

# HOW TO NETWORK CULTURE: THE ANALYSIS OF THE ECOSYSTEM OF LATVIAN MUSIC FIELD

**PhD Līga Vinogradova**

*Latvian Academy of Culture, Institute of Arts and Cultural Studies*

## **Abstract**

The study on the ecosystem of the Latvian music field was carried out within the framework of the CARD project (“the Cultural Capital as a Resource for Sustainable Development of Latvia”) implemented by the Institute of Arts and Cultural Studies of the Latvian Academy of Culture (LAC). One of the tasks of the CARD project was to analyse the cultural ecosystem of Latvia and identify its operator groups, their relationships, and impacts in order to assess the resources of the arts and cultural capital in Latvia [LAC 2020]. Based on initial research, it was suggested to focus on a smaller-scale ecosystem and a specific sub-sector [Laķe, Kunda & Tjarve 2022]. Therefore, this article examines the case of the Latvian music field within the cultural ecosystem of Latvia, as it encompasses a wide range of diverse operator groups. The key theoretical concept used in the research is “ecosystems” – the idea of culture as an ecology that reveals a larger system in a non-hierarchical way [Holden 2015]. In the sociology of art, perceiving culture as a larger system with many equal components is not new; for instance, Howard Becker’s art worlds are based on networks and the distribution of key resources within them [Becker 1974; 1982]. John Holden’s concept of the ecology of culture provides further methodological tools to analyse cultural networks within an ecosystem. The approach suggested by Holden is social network analysis (SNA) [Holden 2015]. While in theory, social network analysis (SNA) holds potential benefits for studying a cultural ecosystem, empirical studies on its application for measuring a cultural ecosystem and its associated limitations

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remain incomplete. The aim of the paper is to analyse the advantages and limitations of studying a cultural ecosystem using SNA. Two research questions are set: (1) How to analyse the ecosystem of Latvian music field and identify the main operator groups and their relationships? (2) What are the advantages and limitations of employing SNA to study the ecosystem of the Latvian music field? The results contribute to advancing methodological skills in both studying cultural ecosystems and developing SNA in the cultural field.

**Keywords:** *social network analysis, culture network, ecosystem, art worlds, music field, the sociology of arts.*

### Introduction

Transparency in the cultural and creative sectors of Latvia, at a structural level, and the ability to identify various involved operator groups have been persistent challenges over the years. The main issue has been associated with the lack of clear demarcation within the cultural and creative sectors and the multifunctional and occasionally precarious activities of its participants. Researchers from the Latvian Academy of Culture concluded that during the Covid-19 pandemic, it became an urgent issue to identify the most effective mechanisms of political and financial support for diverse operators in the cultural and creative sector, encompassing both professional and amateur art. One of the main challenges in accessing state support was determining affiliation with specific cultural fields and addressing the heterogeneity of legal statuses in the production cycle of creative products [Laķe, Kunda & Tjarve 2022]. To address this issue, in the research project CARD – “the Cultural Capital as a Resource for Sustainable Development of Latvia” (implemented by the Latvian Academy of Culture in the framework of the National Research Programme “Latvian Culture – a Resource for National Development”, 2020–2022) one of the tasks was to analyse the current cultural ecosystem of Latvia, examine the linkages among operator groups, and assess the resources of the arts and cultural capital in Latvia [LAC 2020]. To accomplish this task, the research team applied the concept of an ecosystem as a theoretical model to analyse a complex network of actors with diverse backgrounds and attributes. The analysis of the ecosystem can reveal essential development resources for operator groups within the network, including their behavioural chains and decision-making principles, which have a significant impact on the overall dynamic of the ecosystem [Laķe, Kunda & Tjarve 2022].

The issue surrounding the cultural and creative sector lies in the limitations of defining sector boundaries. It is evident that there exist linkages that extend beyond direct association with the creative product itself but hold significant importance

in its development, promotion, and long-term sustainability within the broader ecosystem. Long before the development of the ecosystem concept, sociologist Howard Becker articulated the idea that an art world exists due to the amalgamation of core and support personnel [Becker 1974]. When John Holden formulated the notion of viewing culture as an ecology and analysing it as an ecosystem, he posited that cultural ecology comprises not only people but also encompasses places and objects (such as concert venues and film cameras), ideas, and instruments [Holden 2015: 3–4].

Furthermore, the ecology of culture can be conceptualized as three highly interactive spheres: publicly funded culture, commercial culture, and homemade culture [Holden 2008; 2015: 7], the latter of which we recognize as amateur arts. In consideration of the multifaceted nature of the cultural and creative sector, researchers are sceptical about measuring it as a whole ecosystem. For instance, Holden suggests that creating a comprehensive map of the entire cultural sector associated with a specific territory may not be helpful [Holden 2015: 3]. Tsujimoto et al. propose analysing a particular product system [Tsujimoto et al. 2018], while Barker recommends narrowing the analysis down to a specific sector [Barker 2019]. Taking this into consideration, the research team of the CARD project made two decisions regarding this research. Firstly, to integrate more comprehensive elements into their analysis, e. g., the cultural and creative ecosystem encompasses not only operator groups such as cultural organizations and artists but also encompasses event venues, amateur art communities, infrastructure, and supporting institutions [Laķe, Kunda & Tjarve 2022]. Secondly, to test the idea of measuring the cultural ecosystem, researchers of the project CARD decided to analyse the case of the Latvian music field. This specific field was chosen because in Latvia, it encompasses three spheres as suggested by Holden [2015 2008]: 1) “academic” or “professional art”, which is recognized as a powerful sub-sector due to its cultural and educational value and is publicly funded in Latvia; 2) “popular” music, which is primarily commercial [Tjarve 2019; Sillama 2023]; 3) amateur, homemade, or informal arts, including folk arts practices in Latvia and the highly recognized tradition of the Song and Dance Celebration [Muktupāvela & Laķe 2018].

The next challenge was how to obtain information about operator groups and their relationships and how to analyse such a large-scale ecosystem as the Latvian music field. The idea, as suggested by Holden [2015], was to employ network diagrams or maps, also known as the social network analysis (SNA), to elucidate cultural phenomena. However, in Holden’s report, he expressed reservations about mapping the entire ecology and proposed using SNA on smaller-scale ecologies, such as those geographically limited or confined to sectoral or sub-sectoral levels. In such cases, it can be valuable not only for revealing the types of relationships within an ecosystem

and its actors but also for analysing details like who shares information [Holden 2015]. Therefore, **the aim** of the paper is to analyse the advantages and limitations of studying a cultural ecosystem using SNA. Two **research questions** have been formulated: (1) How to analyse the ecosystem of Latvian music field and identify the main operator groups and their relationships? (2) What are the advantages and limitations of employing SNA to study the ecosystem of the Latvian music field? The findings of this research contribute to the enhancement of methodological expertise in both the study of cultural ecosystems and the development of SNA for the analysis of cultural phenomena.

### **1. Theoretical framework of cultural networks: art worlds and ecosystems**

Network research in the social sciences has traditionally overlooked culture, as it has predominantly focused on social relations as the primary aspect of social structures. For a substantial period in network research, cultural elements, such as narratives, identities, symbolic boundaries, institutions, and rules, were neglected. However, as sociologist Jan A. Fuhse argues, over the past three decades, the social sciences have witnessed a “cultural turn”, making it possible to explore the relationship between culture and social networks. Various fundamental branches of research have emerged since the 1990s to examine the connection between networks and culture. Firstly, cooperative behaviour within a network is seen as a result of cultural norms. Secondly, densely connected networks serve as the foundation for collective identities. Thirdly, under certain conditions, networks can foster intellectual creativity [Fuhse 2015]. Sociologists of culture and the arts have identified several theoretical approaches to studying culture as a network. For example, Wendy Bottero and Nick Crossley [2011] propose two popular ideas: Pierre Bourdieu’s [1993] concept of artistic fields and Howard Becker’s [1982] concept of art worlds. Their critique primarily centres on Bourdieu’s focus on a field as “objective relations” between positions defined by their ranking in the distribution of power and various forms of capital [Bourdieu and Wacquant 1992: 113]. While Bourdieu’s approach appears theoretically applicable to SNA it distinguishes a field as a theoretical space of objective relations, rejecting SNA for failing to distinguish objective relations from social relations. Conversely, a social network reveals concrete social relationships. Bottero and Crossley suggest that Becker’s concept of art worlds is a more promising approach, as it can be analysed in terms of conventions, resources, and networks [Bottero & Crossley 2011].

Becker’s concept of art worlds suggests viewing culture and the arts as a broader system or structure. The sociologist directs his analysis upon conventions among participants, the distribution and mobilization of their key resources (such as money,

skills, equipment), and the physical spaces where an art world exists. He introduces the term “division of labour” to characterize the various roles played by different individuals to coordinate their respective contributions within a specific art world. This includes not only core personnel, like singers, composers, and band members, but also support personnel such as managers, promoters, and technicians. Both groups must operate within established “conventions”, which are agreements that have become a conventional way of doing things in the art world [Crossley & McAndrew 2014; Becker 1974; Becker 1982]. However, Bottero and Crossley [2011] express their disappointment with Becker’s oversight in not considering Social Network Analysis (SNA) as a tool for analysing art worlds. They contend that the concept of art worlds aligns closely with questions that are relevant in SNA, including network centrality, density, closure, and segregation. Furthermore, SNA provides the means to investigate the diffusion of practices and the distribution of conventions and resources as a systematic network of social relationships, encompassing both interpersonal and positional connections.

The concept of perceiving culture in a non-hierarchical and structural manner, an extension of Becker’s line of thought, can be discerned in John Holden’s proposal to conceptualise culture as an ecology or ecosystem [Holden 2015]. To clarify the usage of two terms, “ecology” and “ecosystem”, in various studies, researchers have noted that ecology is the science that studies ecosystems. However, in the cultural field, both terms are employed [Laķe, Kunda & Tjarve 2022]. The term “ecology” in the context of the cultural sector was initially introduced by Holden [2004], and subsequently, it became a widely embraced metaphorical framework for contemplating the cultural sector. Markussen [2011] defines cultural ecology as the intricate networks of arts and cultural operators, encompassing creators, producers, sponsors, participants, and more, from diverse communities. This definition underscores a concept derived from the biological realm – to regard culture and the arts as an interdependent and interconnected ecosystem. Drawing a parallel to Becker’s art worlds, Holden posits that in the cultural system each actor is interdependent, and all parts make the whole system [Holden 2015]. The idea to analyse cultural ecosystem is to get a “view from above” and to see relationships, or as Holden calls it “flows”, in the larger system, e. g., how careers develop, how ideas cross borders, money flow and products move within sub-sectors [Laķe, Kunda & Tjarve 2022; Holden 2015].

Both models for studying culture and the arts endorse a systemic network approach, viewing culture and the arts as non-hierarchical systems without dominant actors, such as artists or creators. This represents a new horizontal perspective on culture and the arts, departing from the traditional sociological idea that places the artist as the central figure in the production of culture and the arts. While Becker’s concept of art worlds is primarily theoretical in nature, researchers have developed

methodological tools for studying cultural and creative ecosystems. These tools can encompass quantitative, qualitative, or mixed methods [Tsujimoto et al. 2018; Laķe, Kunda & Tjarve 2022].

## **2. Social network analysis in measuring the ecosystem**

Social Network Analysis (SNA) is frequently cited as one of the primary approaches for studying a cultural ecosystem. In Tsujimoto et al.'s review of ecosystem studies, four major research streams are outlined for the examination of the ecosystem concept in culture. One of these streams focuses on multi-actor networks, with the others encompassing perspectives such as industrial ecology, business ecosystems, and platform management. Within this particular branch, behavioural relationships are analysed through the lens of social network theory [Tsujimoto et al. 2018]. Holden proposes several approaches to explore his concept of the cultural ecosystem, and network analysis is among them. As mentioned in the introduction, initially, Holden is cautious about employing network analysis to study the cultural ecosystem due to its scale. However, he suggests that it could be effectively applied to smaller-scale ecologies, which may be geographically limited or focused on the interactions of specific operators, such as local, sectoral, or sub-sectoral ecosystems. Network analysis can prove valuable in uncovering relationships and the various types of interactions that occur among organizations and individuals within a cultural ecosystem. It has the potential to unveil the degree of interconnectivity, identify the most connected or isolated operators, and shed light on those who share information and engage in co-production. However, Holden acknowledges that implementing network analysis to measure an ecosystem presents specific challenges. These challenges include the difficulty of delineating boundaries, addressing questions regarding the interconnectedness between local and sectoral networks, avoiding over-simplification, and accurately capturing the quality of a network [Holden 2015]. Bottero and Crossley argue that networks of interaction emerge from the collective action (previously discussed in Becker's work [1974]) inherent in artistic production. Resources circulate through these networks, and their circulation concludes when the exchange of pertinent resources ceases [Bottero & Crossley 2011]. As the researchers of the CARD project were particularly concerned with the flow of resources within a cultural ecosystem, they found SNA to be beneficial due to its capacity to offer a "helicopter view" of the system and its potential to quantitatively measure and visually depict the actors and their connections within an ecosystem. However, they also acknowledge and critically assess its limitations, such as the potential for simplifying empirical reality [Laķe, Kunda & Tjarve 2022]. For instance, one limitation highlighted by Crossley and McAndrew is that SNA is more of a complementary methodology or a component of mixed methods

[Crossley & McAndrew 2014], and therefore, SNA fits within a larger research design.

Prior to explaining how we applied SNA to this study, there are a few definitions, terms, and measures in SNA that need clarification. Networks provide a general means of depicting patterns of connections and interconnections among the components of a system. As a simplified representation of a system, they capture primarily the fundamental aspects of connection patterns and not much else [Newman 2010]. A social network can be described as a collection of social entities, such as individuals, groups, and organizations, interconnected by relationships. These relationships within a social network can encompass personal connections, professional affiliations, the exchange of resources (such as information, goods, or money), interactions, and more [Tabassum 2018]. SNA represents a perspective, paradigm, or framework, rather than a theory or a methodology [Laçe, Tjarve & Grinberga 2015]. It is founded on the premise that social life primarily emerges from relationships and the patterns they create. SNA offers a lens through which to approach the issue but does not predict the specific outcomes. Instead, networks provide guidance on where to investigate and uncover how social relations influence various aspects of life [Emirbayer & Goodwin 1994; Marin & Wellman 2011]. Researchers suggest that the primary objective of SNA is to extract more information than the traditional methods of analysing interrelated entities, albeit at the cost of increased data complexity [Tabassum 2018].

A network is typically represented in a graph composed of two fundamental **elements**: a collection of points, also known as vertices or nodes, and the lines, referred to as edges, links, or relations [Newman 2010; Barabasi 2012; Tabassum 2018]. Vertices and edges in a network can be augmented with additional system-related information, such as names and strengths. Vertices can represent various individual entities, depending on the field and project's subject. Newman posits that the process of simplifying a complete system into a network representation has both advantages and disadvantages, as it involves the loss of some information [Newman 2010]. An edge is a line that connects two nodes and can represent diverse types of relationships. Edges can be either undirected or directed, depending on whether the relationship is symmetric or asymmetric. Additionally, edges can be unweighted or weighted, with the latter often used to represent attributes like duration, emotional intensity, interaction frequency, and a variety of other factors [Tabassum 2018]. There are two main types of networks: whole networks and ego networks. Whole networks provide a "bird's-eye view" of a social structure and typically encompass all nodes; thus, researchers can analyse multiple relationships. In contrast, egocentric networks focus on the network surrounding a single node. It is recommended to use complete data on all network linkages, as there are

numerous concepts and measures in network analysis that can be fully applied to whole networks [Scott 2012].

Researchers propose various **methods for gathering data** for a network, including observation, retrieval from archives or historical materials, trace observation of electronic communications, surveys, and interviews. However, there are several challenges associated with collecting network data through surveys and interviews. To compile comprehensive data, respondents need to possess a list of network members and be able to identify individuals with whom they share specific relationships. This can be problematic when the list is excessively extensive or when a complete list is unavailable, and an alternative is to have respondents recall these connections from memory [Marin & Wellman 2011].

Various **measures** can be applied in network analysis, providing researchers with information about the roles of nodes within the network and the overall characteristics of the network as a whole [Tabassum 2018]. Visualizing a network becomes challenging when dealing with large and complex networks [Scott 2012]. A study conducted by the author of this paper, focusing on the Riga 2014 programme as part of the European Capital of Culture initiative [Laķe, Tjarve & Grīnberga 2015], found that visualization can be beneficial when nodes include their attributes within the network structure. Additionally, it was concluded that supplementary measures are necessary for a thorough analysis of a network structure. Below is a list of some of the most commonly used measures in SNA and applied to this study (see Table 1).

**Table 1. The most commonly used measures in social network analysis.**

<p><b>Centrality</b> is one of the most fundamental measures for determining the significance of an actor within a network, providing insights into the concentration of relationships among a few individuals and offering an indication of their social influence. The most commonly used centrality measures include degree, betweenness, closeness, and eigenvector centrality [Tabassum 2018].</p>
<p><b>Degree centrality</b> indicates the number of edges or neighbours connected to a node (actor). In directed networks, there are two variants: <b>in-degree</b> centrality (representing the number of incoming nodes, i. e., the number of edges ending at a specific node) and <b>out-degree</b> centrality (representing the number of outgoing nodes, i. e., the number of edges originating from a specific node) [Tabassum 2018].</p>
<p><b>Betweenness centrality</b> quantifies the degree to which a node serves as a bridge between other nodes within the network. It reflects an actor's role in facilitating the transfer of information from one section of the network to another. Actors with high betweenness centrality play a crucial role in the flow of information throughout the network [Goldbeck 2015; Tabassum 2018].</p>



A **path** is defined as a sequence of nodes in which consecutive pairs of non-repeating nodes are connected by an edge. **Geodesic distance** refers to the length of the shortest path between two nodes [Tabassum 2018].

**Density** is a network-level measure that quantifies the level of interconnectedness within a network, indicating the extent to which nodes are connected to each other. It is expressed as a ratio of the actual number of edges in the network to the maximum possible number of edges [Scott 2012; Tabassum 2018].

**Network centralization** is a characteristic of network structure that measures the degree to which the edges in a network are concentrated among a small number of actors. In a centralized network, numerous edges connect to a few nodes, whereas in a decentralized network, there is less variation in the number of edges per node, and no nodes dominate. This metric can provide insights into the decision-making processes within a network [Krebs 2013].

**Hubs** are nodes within a highly centralized network that possess the highest number of edges. **Peripheral players**, situated at the network's periphery, are often considered less influential, despite their connections to other networks, and can play a valuable role in information transfer [Newman 2010; Krebs 2013].

**Clusters and cliques** are two distinct types of groups that can be identified within a network. **Bridges** are the nodes that connect two separate sub-groups within a network and, as such, play a crucial role [Krebs 2013; Hoppe & Renelt 2010].

Considering the wide variety of measures available in SNA, we will now delve into how to **apply SNA to a music ecosystem**. Music production is inherently a collective endeavour, underpinned by interactions among social participants and organizational connections. A music world entails individuals collaborating where their actions are interdependent [Crossley & McAndrew 2014]. Various conceptualizations of music clusters exist, often categorized as “popular” and “academic”, or alternatively referred to as “elite” forms of music. As mentioned previously, in Latvia, there is a distinct division between three robust clusters known as “academic”, “popular”, and “amateur” arts. In the field of art sociology, the prevailing concepts used to denote these clusters are “scenes”, “fields”, and “art worlds” [Crossley & McAndrew 2014], with the former, as previously discussed, offering theoretical and methodological advantages in constructing a systemic analysis of musicians’ activities [Martin 2006]. Different music worlds exhibit varying structures and sociological characteristics, ranging from institutionalized and extensive to informal and compact. The identity and boundaries of a music world often hinge on factors such as musical styles (e. g., the jazz world) or geographical regions (e. g., the French music world). However, within a given music world and its representing network, a wide array of actors is involved, extending beyond human participants. Consequently, SNA encompasses more complex networks that include various sites of activity (rehearsal spaces, venues, record shops, studios, etc.), official entities,

and economic actors, each playing a pivotal role in comprehending a music world and the networks that connect them [Crossley & McAndrew 2014].

Researchers are aware of the **limitations** of SNA. Bottero and Crossley acknowledge that SNA alone does not offer a comprehensive depiction of the social reality within a culture, but it does provide one dimension of it, while other dimensions remain important [Bottero & Crossley 2011]. The recommendation is to focus on relationships, connections, and networks within the cultural and creative ecosystem to assess the overall vitality of the “system”. For instance, the quality and quantity of relationships are crucial factors to consider [Laķe, Kunda & Tjarve 2022]. Furthermore, SNA does not preclude the nature of ties between participants and uncovers not only collaboration but also competition and conflict, which can be positive indicators of increased contributions and the promotion of innovation [Crossley & McAndrew 2014]. This holds particular significance for the creative sector, including the music field. Sociologists suggest that dense networks are conducive to stylistic innovation, while traditional cultural forms tend to thrive within dense and closed networks as they tend to foster cooperation, trust, and mutual support among actors [Crossley & McAndrew 2014].

### 3. Research design

In the CARD project, the objective of empirically studying the ecosystem of the Latvian Music Field using Social Network Analysis (SNA) was to identify operator groups (actors) and their interactions while analysing the nature of their relationships and collaborations. The uniqueness of this network analysis lay in its focus on discerning the types of collaborations among specific **operator groups** (e. g., composers, producers, managers, etc.), rather than how individuals collaborated. Consequently, each node or actor in the network represented information obtained from a list of representatives for each operator group. Before conducting the SNA, researchers needed to address several questions:

- Where should the boundaries of the Latvian music field be drawn (e. g., should educators of musicians, technical workers, operators from other field(s), and those working in crossover fields be included)?
- How should operator groups (potential actors in the network) be identified, and how can their uniqueness within the network be established?
- What kinds of relationships or links can be identified?
- Should collaborations only be identified between operator groups that were studied, or should the option be given to identify collaborations with groups excluded from the primary study (i. e., will there be feedback from all actors in the network)?

- Who can represent each operator group?
- How should data be collected from the required operator groups and their collaborations?
- Should exceptional and rare collaborations be considered when concluding collaborative relationships between two operator groups?

To delineate the boundaries of the Latvian music field, the decision was made to base empirical work on the UNESCO and World Bank model of the cultural and creative cycle of production [UNESCO & World Bank 2021]. This model identifies five core activities: creating, making, distributing, exchanging, and archiving, each comprising specific sub-activities. Importantly, these activities can intersect with other cultural forms, sectors, industries, and broader societal and economic aspects. For instance, the “creating” music activity encompasses composing, recording, musical instrument work (including skill instruction and crafting), and other related tasks. Through consultations with experts, this framework was adapted to align with the Latvian music field’s context (see Figure 1). Notably, the “achieving and critiquing” activity was expanded to include music critics. Consequently, it was decided to investigate 14 operator groups that primarily represented key roles



**Figure 1.** Operator groups within the ecosystem of Latvian music field. Adapted by the author from the model of the cultural and creative cycle of production [UNESCO & World Bank 2021].

within the music ecosystem, while others were designated as secondary groups or those concurrently involved in other fields. Educators in the music field, technical workers, and media professionals were excluded from the primary study due to methodological considerations and data consistency objectives.

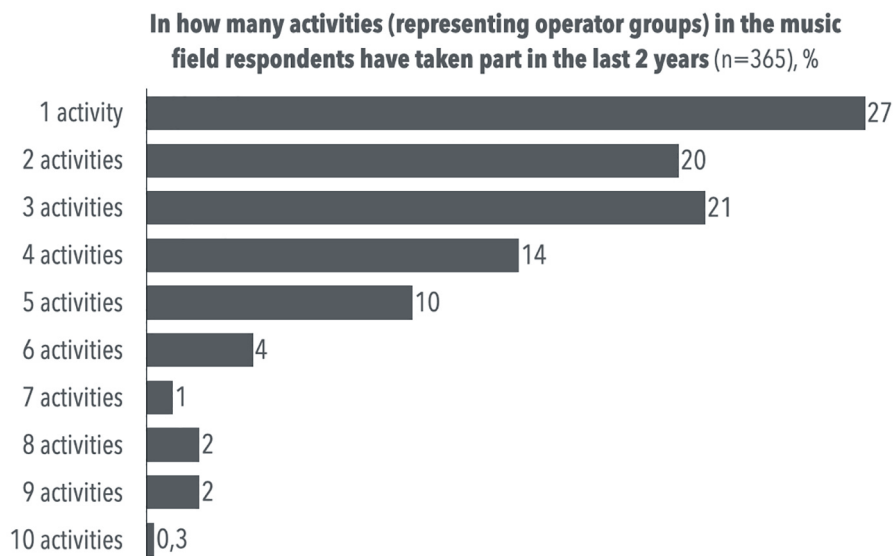
The next step involved deciding on the methodology for data collection and its application. Researchers determined that the most effective way to reach the target groups was through an online survey of operators in the Latvian music field. The survey was distributed to various organizations, including state and local governments, NGOs, and commercial firms within the Latvian music field. The questionnaire encompassed inquiries regarding the activities these organizations engaged in within the music field, the specific activity considered as their primary occupation in the music field, characteristics of this primary occupation, required and available resources, and, notably, the types of collaborations they partook in within the music ecosystem. In total, the survey reached 365 respondents (n), each of whom was classified into one of the 14 operator groups based on their designated primary occupation. An inherent challenge within the Latvian music ecosystem was that respondents often engaged in multiple activities, averaging around three activities per respondent. For instance, composers might also serve as text authors, producers, and performers. To visualize operator groups and their collaborations in a network, a unique primary occupation had to be assigned to each respondent. This step was crucial as researchers acknowledged the complexity of determining which collaborations arose as a result of a specific activity. Additionally, providing an exhaustive list of collaborations for each activity of every respondent would have made the survey excessively lengthy and impractical to complete.

Respondents were inquired about four types of collaborations or relationships: 1) general; 2) financial (both incoming and outgoing payments); 3) other contractual obligations; and 4) creative relationships. The list of collaborators extended beyond the 14 operator groups initially targeted in the survey, encompassing secondary activities and groups that were either excluded from the survey or inaccessible. All 14 operator groups specifically surveyed, as well as the others mentioned solely as collaborative partners, were included in the network as nodes, totalling 23 nodes in all. Each node established a relationship with another if at least one respondent from that group identified a specific type of collaboration, e. g. if one composer indicated collaboration with music critics, the nodes “composers” and “music critics” were linked. Consequently, the network unveiled all potential relationships between operator groups within the music ecosystem, including exceptional ones. The nature of these relationships meant that the network consisted of direct connections. Given that not all actors in the network represented outgoing edges, the network analysis focused exclusively on in-degree, i. e., the number of incoming connections for each

operator group. In other words, the primary measure gauged the extent to which operator groups collaborated with one another, regardless of whether there was information available regarding their own collaborations. In the network analysis, several measures were applied, including degree centrality (to assess the extent of collaborations for each operator group), betweenness centrality (to identify the most influential actors in facilitating information flow within the network), as well as measures characterizing the network of the music ecosystem, such as network centralization and density.

#### 4. Results

The results yielded five networks that depict the ecosystem of the Latvian music field and how various operator groups collaborate within it, considering general, incoming and outgoing financial, other contractual, and creative forms of collaboration. Additionally, three networks were created to represent various music environments or smaller ecosystems within it – academic, popular, and folk music. Each of these networks comprises 23 nodes, each representing an operator group, with edges denoting directed relationships between nodes. The survey data revealed that 27% of all respondents exclusively represented a single activity or operator group defined in the network (see Figure 2). The remaining 73% of respondents were engaged in two or more activities within the music field, with an average of 3 activities per respondent. To maintain uniqueness in the network for nodes and



**Figure 2.** In how many activities (representing operator groups) in the music field respondents have taken part in the last 2 years (n=365), %.

their collaborations while maximizing respondent coverage, 73% of all respondents were required to select one primary activity or occupation in the music field to be assigned to a specific operator group. Consequently, reaching all operator groups equally posed a challenge. For instance, 19% of respondents identified themselves as text authors, but in the network, only 1% were assigned to this category, as it was the proportion that selected “text author” as their primary occupation. “Performer” was the primary occupation chosen by 52% of all respondents, followed by 18% working in concert venues, 9% composers, 4% concert organizers, 4% managers, and the remaining operator groups were represented by fewer respondents. This resulted in some operator groups in the network being underrepresented. However, this did not significantly impact the network’s representation, as collaboration patterns between operator groups were still discernible. In conclusion, the chosen methodology permits the collection of data regarding primary operator groups and their customary collaborations. Nonetheless, it does not provide a comprehensive representation of the complete network within the Latvian music field’s ecosystem.

The analysis of the network representing general collaborations (see Figure 3) revealed the ecosystem of the Latvian music field as decentralized. Therefore, there are no specific sub-groups in the network, and overall, each node has general relationships with quite a few other nodes in the network. According to in-degree (the number of incoming nodes), each node has between 8 to 14 collaborations.

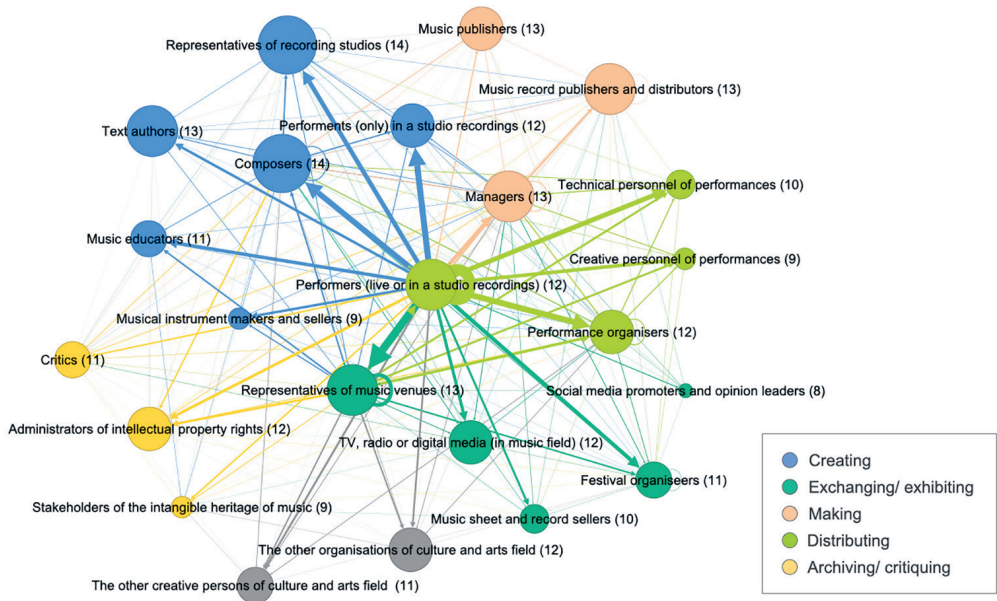
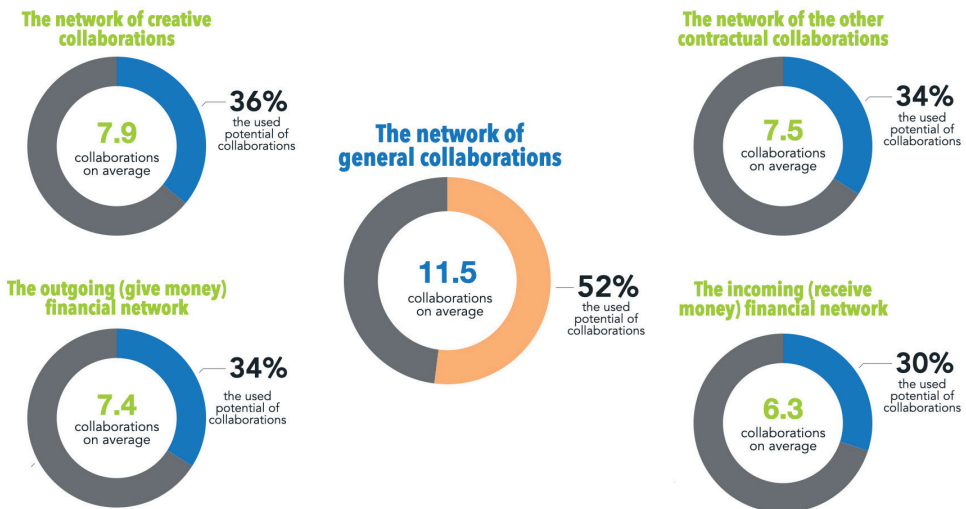


Figure 3. The network of general collaborations in the ecosystem of Latvian music field.

On average, there are 11.5 collaborations for each node. The operator groups with the highest in-degree or those most often indicated as collaboration targets were composers (14) and producers and engineers from recording studios (14). Social media promoters and opinion leaders (8) had the lowest in-degree. The nodes with the highest betweenness centrality were composers (8.7 calculated points for the measure), producers and engineers from recording studios (8.7), and representatives from concert venues (7.3). Interestingly, the network analysis suggested composers as the most important actors in almost every type of collaboration. Most other operator groups collaborated with them in a creative way (12), had non-financial contractual collaborations (11), and provided funding (11) to composers.

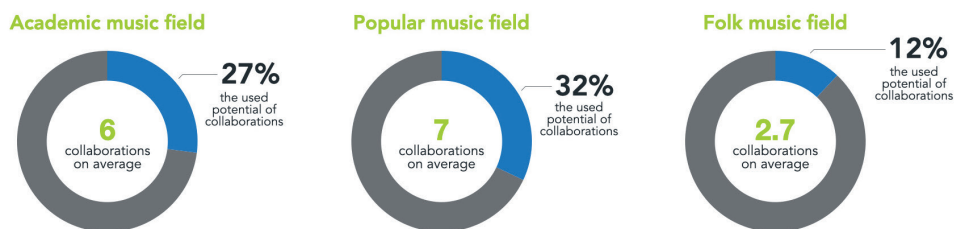
To draw conclusions about the importance and distribution of each type of collaboration within the Latvian music field ecosystem, two measures were considered: the average degree of collaborations per actor and network density (as shown in Figure 4). The analysis revealed that the general collaboration network had the highest average degree, with an average of 11.5 collaborations per actor. This is not surprising, as respondents may find it easier to think about their relationships with others in a general sense rather than specifying a certain type of collaboration. When respondents had to focus on specific types of relationships, it appeared to be more challenging for them to define them. As a result, all four specific networks had significantly lower average degrees: 7.9 in the creative network, 7.5 in the other contractual collaborations network, 7.4 in the outgoing financial network (giving money), and 6.3 in the incoming financial network (receiving money). It is



**Figure 4.** Types of collaborations in the ecosystem of Latvian music field: average collaborations and network density.

noteworthy that the creative network had a slightly higher average degree than the financial networks, suggesting that the creative agenda is prominent in the music field ecosystem. The measure of density, which indicates the level of connectedness in the networks, was also considered. The density was transformed into a percentage for better understanding. In the general collaborations network, the density was 52%, meaning that 52% of nodes were connected to each other. In a hypothetical scenario where each node collaborates with every other node in the network, the density would be 100%. In contrast, the density was lower in the other networks: 36% in the creative network, 34% in the other contractual collaborations network, 34% in the outgoing financial network (giving money), and 30% in the incoming financial network (receiving money).

Comparing these measures becomes even more interesting when we look at the three music fields: academic, popular, and folk (see Figure 5). Separate networks and their analyses were conducted based on respondents' self-identification with the field they mainly represent. SNA indicated that the network representing popular music has the highest collaboration potential, with a density measure of 32% and an average of 7 collaborations per actor. Academic music also showed a relatively high collaboration potential, with a density of 27% and an average of 6 collaborations per actor. In contrast, the folk music network had a significantly lower collaboration potential, with a density of only 12% and an average of 2.7 collaborations per actor. In summary, the folk music field appears to have fewer collaborations and does not fully utilize its potential for collaboration compared to the other two music fields.



**Figure 5.** Comparison between academic, popular and folk music fields: collaborations on average and the network density.

## Conclusion

In conclusion, there were several issues encountered in representing the ecosystem of the Latvian music field, many of which can be attributed to the methodology of **networking culture in general**. Firstly, the decision regarding the boundaries of the network had a significant impact on the results, as several groups were excluded from the survey's target group, mainly those engaged in activities in other fields or having



a secondary role in the music field. However, there is no available data to determine how these exclusions might have affected the network. It could be speculated that the average degree of collaborations might increase with the inclusion of new actors in the network, or it could decrease, as the excluded groups may not be primary representatives of the music field. Secondly, not all relationships in the network were reversible. While the previously mentioned groups were excluded and did not provide information about their collaborations, they still appeared as collaboration partners for some of the respondents. As a result, they were represented in the network, but no information was available about their own relationships with others. This led to the decision to only count incoming collaborations to assess how many other operator groups collaborated with a specific group. However, this approach introduced inconsistencies in the network and made it challenging to present the findings effectively to an audience. Thirdly, there was a methodological decision regarding how to handle the various activities undertaken by representatives from the music field, with respondents on average engaging in three activities each. Since the objective was to measure collaborations between operator groups rather than individuals, and it was clear that distinguishing separate collaborations for each group through the survey would be challenging, respondents were asked to identify their main activity within each operator group and were instructed to exclusively respond in relation to their main activity. Consequently, the network reflects the tendencies of collaboration between operator groups within the music field ecosystem, but it does not capture the complete network of all collaborations. Fourthly, despite the planned approach to reach each operator group through the survey, there were several underrepresented groups in the final dataset. This was primarily because many of these groups were not considered to be primary actors in the music field. One potential solution could involve employing a different sample selection approach, such as quota or stratified sampling, to ensure more balanced representation. Fifthly, the decision to construct the network based on operator groups necessitated a strategy for aggregating responses from multiple respondents associated with a given group. Researchers chose to count each and every collaboration mentioned by respondents representing a particular group. Consequently, the network also includes atypical relationships between operator groups, providing information about a variety of potential interactions, not just the typical ones. From the perspective of testing how to measure a cultural ecosystem in Latvia using a smaller-scale (music) field as a case study, this approach offered a broader perspective on the ecosystem as a whole.

Therefore, the author suggests that networking culture presents various methodological **challenges**. Firstly, there is no specific theoretically and methodologically interconnected framework that can be readily applied to the field of cultural and artistic networks. In many cases, one aspect or another remains unresolved,

as demonstrated by Becker's concept of art worlds [1982] and Holden's idea of a cultural ecosystem [2015]. However, the ecosystem framework chosen by the researchers in the CARD project was deemed the most beneficial for gaining a comprehensive structural "view from above" of culture [Laķe, Kunda & Tjarve 2022]. Secondly, the decision to focus on a specific cultural field was motivated by the realization that representing the entire cultural field would be practically impossible. Therefore, narrowing down the scope to a specific territorial (Latvian) and sectoral (music) field was chosen. However, even within the cultural field, defining boundaries proved to be a challenge. Thirdly, the nature of the cultural field revealed that individuals often take on multiple roles or engage in various activities within the field. In SNA, nodes must be unique, so decisions had to be made on how to reduce the multiple roles of an actor to a single, unique node. Options included selecting only one role, grouping similar roles together, or attributing each node with information about the diverse roles they hold. Fourthly, setting boundaries within a cultural field is a complex task, and decisions about who is included and who is excluded must be made. These decisions are often influenced by data gathering methods and available resources, which ultimately define the representation of the resulting network. Fifthly, to construct a complete and accurate network, ideally, every node should provide information about its relationships. When this is not the case, applying various SNA measures becomes challenging, and the precision of the analysis is compromised. Additionally, difficulties in visualizing and presenting the network can hinder the communication of study findings, making it essential to develop clear and understandable schemes for translating network elements.

Overall, SNA offers several **benefits** and provides different types of data about the cultural ecosystem compared to traditional research methods. Here are some key advantages of using SNA in cultural research:

**1. Precise representation and clear boundaries:** SNA allows for the precise representation of the larger cultural structure and necessitates setting clear boundaries within this structure. This helps researchers gain a clear understanding of which entities are included and excluded from the analysis.

**2. Multidimensional analysis:** SNA enables researchers to analyse various dimensions within the cultural ecosystem. Researchers can focus on specific parts of the ecosystem, such as academic or popular music fields, while using the same set of actors. This flexibility allows for a more nuanced exploration of relationships.

**3. Attributes and additional dimensions:** by assigning attributes to each actor or node in the network, researchers can explore additional dimensions. For example, in this study, it was possible to analyse operator groups based on their status as public, commercial, or non-governmental operators, providing deeper insights into the ecosystem's structure.

**4. Measurement and comparison:** SNA allows for the measurement and comparison of different types of relationships among the same actors or operator groups. In this study, it revealed that creative collaborations were more dominant than financial collaborations within the cultural ecosystem.

**5. Additional data collection using survey method:** SNA, when combined with surveys or other data collection methods, allows researchers to gather additional information about the cultural ecosystem. For instance, this study collected data on available resources, providing insights into why certain operator groups or smaller ecosystems within the larger one may lack necessary resources.

These advantages highlight how SNA can provide a comprehensive and multifaceted understanding of cultural ecosystems and their dynamics.

### **Sources**

- Barabasi, Albert-Laslo. (2012). *Network Science*. Available: <http://barabasilab.neu.edu/networksciencebook/> (viewed 24.02.2023.)
- Barker, V. (2019). The democratic development potential of a cultural ecosystem approach. *Journal of Law, Social Justice and Global Development*, No. 24, pp. 86–99.
- Becker, H. (1982). *Art Worlds*. Berkley: University of California Press.
- Becker, H. (1974). Art as Collective Action. *American Sociological Review*, Vol. 39, no. 6., pp. 767–776.
- Bottero, W., & Crossley, N. (2011). World, Fields and Networks: Becker, Bourdieu and the Structures of Social Relations. *Cultural Sociology*, vol. 5, no. 1, pp. 99–119.
- Bourdieu, P. (1993). *The Field of Cultural Production*. Columbia University Press.
- Bourdieu, P., & Wacquant, L. J. D. C. (1992). *An Invitation to Reflexive Sociology*. University of Chicago Press.
- Crossley, N., McAndrew, S., and Widdop, P. (eds.) (2011). *Social Networks and Music Worlds*. Routledge Advances in Sociology, 1<sup>st</sup> ed. Routledge.
- Emirbayer, M., and Goodwin, J. (1994). Network Analysis, Culture, and the Problem of Agency. *The American Journal of Sociology*, vol. 99, no. 6, pp. 1414–1454.
- Holden, J. (2008). *Democratic Culture*. London: Demos.
- Holden, J. (2015). *The Ecology of Culture*. Arts and Humanities Research Council.
- Hoppe, B., and Reinelt, C. (2010). Social network analysis and the evaluation of leadership networks. *The Leadership Quarterly*, vol. 21, pp. 600–619.
- Krebs, V. (2013). *Social Network Analysis, A Brief Introduction*. Available: <http://www.orgnet.com/sna.html> (viewed 12.03.2023.)

- Laķe, A., Tjarve, B., & Grīnberga, L. (2015). Measuring Social and Economic Impact of Large Scale Cultural Events: A Social Network Analysis. *Culture Crossroads*, vol. 7, pp. 96–110.
- Laķe, A., Kunda, I., & Tjarve, B. (2022). Theoretical Approaches and Methodological Challenges in the Study of the Cultural and Creative Ecosystem. *Letonica*, vol. 46, pp. 14–37.
- Latvian Academy of Culture (2020). *Cultural capital as a resource for sustainable development of Latvia/CARD*. Available: <https://lka.edu.lv/en/research/research-projects/state-research-programmes/cultural-capital-resource-sustainable-development-latviacard/> (viewed 29.04.2023.)
- Marin, A., & Wellman, B. (2011). Social Network Analysis: An Introduction. In: J. Scott & P. J. Carrington (eds.). *The SAGE Handbook of Social Network Analysis*. SAGE, pp. 11–25.
- Martin, P. J. (2006). Musicians' Worlds: Music-Making as a Collaborative Activity. *Symbolic Interaction*, vol. 29, no. 1, pp. 95–107.
- Muktupāvela, R., & Laķe, A. (zin. red.) (2018). *Dziesmu un deju svētki. Tradīcijas anatomija*. Rīga: Jāņa Rozes apgāds.
- Newman, M. (2010). *Networks: An Introduction*. Oxford, New York: Oxford University Press.
- Scott, J. (2012). *What is Social Network Analysis?* London: Bloomsbury Academic.
- Sillamaa, V. (2023). The sound of policy making: how ideas and discourse shape music policy. Master's thesis. Tallin University of Technology, School of Business and Governance. Available: <https://digikogu.taltech.ee/en/Download/fadf05c9-5ea2-4733-b4cb-9ac494935737/Poliitikakujundamiseklakuidasideedjadiskurs.pdf> (viewed 12.09.2023.)
- Tabassum, S., Pereira, F. S. F., Fernandes, S., & Gama, J. (2018). Social Network Analysis. An Overview. *WIREs Data Mining Know. Discov.* E1256.
- Tjarve, B. (2019). Country profile Latvia. Association of the Compendium of Cultural Policies and Trends, *Compendium of Cultural Policies and Trends*, 20<sup>th</sup> ed. Available: [https://www.culturalpolicies.net/wp-content/uploads/pdf\\_full/latvia/Full-country-profile\\_Latvia.pdf](https://www.culturalpolicies.net/wp-content/uploads/pdf_full/latvia/Full-country-profile_Latvia.pdf) (viewed 12.09.2023.)
- Tsujimoto, M., Kajikawa, Y., Tomita, J., Matsumoto, Y. (2018). A review of the ecosystem concept – Towards coherent ecosystem design. *Technological Forecasting & Social Change*, no. 136, pp. 49–58.