory traditions.

### **3. Expansion of Cultural Soundscape Studies**

While this study focuses on the Srivijayan Empire, similar methodologies can be applied to other historical cultures and their soundscapes. Future research can expand the scope to include different regions and time periods, comparing and contrasting various auditory traditions. This comparative approach can provide a richer understanding of global soundscapes and their cultural significance. Additionally, studying soundscapes from different contexts can uncover universal themes and patterns in human auditory experiences, contributing to a broader appreciation of cultural diversity.

### **4. Educational Innovations**

The integration of historical soundscapes into art education offers significant potential for innovative teaching methods. Future research can explore the development of comprehensive educational programs that incorporate soundscape studies into various levels of education, from primary school to higher education. This includes designing curriculum materials, interactive learning modules, and experiential learning activities that engage students with historical sounds. Research can also evaluate the impact of these educational approaches on students' cultural awareness, creativity, and understanding of history.

### **5. Preservation and Digitization Efforts**

As part of the ongoing effort to preserve cultural heritage, future research should focus on the digitization and documentation of traditional soundscapes. Advanced recording techniques, coupled with quantum computing capabilities, can be used to create high-fidelity digital archives of endangered auditory traditions. These archives can serve as valuable resources for researchers, educators, and artists, ensuring that these sounds are accessible to future generations. Additionally, developing

standardized methodologies for recording, analyzing, and preserving soundscapes can help to maintain consistency and accuracy in these efforts.

### **6. Impact of Modern Soundscapes**

Exploring the influence of contemporary soundscapes on modern music and cultural practices is another important research direction. As urbanization and technological advancements continue to shape our auditory environments, understanding how these changes impact music and cultural expressions can provide insights into the evolving nature of soundscapes. Future studies can investigate how modern soundscapes inspire new musical genres and artistic practices, drawing parallels between ancient and contemporary auditory experiences.

### **7. Ethnomusicological Perspectives**

Further ethnomusicological research can provide deeper insights into the cultural contexts and social functions of historical soundscapes. Ethnographic studies that involve fieldwork, interviews with cultural practitioners, and participatory observation can enrich our understanding of how these soundscapes were created and experienced. This qualitative approach can complement the quantitative data obtained through technological analysis, offering a more holistic view of historical auditory traditions.

### **8. Technological Innovations in Sound Creation**

Future research can also focus on the development of new musical instruments and technologies inspired by historical soundscapes. This includes creating digital instruments and sound synthesis tools that mimic the acoustic properties of ancient sounds. By integrating traditional musical elements with cutting-edge technology, researchers and musicians can push the boundaries of creative

expression, resulting in innovative compositions that honor the past while embracing the future.

In conclusion, the study of Srivijayan soundscapes through semiotic analysis, quantum computing, and contemporary jazz compositions sets the stage for a wide range of future research opportunities. By expanding our technological capabilities, fostering interdisciplinary collaboration, and exploring new educational and preservation initiatives, we can continue to deepen our understanding of historical soundscapes and their relevance to modern cultural practices. This ongoing research not only preserves our auditory heritage but also inspires new artistic expressions and educational approaches, ensuring that the rich legacy of cultures like the Srivijayan Empire continues to resonate in the contemporary world.

## References

- Barthes, R. (1972). *Mythologies* (Reprinted). Hill and Wang.  
[https://books.google.co.id/books/about/Mythologies.html?id=jP-DBAAAQBAJ&redir\\_esc=y](https://books.google.co.id/books/about/Mythologies.html?id=jP-DBAAAQBAJ&redir_esc=y)
- Coedes, G. (1968). *The Indianized States of Southeast Asia* (W. F. Vella (ed.)). University of Hawaii Press.  
[https://www.amazon.com/Indianized-States-Southeast-Asia/dp/082480368X#detailBullets\\_feature\\_div](https://www.amazon.com/Indianized-States-Southeast-Asia/dp/082480368X#detailBullets_feature_div)
- Feld, S. (1990). *Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression*. University of Pennsylvania Press.  
<https://www.amazon.com/Sound-Sentiment-Weeping-Expression-Communication/dp/0812212991>
- Gridley, M. (2006). *Jazz Styles: History & Analysis* (9th ed.). Pearson College Div. <https://www.amazon.com/Jazz-Styles-History-Analysis-9th/dp/0131931156>
- Johnson, D. (1994). *Advanced Modal Harmony: Polytonality & Polymodality (Class Handout)*. Berklee College of Music.
- Mahameru, E. (2012). *Aranti's Code U.S. Copyright* (SRU001176090). Live Under The Sun; WEM USA (ASCAP).  
<https://publicrecords.copyright.gov/de-tailed-record/26871434>
- Mahameru, E. (2019). U-PRESS SERVER. *WAN IFRA REPORT:: PRINT INNOVATION AWARDS 2018*, 3–53.  
<https://www.waspadapress.com/wan-ifra-print-innovation-movie>
- Peirce, C. (2011). *Philosophical Writings of Peirce*. Dover Publications.  
<https://www.amazon.com/Philosophical-Writings-Peirce-Charles-S/dp/0486202178>
- Russell, G. (2001). *The Lydian chromatic concept of tonal\_or.pdf*.
- Saussure, F. (1986). *Course in General Linguistics* (C. Bally, A. Sechehaye, & A. Riedlinger (eds.)). Open Court Publishing.  
[https://books.google.co.id/books/about/Course\\_in\\_General\\_Linguistics.html?id=B0eB8mvov6wC&redir\\_esc=y](https://books.google.co.id/books/about/Course_in_General_Linguistics.html?id=B0eB8mvov6wC&redir_esc=y)
- Schafer, R. (1993). *The Soundscape: Our Sonic Environment and the Tuning of the World*. Destiny Books.  
<https://www.amazon.com/Soundscape-Sonic-Environment-Tuning-World-ebook/dp/B005VRKQX8>
- Sterne, J. (2003). *Audible Past: Cultural Origins of Sound Reproduction*. Duke University Press.  
<https://www.dukeupress.edu/the->

audible-past

WEM USA (ASCAP). (2018). *Online Mastering: AI, VR, AR, & MR Online Mastering/Mixing License Agreements at The Boston Studios*. WEM USA (ASCAP). <https://www.wem-id.com/ai-online->

mastering

Wolters, Q. (2000). *History, Culture and Region in Southeast Asian Perspectives*. ISEAS / Cornell. <https://bookshop.iseas.edu.sg/publication/1568>