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Temporal Association and Perception of Rāgas: Testing Hindustani Classical Time-Theory Among Listeners

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Abstract

Hindustani Classical Music follows a unique time-theory, laid down by different scholars from ages and finally culminating in the one laid down by Pandit Vishnu Narayan Bhatkhande in his book Kramik Pustak Malika (Vol:1-8) where each Raaga is associated with a specific time of the day or season, believed to enhance its aesthetic and emotional impact.

However, this system is largely understood and followed by trained Hindustani Classical musicians and connoisseurs, i.e., the ones who are already familiar with the concept of the time theory. This study aims to investigate whether the temporal associations of Raagas hold significance for a diverse range of listeners who have different degrees of understanding of this theory. Through an empirical approach, this diverse group of participants will be exposed to 8 Raagas pertaining to the 8 different prahars of the day.

Their temporal perceptions and responses will be analysed to determine whether they subconsciously align with traditional associations or if their experiences differ. The findings of this research will contribute to the ongoing discourse on the cognitive and affective perception of music, questioning whether the time-theory is an intrinsic phenomenon or a culturally reinforced practice.

Keywords: Hindustani Music, Time Theory, Vishnu Narayan Bhatkhande

Introduction

The primary aim of this research is to investigate the relevance and applicability of PVNB's Time-Theory of Raagas in the context of modern listener preferences and lifestyles. The study seeks to explore whether the traditional associations between Raagas and specific times of the day hold true for contemporary audiences, particularly in light of cultural shifts, changing lifestyles, and the influence of personal preferences. This way, we would get to know whether the theory is a universal truth or whether it is a cultural conditioning.

Modern Research, Its Limitations and Research Gaps

Despite the strong historical foundation of time-theory, contemporary research does not extensively challenge PVNB's framework.

1. Dr. Sujata Roy Manna's study in Anyudhyan: An International Journal of Social Sciences (AIJSS) called "The Concept of 'Time-Theory' in Indian Ragas" reiterates the same principles without introducing new insights.

2. Dr. Lola Kesavan's "Timing Of Ragas From The Viewpoint Of Pandit V.N.Bhatkhande" in Pranav Journal of Fine Arts (A Peer Reviewed Quarterly Online Journal), in a similar fashion, explores the historical evolution of Raaga time-theory, compiles a list of scholars' existing works, and then discusses PVNB's role in systematising it. Despite doing all this, there is no addition to the pool of knowledge.
3. An attempt has been made in Nibedita Shyam's research titled, Time Theory of Ragas in North Indian Classical Music: A Pilot Study. But, even this study relies heavily on a sample of listeners already familiar with HCM.

   While her study does not directly challenge the theory, she suggests directions for future research, including:

- Expanding the sample to include non-classical listeners.
- Testing whether Raagas are perceived differently based on instruments, tempo, and octave differences.
- Investigating whether time-theory holds true for listeners unfamiliar with it.

Connection to This Research

This study builds upon these gaps by examining how individuals with no prior knowledge of Raaga time-theory perceive Raagas, providing a fresh perspective on whether these associations are innate or culturally conditioned. Unlike HCM, neither Carnatic music nor Western Classical music imposes time-based restrictions on compositions. This raises an important question: if other classical traditions thrive without such limitations, is the Raaga time-theory truly essential, or is it a learned convention rather than an intrinsic musical feature? If findings suggest that listeners without prior knowledge do not strongly associate Raagas with specific times, it would provide evidence that the time-theory is a cultural construct rather than an inherent musical truth. This could open the door for greater flexibility in performance and revival of neglected Raagas.

Methodology

This study employs an empirical approach to assess whether individuals unfamiliar with HCM's time-theory can intuitively associate Raagas with specific times of the day. The research design consists of the following steps:

a. Research Design: This study follows a mixed research design (both qualitative and quantitative) to explore whether individuals from different musical backgrounds perceive time associations in HCM Raagas. By challenging PVNB's early 20th-century time-theory (as written in the KPM and others, mentioned in the Literature Review section), the research investigates whether these associations are culturally ingrained or intrinsically perceived.

b. Sampling: A convenience sampling method is used to recruit participants across three groups:

- Group 1: HCM musicians familiar with time-theory (avid listeners, professionals and hobbyists). They are the ones who are further grouped into Group A.
- Group 2: Musicians from non-HCM backgrounds (both professionals and hobbyists). They are the ones who are further grouped into Group B.
- Group 3: Non-musicians with no formal musical training. They are the ones who are also further grouped into Group B.

This diverse sampling ensures varied perspectives while allowing an accessible and practical selection process.

c. Variables: Since this is a mixed study, the research does not employ strict independent and dependent variables and also explores perceptual differences. However, for conceptual clarity, the Potential Influencing Factors (Confounding Variables) are:

- Prior exposure to HCM.
- Personal mood and emotions while listening.
- Cultural background.
- Environmental factors during the listening experience.

d. Data Collection Methods: Data will be collected using a mixed-methods approach combining surveys and interviews:

A. Survey (Google Forms):

a. Participants will listen to 8 selected Raagas (one from each of the eight Prahars).
b. They will fill out a questionnaire indicating the time-of-day they associate with each Raaga.

B. Interviews (Google Meet):

a. Follow-up interviews with select participant will be conducted to gain deeper insights into their reasoning behind their choices to make sure there are no other biases involved.
b. Open-ended questions will allow participants to express their subjective experiences.

C. Non-Biased Listening Setup:

a. Anonymous Presentation: A YouTube video with a blank screen will be used to eliminate bias related to the performer's identity.
b. Eliminating Pattern-based bias: the Raagas are not presented in any chronological order whatsoever, preventing participants from making predictable choices based on the chronological order of the Raagas presented.
c. Raaga Name bias: The Raaga names (along with the performers' names) have not been mentioned in any manner. The only information displayed to the participants is the Song number, which, as noted earlier, has been scrambled. This eliminates any preconceived notions about Raagas that the participants might have.
d. Controlled Musical Variables: All Raagas' performances are in Teental to eliminate taala-based perception bias. All Raagas' performances are in Madhya Laya to eliminate tempo and speed related perception bias.

e. Data Analysis Techniques

As a qualitative study, thematic analysis will be used to interpret participants' responses. Patterns across different listener groups will be identified to examine:

- Whether HCM musicians align more with traditional time-theory.
- Whether non-HCM musicians associate Raagas with time differently.
- Whether non-musicians form any subconscious time-based associations.

f. Reliability and Validity

There are steps that have been taken to ensure research reliability and validity of this research:

- Reliability: The same Raaga samples and listening conditions will be provided to all participants.
- Validity: By including a diverse participant pool, across job profiles and music tastes, and eliminating external biases (such as performer recognition, mood, and environment of listening), the study ensures genuine perceptual responses.

g. Ethical Considerations

- Participants will receive a consent form, which they must sign before participating (as mentioned in

the Consent Form section).

- Their responses will remain anonymous to ensure privacy.
- Participation is voluntary, and individuals may withdraw at any stage.

h. Conceptual Framework

This research challenges the established HCM time-theory proposed by PVNB in KPM. By testing whether listeners, especially those unfamiliar with the theory, perceive time associations, the study examines whether this framework is a culturally learned phenomenon or an intrinsic auditory experience.

Literature Review

Historical Origins of Raaga Time-Theory

The concept of associating Raagas with specific times of the day can be traced back to ancient Indian texts. Walter Kaufmann (1981), in The Ragas of North India, mentions that as early as Sangit Makaranda (7th-11th century), attributed to Narada, musicians were warned of disastrous consequences for performing Raagas outside their prescribed times. Alain Danielou quotes Sangeet Makarand (Ch 01, verse 23-24) as follows: “one who sings knowing the proper time remains happy. By singing the Raagas at the wrong time one ill-treats them. Listening to them, one becomes impoverished and one sees the length of one’s life reduced”. Here are the texts mentioning the Raaga Time-Theory, written before Pandit Vishnu Narayan Bhatkhande (written as PVNB from now on):

1. **Sangeeta Makaranda (Narada)**: Attributed to Narada, it is an early and influential text on classical Indian music. It serves as a compilation of essential musical ideas, encompassing definitions, observations, and commentaries drawn from earlier luminaries such as Bharata Muni and Sharngadeva. A key highlight of the text is its treatment of Raagas, which it classifies into masculine, feminine, and neutral types. In this, he discusses Raaga time-classification and warns that improper performance at the wrong time could bring misfortune.
2. **Swarmelakalanidhi (Ramamatya):** Written by Ramamatya in 1550 during the Vijayanagara period, it is a significant 16th century text in the field of music theory. Recognised as one of the 'nine gems' (Navaratnas) of Carnatic musicology, its enduring relevance is due to its practical alignment with modern-day musical applications, distinguishing it from earlier theoretical works. Organised into five chapters, the treatise primarily discusses Raaga theory, the mela system for categorising Raagas, and the use of shuddha (pure) and vikrita (altered) notes. Mentions 20 superior, 15 middling, and 8 inferior Raagas, categorising them with their Ganakala Niyama (time-specific performance rules).
3. **Raaga Mala & Sadraga Chandrodaya (Pundarika Vittala)**: Believed to have been composed by Pundarika Vittala between 1562 and 1599, is a comprehensive musical treatise. It addresses multiple dimensions of classical music theory, including the principles of Nāda (sound), Śruti (microtones), and Svara (musical notes). The text is structured into three main chapters: Svara Prasada, Svara Mela Prasada, and Alapti Prasada, each dealing with a different facet of musical structure and expression. Lists Raagas under different headings such as Sunrise melodies, Afternoon melodies, and Evening melodies, though inconsistencies exist in Raaga placements across texts.
4. **Raaga Vibhodha (Somanatha)**: This treatise is regarded as a seminal contribution to Raaga theory, providing detailed insights into the features, emotional expressions (rasa), and symbolic visualisations associated with various Raagas. It also discusses the concept of melakartas, or parent scales. This was a system that laid the groundwork for the more refined melakarta framework later formalised by Veṅkaṭamakhin. Provides a 23 Mela chart categorising Raagas with time slots.

5. **Chaturdandi Prakashika (Venkatamakhi)**: Chaturdandi Prakashika, a Sanskrit text authored by Venkatamakhin in the mid-1600s, is a foundational work in Carnatic music theory. It is especially notable for formalising the melakarta system: a method of systematically organising Raagas that remains central to Carnatic music today. The text also delves into practical aspects of performance, covering elements such as alapa (improvisation), thaya, geetam (simple compositions), and prabandha (a structured musical form). This is the first book that pitches the idea and recognises Madhyam as a guiding note, suggesting its role in determining time association.
6. **Raaga Tarangini (Lochanakavi)**: This text stands as one of the earliest in Indian classical music literature to thoroughly cover both the theoretical foundations and the practical execution of music. Divided into two sections, the first addresses theoretical concepts like scale systems and note structures, while the second is concerned with performance techniques related to both vocal and instrumental music. Acknowledges two traditions:
   (i) first one, derived from Saint Thumburu
   (ii) another based on contemporary practices, allowing for flexibility in time-theory under royal command.
7. **Sangeeta Darpana (Catura Damodara)**: Suggests that Raagas assigned to evening hours can be performed till midnight, but performance outside traditional hours was acceptable in special contexts. This belief laid the foundation for later codifications of the time-theory in HCM.

PVNB's Contribution and Influence

PVNB (1860-1936) was the first scholar to systematically document HCM, and his work KPM remains a cornerstone in the field. He classified Raagas based on their association with different Prahars (time divisions of the day).

He introduced a Time Circle, which divided the 24-hour day into eight three-hour Prahars, associating Raagas with specific timings based on their note structures. His theory posited that Raagas using Shuddha Madhyam should be performed in the morning (anti-meridian) and Tivra Madhyam Raagas in the evening (post-meridian). This rationalised the traditional time-theory, though it remained rooted in subjective interpretations.

The Time Circle given by PVNB: Division of Time: PVNB divided the 24-hour day into 8 sections, each spanning 3 hours for both Anti-Meridian (AM) and Post-Meridian (PM) periods.

- AM Sections: 12 AM - 3 AM, 3 AM - 6 AM, 6 AM - 9 AM, 9 AM - 12 PM.
- PM Sections: 12 PM - 3 PM, 3 PM - 6 PM, 6 PM - 9 PM, 9 PM - 12 AM.

Note Varieties: Each section is associated with specific note varieties (Komal and Teevra notes) that help determine the time for a Raaga as follows:

- 3 AM - 9 AM: Raagas of this time use Komal Rishabh, Komal Gandhar, Komal Dhaivat, and Shuddha Nishad.
- 6 AM - 12 PM: Raagas of this time use Shuddha Rishab, Komal Gandhar, Shuddha Dhaivat, and Shuddha Nishad.
- 12 AM - 3 AM: Raagas of this time use the Shuddha Rishabh, and Komal Nishad.

Role of Madhyama (Ma) in Time Determination:

- Shuddha Madhyam: Raagas with Shuddha Madhyam are generally associated with the Anti-Meridian (AM) period (morning to noon).

- Teevra Madhyam: Raagas with Teevra Madhyam are associated with the Post-Meridian (PM) period (afternoon to night).
- Dual Madhyam Raagas: Raagas that use both Shuddha and Teevra Madhyam can be performed during both AM and PM periods, depending on the context.

His system, widely accepted today, influences both pedagogy and performance traditions. While PVNB's system provides a structured approach, it does not address **why** certain Raagas create time-specific emotions. The ancient texts do not offer a clear rationale for assigning Raagas to specific times, and contradictions exist among different sources. This opens the debate on whether the time-theory is an intrinsic musical phenomenon or a learned cultural construct, forming the foundation of the present study.

Drawbacks of PVNB's Time-Theory

1. Limited Exposure to Certain Raagas: PVNB's time-theory assigns specific Raagas to fixed time slots, such as early morning or afternoon. However, concerts are rarely held during these times, leading to a situation where many beautiful Raagas remain unheard by audiences.
2. Discouragement of Performance: Since musicians strictly follow this time-theory, they avoid performing Raagas that do not fit practical concert schedules. As a result:
   - The repertoire of concert performances becomes limited.
   - The same evening-friendly Raagas are repeatedly performed, while morning and afternoon Raagas are neglected.
3. Decline of Rare and Less Popular Raagas: With limited opportunities to perform certain Raagas, musicians often choose not to learn them at all. Over time, many such Raagas fade into obscurity due to a lack of practice and transmission. Even legendary musicians have questioned the necessity of this system. Pt. Ravi Shankar, in his book "My Music, My Life", argued that Raagas should be performed freely, similar to Carnatic music, which does not impose time-based restrictions. His perspective highlights a growing sentiment that rigid adherence to time-theory may be limiting the evolution of HCM.

Aims and Objectives

To Assess Modern Listener Preferences:

- Conduct a survey or experiment to gather data on the listening preferences of contemporary audiences, focusing on their preferred times for listening to specific Raagas.
- Compare these preferences with the traditional time associations prescribed by PVNB's Time-Theory to identify patterns of alignment or divergence.

To Explore the Influence of Lifestyle and Circadian Rhythms:

- Investigate how modern lifestyles, particularly the routines of working professionals (e.g., 9-5 jobs), influence listening preferences for HCM.
- Examine the role of circadian rhythms in shaping listening habits, particularly whether peak alertness hours (e.g., morning and afternoon) correlate with lower music listening preferences due to work focus.

To Compare the Preferences of HCM Professionals and General Listeners:

- Compare the Raaga-time preferences of HCM musicians and connoisseurs (who are familiar with the

Time-Theory) with those of general listeners (who are unfamiliar with the theory).
- Determine whether knowledge of the Time-Theory influences listening preferences and whether there is a significant difference between the two groups.

To Investigate the Impact of Knowledge on Listener Preferences:
- Conduct a follow-up study to assess whether educating participants about the traditional Time-Theory influences their listening preferences.
- Evaluate whether providing context about the prescribed times for Raagas enhances participants' appreciation of the music or leads to a shift in their preferred listening times.

To Identify Factors Influencing Divergence from Traditional Time-Theory:
- Explore the cultural, emotional, and psychological factors that may lead modern listeners to prefer listening to Raagas at times other than those prescribed by the Time-Theory.
- Investigate whether personal moods, convenience, or situational contexts play a more significant role in determining listening preferences than traditional associations.

Hypotheses

Null Hypothesis (H_0):

The listeners will relate the Raagas to the prescribed time.

Alternative Hypothesis (H_1):

The listeners will not relate the Raagas to the prescribed time.

Explanation of Hypotheses:

Null Hypothesis (H_0):
- This hypothesis assumes that the traditional Time-Theory has a significant impact on how listeners perceive or respond to Raagas.
- It suggests that listening to a Raaga at the prescribed time enhances the emotional or aesthetic experience.

Alternative Hypothesis (H_1):
- This hypothesis assumes that the traditional Time-Theory has no significant impact on how listeners perceive or respond to Raagas.
- It suggests that the emotional or aesthetic experience of listening to a Raaga is independent of the time of day prescribed by the theory.

Basis for Hypotheses:
- Listener-Centric Approach: The hypotheses reflect a listener-centric approach, focusing on how modern audiences respond to Raagas rather than assuming that traditional theories are universally applicable.
- Emotional and Aesthetic Impact: The hypotheses are based on the idea that the time of day influences the emotional and aesthetic impact of music.
- Cultural and Lifestyle Shifts: The hypotheses also consider the possibility that cultural and lifestyle changes may have altered how people experience music, potentially reducing the relevance of traditional time associations.

1. Questionnaire

Section 1: Consent and Personal Details

1. Do you agree to participate in this study? (Yes/No)
2. Name
3. Profession / Educational Qualification
4. How much do you listen to music on an average?
   - Less than 30 minutes
   - 30 mins - 1 hour
   - 1 hour - 2 hours
   - More than 2 hours
5. Pick the time at which you are answering this questionnaire.
   - 12 AM - 3 AM
   - 3 AM - 6 AM
   - 6 AM - 9 AM
   - 9 AM - 12 PM
   - 12 PM - 3 PM
   - 3 PM - 6 PM
   - 6 PM - 9 PM
   - 9 PM - 12 AM
6. Please choose your level of exposure/training in Hindustani Classical Music (HCM). (Select one)
   - I listen to HCM occasionally
   - I practice/listen to HCM a lot, as a hobby
   - Professional Practitioner of HCM
   - Professional Musician, but not into HCM
   - I haven't listened to HCM
   - I don't listen to HCM a lot

Section 2: Musical Perception

7. Can you identify a Raaga just by listening to it? (Yes/No)
8. Can you differentiate between two Raagas just by listening to them? (Yes/No)

Section 3: Raaga Perception (Main Study)

9. Listen to the song and choose one or multiple time slots that you think the song can be played. (Select all that apply)

- 12 AM - 3 AM
- 3 AM - 6 AM
- 6 AM - 9 AM
- 9 AM - 12 PM
- 12 PM - 3 PM
- 3 PM - 6 PM
- 6 PM - 9 PM
- 9 PM - 12 AM

2. Rationale Behind Each Section and How it Supports the Study

Section 1: Consent and Personal Details

The consent question ensures ethical compliance, confirming that participants voluntarily agree to take part. Profession/education help categorise participant backgrounds.

Time of Answering: This question is crucial in identifying potential external influences on how participants perceive Raagas as it may unconsciously affect their mental state, emotions, and associations with musical pieces.

- If a participant is listening in the morning, they may be more likely to associate a Raaga with morning energy, even if they would not have done so under different conditions.
- By collecting data on the time of answering, the study can identify patterns and control for potential bias.
- If a significant number of participants select their current time as the Raaga's appropriate time, this could indicate a situational influence rather than an inherent musical association.

Comparing responses from participants answering at different times of the day will help determine whether time-theory associations are consistent across individuals or circumstantial. If the study finds that people consistently follow traditional time-theory regardless of their answering time, it supports the idea that time-theory is an ingrained concept. However, if responses vary significantly based on the time of answering, it suggests that perceptions are flexible and influenced by momentary context rather than an intrinsic Raaga-time connection.

Exposure to HCM helps classify participants into three groups:

- HCM musicians.
- Musicians but not trained in HCM.
- Non-musicians.

Section 2: Musical Perception

Questions on Raaga identification and differentiation help determine the participant's level of musical training. If someone cannot identify or differentiate Raagas, their responses in Section 3 would be more unbiased, revealing their raw perception without prior theoretical knowledge; if otherwise, their response will help determine if prior knowledge reinforces time-based associations.

Section 3: Raaga Perception (Main Study)

- Scrambling the Raagas ensures participants do not choose answers in a predictable pattern.
- Allowing multiple time choices reduces forced responses and provides flexibility, ensuring a more natural and unbiased approach.
- Testing across three participant groups allows for comparison:
  - If HCM-trained musicians select traditional time slots, it supports the theory being culturally reinforced.
  - If non-musicians select random or varied timings, it questions the theory's universality.
  - If non-HCM musicians choose timings based on musical mood rather than the prescribed time-theory, it provides further evidence of subjectivity in Raaga-time associations.

8. Results

Total Number of Participants: 30

Question 1: How much does the participant listen to music?

People who listen to music for longer periods daily are likely to have a stronger sense of musical structures, moods, and patterns. Those who rarely listen to music might perceive Raagas more instinctively, without any learned associations influencing their choices.

Results:

Time	No. of Participants
<30mins	4
30mins-1h	8
1h-2h	6
>2h	12

Table 1: How much does the participant listen to music

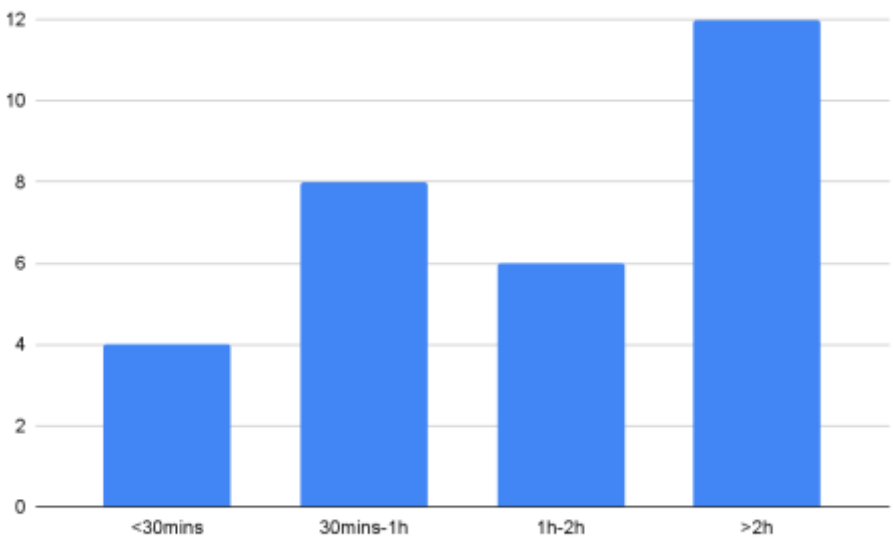

Figure 1: How much does the participant listen to music

Interpretation of Results

- A majority (60%) of participants listen to music for at least an hour per day, indicating that most have a moderate to high level of engagement with music.
- 40% of participants listen for more than 2 hours daily, suggesting a group of highly engaged listeners who are more likely to be familiar with musical structures, moods, and patterns.
- 13.3% of participants listen to music for less than 30 minutes, representing a group with minimal musical exposure, who may provide more instinctive, unbiased responses.

Question 2: The Time at which the Participant Answers

This question is crucial in identifying potential external influences on how participants perceive Raagas. The time of answering may unconsciously affect their mental state, emotions, and associations with musical pieces.

Time of Answering	No. of Participants
12AM-3AM	3
3AM-6AM	1
6AM-9AM	5
9AM-12PM	2
12PM-3PM	7
3PM-6PM	0
6PM-9PM	7
9PM-12AM	5
Table 2: Time at which Participant answers	

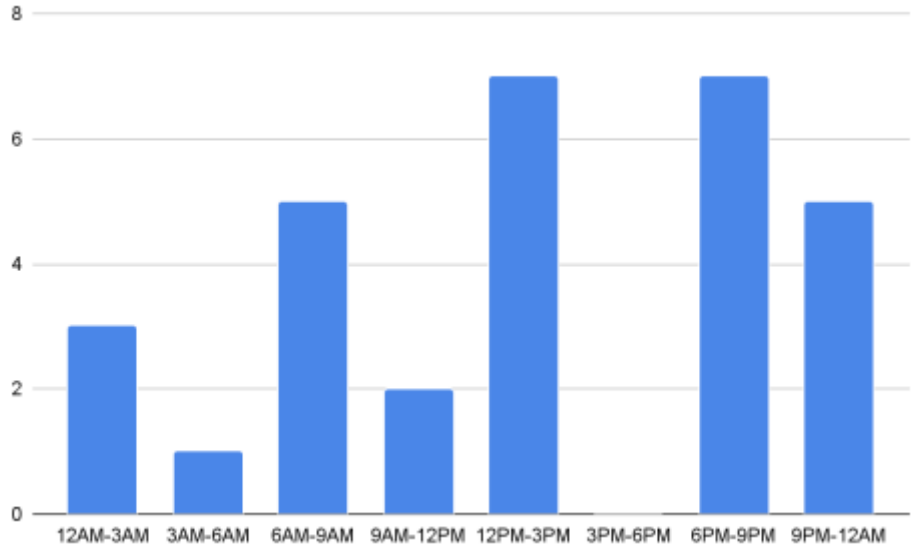

Table 2: Time at which Participant answers

Interpretation of Results:

Peak Response Times:

1. The highest number of responses occurred during 12PM-3PM and 6PM-9PM, with 7 participants each. This suggests that these time slots are when participants were most active or available to engage with the study.
2. The 6AM-9AM and 9PM-12AM intervals also saw relatively high participation, with 5 participants each, indicating that early mornings and late evenings are also common times for engagement.

Low Response Times:

1. The 3PM-6PM interval had no participants, which could indicate that this is a less active or convenient time for participants to respond, possibly due to work, school, or other commitments.
2. The 3AM-6AM interval had only 1 participant, which is expected given that this is typically a time when most people are asleep.

Potential External Influences:

1. The time of answering could influence participants' mental states and emotional responses to Raagas. For example, participants answering in the morning (6AM-9AM) might associate Raagas with morning energy, while those answering in the evening (6PM-9PM) might associate them with evening or night-time moods.
2. This could also introduce an ambiguity in a way that the participants might perceive the raagas of the time that they answer at with better accuracy than the other raagas.
3. The absence of responses during 3PM-6PM could suggest that participants' perceptions during this time are not captured, which might lead to a gap in understanding how Raagas are perceived in the afternoon.

Bias Detection:

1. The data allows for cross-referencing responses to detect potential biases. If participants tend to associate Raagas with the time they are currently experiencing (e.g., morning Raagas in the morning), this could indicate situational influence rather than an inherent association with the Raaga.
2. Comparing responses across different times of the day can help determine whether Raaga-time associations are consistent or if they vary based on the participant's current context.

Question 3: Level of exposure/training in HCM

Exposure to HCM helps classify participants into two groups:

- Group A : Familiar with HCM Time-Theory
- Group B: Unfamiliar with Time-Theory

This segmentation is crucial in analysing whether perception of Raaga-time association is culturally/pedagogically learned or intuitive.

Level of Exposure to HCM	No. of Participants	Group Assigned
Listen to HCM once in a while	12	Group B
Practice / listen to HCM a lot, as a hobby	3	Group A
Professional Practitioner of HCM	2	Group A
Professional Practitioner but not related to HCM	1	Group B
Haven't listened to HCM	6	Group B
Don't listen to HCM a lot	6	Group B

Table 3: Level of exposure/training in HCM

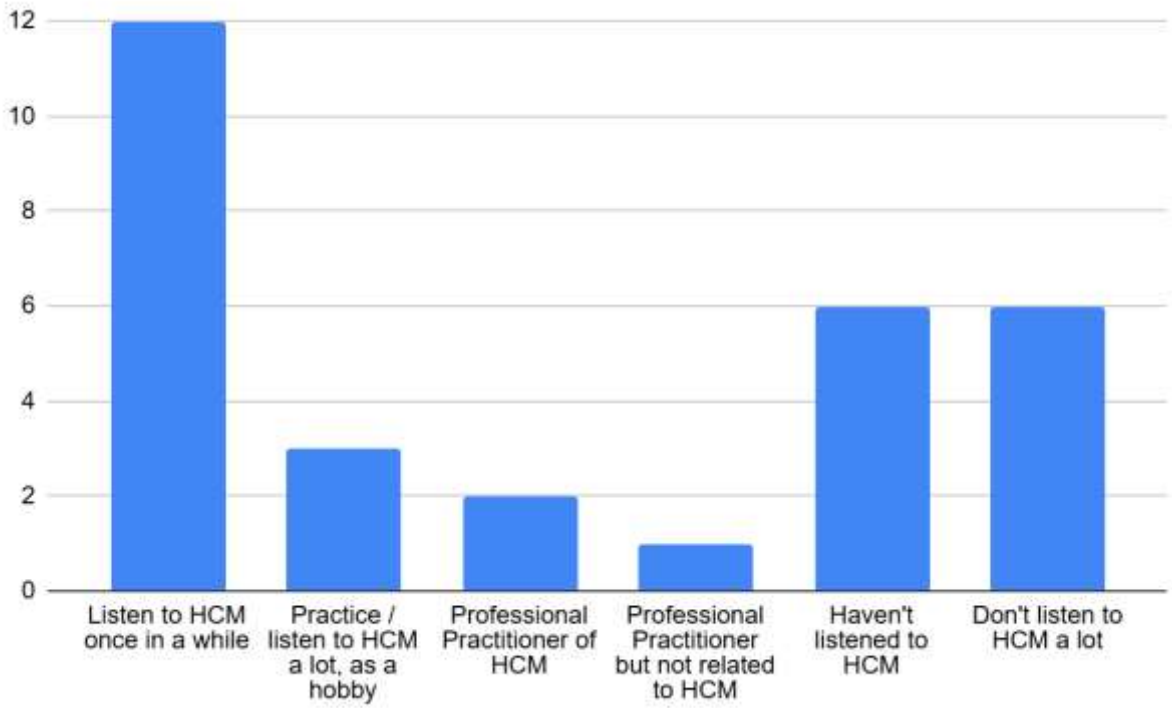

Figure 3: Level of exposure/training in HCM

Interpretation of Results:

According to the Groups assigned, the division becomes as follows:

Group	Number of Participants
Group A	5
Group B	25

Table 4: Participant Grouping

The majority of participants (25 out of 30) fall into Group B, indicating that most participants are not familiar with the traditional Time-Theory associated with Raagas. Only 5 participants, who are either professional practitioners or avid listeners of HCM, are familiar with the Time-Theory. The large number of participants in Group B (unfamiliar with Time-Theory) provides an opportunity to study whether Raaga-time associations are influenced by cultural or pedagogical training or if they emerge naturally. If Group B participants show inconsistent or varied associations, it would suggest that without formal training or exposure to HCM, Raaga-time associations are not universally intuitive and may require cultural context to be understood.

If participants in Group A (familiar with Time-Theory) consistently associate Raagas with specific times of the day, it would suggest that these associations are learned through exposure to HCM traditions. Conversely, if participants in Group B (unfamiliar with Time-Theory) also associate Raagas with specific times, it could indicate that these associations are intuitive or based on universal emotional or psychological responses to music, rather than being culturally specific. The predominance of Group B participants suggests that most people do not have formal exposure to HCM traditions, making this group particularly valuable for studying intuitive perceptions of Raagas.

Question 4: If One Can Identify/Differentiate between Raagas

If someone cannot identify or differentiate Raagas, their responses in Section 3 would be more unbiased, revealing their raw perception without prior theoretical knowledge. And, if someone can identify Raagas, their response will help determine if prior knowledge reinforces time-based associations.

There were 25 responses in this because only the ones in Group B were asked this question. An assumption that the Group A candidates can identify/differentiate between Raagas has been done.

If participant can identify / differentiate between two Raagas	Number of Participants
Yes	6
No	19

Table 5: Participant Raaga perception

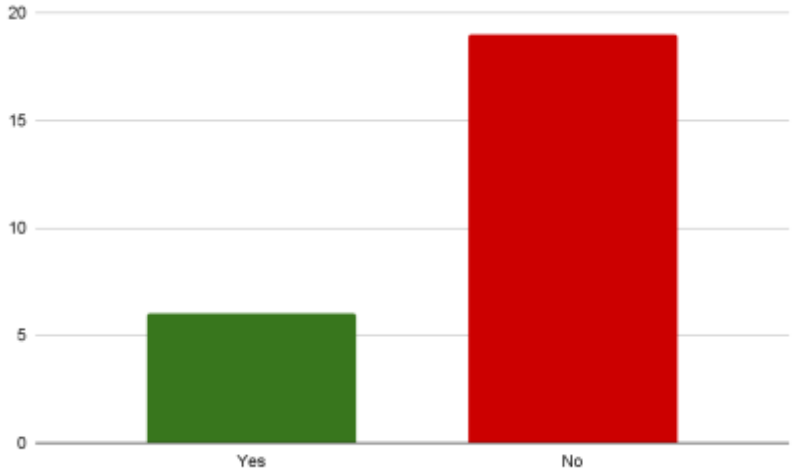

Figure 4: Participant Raaga Perception

Interpretation of Results:

Majority Cannot Identify Raagas:

- Out of the 25 participants in Group B, 19 participants (76%) indicated that they cannot identify or differentiate between Raagas. This suggests that the majority of participants in Group B lack the ability to recognise Raagas, which is expected given their limited exposure to HCM.
- Only 6 participants (24%) in Group B reported that they can identify or differentiate Raagas, indicating some level of familiarity with Raagas despite not being formally trained in HCM Time-Theory.

Implications for Unbiased Responses:

- The fact that 76% of Group B participants cannot identify Raagas is significant for the research. These participants' responses in Section 3 (which likely deals with Raaga-time associations) will be more unbiased because they are not influenced by prior theoretical knowledge of Raagas.
- Their perceptions of Raagas will be based on raw, intuitive responses rather than learned associations, making their data particularly valuable for understanding how people naturally perceive Raagas without cultural or pedagogical influence.

Usefulness for Research:

- This data is crucial for determining whether Raaga-time associations are intuitive or learned. Since most participants in Group B cannot identify Raagas, their responses will reflect natural, uninfluenced perceptions of how Raagas relate to different times of the day.
- By comparing the responses of participants who can identify Raagas (6 in Group B and all of Group A) with those who cannot (19 in Group B), the research can isolate the effect of prior knowledge on Raaga-time associations. This comparison will help determine whether these associations are reinforced by theoretical knowledge or if they emerge naturally.

Reduction of Bias:

- The responses from participants who cannot identify Raagas will provide a baseline for understanding how people perceive Raagas without any prior training or exposure to HCM. This reduces the risk of cultural or pedagogical bias in the study.
- By focusing on these participants, the research can ensure that the findings are not skewed by the influence of traditional Time-Theory, which is more likely to affect participants in Group A or the 6 participants in Group B who can identify Raagas.
- This approach allows the study to explore whether Raaga-time associations are universal (i.e., intuitive and shared across individuals regardless of cultural background) or culturally specific (i.e., learned through exposure to HCM traditions).

Main Study: Raaga Perception

Before we go into the main study, let me note down the correct answers according to the Time Theory laid down by PVNB.

Song Number	Time according to the Time-Theory	Raaga	Artiste
1	9AM-12PM 2nd Prahar of Day	Bilaskhani Todi	Ut. Amir Khan
2	12PM-3PM 3rd Prahar of Day	Patdeep	Pt. Venkatesh Kumar
3	3AM-6AM 4th Prahar of Night (Sandhiprakash)	Sohini	Ut. Rashid Khan
4	6PM-9PM 1st Prahar of Night	Shyam Kalyan	Pt. Kaivalya Kumar Gurav
5	9PM-12AM 2nd Prahar of Night	Saraswati	Pt. Venkatesh Kumar
6	6AM-9AM 2nd Prahar of Day	Ahir Bhairav	Pt. Ajay Chakrabarty

7	12AM-3AM 3rd Prahar of Night	Malgunji	Vid. Jayshree Patnekar
8	3PM-6PM 4th Prahar of Day (Sandhiprakash)	Madhuwanti	Vid. Veena Sahatrsbuddhe

Table 6: List of Raagas chosen, their prescribed times, and artistes

Song 1: Raaga Bilaskhani Todi

Shastriya Parichay or the Classical Classification of the Raaga:

Aaroh - Avroh	S r g P d S' - S' r' n d ; P ; P d n d m g r ; r g r S
Swaras	Madhyam and Nishad are omitted in Aaroh. Pancham omitted in Avroh. Rishabh, Gandhar, Dhaivat and Nishad Komal. Rest all Shuddha Swaras.
Jati	Audhav - Sampurna Vakra
Thaat	Bhairavi
Vadi - Samvadi	Dhaivat - Gandhar
Time	2nd Prahar of the Day (9AM to 12PM)
Mukhya Ang	S r ,n ,d S ; S r g ; r g P ; P d n d ; d m g r ; g r S ;

Table 7: Details of Raaga Bilaskhani Todi

From the 30 responses, these are the results:

12AM-3AM	0.00%
3AM-6AM	19.15%
6AM-9AM	34.04%
9AM-12PM	10.64%
12PM-3PM	6.38%
3PM-6PM	8.51%
6PM-9PM	17.02%
9PM-12AM	4.26%

Table 8: time preference of participants (for Raaga Bilaskhani Todi)

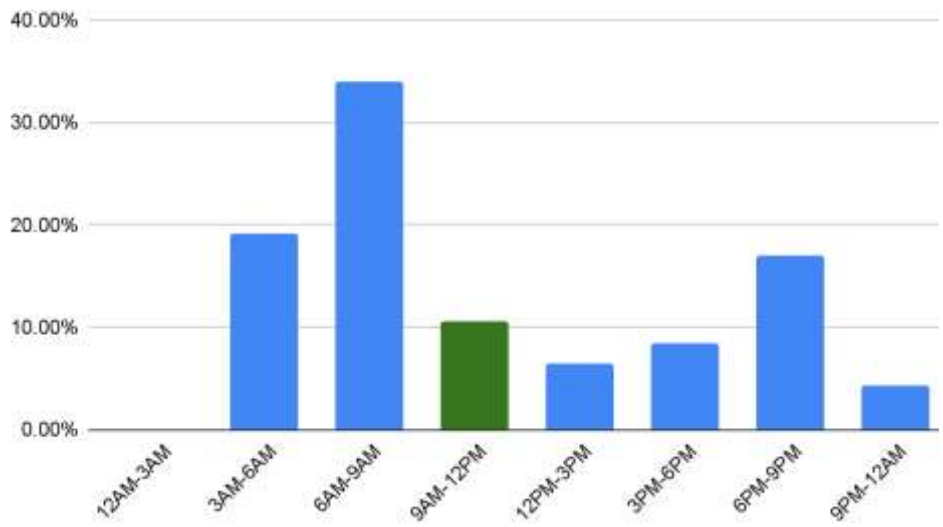

Figure 5: time preference of participants (for Raaga Bilaskhani Todi)

Interpretation of Data:

The Raaga is traditionally associated with the 2nd Prahar of the day (9 AM to 12 PM) according to HCM Time-Theory. However, the responses from 30 participants reveal a significant divergence from the traditional time association, suggesting that the prescribed time may not align with the preferences of most listeners.

All Participant Preferences for Listening Time:

6AM-9AM: 34.04% of participants preferred this time. (Most Preferred)
3AM-6AM: 19.15% of participants preferred this time.
6PM-9PM: 17.02% of participants preferred this time.
9AM-12PM : 10.64% of participants preferred this time. (Prescribed Time)
12PM-3PM: 6.38% of participants preferred this time.
3PM-6PM: 8.51% of participants preferred this time.
9PM-12AM: 4.26% of participants preferred this time.
12AM-3AM: 0.00% of participants preferred this time. (Least Preferred)

The prescribed time is the 4th popular option. If we were to divide only on the basis of Day and Night, 59.57% participants would prefer listening to it during Day and 40.43% participants would prefer listening to it at night. This difference, too, is not very significant.

Conclusion:

The data suggests that the traditional Time-Theory for Bilaskhani Todi may not align with the actual preferences of listeners. Only a small fraction of participants (10.64%) agreed with the prescribed time, while the vast majority (89.36%) preferred other times.

The results for Bilaskhani Todi demonstrate a clear disconnect between the traditional Time Theory and the actual preferences of participants. This suggests that the Time-Theory for this Raaga may not be as rigid or universally applicable as previously thought.

Song 2: Raaga Patdeep

Shastriya Parichay or the Classical Classification of the Raaga:

Aaroh - Avroh	,N S g m P N S'; - S' N D P m g R S ,N S;
Swar	Rishabh and Dhaivat are omitted in Aaroh. Gandhar Komal. Rest All Shuddha Swaras.
Jati	Audhav - Sampurna
Thaat	Kafi
Vadi - Samvadi	Pancham - Shadj
Time	3rd Prahar of the Day (12PM to 3PM)
Mukhya Ang	g m P N S' D P ; mg mP N N N S' ; D P m g m P ; P g m ; g R S ,N ,N S;
Table 9: Details of Raaga Patdeep	

From the 30 responses, these are the results:

12AM-3AM	3.17%
3AM-6AM	4.76%
6AM-9AM	7.94%
9AM-12PM	11.11%
12PM-3PM	17.46%
3PM-6PM	19.05%
6PM-9PM	22.22%
9PM-12AM	14.29%
Table 10: Time Preference of Participants (for Raaga Patdeep)	

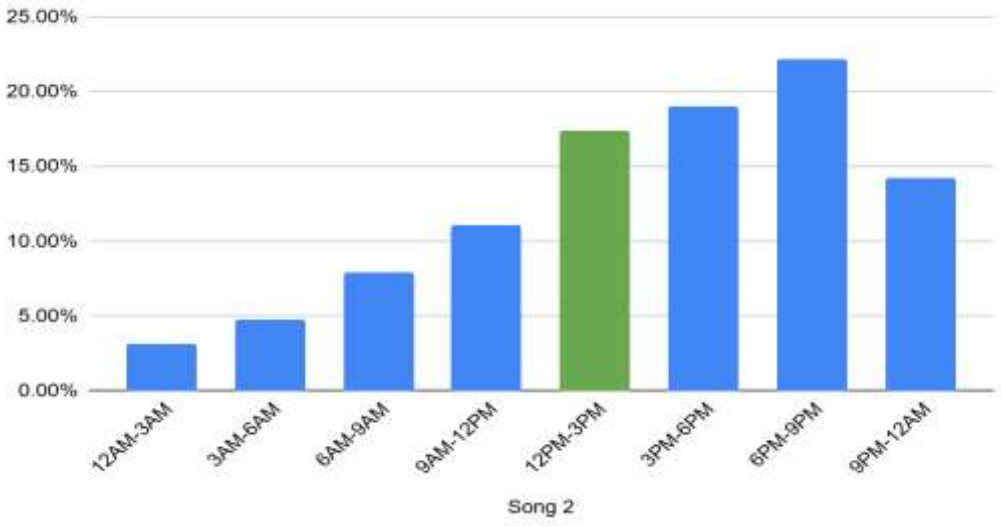

Figure 6: time preference of participants (for Raaga Patdeep)

Interpretation of Data:

The Raaga is traditionally associated with the 3rd Prahar of the day (12 PM to 3 PM) according to HCM Time-Theory. However, the responses from 30 participants reveal a significant divergence from the traditional time association, suggesting that the prescribed time may not align with the preferences of most listeners.

Participant Preferences for Listening Time:

6PM-9PM: 22.22% of participants preferred this time. (Most Preferred)
3PM-6PM: 19.05% of participants preferred this time.
12PM-3PM: 17.46% of participants preferred this time. (Prescribed Time)
9PM-12AM: 14.29% of participants preferred this time.
9AM-12PM: 11.11% of participants preferred this time.
6AM-9AM: 7.94% of participants preferred this time.
3AM-6AM: 4.76% of participants preferred this time.
12AM-3AM: 3.17% of participants preferred this time. (Least Preferred)

The prescribed time is the 3rd popular option. If we were to divide only on the basis of Day and Night, 55.56% participants would prefer listening to it during Day and 44.44% participants would prefer listening to it at night. This difference, too, is not very significant.

Conclusion:

The data suggests that the traditional Time-Theory for Patdeep may not align with the actual preferences of listeners. Only 17.46% of participants agreed with the prescribed time, while the majority (82.54%) preferred other times, particularly 6PM-9PM and 3PM-6PM. This indicates a disconnect between traditional Time-Theory and modern listener preferences.

Song 3: Raaga Sohini

Shastriya Parichay or the Classical Classification of the Raaga:

Aaroh - Avroh	S r G M' D N S'; - S' N D N D M G r S
Swar	Rishabh and Pancham are omitted in Aaroh. Pancham omitted in Avroh. Rishabh Komal, Madhyam Teevra. Rest all Shuddha Swaras.
Jati	Audhav - Shadhav Vakra
Thaat	Marwa
Vadi - Samvadi	Dhaivat - Gandhar
Time	4th Prahar of the Night (3AM to 6AM)
Mukhya Ang	M D N S' r' S' ; N D N D ; S' r' S' r' N S' N D G M G ;
Table 11: Details of Raaga Sohini	

From the 30 responses, these are the results:

12AM-3AM	15.79%
3AM-6AM	15.79%
6AM-9AM	15.79%
9AM-12PM	3.51%
12PM-3PM	10.53%
3PM-6PM	7.02%
6PM-9PM	10.53%
9PM-12AM	21.05%

Table 12: Time Preference of Participants (for Raaga Sohini)

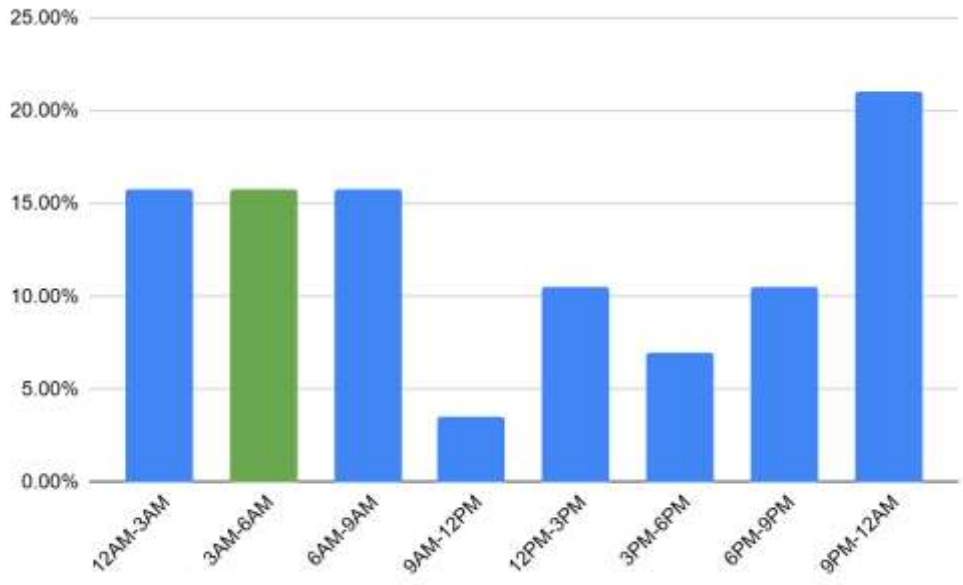

Figure 7: time preference of participants (for Raaga Sohini)

Interpretation of Data:

The Raaga is traditionally associated with the 4th Prahar of the night (3 AM to 6 AM) according to HCM Time-Theory. However, the responses from 30 participants reveal a significant divergence from the traditional time association, suggesting that the prescribed time may not align with the preferences of most listeners.

Participant Preferences for Listening Time:

9PM-12AM: 21.05% of participants preferred this time. (Most Preferred)
12AM-3AM: 15.79% of participants preferred this time.
3AM-6AM: 15.79% of participants preferred this time. (Prescribed Time)
6AM-9AM: 15.79% of participants preferred this time.
12PM-3PM: 10.53% of participants preferred this time.
6PM-9PM: 10.53% of participants preferred this time.

3PM-6PM: 7.02% of participants preferred this time.
9AM-12PM: 3.51% of participants preferred this time. (Least Preferred)
The prescribed time is the 3rd popular option. If we were to divide only on the basis of Day and Night, 36.85% participants would prefer listening to it during Day and 63.15% participants would prefer listening to it at night. This difference is significant and goes on to suggest that this Raaga might have an appeal at off daylight times, albeit not at the exact prescribed time.

Conclusion:
The data suggests that the traditional Time-Theory for Sohini may not align with the actual preferences of listeners. Only 15.79% of participants agreed with the prescribed time, while the majority (84.21%) preferred other times, particularly 9PM-12AM. This indicates a disconnect between traditional Time-Theory and modern listener preferences.

Song 4: Raaga Shyam Kalyan

Shastriya Parichay or the Classical Classification of the Raaga:

Swar	Dhaivat Varjya in Aaroh. Both Madhyams. Rest all Shuddha Swaras.
Jati	Shadhav - Sampurna Vakra
Thaat	Kalyan
Vadi - Samvadi	Pancham - Shadj
Time	1st Prahar of the Night (6PM to 9PM)
Mukhya Ang	S R ,N S (m)R ; R M M P ; P G m R ; M P ; G m P ; G m R ; ,N S R S;
Aaroh - Avroh	,N S R M P N S'; - S' N D P M P D P G m P G m R S ,N S;

Table 13: Details of Raaga Shyam Kalyan

From the 30 responses, these are the results:

12AM-3AM	4.29%
3AM-6AM	7.14%
6AM-9AM	11.43%
9AM-12PM	15.71%
12PM-3PM	11.43%
3PM-6PM	15.71%
6PM-9PM	21.43%
9PM-12AM	12.86%

Table 14: Time Preference of Participants (for Raaga Shyam Kalyan)

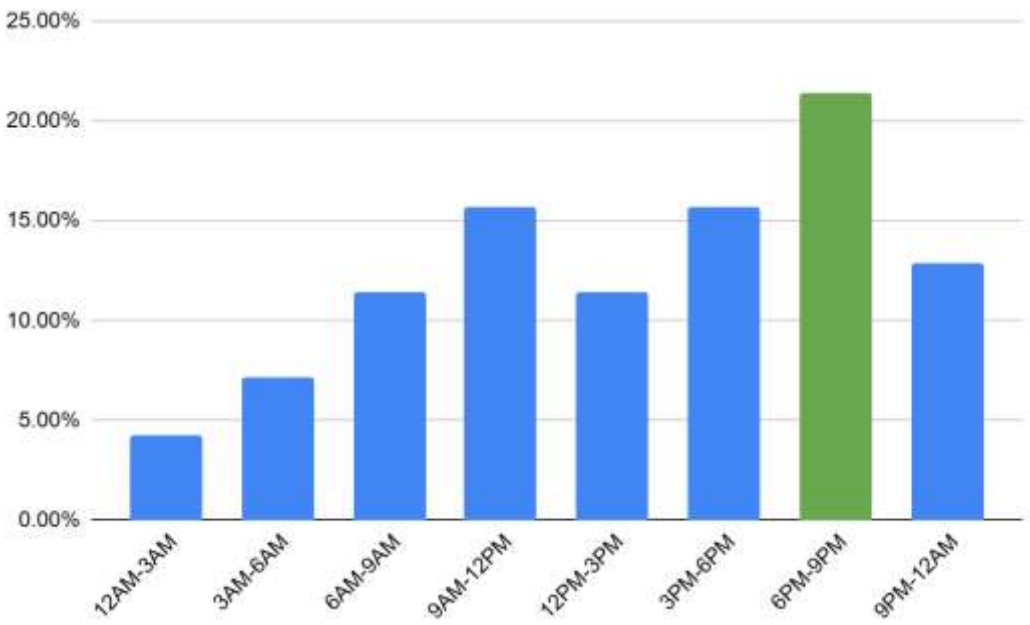

Figure 8: time preference of participants (for Raaga Shyam Kalyan)

Interpretation of Data:

The Raaga is traditionally associated with the 1st Prahar of the night (6 PM to 9 PM) according to HCM Time-Theory. However, the responses from 30 participants reveal a significant divergence from the traditional time association, suggesting that the prescribed time may not align with the preferences of most listeners.

Participant Preferences for Listening Time:

6PM-9PM: 21.43% of participants preferred this time. (Most Preferred & Prescribed)
9AM-12PM: 15.71% of participants preferred this time.
3PM-6PM: 15.71% of participants preferred this time.
9PM-12AM: 12.86% of participants preferred this time.
12PM-3PM: 11.43% of participants preferred this time.
6AM-9AM: 11.43% of participants preferred this time.
3AM-6AM: 7.14% of participants preferred this time.
12AM-3AM: 4.29% of participants preferred this time. (Least Preferred)

The prescribed time is the most popular option. If we were to divide only on the basis of Day and Night, 54.28% participants would prefer listening to it during Day and 45.72% participants would prefer listening to it at night. This difference, too, is not very significant.

Conclusion:

The data suggests that the traditional Time-Theory for Shyam Kalyan aligns with the preferences of listeners, as 21.43% of participants agreed with the prescribed time. However, a significant portion of participants (78.57%) preferred other times, particularly 9AM-12PM and 3PM-6PM, indicating that while the prescribed time is popular, it is not universally preferred.

Song 5: Saraswati

Shastriya Parichay or the Classical Classification of the Raaga:

Aaroh - Avroh	S R M' P D S' - S' n D P M' P M' R S ,n ,D S
Swar	Gandhar and Nishad are omitted in Aaroh. Gandhar is omitted in Avroh. Madhyam Teevra, Nishad Komal. Rest all Shuddha Swaras.
Jati	Audhav - Shadhav
Thaat	Kalyan
Vadi - Samvadi	Pancham - Rishabh
Time	2nd Prahar of the Night (9PM to 12AM)
Mukhya Ang	R M' P D n D ; P M' D P ; M' R M' P ; D S' n D;
Table 15: Details of Raaga Saraswati	

From the 30 responses, these are the results:

12AM-3AM	2.86%
3AM-6AM	4.29%
6AM-9AM	10.00%
9AM-12PM	15.71%
12PM-3PM	12.86%
3PM-6PM	15.71%
6PM-9PM	22.86%
9PM-12AM	15.71%
Table 16: Time Preference of Participants (for Raaga Saraswati)	

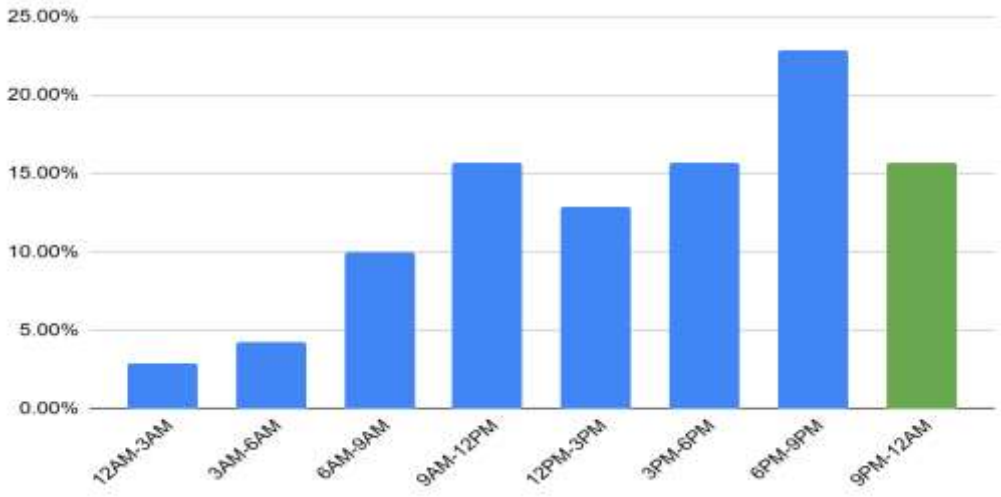

Figure 9: time preference of participants (for Raaga Saraswati)

Interpretation of Data:

The Raaga is traditionally associated with the 2nd Prahar of the night (9 PM to 12 AM) according to HCM Time-Theory. However, the responses from 30 participants reveal a significant divergence from the traditional time association, suggesting that the prescribed time may not align with the preferences of most listeners.

Participant Preferences for Listening Time:

6PM-9PM: 22.86% of participants preferred this time. (Most Preferred)
9PM-12AM: 15.71% of participants preferred this time. (Prescribed Time)
9AM-12PM: 15.71% of participants preferred this time.
3PM-6PM: 15.71% of participants preferred this time.
12PM-3PM: 12.86% of participants preferred this time.
6AM-9AM: 10.00% of participants preferred this time.
3AM-6AM: 4.29% of participants preferred this time.
12AM-3AM: 2.86% of participants preferred this time. (Least Preferred)

The prescribed time is the 2nd popular option. If we were to divide only on the basis of Day and Night, 54.28% participants would prefer listening to it during Day and 45.72% participants would prefer listening to it at night. This difference, too, is not very significant.

Conclusion:

The data suggests that the traditional Time-Theory for Saraswati may not align with the actual preferences of listeners. Only 15.71% of participants agreed with the prescribed time, while the majority (84.29%) preferred other times, particularly 6PM-9PM. This indicates a disconnect between traditional Time-Theory and modern listener preferences.

Song 6: Ahir Bhairav

Shastriya Parichay or the Classical Classification of the Raaga:

Aaroh - Avroh	S r G m P D n S' - S' n D P m G r S
Swar	Rishabh and Nishad Komal. Rest All Shuddha Swaras.
Jati	Sampurna - Sampurna
Thaat	Bhairav
Vadi - Samvadi	Madhyam - Shadj
Time	1st Prahar of the Day (6AM to 9AM)
Mukhya Ang	G m P ; D n D ; P D P ; S' n D ; n D P m G m ; G m P m r r S ; ,n ,D ,n r r S;
Table 17: Details of Raaga Ahir Bhairav	

From the 30 responses, these are the results:

12AM-3AM	15.15%
3AM-6AM	18.18%

6AM-9AM	19.70%
9AM-12PM	4.55%
12PM-3PM	7.58%
3PM-6PM	6.06%
6PM-9PM	10.61%
9PM-12AM	18.18%

Table 18: Time Preference of Participants (for Raaga Ahir Bhairav)

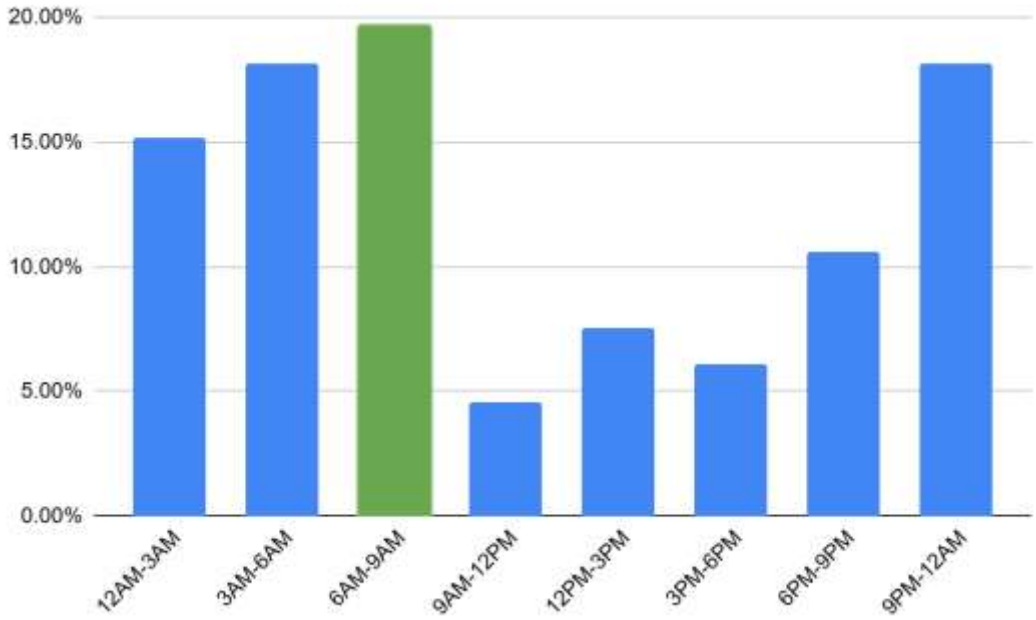

Figure 10: time preference of participants (for Raaga Ahir Bhairav)

Interpretation of Data:

The Raaga is traditionally associated with the 1st Prahar of the day (6 AM to 9 AM) according to HCM Time-Theory. However, the responses from 30 participants reveal a significant divergence from the traditional time association, suggesting that the prescribed time may not align with the preferences of most listeners.

Participant Preferences for Listening Time:

6AM-9AM: 19.70% of participants preferred this time. (Most Preferred, and Prescribed Time)
3AM-6AM: 18.18% of participants preferred this time.
9PM-12AM: 18.18% of participants preferred this time.
12AM-3AM: 15.15% of participants preferred this time.
6PM-9PM: 10.61% of participants preferred this time.
12PM-3PM: 7.58% of participants preferred this time.
3PM-6PM: 6.06% of participants preferred this time.
9AM-12PM: 4.55% of participants preferred this time. (Least Preferred)

The prescribed time is the most popular option. If we were to divide only on the basis of Day and Night, 37.89% participants would prefer listening to it during Day and 62.11% participants would prefer listening to it at night. This difference is very significant and goes on to suggest that participants prefer listening to this raaga at daylight hours (daytime) than at off-daylight hours (nighttime). This further goes on to imply that the time theory does not have much effect on the listeners, rather, listeners prefer to have a completely different preference (although, the most preferred timing is that of early daytime).

Conclusion:

The data suggests that the traditional Time-Theory for Ahir Bhairav aligns with the preferences of listeners, as 19.70% of participants agreed with the prescribed time. However, a significant portion of participants (80.30%) preferred other times, particularly 3AM-6AM and 9PM-12AM, indicating that while the prescribed time is popular, it is not universally preferred.

Song 7: Malgunji

Shastriya Parichay or the Classical Classification of the Raaga:

Aaroh - Avroh	S R G m D n S'; - S' n D P m G R G m g R S ;
Swar	Pancham is omitted in Aaroh. Komal Nishad, Both Gandhars. Rest all Shuddha Swaras.
Jati	Shadhav - Sampurna Vakra
Thaat	Kafi
Vadi - Samvadi	Madhyam - Shadj
Time	3rd Prahar of the Night (12AM to 3AM)
Mukhya Ang	G m g R S ; ,n S ; ,D ,n S R G m ;
Table 19: Details of Raaga Malgunji	

From the 30 responses, these are the results:

12AM-3AM	9.84%
3AM-6AM	9.84%
6AM-9AM	13.11%
9AM-12PM	11.48%
12PM-3PM	13.11%
3PM-6PM	11.48%
6PM-9PM	18.03%
9PM-12AM	13.11%
Table 20: Time Preference of Participants (for Raaga Malgunji)	

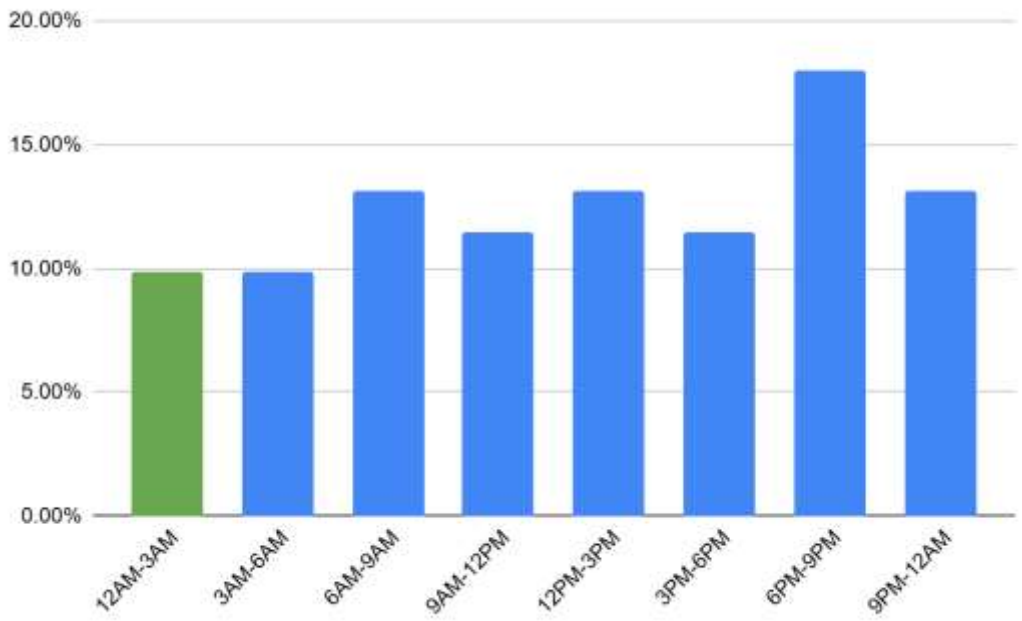

Figure 11: time preference of participants (for Raaga Malgunji)

Interpretation of Data:

The Raaga is traditionally associated with the 3rd Prahar of the night (12 AM to 3 AM) according to HCM Time-Theory. However, the responses from 30 participants reveal a significant divergence from the traditional time association, suggesting that the prescribed time may not align with the preferences of most listeners.

Participant Preferences for Listening Time:

6PM-9PM: 18.03% of participants preferred this time. (Most Preferred)
6AM-9AM: 13.11% of participants preferred this time.
12PM-3PM: 13.11% of participants preferred this time.
9PM-12AM: 13.11% of participants preferred this time.
9AM-12PM: 11.48% of participants preferred this time.
3PM-6PM: 11.48% of participants preferred this time.
12AM-3AM: 9.84% of participants preferred this time. (Prescribed Time)
3AM-6AM: 9.84% of participants preferred this time. (Least Preferred)

The prescribed time is the second-least popular option (7th). If we were to divide only on the basis of Day and Night, 49.18% participants would prefer listening to it during Day and 50.82% participants would prefer listening to it at night. This difference, too, is not very significant.

Conclusion:

The data suggests that the traditional Time-Theory for Malgunji may not align with the actual preferences of listeners. Only 9.84% of participants agreed with the prescribed time, while the majority (90.16%) preferred other times, particularly 6PM-9PM. This indicates a disconnect between traditional Time-Theory and modern listener preferences.

Song 8: Madhuwanti

Shastriya Parichay or the Classical Classification of the Raaga:

Aaroh - Avroh	,N S g M P N S'; - S' N D P M g M g R S ,N S;
Swar	Rishabh and Dhaivat are omitted in Aaroh. Gandhar Komal, Madhyam Teevra. Rest all Shuddha Swaras.
Jati	Audhav - Sampurna
Thaat	Todi
Vadi - Samvadi	Pancham - Shadj
Time	4th Prahar of the Day (3PM to 6PM)
Mukhya Ang	,N S M g M P; M g S R S;
Table 21: Details of Raaga Madhuwanti	

From the 30 responses, these are the results:

12AM-3AM	7.41%
3AM-6AM	12.96%
6AM-9AM	12.96%
9AM-12PM	7.41%
12PM-3PM	12.96%
3PM-6PM	9.26%
6PM-9PM	16.67%
9PM-12AM	20.37%
Table 22: Time Preference of Participants (for Raaga Madhuwanti)	

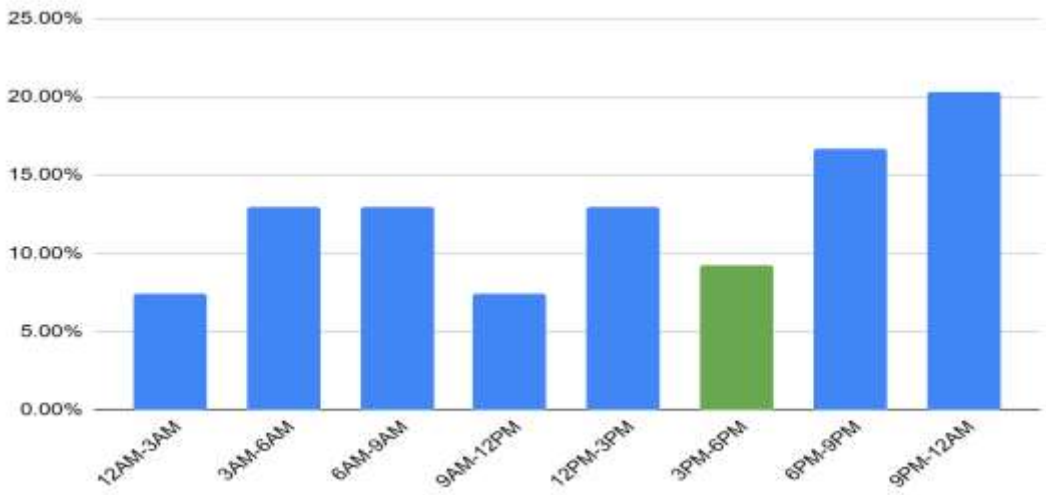

Figure 12: time preference of participants (for Raaga Madhuwanti)

Interpretation of Data:

The Raaga is traditionally associated with the 4th Prahar of the day (3 PM to 6 PM) according to HCM Time-Theory. However, the responses from 30 participants reveal a significant divergence from the traditional time association, suggesting that the prescribed time may not align with the preferences of most listeners.

Participant Preferences for Listening Time:

9PM-12AM: 20.37% of participants preferred this time. (Most Preferred)
6PM-9PM: 16.67% of participants preferred this time.
3AM-6AM: 12.96% of participants preferred this time.
6AM-9AM: 12.96% of participants preferred this time.
12PM-3PM: 12.96% of participants preferred this time.
3PM-6PM: 9.26% of participants preferred this time. (Prescribed Time)
12AM-3AM: 7.41% of participants preferred this time.
9AM-12PM: 7.41% of participants preferred this time. (Least Preferred)

The prescribed time is the 6th popular option. If we were to divide only on the basis of Day and Night, 42.59% participants would prefer listening to it during Day and 57.41% participants would prefer listening to it at night. This difference, too, is not very significant.

Conclusion:

The data suggests that the traditional Time-Theory for Madhuwanti may not align with the actual preferences of listeners. Only 9.26% of participants agreed with the prescribed time, while the majority (90.74%) preferred other times, particularly 9PM-12AM and 6PM-9PM. This indicates a disconnect between traditional Time-Theory and modern listener preferences.

Data Interpretation:

After compiling and analysing the results from all eight Raagas, the following conclusions can be drawn:

Song Number	% of Participants wanting to Listen at the Prescribed Time	% of Participants not wanting to Listen at the Prescribed Time
1	10.64%	89.36%
2	17.46%	82.54%
3	15.79%	84.21%
4	21.43%	78.57%
5	15.71%	84.29%
6	19.7%	80.3%
7	9.84%	90.16%
8	9.26%	90.74%

Table 23: Compiled Time Preference of Participants

Key Findings:

1. Variance:

Indicates the overall spread or dispersion of data points around the average % of participants wanting to listen to the Raaga at the prescribed time.

Formula:

$$\sigma^2 = \frac{\Sigma(x_i - \mu)^2}{N}$$

Where

σ^2 = variance; Σ = sum of; x_i = value; μ = mean; N = total number of values

Song Number	% of Participants wanting to Listen at the Prescribed Time
1	10.64%
2	17.46%
3	15.79%
4	21.43%
5	15.71%
6	19.7%
7	9.84%
8	9.26%

Mean (μ) Formula:

$$\mu = \frac{(x_1 + x_2 + x_3 + x_4 + x_5 + x_6 + x_7 + x_8)}{8}$$

Working:

$$\mu = \frac{(10.64\% + 17.46 + 15.79\% + 21.43\% + 15.71\% + 19.7\% + 9.84\% + 9.26\%)}{8}$$

$$= \frac{119.83\%}{8}$$

$$\mu = 14.97875$$

Song Number	% of Participants wanting to Listen at the Prescribed Time	Deviation from the mean $(x_i - \mu)$	Square of Devitation $(x_i - \mu)^2$
1	10.64	-4.34	18.8356
2	17.46	2.48	6.1504
3	15.79	0.81	0.6561

4	21.43	6.45	41.6025
5	15.71	0.73	0.5329
6	19.7	4.72	22.2784
7	9.84	-5.14	26.4196
8	9.26	-5.72	32.7184

Formula: $\Sigma(x_i - \mu)^2$
$= (x_1 - \mu) + (x_2 - \mu) + (x_3 - \mu) + (x_4 - \mu) + (x_5 - \mu) + (x_6 - \mu) + (x_7 - \mu) + (x_8 - \mu)$
$= 18.8356 + 6.1504 + 0.6561 + 41.6025 + 0.5329\% + 22.2784\% + 26.4196 + 32.7184$
$= 1.491939\%$

Variance formula: $\sigma^2 = \frac{\Sigma(x_i - \mu)^2}{N}$

$= \frac{149.1938875}{8}$

$= 18.6492359375$

Standard Deviation

Provides a more interpretable measure of spread, as it's expressed in the same units as the original data. A smaller standard deviation means the data points are clustered closely around the mean, while a larger standard deviation indicates a wider spread.

Formula: $\sigma = \sqrt{\sigma^2}$

$\sigma = \sqrt{18.6492359375}$

$\sigma = 4.31847611287825$

A standard deviation (σ) of just 4.32 strongly suggests that there is very little difference in the Overall Preference for Non-Prescribed Times:

- The average percentage of participants who preferred to listen to the eight Raagas at their prescribed times is 14.98%.
- Conversely, 85.02% of participants on an average preferred to listen to the Raagas at times other than those prescribed by the traditional Time-Theory.

Comparison with HCM Time-Theory Knowledge:

- Out of the 30 participants, only 5 (16.67%) were familiar with HCM Time-Theory, while 25 (83.33%) were not.
- One might expect that at least 16.67% of participants (those familiar with Time-Theory) would prefer listening to Raagas at their prescribed times. However, the actual percentage (14.98%) is even lower than this expectation.

Implications for Time-Theory:

The data strongly suggests that PVNB's Time Theory of Raagas is not universally applicable. And, the majority of participants (85.02%), regardless of their familiarity with HCM Time-Theory, preferred

listening to Raagas at times that diverged from the traditional prescriptions. This indicates that the Time-Theory may not resonate with modern listeners' preferences or may be influenced by factors other than the intrinsic qualities of the Raagas.

The data reveals that 85.02% of participants preferred listening to Raagas at times other than those traditionally prescribed, suggesting that the Time-Theory may not be as rigid or universally applicable as previously thought.

This divergence could be attributed to various factors, including:

(i) changes in lifestyle: modern lifestyles, with their varied schedules and demands, may influence when people choose to listen to music, leading to a divergence from traditional time prescriptions.

(ii) the influence of personal preferences and moods: emotional and psychological factors play a significant role in determining when people prefer to listen to certain types of music, including Raagas.

(iii) cultural shifts: the rigid structure of the Time-Theory may need to be revisited to accommodate the flexible and dynamic ways in which people interact with music in contemporary contexts.

The findings highlight the importance of adopting a listener-centric approach in the study of Raagas which also benefits the artistes and performers. While the traditional Time-Theory provides a structured framework for understanding Raagas, it may not fully capture the diverse ways in which people experience and engage with classical music today.

Inferences and Implications of the Research

General Listening Preferences for HCM:

To further understand this divergence, I have analysed the general timings during which participants preferred to listen to HCM, regardless of Raaga-specific prescriptions. The data reveals the following preferences:

12AM-3AM	7.31%
3AM-6AM	11.51%
6AM-9AM	15.62%
9AM-12PM	10.02%
12PM-3PM	11.54%
3PM-6PM	11.60%
6PM-9PM	17.42%
9PM-12AM	14.98%

Table 24: Compiled list of listening preference at prescribed timing

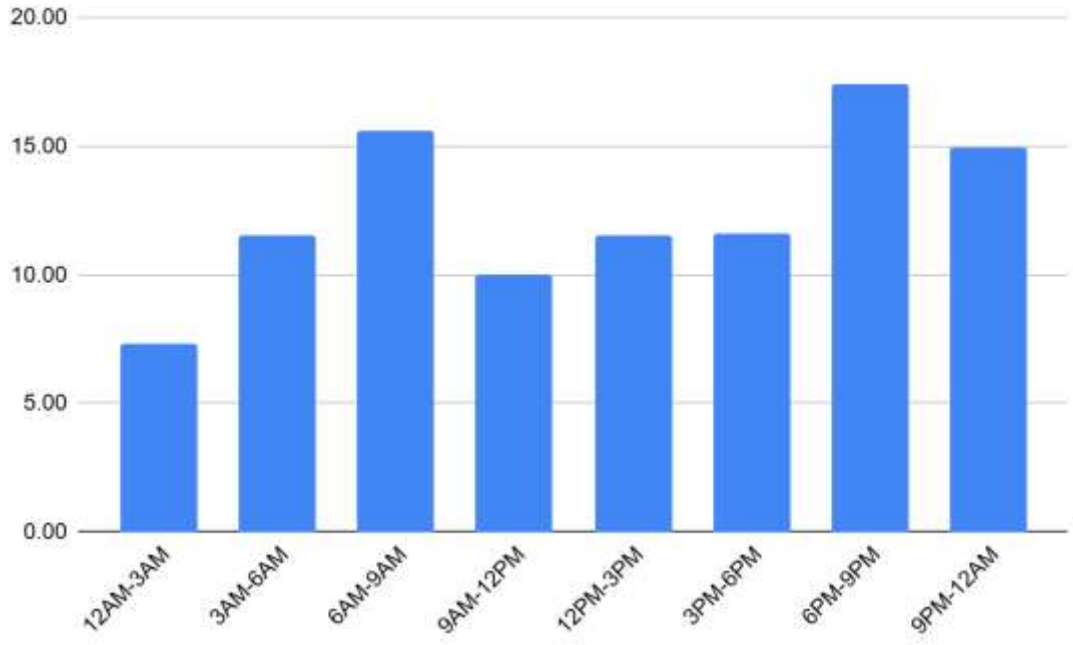

Figure 13: Compiled Listening Preference at prescribed timing

Observations:

1. Peak Listening Times:

- The most popular time for listening to HCM is 6PM-9PM, with 17.42% of participants preferring this slot.
- The second most popular time is 6AM-9AM, with 15.62% of participants choosing this period.
- The third most popular time is 9PM-12AM, with 14.98% of participants preferring this slot.
- Together, these three slots make up 48.02% of the participants.

2. Low Listening Times:

- The least preferred time is 12AM-3AM, with only 7.31% of participants choosing this slot.
- Other less popular times include 9AM-12PM (10.02%) and 3AM-6AM (11.51%).

Connection to a 9-5 Job and Working Professionals:

The results do support the idea that working professionals' schedules influence their listening preferences for HCM.

Here's how:

- Peak Listening Times During Off-Work Hours: The data shows that the most popular times for listening to HCM are 6PM-9PM (17.42%) and 6AM-9AM (15.62%). These times align with typical routines of working professionals:
  - 6PM-9PM: This is the evening period after work, when people are likely to unwind and relax. It makes sense that this is the most popular time for listening to HCM, as it provides a calming and reflective experience after a busy day.
  - 6AM-9AM: This is the morning period before work, when people might listen to music to start their day on a positive note or during their commute.
- Low Listening Times During Work Hours: The data shows lower preferences for listening to HCM during typical work hours.

- 9AM-12PM: 10.02%
- 12PM-3PM: 11.54%
- 3PM-6PM: 11.60%

This suggests that working professionals are less likely to listen to music during their peak work hours, as they are focused on their tasks.

The results align with the idea that working professionals prefer listening to HCM during non-work hours, particularly in the early morning or evening. This supports the notion that lifestyle and work schedules play a significant role in shaping listening preferences, which in turn contributes to the divergence from traditional Raaga-time associations.

How Working Professionals Shape the Study's Results:

The results suggest that working professionals' schedules significantly influence their listening preferences, which in turn shapes the study's findings. Here's how:

- Non-Prescribed Listening Times: Since working professionals are more likely to listen to music during non-work hours (early morning or evening), they are less likely to adhere to the traditional Raaga-time associations, which often prescribe listening during work hours (e.g., 9AM-12PM or 12PM-3PM). This contributes to the 85.02% of participants who prefer listening to Raagas at times other than those prescribed.
- Flexibility in Listening: Working professionals may prioritise convenience and personal preference over traditional rules. For example, they might listen to calming Raagas in the evening to relax, even if those Raagas are traditionally associated with morning times.

The study's results reflect the influence of modern work schedules on listening habits. Working professionals' preferences for listening to HCM during non-work hours contribute to the divergence from traditional Raaga-time associations.

Connection to Circadian Rhythm:

The results partially support the idea that circadian rhythms (natural cycles of alertness and energy) influence listening preferences. Here's how:

- Peak Performance Hours: According to circadian rhythm theory, most people experience peak alertness and productivity during the late morning and early afternoon (approximately 9AM-3PM). The data shows that listening preferences during these hours are relatively low:
  - 9AM-12PM: 10.02%,
  - 12PM-3PM: 11.54%

This suggests that people are less likely to listen to music during their peak performance hours, as they are focused on work or other tasks.

- Relaxation and Wind-Down Hours: In the evening (6PM-9PM: 17.42%) and late night (9PM-12AM: 14.98%), when people are winding down or preparing for sleep, listening preferences increase. This aligns with the idea that people use music to relax and unwind during these periods.

Connection to the Study Results:

The data supports the idea that people are less likely to listen to music during their peak alertness hours (when they are focused on work) and more likely to listen during relaxation periods. This could explain why the traditional Time-Theory, which prescribes specific times for Raagas based on their emotional and

energetic qualities, does not align with modern listening habits. People's natural rhythms and work schedules may override the traditional associations.

Conclusion:

The research findings reveal a significant divergence between the traditional Time-Theory of Raagas and the actual listening preferences of modern audiences. 85.02% of participants preferred listening to Raagas at times other than those prescribed by the traditional Time-Theory, suggesting that the theory may not be as rigid or universally applicable as previously thought. This divergence can be attributed to several factors, including changes in lifestyle, cultural shifts, and the influence of personal preferences and moods.

Findings and Interpretation: The findings of this research highlight the importance of a listener-centric approach in the study of Raagas. While the traditional Time-Theory has long served as a structured framework within Hindustani Classical Music (HCM), it may no longer fully represent the diverse, contemporary ways in which listeners engage with music.

Challenge to the Traditional Time-Theory: The data collected indicates a significant divergence from the time-based prescriptions outlined by early 20th-century scholars like Pandit V.N. Bhatkhande. Notably, 85.02% of participants reported preferring to listen to Raagas at times other than those prescribed by the theory. Additionally, general listening preferences for HCM do not align strictly with traditional prahar-based timings. This suggests that the rigid application of Time-Theory may not resonate with audiences or reflect their actual listening behavior.

Need for Reconsideration: These findings underscore the need to re-evaluate the Time-Theory within the context of modern listening habits and evolving cultural consumption patterns. While the traditional model has historical and pedagogical value, its contemporary relevance appears increasingly limited. Audiences today access music across platforms and time zones, often detached from the original temporal or performative contexts in which Raagas were once situated.

Toward a More Flexible Framework: In conclusion, this research suggests that the Time-Theory may need to be adapted or recontextualised to reflect how people actually experience Raagas today. Future research could aim to develop more flexible, listener-centric models that acknowledge the fluid and personal nature of musical engagement. Such frameworks would not only broaden the accessibility and relevance of HCM but also offer a more inclusive understanding of Raaga-time associations in today's diverse musical landscape.

Follow-Up Interviews to Explore Listener Choices:

Objective: To understand the reasons behind the time slots chosen by participants who are unfamiliar with the Time-Theory.

Methodology:

- Conduct in-depth interviews or surveys with participants who selected time slots that deviate from the traditional Raaga-time associations.
- Ask participants about their motivations, emotional states, and lifestyle factors that influenced their choices.
- Explore whether their choices were based on convenience, mood, or other external factors.

Potential Outcomes:

- Insights into Listener Behaviour: The study will provide a deeper understanding of why people choose to listen to Raagas at specific times, even when they are unaware of the traditional Time-Theory.

- Emotional and Psychological Factors: The research can uncover how emotions, moods, and daily routines influence listening preferences.
- Cultural and Lifestyle Influences: The study can reveal how modern lifestyles and cultural shifts impact the way people engage with HCM.

Significance: This research can help HCM practitioners and educators better understand the needs and preferences of their audience, allowing them to create more engaging and relevant musical experiences.

Results: In order to gain deeper insight into the perceptual choices made by participants unfamiliar with Hindustani Classical Time-Theory, I conducted a follow-up interview with one such participant. The purpose of this interview was to explore the reasoning behind their selection of specific time slots for various Raagas during the initial survey phase. The interview lasted 1 hour, 32 minutes, and 46 seconds, and was conducted via Zoom, as the participant resides outside India. The session covered a range of themes related to musical intuition, emotional response, personal listening habits, cultural associations, and sonic imagery. In the following section, I will present selected excerpts from the conversation along with a thematic breakdown of the key insights that emerged. A recording of the interview has been uploaded to YouTube, and the link is provided for reference (https://youtu.be/9HmS-g9lWzM)

Time stamp	Description
00:00:45	Consent by Participant
00:04:40	Interview on Song 1 (Bilaskhani Todi)
00:10:45	Interview on Song 2 (Patdeep)
00:30:50	Interview on Song 3 (Sohini)
00:47:23	Interview on Song 4 (Shyam Kalyan)
00:53:25	Interview on Song 5 (Saraswati)
01:04:41	Interview on Song 6 (Ahir Bhairav)
01:18:19	Interview on Song 7 (Malgunji)
01:28:34	Interview on Song 8 (Madhuwanti)

Song 1: Bilaskhani Todi

Raaga Perception and Emotional Response:

Q: What did you feel listening to this?

A: It was mostly positive feelings. I would probably listen to this in the morning-ish, late-morning, not early morning. 11AM-types.

I didn't understand the words. A nice song to pick me up in the middle of the day. Post-lunch works. Felt energetic while listening to the song.

Inference:

This initial response highlights a key finding: the participant's time-choice was influenced not by external systems (like the Time-Theory), but by their internal mood and energy cycle. The participant explicitly

situated the Raaga in a late-morning or post-lunch setting, connecting it to a personal need for mental upliftment or re-energisation. For this listener, the act of listening is situated within a rhythm of daily productivity and emotional flux, rather than any learned association with traditional Raaga timings. The perception of the music's character (as energetic and bright) shaped their time choice.

Decision-Making Cues:

Q: What went into your decision of this song getting you out of your slump?

A: The tempo definitely plays a role. It is not fast-paced EDM, Hip-Hop type music.

Evening hours would be fine, but I would prefer it more during the day.

Inference:

The participant here reveals that tempo is a dominant perceptual factor in temporal placement. The music was seen as having a moderate tempo that is active but not intense, which aligned it more closely with daytime activity and engagement rather than evening leisure or introspection. In the absence of theoretical knowledge, formal elements of the music, especially rhythm and tempo, become central to the construction of meaning. This challenges the Time-Theory's reliance on abstract associations and showcases the role of listener-centered heuristics in temporal identification.

Response to Theoretical Time Assignment:

Q: What if I told you this song should be heard during the time 9AM-12pM? Would you listen to this?

A: I would not. May be I could listen to it at 11:30-ish maybe. Because it is closer to lunch time. 9AM is too early. I would want something that is slower, something that brings me to my conscious mind.

Inference:

Despite the prescribed slot aligning with their general suggestion of "late morning," the participant rejected the beginning of that slot, indicating a preference for a gradual emotional and mental transition into the music. This precision reflects a personal relationship with time, shaped by lived experience rather than external musical systems.

The concept of fixed time windows for Raagas may not reflect how contemporary listeners emotionally process or schedule music. Instead, they may associate music with psychological states that fluctuate within a time window, rather than being governed by it.

Mood Association and the Role of Lyrics:

Q: What if I ask you to relate this to a very melancholic and sad mood?

A: No. I don't understand the words. Just based on the music and the tempo, I don't think it is sad. The tempo plays more part than the lyrics in deciding whether a song is happy or sad. If I don't understand the words, I will look at the speed.

The Role of Prior Exposure in Musical Interpretation:

As part of the same interview, I introduced the participant to the Raaga Bilaskhani Todi through a short vocal aalap, performed without lyrics. Prior to this, I briefly narrated the historical and emotional context of the Raaga: the account of Bilas Khan, son of Tansen, who is said to have composed or rendered this Raaga in front of his father's dead body. The Raaga is traditionally considered deeply melancholic, embodying grief, longing, and profound emotional sorrow.

Upon listening to the aalap, the participant responded:
"This felt like a sad longing. My reference is Bollywood music where they put this kind of piece in the beginning or towards the end; and those songs tend to be sad."
This response is particularly valuable for research involving cross-cultural or non-native listeners. The participant, unable to understand the language of the lyrics, defaulted to tempo as an emotional indicator, viewing slower tempos as melancholic and moderate-to-fast tempos as uplifting or energising. In the absence of linguistic or cultural context, auditory characteristics become the dominant mode of emotional interpretation. This reinforces the idea that time-theory, which often assumes a culturally embedded response, may not translate meaningfully across listener demographics. Despite having no theoretical understanding of the Raaga or its historical association, the participant intuitively identified the emotional mood as one of sorrow and yearning. Their point of reference was not Hindustani Classical music, but cinematic sound design, particularly referring to Bollywood scores, where similar tonalities are often used to frame emotional scenes.

Song 2: Patdeep

Raaga Perception and Emotional Response:
Q: What did it make you feel?
A: So, this one, I understood the words a bit, and that definitely would have played a role. There is a sort of desperation in his voice. It is sad. I'd probably put it in a "heart-break" playlist. This is night hours. Definitely not during day.
Inference:
This response reveals that even a partial understanding of lyrics can override musical tempo or tonality as the primary interpretive lens. The emotion was perceived to be "desperation" and "sadness" and was linked to both vocal expression and lyrical content, resulting in an association with late evening or night.

Dependance on Tempo:
Q: Did the tempo play a part in your decision?
A: In this one, the lyrics definitely took precedence over the tempo. Since I could understand the words "Tori Sang Na Jau". They can be indicating intense emotions. Because at nights, people are more vulnerable.
Inference:
The participant indicated that they understood part of the text, specifically the phrase "Tori Sang Na Jau." This created a new dynamic in interpretation, shifting the focus from purely musical features (as in the earlier aalap-based examples) to a lyrical-emotional analysis. This represents a shift from earlier interpretations where tempo was the dominant cue. Here, semantic comprehension altered emotional interpretation and, consequently, the perceived time-of-day association. The song was no longer neutral or flexible, because it was anchored by the narrative context the participant constructed from the lyrics. This suggests that emotional interpretation and temporal association are highly plastic. They adapt dynamically to which musical or linguistic cue is most accessible or personally meaningful to the listener.

Reframing Contextual Prompts:
To test whether this emotional anchor could be shifted, the participant was asked to reframe the song as an expression of stubbornness rather than sadness.

Q: If supposed you were to relate it to stubbornness or to place it at 3-6PM. Would you be open to such a change in your perception?
A: Surely. It would become more playful; a sort of cute-annoyed. Stubbornness is something that I can consider, but it would not my go-to thing. Then it would probably go up earlier in the day. Evenings probably, at 5-6PM.

Inference:

When given a new narrative lens, the participant repositioned the same song to an entirely different emotional space and time-of-day context. Instead of late-night vulnerability, the same lyrics and melody were now associated with early evening playfulness, based on a reinterpretation of tone and meaning. These responses reveal that emotional and temporal interpretation is contextually malleable, i.e., listeners can adapt their perception based on suggestion, reframing, or imagined scenarios. This also affirms that the same musical piece can carry multiple temporal meanings, depending on the listener's emotional framing, lyrical comprehension, and listening environment. This case reinforces the notion that Raaga perception is not governed by a singular, fixed response, but is constructed interactively and situationally. While earlier examples demonstrated sonic and energetic cues (tempo, mood), this case introduces the powerful influence of linguistic comprehension and narrative framing. More importantly, it highlights the listener's flexibility in adapting meaning, the same musical phrase can belong to different times of the day not because of a fixed rule, but because of the listener's ability to shift emotional interpretation through internal or external cues.

Song 3: Sohini

Raaga Perception and Emotional Response:

Q: What did you feel listening to this? Did you feel uncomfortable by any chance?
A: I understood the words in this one. He's talking about "man lalchaye", but I don't get it exactly. It's kind of a slow song. I have very weird feelings about it. I have no strong feelings about this. It just made me confused. I don't feel strongly. Except that it's slow. It feels like it is building up to something but then it goes nowhere. Yes, it does count as uncomfortable. I would not listen to it again, probably.

Inference:

For the third recorded Raaga in the session, the participant recognised some lyrics, specifically the phrase "man lalchaye", but admitted to not fully understanding their meaning. The overall emotional reaction was one of uncertainty, mild confusion, and emotional detachment. This response introduces a different category of listener experience: one that is neither positive nor negative, but emotionally neutral or unresolved. This illustrates that listener discomfort can emerge not from dissonance or sadness, but from ambiguity, like when a piece appears to hint at an emotional direction but offers no resolution. In this case, the notes, slowness and lack of narrative clarity led to a sense of detachment, not emotional immersion.

Music as Background, Not Situation or Time Specific:

Q: What about the time?

A: Since it is so mysterious to me, I'd probably put it in the background while doing something else. During peak working hours. Or maybe when I am looking outside the bus. Because then I am not actually paying attention to the song, it is just there.
I honestly could not figure out what it was trying to make me feel. I don't mean to disrespect the art. I am

sure it is trying to do something substantial.

Inference:

This reflects a departure from emotion-driven time-placement seen in previous excerpts. Instead, the participant relegated the song to a passive auditory role: a kind of musical filler that occupies space but does not demand emotional or cognitive engagement. This marks an important contrast: when a song does not evoke a clear mood or narrative, time-of-day associations become secondary to functional or situational listening contexts (e.g., work, travel). The participant's response shows that musical ambiguity may lead to temporal ambiguity as well, thus challenging the assumption embedded in Time-Theory that every Raaga necessarily evokes a distinct time or feeling.

Comparative Listening Exercise: Puriya, Marwa and Sohini

To test emotional sensitivity and perception beyond lyrics, the participant was next presented with three untexted vocal renderings of Sohini, Puriya, and Marwa, all of which use the same scale (tonal material) but differ in phrasing, ornamentation, and delivery style.

Answer for Sohini:

That invoked some kind of strength. Like even if not everything is working out, it's okay. Sort of a motivational song. Not an energising song. It is more like a stone-hearted strong.

Answer for Puriya:

That gives me the feeling of anticipation of something bad. It is like the calm before the storm, except you know the storm is surely coming. It is like the period of dread before you actually face grave consequences.

Answer for Marwa:

This is like the ending to one chapter. Mixed feelings... kind of sad that something is ending, but hope for the future — everything that comes with ending a phase in your life before starting a new one. Like packing your bags before you leave a city.

Music as a Narrative: This section offers key insights into the listener's meaning-making process. While Raagas like Sohini, Puriya, and Marwa are traditionally time-bound within the Time-Theory framework, the participant did not associate them with times of day at all. Instead, they mapped the music onto personal, situational, and psychological transitions: "the end of a chapter," "emotional strength," "dread before consequence."

Key takeaways:

- Even with identical tonal scales, interpretation depends on phrasing, character, and delivery and not on abstract theoretical placement.
- Listeners unfamiliar with Time-Theory may reframe Raagas entirely through life-situational metaphors, disconnecting them from diurnal or seasonal associations.
- Subtle or ambiguous Raagas often lead to multi-layered, introspective, and non-temporal interpretations, showing that the Time-Theory may oversimplify the complex emotional register that Raagas can access.

Listeners unfamiliar with theoretical frameworks use emotion, memory, and personal symbolism to interpret music, none of which consistently align with traditional time designations. In fact, the more emotionally subtle or ambiguous the Raaga, the more likely the listener is to place it within a narrative or situational frame, rather than a chronological one. This reinforces the need to explore listener-centric and situational models of Raaga association, expanding beyond fixed frameworks like Time-Theory.

Song 4: Shyam Kalyan

Raaga Perception and Emotional Response:

Q: What did you feel listening to this?

A: I think this was a give-away because I think he said "Sawan" in the beginning. But then on a deeper level, it is like the joy of starting something new or life changing for better. The beats in the back were giving a cool, happy, fun vibe. So, this is definitely fun. Go out, look at the world around you, appreciate and notice all the little details. It would inspire me to go for a hike.

It is like restarting. It is like when you go on a break and then come back to work with a renewed zeal. It gives me the feeling of spring.

Inference:

This Raaga excerpt included lyrics that featured the word "Sawan", which the participant noticed immediately. Despite this linguistic cue, the emotional interpretation was rich, layered, and not solely reliant on the word itself. Here, the participant associated the Raaga with emotional rejuvenation, nature, optimism, and discovery. Their description "joy of starting something new," "renewed zeal," "spring-like feeling", places the Raaga within a framework of seasonal and personal renewal, distinct from the rigid slotting of Time-Theory.

Temporal Association Framed by Mood and Season:

Q: If you were to give a time for this. What would it be?

A: Early morning. Or like late morning. Anytime in the morning. It would make me hopeful. It could also work when I am in a good mood. Celebrating the starting of something.

Inference:

Here, the time association was derived not from external cues like rhythm or theory, but from an internal mood alignment, that of the feeling of hope, freshness, and beginning. The Raaga was mapped to morning hours because mornings symbolise beginnings, potential, and clarity. The participant also added that it could be associated with any moment of emotional upliftment, such as returning from a break or experiencing a personal restart. Importantly, this temporal assignment was not rigid but mood-driven, suggesting that time, in the participant's view, was interchangeable with psychological states. By connecting the music to springtime, hiking, observation of details, and a return to work, the participant engaged with the Raaga as a symbol of environmental and internal flourishing. This frames the Raaga not within a technical or theoretical scaffold, but as a soundtrack for moments of emotional and sensory awakening.

- The lyric "Sawan" may have initially primed a seasonal association, but the participant's deeper response extended far beyond the word itself.
- Musical tone, beat, and overall energy were central in creating the feeling of "cool, happy, fun," and "inspiring."
- The listener applied the Raaga to universal experiences of emerging from rest, stepping into a new phase, celebrating movement and change.

This example illustrates how listeners build their own time-mood frameworks, independent of the traditional Raaga-time slots. The participant's associations with morning, spring, and personal renewal were grounded in symbolic and emotional reasoning, not in classical theory. Furthermore, the example shows how even minimal lyrical cues (e.g., "Sawan") can serve as a springboard, but do not define the entire interpretive experience. The listener instead engages with atmosphere, personal mood, and

imagination, which are fluid and subjective. This supports the overarching finding that listener perception of Raagas is shaped by lived experience, metaphorical thinking, and emotional resonance, not just sonic or textual content. The Time-Theory does not account for these personal variables, and therefore may not be universally meaningful to modern, diverse audiences.

Song 5: Saraswati

Raaga Perception and Emotional Response:

Q: What did you feel listening to this?

A: Very energetic song because of the tempo. Like the grand finale of a concert. I can imagine listening to this song when I am hanging out with my friends, doing silly things. It's all fun and games.

Inference:

In this excerpt, the participant immediately responded to the energy and rhythm of the piece rather than its lyrical or melodic content. Here, the tempo of the Raaga emerged as the dominant emotional trigger, producing a feeling of celebration, playfulness, and group camaraderie. The participant's interpretation is entirely rooted in personal and social experience, disconnected from traditional emotional frameworks or Raaga-character typologies. This reinforces a recurring theme: tempo significantly shapes listener mood and situational imagining, especially among non-classical listeners. The music is not just heard, it is placed into a social and experiential scene, in this case, a group setting marked by laughter, interaction, and spontaneity.

Temporal Association as Situational and Conditional

Q: If you were to place it at a time of the day, where would you place it?

A: Anytime. Not late night though. Unless I am trying to stay up late and I need that jolt of energy. It was mostly because of the tempo of the song. Even though I understood the words a little bit like "Piya" and "Tirchi nazariya". There was no need for the words to make me feel anything. The lyrics didn't convey anything strong just by themself.

Inference:

This response marks a departure from strict time-slotting, in favor of conditional time association. The participant identifies no fixed ideal moment for the music but instead frames time as fluid, mood-dependent, and need-based. The Raaga could be heard "anytime" so long as the listener is in an active or playful state. It would only enter the nighttime space if it served a functional purpose such as helping someone stay awake. This suggests that energy level, not time-of-day, dictates musical suitability for this listener. The participant treats music as a resource to match or modify their internal state, rather than as an art form with externally imposed time restrictions. Although the participant recognised a few lyrics like "Piya" and "Tirchi nazariya", they explicitly stated: "There was no need for the words to make me feel anything. The lyrics didn't convey anything strong just by themself." This affirms a pattern observed earlier in the study: for listeners not steeped in the cultural or poetic significance of Hindustani lyrics, it is musical structure and especially tempo and tone that drives emotional interpretation. The lyrics are noted, but not emotionally operative. This case reinforces that listeners unfamiliar with Time-Theory associate Raagas less with fixed time periods and more with personal energy states, moods, and contextual functionality. The Raaga in question was placed in any moment of heightened energy, not because of its theoretical timing but because of its ability to energise the listener.

- Tempo shaped perception more than lyrics or Raaga identity.

- Time-of-day was viewed flexibly, dictated by function rather than tradition.
- Music was imagined in a social setting, aligning with shared activities rather than solitary emotional states.

This example directly challenges the foundation of the Time-Theory by demonstrating that tempo and situational context may be more influential in determining a listener's time placement than the Raaga's canonical classification. Rather than acting as a passive receiver of tradition, the listener actively reinterprets the music based on personal and social relevance. For this participant, Raaga-time is not chronological but conditional, shaped by what the music makes them feel, what they are doing, and what they need from the music at that moment. Such flexibility suggests a need to evolve time-based Raaga frameworks to include listener agency and contextual adaptability.

Song 6: Ahir Bhairav

Raaga Perception and Emotional Response:

Q: What did you feel listening to this?

A: This one was just really sad. Even though the tempo increased towards the end, the person singing was not singing along with the tempo completely I guess. (She is here referring to the fact that Ajoy ji is dragging a little behind the tabla which is an aesthetic choice made by him). I also picked up a few phrases like "Piya ke milan ki aas". It was just really sad. Again longing and desperation.

Inference:

This Raaga excerpt elicited a clear and immediate emotional response from the participant. The participant noticed a technical nuance, i.e., the deliberate dragging of the vocal line behind the tabla, a classic aesthetic device used in expressive Raaga interpretation. Despite the tempo picking up in the latter half of the performance, the participant's perception of the piece as "really sad" remained unchanged. They also picked up lyrical fragments such as "Piya ke milan", which reinforced the tone of longing and emotional vulnerability. This shows that tempo alone does not override melodic and expressive cues. Even as the rhythm accelerated, the emotional weight of the melody and the vocalist's delivery anchored the listener in a state of sadness and yearning.

Resistance to Reframing Despite Lyrical Context

Q: To test whether contextual explanation could shift the listener's perception, the bandish (song text) was explained to the participant: that it reflects a devotee's longing for divine union. With that information, does this sound different?

A: Even after this explanation that you gave me, I would still want to think that it is a sad song. I would still like to believe that it depicts sadness and longing.

Inference:

It demonstrates that the emotional quality of a Raaga can be so strong that neither tempo nor poetic meaning is sufficient to override the mood communicated through musical phrasing and performance style. It suggests that Raaga itself carries emotional markers that can be perceived even by untrained ears, independent of theoretical or textual knowledge.

Dominance of Melody and Vocal Texture in Emotional Judgement

Q: What was the feeling of sadness and longing based on?

A: That was based on how he sang it. The melody, for sure. The tempo didn't play any role, because I

noticed the tempo got fast, but that didn't affect my judgement. The vocals took precedence. Maybe, if the singer had started singing really fast, I would have perceived it differently.

Inference:

Here, the participant attributes their emotional interpretation to melody, phrasing, and vocal timbre, not to tempo, lyrics, or cultural context. The bassy, textured voice of Pt. Ajoy Chakraborty and his expressive lag in tempo created a strong emotional impression of grief, longing, and devotion-as-suffering. The emotional character of this Raaga was shaped primarily through musical delivery and voice texture, demonstrating how non-theoretical cues strongly influence listener perception, especially among those unfamiliar with classical norms.

Q: Could you say this was due to the vocal texture of the singer (Pt. Ajoy Chakraborty)?

A: Yes, definitely. It's possible that I would have interpreted it in a different manner if it were in a higher pitch. I relate softness with higher notes. The singer's husky and bassy voice definitely played a role in my emotional response.

This example further challenges the assumption within Time-Theory that emotion (and by extension, time placement) can be deduced from structure alone. Here, the participant's emotional response remained fixed despite a tempo shift and re-interpretive explanation of lyrics. The emotive quality was perceived as intrinsic to the Raaga's phrasing and the performer's vocal tone.

- The tempo was noticed but did not influence emotional interpretation.
- Vocal texture and the melodic phrasing over rhythm dominated perception.
- Even with an explanatory frame that might shift the mood to hopeful longing or devotional bliss, the participant resisted reframing, holding onto the original interpretation of longing and sorrow.

This case presents an important insight for Raaga-Time Theory: some Raagas carry an emotional weight that resists reinterpretation, even among listeners without theoretical training. In such cases, the listener's intuition aligns with the traditional emotional intent, but not because of time-theory, rather because of the aesthetic and performative force of the music itself. This opens the door to a model where emotional archetypes may be encoded in the Raaga's internal logic (melodic progression, tonal color, register, and pacing) and in the performer's interpretive choices, rather than in its time-of-day classification.

Song 7: Malgunji

Raaga Perception and Emotional Response:

Q: What did you feel listening to this?

A: This one is like when you see somebody and you really like them. I guess you can say it's right after love at first sight. Like when you're alone and are processing the feeling. More than the excitement of it, there's this curiosity. It is fun and curious.

I didn't understand the words very much.

Inference:

The participant interpreted the Raaga not as overtly romantic or ecstatic, but as evoking a more introspective and curious kind of joy; the early emotional stage after falling for someone. Even without a full understanding of the lyrics, the participant constructed a narrative of emotional reflection and private joy, rooted in the melodic feel and tone of the performance.

Interpretation Based on Phrasing and Tempo, Not Text

Q: What was this interpretation based on?

A: It was the way it was being sung. The tempo wasn't too slow or too fast for me. Maybe it was at a higher tempo, I'd have associated it with more excitement. This one was more like everything feels better because you like this one person. All the colours are brighter and your day is better. It is like you're slowly noticing things around you.

Inference:

This statement reveals a sophisticated emotional calibration based on tempo, tonality, and delivery. The participant was sensitive to how the music unfolded, not just what was said or played. They interpreted the song as gentle, personal, and reflective, not because of lyrics or structure, but because of musical subtlety.

This supports the idea that musical phrasing, particularly how expressive details are handled, can evoke very specific emotional narratives for listeners, even those unfamiliar with the musical system.

Time Placement as Light-Dependent Mood Association

Q: Which time would you associate this with?

A: During the day before sunset. It could be early morning, or during the day. Just when the sunlight is there.

Inference:

Unlike previous responses based on emotional rhythm or situational context, this time association was explicitly tied to natural light. The presence of sunlight was seen as essential to the mood which was not too intense, but warm and perceptive, echoing the emotional undertone of the Raaga. This introduces another dimension into time-association: environmental aesthetics. The music evoked an emotional landscape that, to the participant, naturally aligned with sunlight, further affirming that Raaga-time association can stem from symbolic, sensory, and environmental impressions rather than classical rulebooks. In this response, the participant was not just interpreting the music emotionally, for they were crafting a scene. Their imagination placed the music in a moment of quiet emotional reflection, connected to personal discovery and enhanced perception of the world. This response was neither neutral nor dictated by tradition, but rather a listener-authored emotional narrative, grounded in personal metaphor and aesthetic intuition.

- Lyrics played little role in meaning-making; melodic phrasing was central.
- Tempo was acknowledged but did not dictate mood; emotional texture and color did.
- Time was not assigned by hours, but by the quality of light: daylight as a metaphor for gentle emotional clarity.

This example highlights the subtlety and complexity of listener perception when engaging with Raagas outside the classical framework. Instead of placing music into the Time-Theory's fixed slots, the participant created a light-based emotional context: fluid and metaphorical rather than categorical. The response demonstrates how non-classical listeners may approach Raagas not as fixed cultural artifacts but as personal soundtracks, aligning music with emotion, light, space, and mood rather than structured time periods. This supports the overall thesis that Raaga-time associations, when examined outside trained communities, are deeply personal, situational, and symbolic.

Song 8: Madhuwanti

Raaga Perception and Emotional Response:

Q: What did you feel listening to this?

A: Sounds like a devotional song. So then I perceived it as such. It's like the grandeur of a big Puja. Probably a large gathering of people.

Inference:

In response to this final excerpt, the participant immediately associated the piece with a devotional mood, despite no explicit contextual framing being provided. This perception appears to be driven by lyrical comprehension not tempo, and also by musical style and delivery, which evoked a sense of ritual, reverence, and collectivity. The participant's mental image was situated within the framework of communal worship, suggesting that the music communicated ceremonial grandeur through its sonic characteristics. This case demonstrates how listeners unfamiliar with the technical elements of Hindustani Classical music still recognise devotional cues based on aesthetic conventions including tone, phrasing, and vocal expressivity. The interpretation reflects the power of musical semiotics in evoking collective memory and spiritual context.

Time Placement as Ritual Association

Q: You'd place this at evening?

A: Yes.

Inference:

While the response was brief, it affirmed an intuitive connection between devotional music and the evening period. This aligns with common cultural experiences, where evening aarti or pujas are accompanied by melodic and rhythmically elevated compositions. It is worth noting that this association did not emerge from classical training, but rather from social exposure to devotional practices. This suggests that Raaga-time associations can sometimes be inherited through lived cultural experience, even without formal musicological knowledge. Unlike earlier examples, where emotional mood or situational imagination drove time choice, this case is grounded in a ritual and collective memory framework.

This final case underscores a key nuance in listener-centric models: not all responses are purely intuitive or emotional for some are socially conditioned through cultural exposure to religious or public contexts where specific musical elements are commonly used. In this example, musical grandeur, tonal ornamentation, and vocal scale suggested devotion, and the participant readily mapped that to evening ritual settings.

- The interpretation was socially and culturally framed, rather than internally emotional or metaphorical.
- The time-of-day association (evening) stemmed from ritual memory, not musical structure.
- Lyrics were not the key influence; musical texture and communal familiarity with puja settings shaped the response.

This case rounds off the interview study by highlighting a third pathway of musical perception: culturally imprinted archetypes. While other responses were based on personal emotion or functional use, this example points to collective cultural contexts as a powerful influence in how Raagas are understood and temporally placed by listeners outside the classical fold.

Raaga-time associations, for unfamiliar listeners, are constructed through a dynamic interplay of emotional intuition, situational memory, symbolic metaphors, and cultural exposure rather than through

adherence to theoretical rules or compositional intent. This validates the need for a listener-centric model that honors these diverse interpretive possibilities.

Challenging the Foundations of Raga-Time Theory

The traditional Time-Theory in HCM, most systematically codified by PVNB in the early 20th century, assigns specific Raagas to fixed time slots within the 24-hour cycle. This system, though influential, rests on the assumption that each Raaga inherently evokes an emotional quality best suited to a corresponding time of day. This research, built on a listener-centric model, challenges that premise fundamentally. Through a series of in-depth follow-up interviews with listeners unfamiliar with Time-Theory, this study explored how individuals intuitively perceive the emotional and temporal identity of various Raagas. The responses gathered reveal that Raaga-time associations are not intrinsic to the Raagas themselves, but are instead shaped by a complex interplay of musical, emotional, social, and environmental cues: many of which directly contradict PVNB's time-theory framework.

Why Time-Based Assignment Is Unfounded: Themes and Evidence

1. Emotional perception is shaped by phrasing, melody, and vocal delivery, not fixed time: The participant repeatedly cited melodic phrasing, vocal timbre, and expressive delivery as the main drivers of emotion. In cases like Pt. Ajoy Chakraborty's performance, listeners resisted reinterpretation even when the lyrics or tempo shifted. The melody itself carried emotional weight, disproving the need for time-based categorisation.
3. Listeners form temporal associations situationally, not categorically: Responses demonstrated that music is placed in time not through theoretical alignment, but through personal circumstances, for e.g., during a bus ride, during a work break, or while experiencing joy, sadness, or reflection. This situational model of time association fundamentally opposes the fixed "Prahara" system.
4. Environmental factors (e.g., light, season, weather) play a key role in temporal mapping: Several participants associated Raagas with sunlight, spring, or natural elements, not with time intervals like "3-6 PM" or "6-9 AM." These light-dependent or seasonally symbolic interpretations cannot be captured by rigid theoretical time slots.
5. Lyrics, when understood, may shape perception, but are not dominant: Even when participants partially understood lyrics, they still often prioritised vocal tone, tempo, and emotional feel over literal meaning. In some cases, lyrics were reinterpreted when framed differently, suggesting that emotional tone is more influential than textual content in determining time or mood.
6. Musical tempo influences mood and energy, not clock-time: Listeners frequently associated faster tempos with energy or playfulness, but did not connect these moods to specific hours. Instead, tempo drove associations with tasks, moods, and social contexts (e.g., staying awake, hanging out with friends, or feeling re-energised), again detaching music from the clock.
7. Music was often viewed as a narrative or backdrop to life events: Participants described music as part of their life story or emotional environment, not a composition meant for fixed hours. Terms like "end of a chapter," "new beginnings," "emotional processing," and "personal soundtrack" show how Raagas are experienced as fluid emotional landscapes, not time-bound constructs.
8. Cultural exposure, not theory, guided the associations: In one case, the participant associated a Raaga with evening Puja purely based on cultural memory, not because of any theoretical timing. This

reinforces the idea that what people know from lived experience, not musicological theory, drives time placement.

9. Attempts to reframe interpretations were frequently resisted: Even when told that a Raaga traditionally belonged to a particular time or had a different emotional intent, listeners chose to trust their intuitive, experiential reading, revealing that the perceived essence of a Raaga is not easily overwritten by doctrine.

Raagas Should Not Bound by the Clock

This study clearly shows that the act of assigning fixed time-slots to Raagas is not musically inherent, not universally perceived, and not experientially valid especially for listeners outside the narrow tradition of HCM pedagogy. What PVNB and several earlier theorists attempted was a standardisation rooted in aesthetics, not evidence. Yet, as demonstrated here, the experience of Raagas is non-linear, emotionally nuanced, and deeply subjective. Listeners relate to music through mood, memory, context, energy, and emotion and not through time tables. To insist that a Raaga "must" be performed or heard during a certain time of day restricts the musical imagination, discourages performance of Raagas outside "concert-friendly" hours, and risks the erosion of Raagas deemed impractical under this system.

In conclusion, the rigid time-theory of Raagas, as proposed by PVNB or derived from older texts, should be critically re-evaluated or altogether abandoned in light of how people actually experience music today. A listener-centric, situational, and emotionally fluid model is not only more inclusive: it is more accurate, sustainable, and relevant to the world.

References within Main Content of the Research Paper

1. Kaufmann, Walter. The Ragas of North India, 1968.
2. Narada. Sangit Makaranda, 7th-11th century.
3. Wikipedia contributors. "Sangita Makarandha." Wikipedia, 10 Nov. 2024, en.wikipedia.org/wiki/Sangita_Makarandha
4. Daniélou, Alain. The Ragas of Northern Indian Music, 1968.
5. Ramamatya. Svaramelakalanidhi. Translated by Ramaswami Aiyar. The Annamalai University, 1931.
6. "Svaramelakalanidhi." Wikipedia, 18 Dec. 2023, en.wikipedia.org/wiki/Svaramelakalanidhi.
7. Rajagopal, Padma. "The Study of Pundarika Vittalas Treatises With Reference to the Systems of Raga Classification in Post Ratnakara Period." Shodhganga, Feb. 1997. https://shodhganga.inflibnet.ac.in/handle/10603/60012
8. Shastribhih, Shubhramanya, and Venkata Ramaya. Chaturdandi Prakasika of Venkata Makhi. Vol. 1, 1934.
9. Sastri, Subrahmanya, ed. Rāgavibodha of Somanātha: With His Own Commentary. Adyar Library, 1945.
10. Vittala, Pundarika. Sad-raga-chandodaya. Anandavalli, Khandesh, India, 1560-1570.
11. Dāmōdara, Catura. Sangita Darpanam. Edited by Vasudeva Sastri. Government of Madras, 1952.
12. Bhatkhande, Pandit Vishnu Narayan. Hindustani Sangeet Paddhati Kramik Pustak Malika. Vol. 1–6. India: Sangeet Sadan Prakashan, 2022.
13. Shankar, Ravi. My Music, My Life. Vikas Publishing House eBooks, 1969.
14. Manna, Dr. Sujata Roy. "The Concept of 'Time-Theory' in Indian Ragas." Anyudhyan: An International Journal of Social Sciences (AIJSS).

15. Kesavan, Lola. “Timing Of Ragas From the Viewpoint of Pandit V.N.Bhatkhande.” Pranav Journal of Fine Arts (a Peer Reviewed Quarterly Online Journal).
16. Shyam, Nibedita. “Time Theory of Ragas in North Indian Classical Music: A Pilot Study.” Sangeet Galaxy e-Journal (July 2024).