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RHYTMIC EXPERIMENTATION WITH RECYCLED MATERIALS: A CULTURAL AND ECOLOGICAL STUDY OF BANDUNG'S PERCUSSION

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ABSTRACT
This study examines the creative practices of experimental percussion communities in Bandung that utilize found and recycled objects as sound-producing instruments. The research aims to understand how these communities explore, modify, and construct rhythms from non-conventional materials, and how their creativity is shaped by social interaction, aesthetic values, and environmental awareness. Using a qualitative approach through participant observation and in-depth interviews with community members, artists, and instrument makers, the study reveals that the transformation of discarded objects into percussion instruments generates unique sound innovations and fosters strong communal solidarity. The practice also creates an alternative cultural space where creativity, collaboration, and ecological consciousness intersect. Furthermore, experimentation with recycled objects functions as an expressive, educational, and environmentally engaged artistic medium. These findings demonstrate that recycled-based experimental percussion plays a significant role in shaping Bandung's contemporary art ecosystem and promoting sustainable creative practices.

INTRODUCTION
Globalization, urbanization, and advances in information technology have driven socio-cultural change, reshaping perspectives on art and influencing musical creativity as a form of cultural expression, as reflected in the activites of percussion music communities in cities such as Bandung. In Bandung, creative expression emerges through continuous interaction between artists and their socio-cultural environment. Humans use creativity to develop themselves, their communities, and the world in ways that support human life. The cultivation of creativity generates changes that benefit society, encompassing activites such as production, innovation, and the transformation of existing forms (Boonrod & Piratanatsakul, 2024). For example, the use of found objects in percussion performance represents not only artistic innovation but also ecological awareness and cultural reflection.

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Sumardjo argues that the use of found objects in percussion performance represents not only artistic innovation, but also ecological awareness and cultural reflection (Jabbaril, 2021). According to Menuhin, percussion refers to all instruments that generate sound through striking, whether with the hand or an implement (Rudiana, 2025). They have a place in all musical cultures and in some they are dominant, at the same time the sole form of musical expression. Percussion offers a distinctive mode of musical expression through its unique timbres, rhythmic patterns, and sound diversity, making it a compelling medium for creative exploration (Rudiana et al., 2024). Contemporary practices increasingly incorporate found or unconventional objects with distinctive sound potentials.

Supriadi defines creativity as the ability to produce something new, both in the form of ideas and original works. From this perspective, percussion community practices that employ non-conventional media represent a concrete manifestation of creativity grounded in locality and socio-cultural context (Ardiansa & Camelia, 2024). With regard to percussion, Garry de Cook, notes that anthropologists and historians generally agree that percussion instruments were among the earliest musical instruments created, while the human voice is considered the first musical instrument used by humans (Rudiana et al., 2024) .

Bandung's dynamic cultural landscape, rooted in Sundanese traditions, has fostered the emergences of percussion communities that creatively utilize discarded materials as musical instruments. One example is Pepen Supendi, a Bandung-based artist and founder of Pey Production, whose workshop produces traditional and engineered instruments made from reused materials. As P1 explained, in recent years, demand for such instruments made from recycled materials has grown significantly, attracting interest from across Indonesia. musical instruments, including both traditional forms and engineered instruments made form reused materials (P1).

Several communities in Bandung exemplify this practice. Idea Percussion, established in 1991, is recognized as a pioneer of experimental percussion in Indonesia. Similarly, Noise Creator, founded in 2009, combines percussion exploration with music education by developing instruments from recycled materials such as PVC pipes, paper, and plastic. As P2 explained, the programs conducted by Noise Creative Lab provide a platform for students to develop new ideas, play their homemade instruments, and perform them in a show (P2). This initiative not only broadens access to music education but also embodies eco-pedagogical values by integrating environmental awareness into creative learning (Yasida, 2020).

Ozenk Percussion is currently expanding its practice into the domain of world music. The term *world music* refers to musical traditions rooted in specific local, ethnic, or community contexts, characterized by distinctive instruments, tonal systems, rhythmic structures, and social functions that differ from those of mainstream western music (Mehta et al., 2025). They are further demonstrates the intersection of music and environmental activism. Inspired by urban waste issues, the group transforms collected trash into percussion instruments during performances, conveying strong ecological and social messages. This practice aligns with Bandung City Regulation No. 9 of 2018 on waste management, particularly in emphasizing community participation (Peraturan Daerah (Perda) Kota Bandung Nomor 9 Tahun 2018 Tentang Pengelolaan Sampah, 2018). As P3 noted, the group seeks to demonstrate that discarded objects ratin value and potential when recontextualized creatively (P3).

Other communities, such as USBP, employ recycled materials as primary sound sources, emphasizing collectice experimentation and alternative percussion orchestration. In this context, P4 explained that USBP not only presents musical performances, but also conveys social messages, especially regarding the environment (P4). Also with Tataloe, P5 explained, this technique creates a distinctive and intriguing rhythmic complexity, a percussion orchestration built not from standard musical instruments, but from the exploration of recycled materials (P5).

In educational settings, similar practices are evident in the work of Rizki Hamdani, an arts teacher at Muthahari Junior High School who integrates recycled materials percussion school-based learning. His approach highlights the affordability, accessibility, and environmental benefits of recycled percussion instruments while fostering creativity ecological awareness among students (P6).

However, despite the growing presence of recycle-based precussion practices in Indonesia, scholarly investigation into how these practices construct cultural meaning, community identity, and ecological values remain limited. Existing studies tend to focus on technical innovation or performance aesthetics, leaving a gap in understanding the socio-cultural significance of recycled percussion within local communities. This study addresses

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this gap by examining recycled-based percussion practices in Bandung through the following research questions; (1) How do Bandung percussion communities transform recycled objects into musical instruments? and (2) What cultural and ecological values emerge form the use of recycled materials in percussion music practices?

METHOD

This study employed a qualitative approach following Strauss & Corbin, grounded theory principles to explore the mechanism underlying rhythmic experimentation (Pascua Jr, 2024). Data were collected through participant observation, in-depth interviews with musicians and instrument makers, and documentation of performances. The researcher acted as both an observer and a participant to capture interactional dynamics, improvisational processes, and sound exploration practices. Data analysis involved thematic categorization, coding, and interpretive analysis to identify patterns of creativity, cultural meaning, and ecological values.

RESULT AND DISCUSSION

The rhythmic experimentation conducted by percussion music communities based on recycled materials in the city of Bandung reveals more than mere musical creativity. It reflects a living cultural practice that develops within a complex space where limitations are not perceived as obstacbles, but rather as sources of possibility. The research approach employed in this study, including participant observation, in-depth interviews, and audio-visual documentation, demonstrates that musical activities within these communities do not occur in isolation. These communities do not merely perform music, they construct ecosystems, alternative cultural spaces that are inclusive, fluid, and open to new interpretations.

They create value form objects deemes worthless and animate rhythm from recycled materials. In this context, recycled materials function not only as instruments but also as symbols of resistance to consumerism and as tools for raising environmental awareness. Based on the findings from field exploration, the discussion is organized around four main aspects that form the core of these community practice; (1) the relationship with the sound medium**,** (2) musical characteristics and rhythmic patterns of each community, (3) social and ecological values embedded in the practices, (4) the role of communities as cultural spaces.

Relationship with the Sound Medium

Members of percussion communities in Bandung demonstrate a close and intimate relationship with the objects they use as instruments. They do not simply take discarded items and strike them to produce sound. The processes of selecting, sorting, modifying, and performing these objects are carried out with careful consideration and sensitivity.

Musical expression originates from the body, and music itself consists of a feedback loop between producing sound, listening, and reproducing sound. In this sense, music functions as a dialogues with the body. Within the creative process, objects commonly regarded as waste are repositionied as musical instruments. This reflects an alternative perspective that views recycled materials not as refuse to be disposed of, but as sound potentials to be explored. Indirectly, these activities also contribute to broader environmental awareness.

Musical Characteristics and Rhythmic Patterns of Each Community

The music performed by percussion communities in Bandung is highly diverse and not confined to a single pattern or genre. Some groups draw inspiration from traditional Sundanese rhythmics, while others incorporate elements from Latin music, Afrobeat, or street performance styles. Notably, although thet adapt rhythmic from various sources, these influences are always reworked in ways that reflect the unique sound characteristics of their instruments and the backgrounds of the performers. As a results, distinctive rhythmic patterns emerge, often difficult to replicate using conventional instrument. Several groups develop complex arrangements involving role diffeentitaion such as a

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rhythmic foundations, accents, and sound effects generated through friction or vibration. The performers gesture further reinforce the musical composition, indicating a high level of creativity aligned with the structure of the works performed. Below are examples of characteristic rhythmic styles and musical identities of each group based on the researcher's analysis of their performances.

Idea Percussion

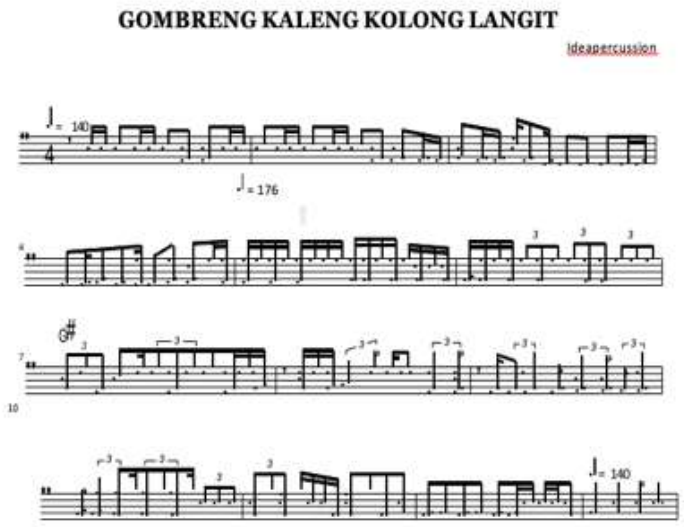

Figure1Notation of Gombreng Kaleng Kolong Langit by Idea Percussion

In this work, instrumentation stands out through the use of non traditional percussion instruments made form kitchen utensils, used drums, glass bottles, and various recycled materials creatively re-engineered into musical instruments. Although most of these instruments are atonal, the diversity of sounds produced becomes a distinctive and compelling aesthetic element. The musical character of Idea Percussion tends to be cheerful and expressive, reflecting the collective spirit of individuals performing with objects commonly found in households and workshops. Rhythmically, the group explores a wide range of striking patterns and sound timbres, carefully considering the uniqe sound qualities of each object. Their rhythmic structures emerge from spontaneous interactions between sounds, forming a distinct musical identity. As emphasized by Schafer, contemporary musical practices have expended the boundaries of what is considered musical by incorporating environmental sounds into meaningful musical experiences (Llorca, 2024).

This phenomenon reflects a musical approach that is not only experimental but also transformative, elevating everyday objects into artistic media. Consequently, Idea Percussion demonstrates how recled material percussion practices bridge art, social creativity, and environmental awareness, contributing to new paradigms in contemporary experimental music. In this findings, Idea Percussion's musical practice indicates that sound innovation derived from recycled materials serves as a fundamental basis for creating nw aesthetics. Through the use of discarded objects, the group achieves diverse timbres and rhythmic patterns that define their experimental musical character. Moreover, the creative process contributes to the formation of cultural and ecological identities, embedding environmental awareness

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within musical expression. Their collective practices also strengthen community networks through collaboration, improvisation, and knowledge exchange, establishing a creative ecosystem that extends beyond musical production.

Ozenk Percussion

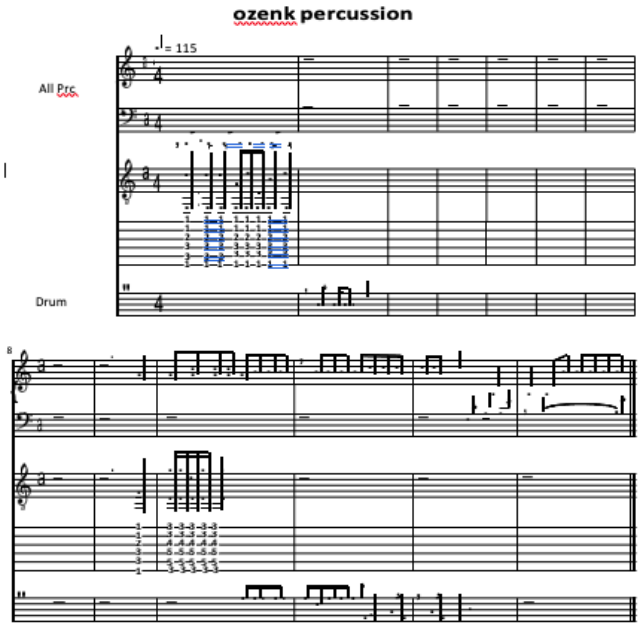

Figure 2 Notation of Ozenk Percussion Work's

Ozenk Percussion adopts a distinctive musical approach by combining conventional and non-conventional instruments. They integrate recycled materials with traditional Sundanese instruments such as kendang, alongside Western instruments including drum sets and brass sections. Their compositional structures are largely inspired by traditional Sundanese kendang patterns, known for their dynamic and complex structures. These are enriched through improvisation and individual expression, creating interactive and varied rhythmic dialogues. While brass and drum elements add color, the primary focus remains on the timbre and rhythmic patterns produced by recycled instruments.

This findings, Ozenk Percussion successfully integrates recycled materials with Sundanese traditional and Western instruments, expanding the possibilities of timbre and rhythm. By positioning Sundanese kendang patterns as the core musical theme, the group reinforces a strong cultural identity while simultaneously promoting ecological awareness through recycled materials. Their collaborative approach further strengthens community networks and establishes percussion music as a platform for interaction, learning, and creative development.

Figure2Notation of Tataloe Percussion's Work

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Tataloe Percussion

In this composition, Tataloe performs predominantly uniform (rampak) rhythmic patterns. While the group does not emphasize complex rhythmic structures, the strength of the composition lies in its fast tempo and high-energy dynamics. Simple rhythmic patterns presented with intensity and unexpected momentum create a compelling musical experience.The performance also highlights strong choreographic and theatrical elements, including visual expression, stage formations, and performer interaction. This demonstrates that the performance is shaped not only by sound but also by bodily movement as an aesthetic language. As Murgiyanto explains, sound-influenced movement includes hand clapping, foot stomping, and sounds produced by clothing or accessories (Permana & Gunawan, 2023).

The composition uses used barrels as the sole sound medium, played by five performers who explore their sound potential through various striking techniques and dynamic control. The use of recycled materials functions not only as a musical choice but also as an ecological statement. This findings, Tataloe demonstrates how used barrels can be transformed into innovative sound sources through rhythmic energy and dynamic variation. Despite simple rhythmic structures, they achieve strong musical impact. The integration of choreography and recycled materials reinforces both musical creativity and ecological identity.

USBP

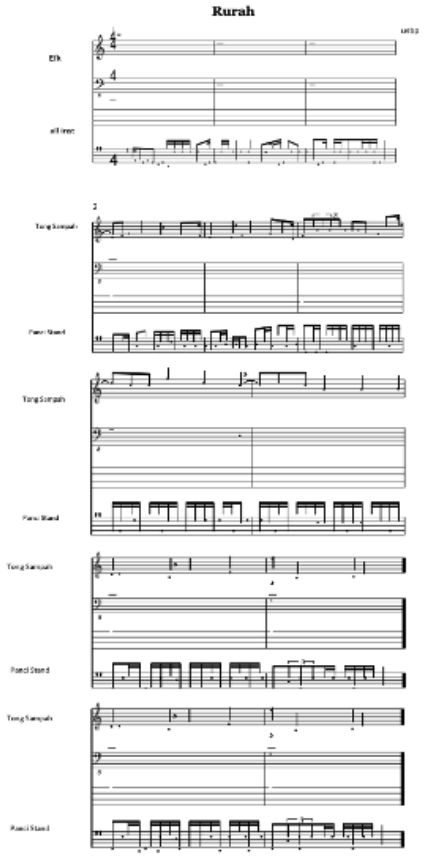

Figure3Rurah Notation by USBP

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From a compositional perspective, one of USBP's works analyzed by the author reveals universal and modern rhythmic patterns, strongly influenced by Latin rhythms and performed using sticks. Instrument designs are modern, although low timbres still rely on water barrels. Kitchen utensils are redesigned into visually appealing percussion instruments resembling those found in marching band ensembles. The composition *Rurah*, one of the group's flagship works, features dense rhythmic patterns with varied sticking techniques.

This piece was performed during a concert accompanying a talented female drummer, Bunga, at Sunan Ambu ISBI Bandung in 2024. This findings, USBP's compositions illustrate the modernization of urban percussion practices in Bandung, both organologically and aesthetically. Universal rhythmic patterns and strong Latin influences are combined with creatively redesigned recycled instruments. Overall, USBP represents ecological innovation through material creativity, modern percussion design, and global musical influences within a local context.

Muthahari High School

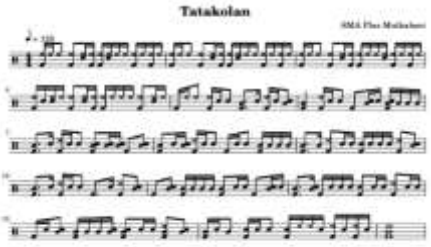

Figure4Tatakolan Notation by Muthahari Junior High School

The percussion ensemble at SMA Plus Muthahari exclusively uses recycled water gallons and large jerry cans as instruments. Rhythms are generally uniform (rampak), adjusted to students' technical abilities, with jerry cans serving as rhythmic anchors.The compositions do not pursue complex musical structures, a deliberate pedagogical choice by the instructor. Instead, simplicity allows students to focus on coordination, cohesion, and tempo control. In this findings, the use of recycled materials in SMA Plus Muthahari reflects a pedagogical approach prioritizing accessibility and musical education. Simple instruments and uniform rhythms enable students to develop fundamental musical skills, demonstrating a form of pedagogical creativity that integrates environmental awareness.

Noise Creator

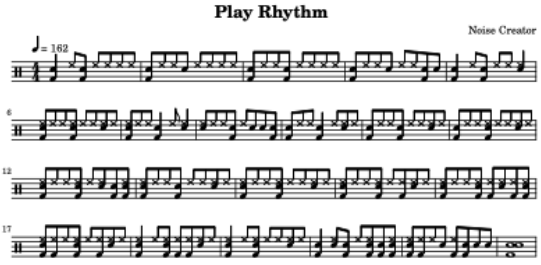

Figure5Play Rhythm Notation by Noise Creator

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Noise Creator experiments with recycled paper rolls engineered into large tubular drums known as *Paper Drums*, fitted with heads, and *Paralophones* made from designed PVC pipes. These instruments produce distinctive timbres. However, rhythmically, their compositions resemble those of other groups using water barrels. The use of mica drumheads on paper drums limits resonance quality, resulting in flatter sound characteristics. Rhythmic structures are repetitive and simple, reflecting the group's inclusive focus on accessibility for children with special needs. In this findings, Noise Creator's work demonstrates strong material innovation but relatively simple compositional structures. Instrument limitations and repetitive rhythms align with the group's inclusive objectives. Their practice highlights a balance between experimental instrument design and adaptive musical approaches.

Social and Ecological Values

Beyond musical and organological aspects, these practices convey strong social and environmental messages. By using recycled materials, communities encourage society to reconsider relationships with waste and nature. Music becomes a medium for expressing creativity born from limitation and for redefining the value of discarded objects. These communities also provide inclusive spaces for individuals from diverse backgrounds. Ecologically, their activities contribute significantly to environmental awareness, aligning with government initiatives addressing waste management. In educational contexts, such practices support environmental education principles, fostering ecological responsibility through artistic engagement.

Through this creative process, students not only learn about art and music, but also internalize environmentally friendly values, ecological awareness, and social responsibility. In 2023, researcher conducted a community service activity at the Lembaga Pemasyarakatan Sukamiskin in Bandung for children with legal problems from various cases in West Java and outside West Java who were entrusted to the LP Sukamiskin. The author conducted a percussion workshop using recycled materials. This activity was not merely about learning to play music; the author also aimed to build good communication between the author and the children, as well as among the children themselves. After nearly fifteen sessions, it was evident that the children were highly enthusiastic, and the author observed changes in the participants. The essence of playing music is to instill discipline, unity, and responsibility.

The Role of the Community as a Cultural Space

Bandung has long been recognized as a center of creativity in Indonesia. Its cultural identity is shaped not only by formal institutions but also by experimental music communities operating within increasingly limited urban spaces. As noted by Reza Syafriliyan, a Latin percussionist and member of KSP Band and Penabuh Bandung Pisan, these communities function as spaces for collective learning, creation, and public engagement. P7 explained that activities such as street performances, workshops, and cross-disciplinary collaborations reinforce their role as dynamic cultural assets (P7).

According to Williams (1983), culture represents a "whole way of life," encompassing values, relationships, and environmental interactions. These percussion communities embody this concept, functioning as alternative cultural scenes that challenge institutional exclusivity. As Bennett and Peterson (2004) describe, such scenes shape creative practices, lifestyles, and social solidarity. In Bandung, recycled-material percussion communities demonstrate how music can serve as an expression of environmental awareness and collective creativity.

Syhthesis of Findings

This study identifies three interrelated findings that characterize recycled-based percussion practices in Bandung:

1. Rhythmic Innovation from Recycled Material
   All communities exhibit high creativity in transforming recycled materials into percussion instruments with distinctive rhythmic characteristics. This innovation forms the foundation of a new aesthetic in Bandung's contemporary percussion practices.
2. Formation of Cultural and Ecological Identity

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The use of recycled materials shapes collective identities that integrate cultural values, environmental awareness, and urban contexts. These practices embed ecological consciousness within musical expression.

3. Strengthening Community Networks and Creative Ecosystems
   Percussion practices based on recycled materials foster collaboration, inclusivity, and knowledge exchange, contributing to dynamic and sustainable creative ecosystems.

Together, these findings demonstrate that recycled-based percussion in Bandung is not merely an alternative musical practice, but a culturally significant movement that integrates rhythmic innovation, environmental consciousness, and community-driven creativity.

CONCLUSION

This study concludes that recycled-object percussion in Bandung represents a significant form of experimental music practice that integrates creativity, ecological awareness, and community-based cultural expression. The transformation of waste materials into musical instruments demonstrates an alternative artistic paradigm in which limitations become sources of innovation. These practices not only produce unique rhythmic aesthetics but also cultivate solidarity, environmental responsibility, and inclusive cultural spaces. The findings contribute to broader discussions on eco-musicology, community-based art, and sustainable creative practices. Future research may explore comparative studies with other cities or develop curricular models that incorporate recycle-based music education.

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