

NEW FUTURES FELLOWSHIP PROJECT

CLIMATE + MUSIC

ASSESSING THE LIFE-CYCLE IMPACTS OF AN ALBUM—AN ESG FRAMEWORK OF THE MUSIC INDUSTRY

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Project Overview:

This paper provides a comprehensive examination of the environmental, social, and governance (ESG) impacts within the music industry, employing a life-cycle assessment of a hypothetical international hit album as an illustrative framework.

Keywords:

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Executive Summary

Understanding the impacts of each and every industry is essential to addressing the climate crisis through an ‘all-of-society’ green transition. Although music is not one of the top polluting industries, it is uniquely positioned for mass appeal due to the overwhelming number of artists and young audiences who have expressed support for environmental issues historically. Unfortunately, the examination of these impacts is grossly under-researched and, where research exists, it is often conducted in a non-uniform manner and applied to only part of the industry. The diversity of methodologies makes it difficult to understand the industry’s environmental impacts; research is further lacking in understanding industry social and governance impacts. Thus, for a variety of reasons, a holistic understanding of the industry’s impacts, and opportunities for improvement, remains elusive. In our paper, we conduct a comprehensive review of the music industry’s environmental, social, and governance (ESG) impacts and we use a life-cycle assessment (LCA) of a hypothetical international hit album as an illustrative framework.

While many excellent initiatives exist that aim to minimize the environmental impact of music, and thus hit albums, environmentally damaging practices still abound in the industry. Materials for musical instruments like tonewoods and metal alloys are often sourced without much consideration for the environment, while electronic instruments and technical equipment are rarely ever recycled, exacerbating issues regarding e-waste. Further, while song lyrics are proven to have a profound impact on listeners’ behavior, environmental issues in hit songs’ lyrics are dwindling, while international hits are filled with environmentally destructive themes. While the ecological footprint of other sectors within the industry dwarf the environmental impact of music management and ownership, office spaces and employee travel are still considerable sources of greenhouse gas emissions (GHGs) within this part of the industry. Uncertified, fast-fashion merchandise is another environmental consideration many ignore, where, depending on materials and inks used, significant environmental impacts are hidden. Recording, publishing, and distributing songs either through online streaming or vinyl both amass significant GHG emissions and raw material use. Lastly, live music, the most environmentally degrading part of the industry, is also responsible for significant GHG emissions, waste production, as well as land and biodiversity destruction due to artist and fan travel, catering practices, and poor waste management strategies.

There are many social impacts resulting from the music industry that can be illustrated by tracking the trajectory of a hit album. Firstly, music education is not equitably accessible, especially to low-income groups, due to the high expenses of music lessons, musical instruments, transportation to and from lessons, and more. Further, in the West, music teachers are often White, which can lead to issues regarding White subjectivities in how music is being taught, if there is not careful attention to how music is conceptualized in a sociohistorical context. Workers who help extract, process, and produce the materials for music instruments and merchandise are often exploited by their employers and exposed to harmful chemicals as a result of materials

extraction and processing. Finally, although live music venues can increase tourism, their presence can lead to gentrification and thus rising rent and property values. These in turn lead to the displacement of low-income communities.

Artists are generally undercompensated and thus undervalued by music streaming services. Women are underrepresented as recognized artists and songwriters. Diversity, equity, and inclusion is important in any institution to ensure the presence of distributive justice, procedural justice, and restorative justice. Women, Blacks, and other minorities are underrepresented in the governing boards of major music groups in the West. However, women on the board of directors increase the frequency and transparency of environmental and social disclosures, and thus companies with representative boards tend to be more effective than non-representative firms at pursuing sustainability actions.

Further, data centers are associated with struggles over governance and decision-making power. Data centers that play a role in music streaming are controversial due to their high demand for land, water, and energy, often leading to resource-use power struggles with nearby communities. Cities compete for data centers to garner capital investments and tax revenues. However, such competition may lead to inter-municipal or inter-county competition for revenue and access to the water, energy, and land that these centers require.

Based on our life-cycle assessment, we find that the current literature is fragmented and incomplete. To fill this gap, we propose a preliminary 'ESG-like' framework that we hope will be enhanced and expanded by further research and dialogue with key sectors of the industry. We hope that researchers and practitioners in the music industry can construct a uniform and comprehensive ESG reporting guide that any and all actors in the music industry can use to assess, evaluate, and improve environmental, social, and governance performance within the industry.

Introduction

Scholars have extensively examined the diverse and incredible benefits that music has provided throughout human history. However, research on the environmental and social costs of modern music is lacking.¹ This gap in the literature is significant as the global music industry has an often overlooked ecological footprint, mirroring some of the most pressing environmental and social issues of our time. Ranging from significant GHG emissions to biodiversity loss, poor and non-transparent governance, amongst other externalities and concerns, the music sector has considerable untapped potential for positive change.

Environmental, social, and governance (ESG) metrics have been created to respond to the demand for information that captures how companies, through their products and services, use different forms of capital — natural, social, human, and intellectual, as well as financial — and how their activities affect society through positive and negative externalities. An ESG framework can encourage improvements within the industry via active policy or informing consumer choice, but can also stimulate the industry to use its voice to reach and influence the broader global economy. However, data collection and verification that can inform such policy – and decision-making – are lacking within the music industry. This industry rarely documents or coordinates activities, which can make data collection a difficult task, complicating efforts to develop, for instance, a carbon footprint for the industry as a whole.²

Related corporate reporting efforts have also emerged, such as the CDP or the recent Securities and Exchange Commission’s (SEC) climate-disclosure rule.³ Although there is a significant disconnect between themes and a fixation on the financial (as opposed to ethical) paradigm,⁴ how institutions and rating agencies are assessing and assigning ESG ‘scores’ can provide useful guidance and framework for creating a similar metric for the music industry. Thus, this paper sets out to develop recommendations for an “ESG-like” framework specifically designed for the music industry, to allow a diverse range of actors, such as artists, managers, music venues, and producers within the industry to evaluate and report their environmental and social impacts in a holistic manner. The actions of the music industry have important symbolic value because this cultural industry plays such a vital role in shaping consumer desires and behaviors.⁵

¹ Samuel Cameron, “Past, present and future: music economies at the crossroads,” *Journal of Cultural Economics* 40 (2016): 1-12.

² Fiona Berry, Laura Wynne, and Chris Riedy, “*Changing Our Tune: Scoping the potential of the Australian music industry to address climate change*,” (Sydney, Institute for Sustainable Futures UTS and Green Music Australia, 2014).

³ Sakis Kotsantonis and George Serafeim, “Four Things No One Will Tell You About ESG Data,” *Journal of Applied Corporate Finance* 31, no. 2 (Spring 2019): 50-58.

⁴ Luluk Widyawati, “A systematic literature review of socially responsible investment and environmental social governance metrics,” *Business Strategy and the Environment* 29(2): 619-637.

⁵ Catherine Bottrill, Diana Liverman, and Maxwell Boykoff, “Carbon soundings: greenhouse gas emissions of the UK music industry,” *Environmental Research Letters* 5 (March 2010), <https://doi.org/10.1088/1748-9326/5/1/014019>.

In this paper, we construct a framework to evaluate the environmental, social, and governance characteristics of the music industry generally. Because the majority of existing research on the sector has focused on the U.S. and Western music industries, our paper necessarily reflects data and examples from those areas. To organize our approach – and to make it accessible to various audiences – we develop a ‘life cycle’ assessment of a hit album and review ecological and social issues across the full trajectory of an album – from initial conception of songs to touring that supports the album. Under this framework, we discuss the environmental, social, and governance implications of six sectors in the music industry: (1) Music Education (2) Musical Instruments and Equipment, (3) Music Composition and Songwriting, (4) Ownership, Management, and Promotion, (5) Music Recording, Publishing, and Distribution, and (6) Live Music Performances. This life-cycle assessment emerged to understand the full spectrum of activities and associated impacts that go into the creation of a ‘hit’ album. Although individual criteria or a whole category (i.e. environment, social, or governance) may not be applicable to all sectors, the proposed framework offers actors in the industry a better understanding of what is most material to their ESG performance, provides the raw material for a more targeted ESG assessment, and guidance on what types of data to report. The report concludes by highlighting possible solutions that can help the industry improve its ESG performance.

Methodology

A life cycle assessment or analysis (LCA) is a methodology commonly used to assess environmental impacts associated with all the stages of a product, process, or service. In our paper, we extend the framework of a LCA to evaluate the different stages in the production of an album in order to gain a holistic understanding of the performance of the music industry - and as an illustrative concept that will be readily accessible to fans, musicians and others. Further, while the LCA methodology is commonly used to highlight environmental impacts, we expand the framework to include social and governance considerations, where applicable.

We consider many different sectors within the music industry. There is a lack of consensus and clarity with regard to how various sectors of the music industry are defined. However, considering just the music industry as a single entity is an inappropriate model for understanding and analyzing the economics, politics, and impacts surrounding music.⁶ In our paper, we examine six different sectors, which is a condensed and simplified list based off of the framework used by Bottrill, Liverman, and Boykoff (2010, 3-4).⁷ By examining each of these sectors in turn, we plan to highlight the environmental, social, and governance⁸ impacts that are

⁶ John Williamson and Martin Cloonan, “Rethinking the music industry,” *Popular Music* 26, no.2 (2007): 305-322.

⁷ Catherine Bottrill, Diana Liverman, and Maxwell Boykoff, “Carbon soundings: greenhouse gas emissions of the UK music industry,” *Environmental Research Letters* 5 (March 2010), <https://doi.org/10.1088/1748-9326/5/1/014019>.

⁸ We find that prior literature has not examined the governance aspects related to the *music education & music instruments/equipment* and *music composition & songwriting* stages; thus, these impacts are not considered in our paper.

most material to assessing the overall ESG performance of the music industry that informs our proposed ESG framework. In addition, our analysis exposes areas for improvement and highlights possible solutions. In this section we cast a wide net, striving to encompass the true “life cycle” of a hit album, starting at the music education artists receive to their composition of a song all the way to the production and distribution of an album and touring in support of it. We conclude with a set of pragmatic recommendations for how to build an ESG framework from this life cycle analysis.

Life Cycle Assessment

Music Education

I. Social

Music education is an important aspect of musical and cultural engagement. Schools, historically and culturally, are often part of a system that creates barriers to success that impede minority students, and those affected by systemic poverty.⁹ At the elementary level, White, female teachers largely populate music education in the West, potentially creating issues regarding White subjectivities which can impact the types of music being taught and how much music is being conceptualized in a sociohistorical context, if at all.¹⁰ A lack of diversity and inclusion can lead to different musical education experiences of music educators and students, including educational experiences that tend to be compromised by bullying and victimization of the verbal and physical harassment that exists in schools.¹¹

At higher music education levels, minority music students and faculty are lacking.¹² Further, there are also issues of access to music education. Minority students are often not exposed to certain types of music, as there is a notion that certain music (e.g., classical) is not ‘natural’ to minority children, implying a false cultural parochialism.¹³ Minority students must also consider the financial and resource burden of often expensive music education programs

⁹ Annette Lareau, *Unequal Childhoods: Class, Race, and Family Life* (Berkeley: University of California Press, 2011).

¹⁰ Juliet Hess, “Equity in Music Education: Why Equity and Social Justice in Music Education?,” *Music Educators Journal* 104, no. 1 (September 2017): 71-73.

¹¹ Brian J. Panetta, “Understanding an Invisible Minority: A Literature Review of LGBTQ+ Persons in Music Education,” *National Association for Music Education* 40, no. 1 (2021): 18-26.

¹² Allen Clements, “Minority Students and Faculty in Higher Music Education,” *The National Association for Music Education*, (March 2009); Daniel J. Albert, “Socioeconomic Status and Instrumental Music: What Does the Research

¹³ *Ibid.*

Say about the Relationship and Its Implications?,” *Update: Applications of Research in Music Education* 25, no. 1 (November 2006): 29–45.; Kenneth Elpus and Carlos R. Abril, “High School Music Ensemble Students in the United States: A Demographic Profile,” *Journal of Research in Music Education* 59, no. 2 (July 2011): 128–45.; Vincent C. Bates, “Social Class and School Music,” *National Association for Music Education*, (June 2012).

that could contribute to unequal access and achievement.¹⁴ Additionally, students from low-income homes are likely to receive lower placements and fewer opportunities to demonstrate their talents than their counterparts from more financially privileged circumstances.¹⁵

Musical Instruments and Equipment

I. Environmental

Like all mass-produced commodities, musical instruments have diverse and significant environmental impacts. Depending on the genre, the type of instrument(s) played by artists will vary and thus so will the environmental impact of the music written for these instruments. Some hit songs, like Adele’s ‘Someone Like You’ uses a single instrument, while others like Robbie Williams’ ‘Angels’ features an entire orchestra with dozens of instruments used. Thus, the scale of environmental impact associated with instruments will vary dramatically across songs and albums. However, it is vital to ensure that relevant actors in the music industry become aware of the environmental impact of musical instruments used for specific songs, albums, and projects. For instance, stringed instruments and certain wind instruments, as well as various percussion instruments, are produced from tonewoods – special species of old growth woods with musically satisfying tonal characters¹⁶, unlike timber used for construction and furniture.¹⁷ Though not all tonewood species are listed as endangered under the CITES Treaty (the multilateral treaty protecting internationally-traded plants and animals), the supply for many of the species is dwindling, in part thanks to the increasing rate of logging needed to meet global demand for musical instruments.¹⁸

For instance, guitars – one of the most popular instruments – are traditionally made from several different tonewoods, such as sitka spruce, koa, maple, rosewood, ebony, and mahogany.¹⁹ These species are sourced from various corners of the world, ranging from the Pacific Northwest and Brazil to Madagascar, India, Fiji, Central America, and more. At US-based Martin Guitars alone, tonewoods come from all six continents and 30 different vendors.²⁰ With roughly 2.6 million guitars produced annually²¹, these species are becoming rarer and more expensive due to

¹⁴ Daniel J. Albert, “Socioeconomic Status and Instrumental Music: What Does the Research Say about the Relationship and Its Implications?,” *Update: Applications of Research in Music Education* 25, no. 1 (November 2006): 29–45.; Kenneth Elpus and Carlos R. Abril, “High School Music Ensemble Students in the United States: A Demographic Profile,” *Journal of Research in Music Education* 59, no. 2 (July 2011): 128–45.

¹⁵ Jennifer L. Hochschild, “Social Class in Public Schools,” *Journal of Social Issues* 58, No.4 (November 2003): 821-840.

¹⁶ Steven Errede, “Sustainability and Musical Instruments,” UIUC Physics 406: Acoustical Physics of Music (lecture, University of Illinois at Urbana-Champaign, IL, 2002-2017).

¹⁷ Chris Gibson and Andrew Warren, “Friday essay: the guitar industry’s hidden environmental problem — and the people trying to fix it,” *The Conversation*, May 27, 2021, <https://theconversation.com/friday-essay-the-guitar-industrys-hidden-environmental-problem-and-the-people-trying-to-fix-it-159211>.

¹⁸ Anna Reid and Peter Petocz, *Educating Musicians for Sustainability* (New York: Routledge, 2021), 1.

¹⁹ “Building a Sustainable Guitar,” World Resources Institute, accessed July 26, 2022, <https://www.wri.org/resources/tags/building-sustainable-guitar-10996>.

²⁰ Gibson and Warren, “Friday essay.”

²¹ “The Music Industry Census,” Music Trades, accessed July 26, 2022, <https://www.musictrades.com/census.html>.

extensive and often unregulated logging.²² They easily become targets of illegal logging in places where forestry communities struggle with corrupt governance and poverty, ultimately threatening forest biodiversity.²³ Meanwhile, climate change has already modified the geographic range of trees, pathogens, and insects, threatening forests²⁴, with associated impacts on the supply chain for guitars and other wooden instruments. In addition to wood, a plethora of other materials are used for modern guitars, such as metals and plastics, each with a set of diverse environmental impacts (e.g., mining, production, and disposal).

Other instruments, such as brass instruments made of certain metal alloys, most commonly musical brass and musical bronze, require intensive mining and smelting processes, both with significant environmental footprints.²⁵ As many modern hits feature electronic music, assessing the environmental impact of these becomes even more convoluted, as the computers used in the process are built and powered by batteries made of rare earth elements, like neodymium, cerium, and lanthanum, all attained as byproducts of complex mining operations.^{26,27} Other electronic equipment used for music, such as cables, microphones, and headphones are all similarly resource intensive, made with valuable raw materials, such as gold, platinum, cobalt and rare earth elements, as well as copious amounts of plastic. Meanwhile, of the 50 million tonnes of electronic and electrical waste produced globally every year, only 20% gets formally recycled.²⁸ Such a number is not available for the recycling of musical instruments.

Ultimately, musical instruments and components are all obtained from a finite resource – our natural world – and so their environmental impact must be minimized to allow for the regeneration and responsible extraction of the natural materials needed for their production.

II. Social

There's certainly a sound understanding of the social impacts of raw materials, especially in regard to wood products and plastics that are inputs to many musical instruments. Laborers in the wood products industry are often subject to exploitation by their employers.²⁹ Workers in the plastics industry are exposed to harmful chemicals during manufacturing that could cause severe illnesses such as chronic bronchitis and obstructive pulmonary changes.³⁰ Indeed, plastics pose

²² Errede, "Sustainability and Musical Instruments."

²³ "Building a Sustainable Guitar: Ebony," World Resources Institute, accessed July 26, 2022, <https://www.wri.org/insights/building-sustainable-guitar-ebony>.

²⁴ Tom Ramsfield et al., "Forest health in a changing world: effects of globalization and climate change on forest insect and pathogen impacts," *Forestry: An International Journal of Forest Research* 89, no. 3 (March 2016): 245–252, <https://doi.org/10.1093/forestry/cpw018>.

²⁵ Reid and Petocz, "Educating Musicians for Sustainability."

²⁶ Ibid.

²⁷ Ben McLellan et al., "Sustainability of the Rare Earths Industry," *Procedia Environmental Sciences* 20, no. 20 (2014): 280–287, <https://doi.org/10.1016/j.proenv.2014.03.035>.

²⁸ "UN report: Time to seize opportunity, tackle challenge of e-waste," UN Environment Programme, accessed July 27, 2022,

<https://www.unep.org/news-and-stories/press-release/un-report-time-seize-opportunity-tackle-challenge-e-waste>.

²⁹ Erik Loomis, "When Loggers Were Green: Lumber, Labor, and Conservation, 1937–1948," *Western Historical Quarterly* 46, no. 4 (Winter 2015): 421–441.

³⁰ Sawsan F. Helal and Wessam S. Elshafy, "Health hazards among workers in plastic industry," *Toxicology and Industrial Health* 29, no. 9 (May 2012): 812–819.

serious threats to consumers' health as exposure to plastics' harmful chemicals can lead to adverse health outcomes such as altered hormone levels and birth defects.³¹

Music Composition and Songwriting

I. Environmental

Surely, composing and writing songs, even international hits, do not amass any harmful environmental impacts. However, it is appropriate to address environmentally destructive, or at least impactful, lyrics and themes here, often present in modern-day hits. Some current artists, like Billie Eilish and Childish Gambino, integrate pressing environmental issues into their lyrics. However, in general, even references to nature in cultural products, such as song lyrics, have been steadily diminishing since the 1950s, while references to human-made environments have not.³² Research largely focuses on antisocial and violent lyrics' influence on listeners' behavior, rather than environmentally harmful practices, but it is clear that words have a profound influence on listeners.³³ Therefore, unsustainable practices, often present (and praised) on hit albums and characteristic of the lifestyles many hit artists lead – from luxury cars, yachts, and private jets to excessive consumerism – likely have some influence on listeners, especially on how younger ones view and understand the world.³⁴

II. Social

The Annenberg Inclusion Initiative, a think tank investigating diversity and inclusion in entertainment, examines inclusion in the music industry. In its latest (2021) annual report,³⁵ the Initiative examines the ethnic/racial and gender composition of artists, songwriters and producers credited across 1,000 songs on the Billboard Hot 100 Year-End Chart from 2012 to 2021. Based on their analysis and sample, the Initiative finds that women are underrepresented and/or under-credited as songwriters. On average, over the past decade 12.7% of songwriters were women. Amongst performers, women are better represented, but the disparity is still evident. Women comprised 21.38% of artists. Meanwhile, the percentage of artists from underrepresented

³¹ Richard C. Thompson, Charles J. Moore, Frederick S. vom Saal, and Shanna H. Swan, "Plastics, the environment and human health: current consensus and future trends," *Philosophical transactions of the Royal Society of London. Series B, Biological sciences* 364 no. 1526 (July 2009), 2153–2166.

³² Selin Kesebir and Pelin Kesebir, "A Growing Disconnection From Nature Is Evident in Cultural Products," *Perspectives on Psychological Science* 12, no. 2 (March, 2017), <https://doi.org/10.1177/1745691616662473>.

³³ Craig A Anderson, Nicholas L Carnagey, and Janie Eubanks, "Exposure to violent media: the effects of songs with violent lyrics on aggressive thoughts and feelings," *Journal of Personality and Social Psychology* 85, no. 5 (May 2003): 960–971, <https://doi.org/10.1037/0022-3514.84.5.960>.

³⁴ Council on Communications and Media, "Impact of Music, Music Lyrics, and Music Videos on Children and Youth," *Pediatrics* 124, no. 5 (2009): 1488-1494, <https://doi.org/10.1542/peds.2009-2145>.

³⁵ Karla Hernandez, Stacy L. Smith, and Katherine Pieper, *Inclusion in the Recording Studio? Gender and Race/Ethnicity of Artists, Songwriters, and Producers across 1,000 Popular Songs from 2012-2021*, (Los Angeles, USC Annenberg Inclusion Initiative, 2022). <https://assets.uscannenberg.org/docs/aii-inclusion-recording-studio-20220331.pdf>.

racial/ethnic groups has been increasing over the years; 47.8% of artists were people of color from the sample group. Further, 37.9% were underrepresented men, while 10% were underrepresented women. These disparities are reflected in the nominations of music awards. A mere 13.6% of Grammy nominees from 2013 to 2022 were women. Of these women nominees, 55.7% were white and the rest (44.3%) were from an underrepresented racial/ethnic group.

Ownership, Management, and Promotion

I. Environmental

The ownership and management of international hit albums involve an immense number of corporations and organizations, from trade bodies and collection societies to music/artist management companies, various agencies, record labels, and promotion services.³⁶ It is important to note that, in comparison to other stages in the life of a hit album such as live music, the GHG emissions of this stage are negligible.³⁷ Nonetheless, the majority of these companies operate within the wider context of a generally polluting private sector, so it is still important to explore their operational impacts here.

Merchandise – physical promotion materials that often accompany hit albums – can be detrimental to the environment. The impacts of these vary depending on materials and inks used, but some of the most popular textile-based products, particularly t-shirts and sweatshirts, undoubtedly contribute to the environmental impact of music corporations. The fashion industry reportedly causes 8-10% of the world’s GHG emissions, and produces 20% of pollutant load into waters³⁸, making conventional fashion merchandise items environmentally harmful byproducts of hit albums.

Emissions from fossil fuel-based energy that heats, lights, and powers corporate buildings is a significant contributor to the GHG emissions of these corporations.³⁹ For bigger companies, such as Warner Music Group – one of the ‘big 3’, the three biggest record labels globally – pre-pandemic environmental impacts from employee travel were also considerable, while emissions from physical products, digital service providers, licensing, and merchandise are currently under investigation and have not been measured so far.⁴⁰

II. Social & Governance⁴¹

³⁶ Bottrill, Liverman, and Boykoff, “Carbon soundings.”

³⁷ Bottrill et al., “First Step: UK Music Industry Greenhouse Gas Emissions for 2007,” (Report, University of Oxford Environmental Change Institute, 2008).

³⁸ “ActNow for Zero-Waste Fashion,” United Nations, accessed August 2, 2022, <https://www.un.org/sustainabledevelopment/blog/2019/08/actnow-for-zero-waste-fashion/>.

³⁹ Ibid.

⁴⁰ “Environmental Social Governance Report 2021,” Warner Music Group, accessed August 2, 2022, https://www.wmg.com/sites/g/files/g2000004716/f/202202/WMG_ESG_2021_Report.pdf.

⁴¹ While there are social considerations regarding royalties, the burden of these issues lies on the streaming services, rather than the trade bodies and collection societies themselves. The unfairness in streaming royalties will be addressed in the “Music Recording, Publishing & Distributing” section. Companies in the music industry often

The human rights concerns associated with the textile industry have been examined thoroughly. Like most companies, clothing companies desire to procure their products at the lowest price possible. As a result, cheap labor is often used to drive production costs down, which is associated with dangerous and unsanitary working conditions.⁴² Indeed, clandestine workshops often have deplorable work conditions with poor hygienic and security conditions, scant or nonexistent wages, prolonged debt, subjection to extreme surveillance and control, and worker exploitation or even slavery.⁴³ While fair labor standards exist, many companies fail to uphold human rights in their international supply chain, including at production facilities.

Music Recording, Publishing, and Distribution

I. Environmental

No matter the format, all music recording and distribution systems have associated environmental costs. While the history of commercial music production is convoluted and has seen various technologies rise and fall, downloading and streaming have become the most popular ways to listen to music since the 2000s.⁴⁴ As data-based audio files replaced recordings made from insect-derived resin called shellac and CDs made from petrochemical plastics⁴⁵, the environmental impact of recording, publishing, and distributing music has also changed.

Firstly, operating a music studio often uses large amounts of electricity, depending on size, usage, equipment as well as energy conservation methods of the studio.⁴⁶ Once a hit album is recorded at a studio, it is distributed in a way that, to listeners, likely seems immaterial, through Digital Service Providers (DSPs) such as Spotify and Apple Music, where songs are downloaded or streamed from the cloud. However, streaming music is certainly not immaterial when it comes to its GHG emissions. These emissions derive from two sources: the listener and the DSPs. On the listening devices, streaming drains battery life significantly fast, while on the platforms' side, servers requiring "power, massive cooling systems, internet connectivity,

provide management and promotion services, alongside with recording and publishing services. The social and governance aspects, particularly those related to diversity, equity, and inclusion (DEI), of the Management, Agencies, & Promotion stage that overlap those of Music Recording, Publishing & Distributing will be addressed in the following section.

⁴² Rachel Bick, Erika Halsey, and Christine C. Ekenga, "The global environmental injustice of fast fashion," *Environmental Health* 17, no 92. (December 2018)

⁴³ Débora Betrisey, "Migration and Trafficking of Persons for Labor Exploitation in the Textile Workshops of Buenos Aires under Neoliberalism," *Latin American Perspectives* 44, no 6. (April 2017): 63-76; Laura Ho, Catherine Powell, and Leti Volpp, "(dis)assembling rights of women workers along the global assembly line: human rights and the garment industry," *Harvard Civil Rights-Civil Liberties Law Review* 31, no. 2 (1996), 383-414.

⁴⁴ Matt Brennan and Kyle Devine, "The cost of music," *Popular Music* 39, no. 1 (February 2020): 43-65, <https://doi.org/10.1017/S0261143019000552>.

⁴⁵ Ibid.

⁴⁶ Bottrill et al., "First step."

buildings, and land" are activated.⁴⁷ For instance, Spotify, the largest streaming platform globally, emitted 353,054 tons of CO₂e in 2021, with 55% of these resulting from end-use streaming, cloud use, as well as goods and services such as content delivery network providers.⁴⁸

It is also important to remember that, while they are used for other purposes besides just listening to music, electronic devices, such as headphones, are inherently part of the modern-day music consumption experience, and are often marketed for such purposes as well.³⁹ Therefore, the environmental damage resulting from the manufacturing, disposal, and mindless consumption of these devices should not be forgotten when examining the environmental impact of digital music distribution.

Lastly, while digital distribution is undoubtedly the most popular way to listen to modern-day hits, vinyl sales have been steadily increasing in recent years and have seen an unprecedented revival amongst younger generations.⁴⁹ Vinyl is made from polyvinyl chloride and its production involves significant amounts of fossil fuel, chemical, and energy use⁵⁰, with many of the major producers reportedly releasing toxic wastewater into rivers and are responsible for hazardous air pollution in various places around the world.⁵¹

II. Social

There is more work needed to achieve inclusion in the music recording industry. According to the aforementioned Annenberg Inclusion Initiative report,⁵² the gender and ethnic/racial gaps within this sector of the industry are clear. Women are often pushed aside as producers; from a sample size of songs on the Billboard Chart from 2012, 2015, and 2017-2021, 96.1% of listed producers were men, with women representing only 3.9% - a ratio of 35 to 1. Further, there are 10 women of color out of 1,567 producing credits of the sampled songs. This translates to a ratio of men producers to underrepresented women producers of nearly 150 to 1.

Digital music streaming services, such as Spotify, Apple Music, and Tidal, distribute royalties based on a per-stream model. However, these royalties are minuscule and artists can be grossly undercompensated for the streaming of their creations. The discussion about royalty payment has fostered a broader aesthetic and moral argument about what music should be worth, as the micro-payments generated by each stream being deemed as devaluing music.⁵³ Further, musicians argue that on-demand streaming services undermine sales of digital files and physical

⁴⁷ Adam Met, "Protect the Planet: Stop Streaming Songs," *Rolling Stone*, April 22, 2022, <https://www.rollingstone.com/music/music-features/earth-day-climate-change-streaming-downloading-ajr-1339228/>.

⁴⁸ "Equity and Impact Report 2021," Spotify, accessed August 5, 2022, <https://www.lifeatspotify.com/reports/Spotify-Equity-Impact-Report-2021.pdf>.

⁴⁹ Will Richards, "Vinyl record sales in 2021 at highest level for 30 years," *NME*, December 29, 2021, <https://www.nme.com/news/music/vinyl-record-sales-in-2021-at-highest-level-for-30-years-3127074>.

⁵⁰ Jonathan Wilson, "Dark side of the vinyl: Are records bad for the environment?" *Engineering and Technology* 14, no. 3 (April 2019): 60-61, <https://doi.org/10.1049/et.2019.0311>.

⁵¹ Brennan and Devine, "The cost of music."

⁵² Hernandez, Smith, and Pieper, "Inclusion in the Recording Studio."

⁵³ Lee Marshall, "'Let's Keep Music Special. F-Spotify': on-Demand Streaming and the Controversy over Artist Royalties," *Creative Industries Journal* 8, no. 2 (October 2015): 177-189.

media that have better returns; thus these streaming services are not a financial model that can sustain their musical careers.⁵⁴ Musicians have stated that there are several aspects needed to improve streaming services, including better promotion of local music, gender balance in the recommended music, and transparency about how the algorithms work (see Figure 1).⁵⁵

Figure 1: Recommended improvements to the music streaming services, by musicians (Ferraro et al., 2021)

1. Better promotion of local music
2. Gender balance in the recommended music
3. Music items in the long tail of the popularity distribution (not only the most popular artists) have to be included in the recommendations shown to users
4. Control given to artists over the tracks that are promoted or higher weighted in recommendations
5. Transparency about how the algorithms work
6. A system that influences a user's taste (or attempts to do so) is an undesired misuse
7. Music platforms should be enriched with information that puts the music into context

Data centers are frequently used to store, process, and disseminate internet services, including music downloads. Despite their useful role in modern music distribution, data centers are matters of high controversy. Data centers have a high demand for land, water, and energy to store and protect data. However, data centers then have to compete with local residents for these resources.⁵⁶ While some data centers are compensating for their high energy usage by constructing large renewable energy farms, if not carefully planned, nearby residents may feel cheated as these renewable energy sites are often built on the promise that it would provide clean power to hundreds of thousands of households.⁵⁷ Instead, residents may be confronted with noise, light, and sometimes horizon pollution of these sites. Further, in the struggle over land, residents often feel that they are not heard in regard to zoning plans, environmental visions, and area plans.⁵⁸

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⁵⁴ Ibid.

⁵⁵ Andres Ferraro, Xavier Serra, and Christine Bauer, "What is fair? Exploring the artists' perspective on the fairness of music streaming platforms" (paper accepted at the 18th IFIP International Conference on Human-Computer Interaction (INTERACT 2021), Bari, Italy, June 2021).

⁵⁶ Desmond Bast, Constance Carr, Karinne Madron, and Ahmad Mafaz Syrus, "Four reasons why data centers matter, five implications of their social spatial distribution, one graphic to visualize them," *Environment and Planning A: Economy and Space* 54, no. 3 (January, 2022): 441-445.

⁵⁷ Merijn Rengers and Carola Houtekamer, "Broken promises: how the Wieringermeerpolder silted up with wind turbines and data centers," *NRC*, June 5, 2020, <https://www.nrc.nl/nieuws/2020/06/05/gebroken-beloftes-hoe-de-wieringermeerpolder-dichtslibde-met-windturbines-en-datacentra-a4001882>

⁵⁸ Ibid.

The composition of the executive board varies by type of company (see Figure 1). Women and Black executives are grossly underrepresented across companies. Underrepresented executives represent less than a quarter of executives across companies, with the lowest representation amongst publishing (17.8%) and radio (12.3%) companies. Black women representation is in the single digits, and representation of underrepresented and black women are lowest in publishing and radio companies in the US, for instance.

As aforementioned, data centers are associated with struggles over governance and decision-making power. The data center industry is ‘state-led,’ meaning that the state has the sovereign ability to develop local economic regimes to reap respective revenues; cities thus compete for data centers in order to anchor capital investments and tax revenues.⁵⁹ Further, the uneven distribution of data centers may foster inter-municipal or inter-county competition for revenue and access to the water, energy, and land resources that the data centers require.⁶⁰ All of the above problems are concerning; yet, the magnitude of these problems is largely unknown because many data centers do not disclose their upstream input dependencies.⁶¹

Figure 2: Gender and racial/ethnic composition of the executive boards across music industry categories

⁵⁹ Koen Molenaar, “The competitive advantage of Dutch Datacenters: Using Porter's Diamond to analyse the data center industry” (Master Thesis, Radboud University, 2016).

⁶⁰ Bast et al., “Why data centers matter.”

⁶¹ Ibid.

Women executives across 5 industry categories

Women Executives					
	Music Groups	Labels	Publishing	Radio	Streaming
CEO/Chief/President	17	19.1	18	24.8	21.4
EVP/SVP/GM	33.7	32.3	29.1	29	33.8
VP/Head	43	44.4	42.8	36.2	42.4
Total	37.3	36.1	31.9	33.2	36.8

Black executives across 5 industry categories

Black Executives					
	Music Groups	Labels	Publishing	Radio	Streaming
CEO/Chief/President	10.6	10.6	4	4.5	2.9
EVP/SVP/GM	9.4	17.1	4.7	3.1	8.6
VP/Head	5.1	13.3	8.6	4.4	7.9
Total	7.2	14.4	6.1	4	7.4

Underrepresented executives across 5 industry categories

Underrepresented Executives					
	Music Groups	Labels	Publishing	Radio	Streaming
CEO/Chief/President	21.3	18.3	14	11.8	27.1
EVP/SVP/GM	21.5	27.2	17.6	12.5	21.4
VP/Head	29.7	25.1	20.3	12.3	29.5
Total	25.4	25	17.8	12.3	26.8

Underrepresented, Black, and white women executives across 5 industry categories

Women Executive Composition					
	Music Groups	Labels	Publishing	Radio	Streaming
Underrepresented women	11.4	10.3	7.1	4.4	12.5
Black women	3.6	5.3	1.9	1.4	3.8
White women	25.8	25.5	25.1	28.9	24.5

Percentages reported out of 4,060 executives at the VP level and above across 119 music companies (70 organizations and subsidiaries).

*EVP stands for executive vice president. SVP stands for senior vice president. GM stands for general manager.

Source: USC Annenberg Inclusion Initiative

Live Music Performance

I. Environmental

The environmental impact of live performances is undoubtedly the most well-documented element in the life of a hit album. This isn't particularly surprising, considering the ecological footprint of this sector. Just in the UK, a global leader in sustainability research and policies for the cultural sector, the live music sector is responsible for roughly 75% of the 540,000 tons of carbon dioxide equivalents emitted by the UK music industry annually.⁶² Live concerts, often part of globetrotting tours, require complex systems such as transportation and travel, energy, water, land, and waste management^{63,64}, that all present a wide range of environmental issues, well beyond GHG emissions.

Audience travel is generally the biggest environmental impact for events, but getting staff, artists, and contractors to event locations are all significant as well. Data on impacts associated with the travel of performers and support staff is still somewhat of a blind-spot in the industry, with minimal documentation available.⁶⁵ Worldwide shipping of music equipment also makes a significant contribution to the overall GHG emissions of the live music sector.⁶⁶

Another prevalent ecological concern for the sector is the energy consumption of performance spaces. Music venues range from small theaters to concert halls seating tens of thousands, and festival grounds that sometimes cover hundreds of thousands of square meters. These venues are responsible for about a third of live performance GHG emissions.⁶⁷

Waste is another crucial issue within the sector. One of the highest grossing music festivals in the world, Coachella, combined with a few other festivals held on the same grounds, generate an estimated 107 tons of solid waste per festival day. Only about 20% of this waste gets recycled.⁶⁸ While many venues and artists have eliminated single-use products from their events, a recent study found that as a result of the Covid-19 lockdowns, 570 million pounds of single-use plastics were saved from going to waste at festivals and venues, suggesting that the issue is nowhere near solved.⁶⁹ Further, at a major music festival in 2019, researchers estimated that

⁶² Bottrill et al., "First step."

⁶³ Matt Brennan, "The Environmental Sustainability of the Music Industries," in *Cultural Industries and the Environmental Crisis*, ed. Kate Oakley and Mark Banks (Springer Cham, 2020), 37-49.

⁶⁴ Chris Jones, Carly McLachlan, and Sarah Mander, "Super-Low Carbon Live Music: a roadmap for the UK live music sector to play its part in tackling the climate crisis," *Tyndall Centre for Climate Change Research*, June 2021, <https://documents.manchester.ac.uk/display.aspx?DocID=56701>.

⁶⁵ "Sustainable Travel & Transport Guide for Festivals and Outdoor Events (2020)," *Ecolibrium*, accessed August 10, 2022, <https://ecolibrium.earth/wp-content/uploads/2020/05/ecolibrium-Travel-Guide-for-Events-2020.pdf>.

⁶⁶ Jones, McLachlan, and Mander, "Super-Low Carbon Live Music."

⁶⁷ Bottrill et al., "First step."

⁶⁸ Julia Gray, "Covid put music festivals on hold. Climate change might offer bigger long-term problems."

Washington Post, October 23, 2021, https://www.washingtonpost.com/lifestyle/style/covid-put-music-festivals-on-hold-climate-change-might-offer-bigger-long-term-problems/2021/10/21/f7863736-2c4f-11ec-985d-3150f7e106b2_story.html.

⁶⁹ Kasey Bondoni, "BLOND:ISH on Her Goal To Eliminate Single-Use Plastic in the Music Industry," *edm.com*, April 22, 2021, <https://edm.com/interviews/blondish-bye-bye-plastic-interview>.

about 20% of tents had been left behind by festival-goers, aggravating festivals' plastic waste impact.⁷⁰

Moreover, food, food waste, and food-related impacts can also be hefty contributors to the overall environmental impact of live events. From the deleterious effects of conventional animal farming on the climate and forests, to the disposable cups, plates, and straws left behind after events, as well as the organic waste produced – food is a key aspect to consider when thinking about live events' ecological footprints.

Naturally, live music events, especially music festivals, influence local land use and have an impact on local biodiversity and wildlife. While figures are lacking, it is likely that large-scale concerts and festivals impact wildlife even when protective measures are introduced.⁷¹

II. Social

Certainly, live music venues provide the space to achieve social and cultural benefits. Live music brings musicians and people together in one place at one time,⁷² offers a sense of belonging, and contributes to a thriving cultural environment.⁷³ Further, it can help attract tourists to cities, thus providing economic benefits to local people. However, live music venues and festivals can also have negative externalities such as noise and violence near them.⁷⁴ Further, the presence of live music venues can lead to rising rent and property values, and to the displacement of low-income groups.⁷⁵ Local musicians can also be displaced due to gentrification⁷⁶ in which rehearsal spaces and affordable housing are often replaced by new land developments that generate more profit.⁷⁷

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⁷⁰ Teresa Moore, "Campsite Waste: A Single Use Plastics Problem" in *Green Events & Innovations Conference 2019* (2019).

⁷¹ Wanja Rast, Leon M. F. Barthel, and Anne Berger, "Music Festival Makes Hedgehogs Move: How Individuals Cope Behaviorally in Response to Human-Induced Stressors," *Animals* 9, no. 7 (July 2019): 455, <https://doi.org/10.3390%2Fani9070455>.

⁷² Sara Cohen, "Live music and urban landscape: Mapping the beat in Liverpool," *Social Semiotics* 22, no. 5. (October 2012): 587-603.

⁷³ Ray Hudson, "Regions and place: Music, identity and place," *Progress in Human Geography*, 30, no. 5 (October 2006): 626-634.; Declan Martin, "Cultural value and urban governance: A place for Melbourne's music community at the policymaking table," *Perfect Beat* 18, no. 2 (August 2017): 110-130.; Jonathan R. Wynn, *Music/city: American festivals and placemaking in Austin, Nashville, and Newport* (Chicago: University of Chicago Press, 2015).

⁷⁴ Shane Homan, "Governmental as anything: Live music and law and order in Melbourne," *Perfect Beat* 11, no. 2 (2010): 103-118.

⁷⁵ Chris Gibson and Shane Homan, "Urban redevelopment, live and public space. Cultural performance and the re-making of Marrickville," *International Journal of Cultural Policy* 10, no. 1 (2004): 67-84.

⁷⁶ Sara Cohen, "From the big dig to the big gig": Live music, urban regeneration and social change in the European Capital of Culture 2008. C. Wergin, F. Holt (Eds.), *Musical performance and the changing city: Post-industrial contexts in Europe and the United States*, (New York: Routledge, 2013), 27-51.

⁷⁷ Fabian Holt, "Rock clubs and gentrification in New York City: The case of the bowery presents," *IASPM@Journal* 4, no. 1 (2014): 21-42.; Kate Shaw, "Independent creative subcultures and why they matter," *International Journal of Cultural Policy* 18, no. 3 (May 2013): 333-352.

Similar to other companies within the music industry, there is a lack of diversity and inclusion in regard to gender and racial/ethnic composition of the executive board for the live music industry (see Figure 3).

Figure 3: Gender and racial/ethnic composition of the executive boards in the live music industry

Women executives in the live music industry		Underrepresented executives in the live music industry	
Women Executives		Underrepresented Executives	
CEO/Chief/President	21.4	CEO/Chief/President	10.8
EVP/SVP/GM	34.1	EVP/SVP/GM	19.7
VP/Head	49.5	VP/Head	17.5
Total	39.1	Total	16.8

Black executives in the live music industry		Underrepresented, Black, and white women executives in the live music industry	
Black Executives		Women Executive Composition	
CEO/Chief/President	2.4	Underrepresented women	9
EVP/SVP/GM	3.3	Black women	1.7
VP/Head	3.6	White women	30.8
Total	3.3		

Percentages reported out of 4,060 executives at the VP level and above across 119 music companies (70 organizations and subsidiaries).

*EVP stands for executive vice president. SVP stands for senior vice president. GM stands for general manager.

Source: USC Annenberg Inclusion Initiative

Here we offer some recommendations for how the findings from the LCA could be adapted into a workable ESG framework for the industry.

Environmental

Figures 4, 5, 6, 7, and 8: Environmental considerations for the ESG framework

Musical Instruments & Equipment	<p><u>Natural resources used for musical instruments and equipment</u></p> <p>Instruments and equipment used in the composition and performance of music must come under scrutiny and be analyzed through the environmental impact of their production process. The natural materials used for these products should be sourced, produced, and regenerated in an ecologically responsible way. Rare and endangered species used should be replaced by more commonly available materials, and for commonly available but environmentally harmful materials, such as plastic, more eco-friendly alternatives should be explored.⁷⁸ Once an instrument is manufactured, it is key that it has the longest life possible. Buying second-hand instruments, and especially equipment, should be facilitated and encouraged. Packaging and shipment of these instruments should also be done in the most responsible manner possible.</p> <p><u>Recycling of musical instruments and equipment</u></p> <p>When musical instruments and equipment reach their ends of life, adequate recycling and circular processes should be sought. The possibility to responsibly discard and re-/upcycle these products should be taken into account at the time of purchase. Upcycling instruments and turning them into merch, for instance, can give a new life to these products. Adhesives and unrecyclable components should be avoided and manufacturers should be discouraged from producing such items.</p> <p>ESG criterion could be drawn from various guidance on best practices for materials, production and recycling relevant for musical instruments and equipment.</p>
Music Composition & Songwriting	<p><u>References to nature and environmental issues in song lyrics</u></p> <p>By highlighting ecological issues through music, artists can direct their audience’s attention towards environmental sustainability and increase awareness, challenge beliefs and attitudes, or even behaviors.⁷⁹ Composers and artists occupy a special place in the hearts of many and can lead and inspire fans and listeners to lead more ecologically conscious lives beyond music.</p> <p>While this category is not as directly measurable as metrics such as source of materials or tons of carbon—and artists need to be true to their vision and not feel required to incorporate “approved” themes—an ESG framework could perhaps offer “bonus points” or commendations for content (lyrics, themes, etc.) that celebrate environmental stewardship.</p>
Ownership & Management	<p><u>Offices</u></p> <p>Switching to 100% renewable energy for offices, either through on-site energy generation or purchased from energy providers, as well as other greening efforts like vegan cafeterias and single-use plastic bans, can lead to a significant decrease in the ecological footprint of any corporation.</p> <p><u>Travel</u></p> <p>Minimizing employee travel, and opting for public transportation such as buses and trains whenever possible can help lower employee emissions. In case air travel is absolutely unavoidable, offsetting the resulting emissions can help balance unavoidable emissions.</p> <p><u>Merchandise</u></p> <p>For clothing, aiming for recycled materials, certified organic cotton, or sustainable alternatives like hemp or bamboo can help lower the environmental impact of merchandise.</p> <p>ESG criteria for offices and travel can be based on more generic criteria for corporate sustainability. Similarly, there are robust ESG frameworks for the textile and clothing industries that could underpin ESG criteria for much of the merchandise sold by bands.</p>

⁷⁸ Ibid.

⁷⁹ Ibid.

Music Recording, Publishing, and Distributing	<p><u>Music Studios</u> By switching to 100% renewable energy, studios can significantly lower their environmental impact. Studios should introduce comprehensive e-waste recycling policies and minimize electronic waste whenever possible.</p> <p><u>Digital Service Providers (DSPs)</u> DSPs should ensure that the GHG emissions resulting from streaming, downloading, and device battery usage are reduced.</p> <p><u>Vinyl</u> By pressing vinyl at 140 grams rather than 180 grams, the carbon footprint of manufacturing and shipping can be lowered. Switching to sea freight over air freight when shipping records is less carbon intensive as well. Using recycled or FSC-certified paper packaging for records is another way to minimize environmental impact.⁸⁰</p> <p>ESG criteria for this category could be drawn largely from best practices and criteria for energy and materials use for corporate sustainability.</p>
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Live Music Performance	<p><u>Travel and shipping</u> Live music events should encourage fans and offer incentives to take public transport to venues to minimize GHG emissions resulting from audience travel. Routing tours and equipment transfers in an efficient way and ditching one-off international shows and events can lower the carbon footprint of touring artists.</p> <p><u>Energy Consumption</u> If feasible, installing solar panels on top of venues can help lower GHG emissions. Switching to LED and smart light bulbs, setting up water saving devices and modifying air conditioning systems can all help reduce energy consumption. For rural venues and festivals, deploying an on-site wind turbine can help supply clean energy right from the source.</p> <p><u>Waste</u> Minimize or completely eliminate single-use (plastic) products from events, by offering reusable or biodegradable products instead. Establish water stations so fans can fill up water bottles on site.</p> <p><u>Food</u> Making the switch to meat- and fish-free catering at live music events can lower the environmental impact of said events. Focus on local, organic, seasonal produce can help mitigate the detrimental environmental impacts of agriculture.</p> <p><u>Local biodiversity and wildlife</u> Allow for local flora and fauna to take up space at a venue, for instance through living green roofs, bat or swift boxes, bug hotels, and wildflowers can help protect local environments.</p> <p><u>Environmental Activism</u> Touring and live performances are great opportunities for artists and venues to raise awareness of environmental issues and initiatives amongst a wide audience, and model behavioral changes needed to address said issues.⁸¹</p> <p>ESG criteria for this category could be based on the work of organizations such as Reverb in the US and Julie’s Bicycle in the UK, both working with musicians and venues to green live music events.</p>
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⁸⁰ “Moving arts: Managing the carbon impacts of our touring,” Julie’s Bicycle, accessed August 10, 2022, https://juliesbicycle.com/wp-content/uploads/2022/01/MA_Vol2_Orchestras_Report_2010.pdf.

⁸¹ “Take Action,” Music Declares Emergency, accessed August 10, 2022, <https://musicdeclares.net/gb/take-action/industry/label>.

Social

Figure 9: Social considerations for the ESG framework

Music Education	<p><u>Classroom education</u></p> <p>Music education provides the opportunity to construct and implement a conceptual model that can create ways to think deeply about how the issues of race, ethnicity, gender, and culture might mediate music learning. The music classroom provides an opportunity for teachers to navigate their White subjectivities and challenge dominant paradigms of music education by engaging issues of social justice, studying a broad range of musics, and emphasizing socio historical contextualization.⁸² Students should be able to engage with music in ways that are congruent with their own lived cultural experiences with music.⁸³ Such ways can help educators find ways to provide equitable education to an increasingly diverse student population.⁸⁴ Music groups and artists can help improve music education by providing time, financial, and experiential resources to foster high quality and equitable educational experiences (e.g. funding art programs, scholarships, etc.)</p> <p>ESG for this area could be focused on funding for equitable music education, including funding for arts programs in public schools and scholarships.</p>
Musical Instruments & Equipment	<p><u>Materials acquisition</u></p> <p>Ensure that materials for musical instruments are toxic-free and fair-trade certified.</p> <p>ESG criteria could run down the supply chain and consider where raw materials are sourced and the impacts on workers and local communities.</p>
Music Composition & Songwriting	<p><u>Diversity, equity, and inclusion</u></p> <p>Diversity, equity, and inclusion are important in any institution to ensure fair and just involvement among participants in decision-making processes, identity formation, and community development.⁸⁵ Institutions and actors across the music industry can increase efforts to ensure greater workforce representation regarding gender, race/ethnicity, and sexual orientation. Internal strategies to use unbiased and blind resume reviews, inclusive interviews and hiring, and inclusive internal communication can help with such efforts.</p>
Ownership & Management	
Music Recording, Publishing, and Distributing	<p><u>Streaming services and data centers</u></p> <p>Emphasize to consumers to download their music to reduce dependency on data centers. Fairly treat musicians who distribute music on streaming services (see Figure 1).</p> <p><u>Merchandise</u></p> <p>Ensure that materials for merchandise are fair-trade certified and/or are sourced from companies that follow fair labor practices.</p> <p><u>Reporting and transparency of diversity, equity, and inclusion initiatives can be based on the 2021 Warner Music Group ESG report.⁸⁶</u></p>
Live Music Performance	<p><u>Noise pollution</u></p> <p>Ensure that live music venues have effective sound insulation, such as by using sound absorbing materials on the stage walls and ceilings, and manage stage volume.</p> <p><u>Gentrification</u></p> <p>Work with local community organizations to champion rent control, vacancy control, and create affordable housing.</p> <p>ESG criteria for this category can draw on community relations and interactions.</p>

⁸² Juliet Hess, “Troubling Whiteness: Music education and the “messiness” of equity work,” *International Journal of Music Education* 36, no. 2 (April 2018): 128-144.; Jacqueline Kelly-McHale, “Equity in Music Education: Exclusionary Practices in Music Education,” *Music Educators Journal* 104, no. 3 (March 2018): 60-62.

⁸³ Constance L. McKoy and Vicki R. Lind, *Culturally Responsive Teaching in Music Education: From Understanding to Application (1st ed.)* (New York: Routledge, 2016).

⁸⁴ Abby Butler, Vicki L. Lind, and Constance L. McKoy, “Equity and access in music education: conceptualizing culture as barriers to and supports for music learning,” *Music Education Research* 9, no 2. (June 2007): 241-253.

⁸⁵ Marie-Élène Roberge and Rolf van Dick, “Recognizing the benefits of diversity: When and how does diversity increase group performance?,” *Human Resource Management Review* 20, no. 4 (2010): 295-308.

⁸⁶ Warner Music Group, “Environmental Social Governance Report 2021.”

Governance

Figure 10: Governance considerations for the ESG framework

Ownership & Management	Diversity in the boardroom not only heightens diversity and inclusion within a company, but also has a positive effect on sustainability reporting and action. Diversity in the boardroom increases the frequency and transparency of social and environmental disclosures. ⁸⁷ Research suggests that firms with diverse leadership teams are more effective than other firms at pursuing sustainability strategies. ⁸⁸ Women on the board of directors might also assist the company to achieve equity and employment goals. ⁸⁹ The positive relationship between board diversity and sustainability disclosures and performance suggests that companies should recruit more diverse members for their board to enhance their corporate sustainability performance. On the macro-scale, aspects of the music industry that interact with governmental decision-makers, such as data centers, must be transparent and allow democratic decision-making. Democratic capital stock has an important and robust effect on climate change policies, as well as social and policy outcomes. ⁹⁰
Music Recording, Publishing, and Distributing	
Live Music Performance	ESG criteria for governance is heavily related to social considerations - transparency of who comprises the decision-makers within each major actor of the industry is important to understanding their impacts.

Conclusion

The environmental and social impacts of the music industry are manifold, while comprehensive overviews in the literature are lacking. Current research is fragmented and focuses on specific sectors within the industry rather than holistically surveying the impacts of the overall industry - in other words, everything required for an artist to truly connect to fans. Further, current literature lacks in examining the social and governance factors of the music industry; thus, we propose developing and using an ESG-like framework to assess and evaluate the music industry. Our research highlights many ESG concerns in the music industry:

⁸⁷ Kaouther Chebbi, Meqbel M. Aliedan, and Abdulaziz M. Alsahlawi, “Women on the Board and Environmental Sustainability Reporting: Evidence from France,” *International Journal of Innovation, Creativity and Change* 14, no. 11 (2020): 231-258.; Saidu Musa, Nusirat Gold, and Hope O. Aifuwa, “Board Diversity and Sustainability Reporting: Evidence from Industrial Goods Firms,” *Izvestiya Journal of the University of Economics – Varna* 64, no. 4 (November 2020): 377–398.; Emeldah M. Modiba and Collins C. Ngwakwe, “Women on the Corporate Board of Directors and Corporate Sustainability Disclosure,” *Corporate Board: Role, Duties and Composition* 13, no. 2 (2017): 32-37.; Belen Fernandez-Feijoo, Silvia Romero, and Silvia Ruiz-Blanco, “Women on boards: Do they affect sustainability reporting?,” *Corporate Social Responsibility and Environmental Management* 21, no. 6 (June 2013), 351–364.

⁸⁸ Christy Glass, Alison Cook, and Alicia R. Ingersoll, “Do Women Leaders Promote Sustainability? Analyzing the Effect of Corporate Governance Composition on Environmental Performance,” *Business Strategy and the Environment* 25, no. 7 (March 2015): 495–511.

⁸⁹ See footnote 87.

⁹⁰ Per Fredriksson and Eric Neumayer, “Democracy and climate change policies: Is history important?,” *Ecological Economics* 95, (November 2013): 11-19.

⁹¹ Juliet Hess, “Troubling Whiteness: Music education and the “messiness” of equity work,” *International Journal of Music Education* 36, no. 2 (April 2018): 128-144.; Jacqueline Kelly-McHale, “Equity in Music Education: Exclusionary Practices in Music Education,” *Music Educators Journal* 104, no. 3 (March 2018): 60-62.

⁹² Constance L. McKoy and Vicki R. Lind, *Culturally Responsive Teaching in Music Education: From Understanding to Application (1st ed.)* (New York: Routledge, 2016).

⁹³ Abby Butler, Vicki L. Lind, and Constance L. McKoy, “Equity and access in music education: conceptualizing culture as barriers to and supports for music learning,” *Music Education Research* 9, no. 2. (June 2007): 241-253.

⁹⁴ Marie-Élène Roberge and Rolf van Dick, “Recognizing the benefits of diversity: When and how does diversity increase group performance?,” *Human Resource Management Review* 20, no. 4 (2010): 295-308.

⁹⁵ Warner Music Group, “Environmental Social Governance Report 2021.”

From sustainability education within music institutions, through irresponsibly sourced instruments, emission-ridden streaming platforms, and poor waste management practices at music festivals, for a hit album to materialize and reach millions of listeners, the industry contributes to a range of environmental impacts. It is key that these impacts are addressed and practices within the industry are transformed, so that the astonishing benefits that all music, including international hits, provides for so many around the world can continue to do the same for future generations.

Women, Blacks, and other minority groups are underrepresented as artists, songwriters, and board members of music groups. However, diversity on the board of music groups leads to greater frequency and transparency of environmental performance, as well as the pursuit of sustainability initiatives. Music is often not accessible to low-income groups due to the expenses of music education and instruments; further, music may not be accessible to minority groups due to how music is conceptualized and contextualized by White educators in the West. Data centers used for streaming services and live music venues lead to concerns regarding land, water, and energy usage as well as their governance.

An ESG framework that is enhanced and expanded by researchers and practitioners in the music industry would allow all actors to understand their impacts not only on the natural world, but also on communities and on culture.

The life cycle analysis of an album provides a way of thinking holistically about the music industry, its various impacts and its potential for improvement. We used this LCA as a foundation to inform some preliminary recommendations of what a holistic ESG framework could look like for the music sector. We hope that leaders in the various sectors of the music industry will examine these issues and consider working together to define an ESG framework that is practical, constructive, and useful for the industry to pursue improvements and for fans who may want to make choices based on the environmental and social sustainability of the music that means so much to them.

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