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CIRCULAR LEARNING PROCESS FOR ENTREPRENEURIAL INNOVATION ECOSYSTEM

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Abstract
Introduction:
This research introduced a discussion with emergent modeling for systemic learning process using a case study based on the World Music School (WMS), an NGO (non-governmental organization) that has taught music and organized events around dance and music as an inclusive learning process and connectivity enhancer. This research is an extension to previously published research relating to the WMS. Previous study has made discussions around community resilience as key a contribution towards the social ecological system, extrapolating how community resilience was nurtured by systemic learning process during inter-organizational collaborations.

Problem:
This research contributed a synthesized framework that linked community resilience with circular ecosystem, emphasizing the analogy between the emerging characteristics of community resilience and the unique elements of a circular ecosystem. It tackled the research question of how circularity was enabled within an Entrepreneurial Innovation Ecosystem, fostering social sustainability.

Methodology:
The methodological approach of this research involves academic literature, fieldwork observation and in-depth discussion with multiple agents and stakeholders including community and research groups.

Results:
This research identified fundamental insights that have defined the resilience of a community to a paradigm shift: the transition from linear to circular production on social aspects of an entrepreneurial ecosystem. The framework being presented, has defined the different shock levels and mechanisms along the micro, meso and macro level of longitudinal impact regarding the three categories of community resilience, respectively initiatives, emerging qualities and longitudinal impact. Through the multi-level perspective framework, the community resilience insights can be extrapolated to the Entrepreneurial Innovation Ecosystem implementation. It contributed to minimizing the theoretical and empirical research gap regarding the social aspect of circular ecosystem, it exposed the unique nexus of the structured

entrepreneurial circular ecosystem and community resilience. The observation of this case study suggested that social sustainability can be achieved through the circularity of an Entrepreneurial Innovation Ecosystem.

Keywords: circular ecosystem, circular economy, community resilience, systemic design, learning process.

1 | Introduction

The current Circular Economy (CE hereafter) literature addresses mostly on micro-level issues, inquiring how firms face the implementation barriers, the long-term turn-over of eco-efficiency investments and circular business models risks. The circular ecosystem approach is gaining attention as means to achieve sustainability goals, reduce environmental degradation, and foster a more resilient and resource-efficient economy. However, there is a gap within the literature with regards to the social benefits of the CE, as well as the development of studies for behavioral drivers of circularity by systemic, longitudinally-influential bottom-up approaches, by saying longitudinal, this means the accumulation of changes over time that pass system threshold.

As an extension to previously published research (see Chen et al., 2022), which answered the question of "How can community resilience be nurtured by systemic learning process during inter-organizational collaborations?", this research raised the question of "How did a circular ecosystem enable circularity within an Entrepreneurial Innovation Ecosystem, fostering social sustainability?". It identified a synthesized model based on literature (Aarikka-Stenroos et al., 2021; Berkes & Ross, 2013; Konietzko et al., 2020; Trevisan et al., 2022) for the analogy between the emerging characteristics of community resilience and the unique elements of an entrepreneurial circular ecosystem.

This research proposed insights of a unique nexus where structured entrepreneurial circular ecosystem (Aarikka-Stenroos et al., 2021; Konietzko et al., 2020; Trevisan et al., 2022) are characterized by community resilience. Such community resilience was nurtured from hybrid learning-by-doing processes that combined technology and teaching in creative ways (Chen et al., 2022; Hall et al., 2012; Nousala & Marlowe, 2020). The observation of this case study suggested that social sustainability can be achieved through the circularity of an Entrepreneurial Innovation Ecosystem, as in this case study, the World Music School.

2 | Community resilience and circular ecosystem

2.1 | Community resilience

Our proximity to our environment and the links between human beings, seemed to suggest an emergent result, namely one of connection, but also disconnection (Folke, 2006; Wenger, 1998). However, what emergent combinations of these conditions are responsible? A targeted literature review on community resilience was carried out in previous study (Chen et al., 2022). Community resilience in the context of social ecological systems (Folke, 2006; Holling, 2001; Varela et al., 1974) were identified and then discussed, for the adaptation of an adopted, synthesized model (Berkes & Ross, 2013), modified for the analysis of the World Music School case study (World Music School Helsinki, 2017). Previously published research focused on possible acupuncture points of approach (instead of an immediate panacea) (Lastra & Pojani, 2018; Stokes et al., 2015) to the social disconnection, both theoretical and practical, by re-discovering the quality of the longer-term connectivity. This re-emphasized the significance of both explicit and tacit components within community resilience (Holling, 2001; Meadows, 2008; Salthe, 1985, 1993). The conditions of the learning processes were observed through both individual involvement and the group of community engagements (Holland, 1996; Varela et al., 1974).

2.2 | Bridging community resilience and the social aspects of circular economy

Currently available literature had well addressed the entrepreneurial level Circular Economy, extrapolating how CE enabled firms facing the implementation barriers, the long-term turn-over of eco-efficiency investments and circular business models risks. Geissdoerfer et al. (2017) proposed a framework that integrated the CE's principles, practices and enablers, highlighting the importance of innovation, collaboration and policy

intervention. Twelve operational principles were proposed for integrating the CE paradigm under the just and safe operating space narrative (Suarez-Eiroa et al., 2021), emphasizing the pervasive characteristic of circularity in a more sustainable paradigm of economy. When it came to the social aspects of CE, the call for action (both theoretically and practically) were becoming higher than ever (Bianchini et al., 2022; Carbonell-Alcocer et al., 2022; Clube & Tennant, 2023; Kaya et al., 2023; Mansilla-Obando et al., 2022; Mies et al., 2021; Schöggl et al., 2022).

Critique has been made about CE's reliance on technological solutions and its overlooking the complexities of social ecological systems, arguing that it may lead to rebound effects and unintended consequences (Korhonen et al., 2018). Current CE discourse is too focused on maintaining economic growth and lacks a critical social dimension. Within the environmental and economic dimension, whereas social aspects, such as labor practices, human rights or community well-being, have only been peripherally and sporadically integrated into the CE concept (Mies et al., 2021).

Therefore, the importance of integrating economic, environmental and social dimensions in the CE discourse has becoming prominent (Kirchherr et al., 2017). A framework including four dimensions (employment, education, health, and quality of life) was proposed to assess social indicators in a CE perspective, emphasizing the importance of considering social aspects (Bianchini et al., 2022). There is a gap within the literature with regards to the development of studies for social behavioral drivers of circularity by systemic bottom-up longitudinally-influential approaches.

Recent literatures have argued that CE and resilience are interrelated concepts. Massari et al. (2022) discussed the synergetic relationship between CE and resilience. CE has the potential to enhance resilience by reducing resource dependence, mitigating environmental risks, and fostering innovation (Kennedy & Linnenluecke, 2022). The linkage between Circular Economy and community resilience is critical, for CE has the potential to achieve a balanced interplay between environmental and economic systems (Ghisellini et al., 2016).

Social aspect of CE should prioritize human needs, equity and well-being, while still promoting resource efficiency and waste reduction (Clube & Tennant, 2023). Relevant research highlighted the importance of considering social aspects in the design and implementation of Circular Economy strategies, called for a shift towards more inclusive, participatory, and democratic approaches that empower individuals and communities to contribute to the transition. Relevant research and case studies also showed the role of education in promoting a sustainable future through the CE (Carbonell-Alcocer et al., 2022), focusing on the moderating role of NGOs as determinant factors of successful social entrepreneurship in the emerging CE, demonstrating that NGOs can play a crucial role in supporting social entrepreneurs by providing resources, capacity-building and networking opportunities, thus contributing to the development of a more inclusive and sustainable CE (Schöggl et al., 2022).

2.3 | From circular economy to circular ecosystem: the call for systemic thinking and circularity

Current Circular Economy literature addresses mostly micro-level issues inquiring how firms face the implementation barriers, the long-term turn-over of eco-efficiency investments and circular business models risks. Transitioning from a linear economy to a Circular Economy required product, business model and ecosystem innovation (Konietzko et al., 2020), CE required a systemic approach rather than looking at individual companies, by adopting an ecosystem perspective (Trevisan et al., 2022). Circularity is fundamental to CE (Al-Thani & Al-Ansari, 2021). To view circularity as a systemic property (Konietzko et al., 2020), this brought to the discussion of circular ecosystem, a term motivated by the need for more systemic innovation approaches for a Circular Economy, adding an ecosystem lens to existing circular product (Konietzko et al., 2020). A circular ecosystem is a unique phenomenon, it represents more than the junction between business ecosystem and Circular Economy (Trevisan et al., 2022).

Konietzko et al. (2020) raised three groups of principles for a systemic understanding of circular ecosystem: collaboration, experimentation and platformization. Based on theoretical domains from both areas of CE and business economy, this research adopted the definition of circular ecosystem as *"…a system of interdependent and heterogeneous actors that go beyond industrial boundaries and direct the collective efforts towards a circular value proposition, providing opportunities for economic and environmental sustainability* (Trevisan et al., 2022, p. 292)*".* A comprehensive theoretical framework (Trevisan et al., 2022) that synthesized the five main and unique elements of a circular ecosystem (1. Value, 2. Actors, 3. Data, Materials and flows, 4. Circular activities and strategies, and 5. Governance) was also adopted in this research, for the analogy between the emerging characteristics of community resilience and the unique elements of a circular ecosystem.

Though the environmental and economic aspects of circular ecosystem have been well discussed, the

social aspects of a circular ecosystem still deserved more attention. There is a lack of studies about the social sphere in the field of the CE (Parida et al., 2019). It is necessary to understand the social benefits of the CE, as well as the environmental and economic ones (Trevisan et al., 2022, p. 296). Tackling circular ecosystem and community resilience from a social ecological system perspective, this research aims at minimizing the theoretical and empirical research gap, choosing the WMS as an empirical study to explore how circular ecosystem enable circularity within an Entrepreneurial Innovation Ecosystem, thus fostering social sustainability.

2.4 | The entrepreneurial circular ecosystem

A taxonomy of circular ecosystem (Saidani et al., 2019) was proposed to better structure circular ecosystem by its various specifications. Based on a heuristic model (Aarikka-Stenroos et al., 2021) that disambiguated various types of CE ecosystems, the WMS circular ecosystem didn't just fit into one solely classification of the five proposed ecosystem typologies. The WMS could be approached as an Urban Ecosystem for its community services, as an amenity that benefited the community "glocally" (both locally and globally), while the fundamental learning-process that generated and shared knowledge indicated the WMS functioned as a Knowledge Ecosystem, its innovative venture creation and self-sustaining characters delivered certain sustainable values. Out of all five descriptions of ecosystems, an entrepreneurial perspective illustrated the WMS entrepreneurship in a relatively comprehensive way. The CE Entrepreneurial Ecosystem is, as defined by literature, *"a regional community of hierarchically independent, yet interdependent heterogeneous set of actors who facilitate the start-up and scale-up of entrepreneurial new ventures focused on sustainable business opportunities"*(Aarikka-Stenroos et al., 2021, p. 272) The key features of such ecosystem could be understood in following aspects, which will be further discussed:

- New business model
- Location specific
- Collective facilitation of start-up and scale-up entrepreneurial new ventures focused on sustainable business opportunities
- Educational and research institution
- Distributed among ecosystem actors
- New business models
- A system aims to develop and support new, more sustainable businesses in society

As an NGO, WMS produced systemic outcome that was not necessarily confined to economic values, the social sustainability value proposition indicated its hybrid ecosystem nature, therefore we identified the WMS as an Entrepreneurial Innovation Ecosystem, with emphasis on knowledge sharing and social innovation.

3 | Methodology

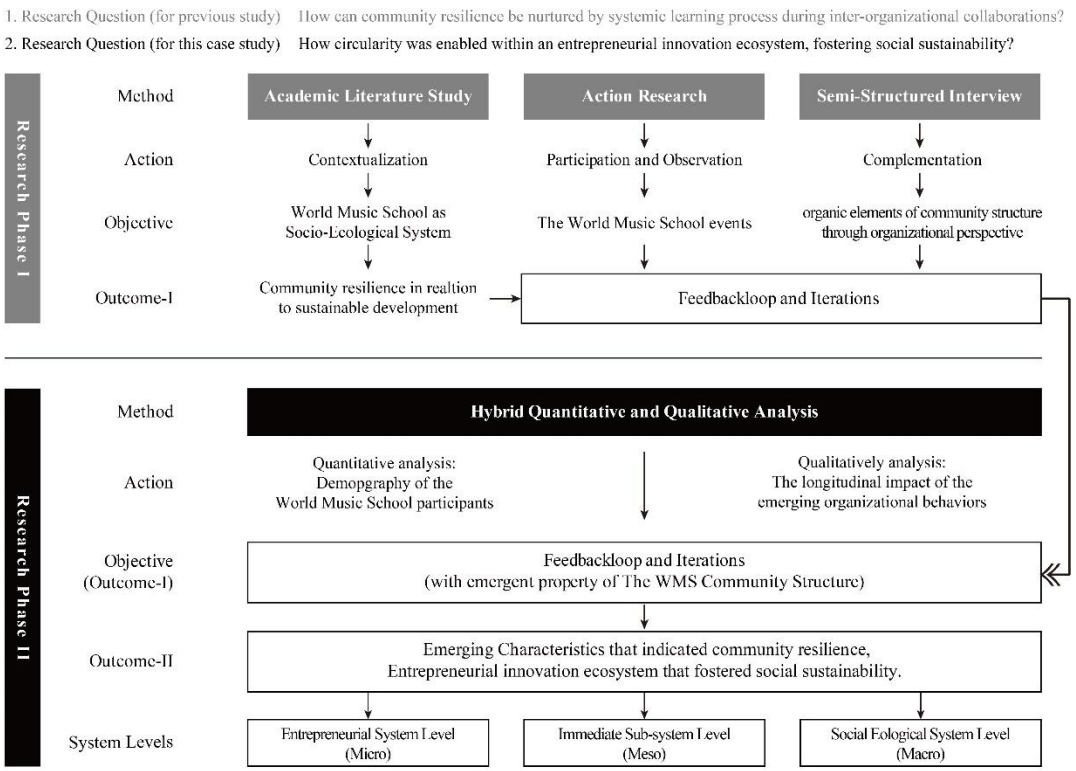
The methodology applied in this research is consequential to previous literature review, shifting from the contextualization to the narrowing down of the subject matter of this research. Previous observational discussions began with the reviewing of community disconnections as the gap being observed during communities' development. To better scope the investigation of the observation of this development, a biological perspective (McKelvey, 1997, 2002; Nousala & Hall, 2008; Salthe, 1985, 1993) was then introduced for a holistic understanding of the dynamics of this social ecological system, on which the functioning of community is fundamentally based (Walker & Salt, 2012). By reviewing the phenomena of disconnection informed by literature (Eisenberger, 2012; Holt-Lunstad et al., 2015; Kesebir & Kesebir, 2017; Walker & Salt, 2012) and how such phenomena are linked to the sustainable development of community, the focus of this study, community resilience is then introduced and clarified by three fundamental aspects proposed as firstly, what is meant by community resilience, secondly, why does community resilience matter and thirdly, to what a community is resilient to, which were all well discussed in previous study (Chen et al., 2022).

The engagement with the WMS enabled opportunity to observe organizational behavior through the lens of community resilience, this is when a crossover became prominent where structured entrepreneurial communities are characterized by hybrid learning-by-doing processes that combine technology and teaching in creative ways.

To tackle the research question of how circularity was enabled within an Entrepreneurial Innovation Ecosystem, fostering social sustainability, this study applied mixed methods in two phases: academic literature study, action research and semi-structured interview as Research Phase I; a hybrid quantitative and qualitative analysis as Research Phase II. See Exhibit 1 for details. In Research Phase I, apart from academic literature study as previously discussed, the authors carried out action research by participating in the WMS events since its organizational initiation. Observations through fieldwork in a period of time highlighted several emerging behaviors occurred during the organizational interaction, this directly contributed to a series of critical characteristics regarding the WMS communities, which then led to the emergence of the entrepreneurial community resilience. These characteristics complemented the organizational aspects of this case study, including a three-round semi-structured interview that was carried out with stakeholders of the WMS including communities and research groups, providing insights of the organic elements that constituent the WMS community structure from organizational management perspective. In Research Phase II, a hybrid quantitative and qualitative analysis was subsequently applied for the analysis of all the data collected: Demographic analysis of the WMS participants was quantitatively undertaken, whilst longitudinal impact of the emerging organizational behaviors and impact was qualitatively analyzed.

This phenomenological methodology approach looked at the emergent property of community structure to understand the qualitatively of what are the key elements that underpins repeatability of the observation during case study. The community acted and fulfilled the requirements to be considered as a CE Entrepreneurial Ecosystem. It allowed the observation of feedback loops and iterations which are critical to dynamic forces that led to resilient behaviors in the WMS community and its proximity as social ecological system.

Exhibit 1. Methodology: Two phases of methods applied in this research



4 | The case study of the World Music School

4.1 | Community Resilience in the WMS: A summary

Based on the feedback loops observed in the WMS activities, three key iterations were highlighted, see Exhibit 2. Due to these iterations, a series of critical characteristics regarding the WMS communities emerged, which led to the emergence of community resilience. These characteristics that indicated community resilience were summarized in three catagories (for detailed analysis see Chen et al., 2022)

Category 1: Initiatives

- values and beliefs;
- knowledge, skills and learning;
- a positive outlook;

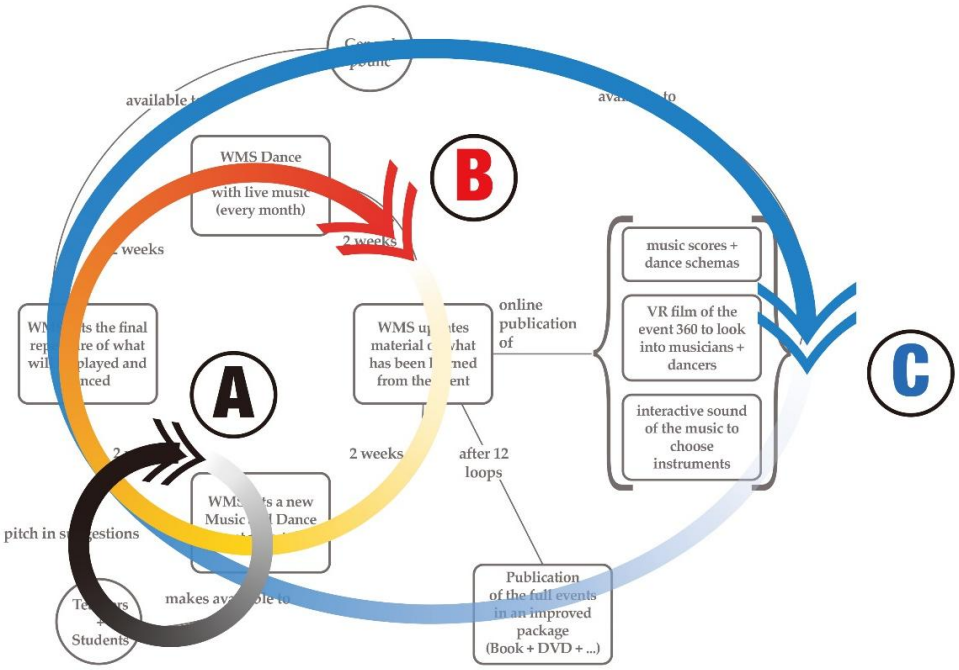
Category 2: Emerging Qualities

- people–place connections;
- social networks;
- empowerment;

Category 3: Longitudinal Impact

- polycentric governance;
- an entrepreneurial circular ecosystem;
- community infrastructure.

Exhibit 2. Three key iterations (A, B and C) occurred within the overall interactions in the WMS communities.



4.2 | The Entrepreneurial Innovation Ecosystem of the WMS

As an NGO, WMS produced systemic outcome that was not necessarily confined to economic values, the social sustainability value proposition indicated its hybrid ecosystem nature. Circularity is a defining trait of CE, *"…the 'end-users' or 'consumers' are given new "prosumer" roles…"* (Aarikka-Stenroos et al., 2021, p. 262; Zhong & Pearce, 2018). In the WMS the music and dance repertoire were taught in reciprocal way, all the participants (including local residence, students, musicians, dance teachers and general public)

were playing multiple roles. The matured dancers became the teacher of the immature. The circularity of the WMS community became prominent especially in an aging society where the elderly could be empowered in active ways, encouraging them in the participation of community development.

Based on a demographic research of the WMS commuynity (see Exhibit 3 & Exhibit 4), the positive outlook of the WMS community indicated the heterogeneity of the WMS community, the circular learning process and the people–place connections highlighted the interdependence within the community. Exhibit 5 presents a comprehensive picture of such Entrepreneurial Innovation Ecosystem, using frameworks adopted from the Circular Ecosystem typology research (Aarikka-Stenroos et al., 2021).

Exhibit 3. The proportion of local, diaspora or peripheral among the WMS Helsinki participants (World Music School Helsinki, 2017)

Description of data: Approximately one third of the participants are local and the reaming two thirds are from all over the world, this diagram shows the diversity of the participants' geographical background which contributes to the positive outlook of the WMS community.

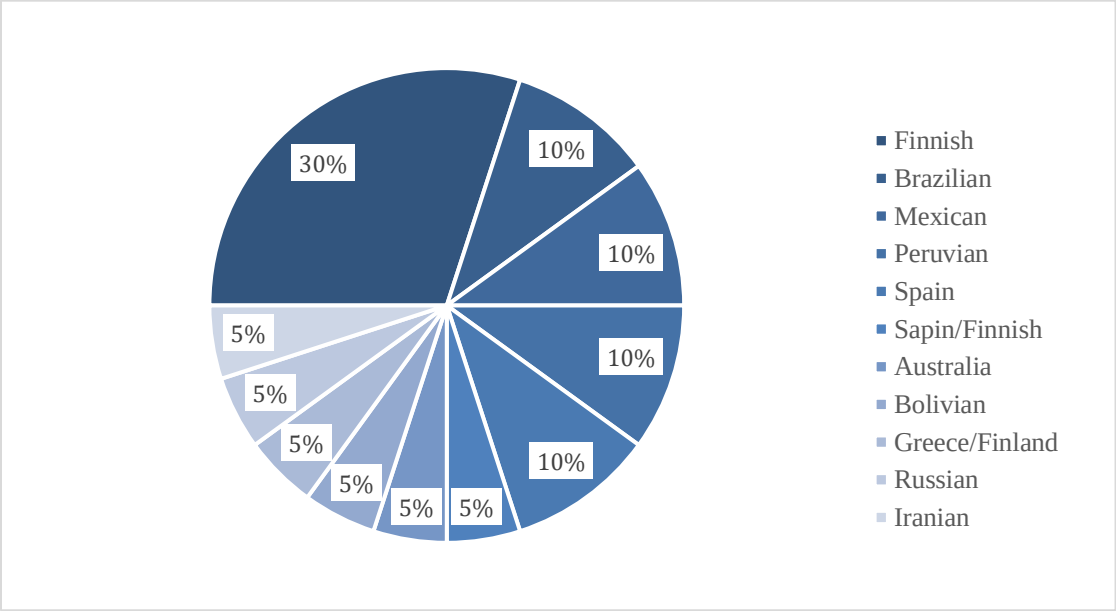
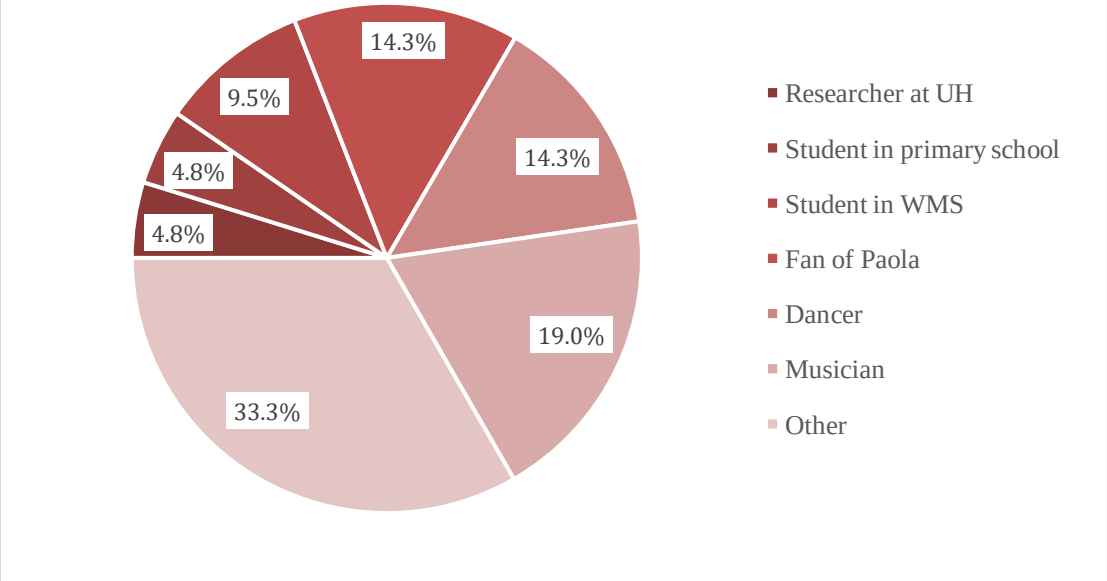


Exhibit 4. The various social identities among the WMS Helsinki participants (World Music School Helsinki, 2017)

Description of data: One third of the participants are professionals (Musicians and Dancers) and the rest

A typology overview of CE ecosystem: (Aarikka-Stenroos et al., 2021)		The WMS Entrepreneurial Innovation Ecosystem Characterized by Circular Learning Process
Ecosystem type	*Entrepreneurial ecosystem*	Entrepreneurial Innovation Ecosystem
Ecosystem outcome	*New business models*	Community Resilience, Social Sustainability



are consisted of various social identities, instead of the professionals, this diagram shows the modularity were obtained among the WMS community. This diagram shows the diversity of the participants which contributes to the positive outlook.

Exhibit 5. The WMS Entrepreneurial Innovation Ecosystem Characterized by Circular Learning Process

4.3 | From the WMS Community Resilience to the Entrepreneurial Innovation Ecosystems

Such Entrepreneurial Innovation Ecosystem is one of the longitudinal impacts of the WMS communities through hybrid learning-by-doing processes that combined technology and teaching in creative ways. Following such circular ecosystem were the polycentric governance and community infrastructure where the WMS communities were based in. Such longitudinal impact were the results of the accumulation of changes over time that pass system threshold. To exposed the unique nexus of the structured entrepreneurial circular ecosystem and community resilience, an analogy between the emerging characteristics of community resilience and the unique elements of such circular ecosystem was analyzed as followed (See Exhibit 6). The following analysis adopted previously published circular ecosystem theoretical framework (Trevisan et al., 2022), with a set of circular ecosystem innovation principles (Konietzko et al., 2020) as mindset.

Exhibit 6. The analogy between the emerging characteristics of the WMS community resilience and the elements of a circular ecosystem.

(1) Value:

The three key iterations of the WMS community interactions (see Fig. 2) suggested that the value proposition of the WMS was fundamentally circular. The "shared values and beliefs" (as in Category 1: Initiatives) of the WMS communities guaranteed the continuous loop of various values (feedback loops of value in the WMS). Circularity is the distinguishing feature of value proposition in a circular ecosystem (Trevisan et al., 2022). Our research showed that during the WMS community interactions, social sustainability was fostered through the establishment of systemic goals (Konietzko et al., 2020) and co-create collaborative value (Aminoff et al., 2017) during the WMS community interactions. These social sustainability aligned with the Sustainable Development Goal (United Nations, 2015) particularly on "SGD 10: Reduced Inequalities" and "SGD 11: Sustainabile Cities and Communities".

(2) Actors

In a circular ecosystem, actors play significant roles in pursuing collective value towards circular efforts. (Konietzko et al., 2020; Trevisan et al., 2022). The heterogeneity here was indicated by the participants (see Exhibit 3 & Exhibit 4). The shared value & belief made it easier for the alignment of interests from multiple stakeholder. The WMS platform (both physical and virtual) played the role as the orchestrator of the Entrepreneurial Innovation Ecosystem. Through systemic learning process that empowered all the participants, the WMS communities as a collective actor moved toward a targeted goal first on individual well-being and then on the sustainability of the whole community.

(3) Data, materials, and flows

Shared knowledge, skills & learning were the unique resources that kept feeding the WMS communities. As an NGO, the WMS reframed its resources and the way they were distributed. Through collective action (systemic learning process) that integrated multiple cultural elements (synchronicity activities), the synergistic outcome being community resilience as social capital that in return reinforced the social structure of the WMS community.

(4) Circular activities and strategies.

Apart from the economic and environmental aspects that guided most of the circular activities in circular ecosystems, the sustainable goal of the WMS was fundamentally socially oriented. Though the economic outcome of the WMS might seem insignificant compared to that of the industrial entities, the WMS community resilience as social capital shall not be overlooked especially in a post-pandemic Anthropocene where humanistic values were often override by the ever demanding need of infinite growth. Such *dis-ease* would take a toll on the surrounding society, including the health care system, the lack of quality in the connections of the disconnected individual (Eisenberger, 2012).

Circular Ecosystem Theoretical Framework (Trevisan et al., 2022)		Community Resilience Nurtured by The WMS Communities
Main Element	Description	Emerging Characteristics
1. value	● *circular value proposition*	● socially oriented towards sustainability
	● *value co-creation*	● synchronicity activity
	● *collective value capture*	● shared value & belief
	● *multiple circles of value*	● feedback loops of values
2. actors	● *heterogeneity and interdependency*	● a diverse outlook with diaspora
	● *alignment of interests*	● shared value & belief
	● *role, responsibility, reliability & orchestrator*	● empowerment & social networks
3. data, materials and flows	● *reframe and rethink how resources are used*	● shared knowledge, skills & learning
	● *synergies of materials and data*	● synchronicity activity
	● *resource (tangible & intangible) sharing*	● systemic learning process
4. circular activities and strategies	● *environmentally oriented towards sustainability*	● socially oriented towards sustainability
	● *economic and environmental gains*	● social capital as social gains
5. governance	● *equal and non-hierarchical governance*	● innovative governance
	● *relative autonomy*	● a 'biological' social ecological system

(5) Governance

"Governance has unique nuances in circular ecosystems" (Trevisan et al., 2022, p. 294). Circular ecosystem is characterized by greater independence and hierarchical flexibility among actors, this implies that these actors have relative autonomy in their decision-making (de Langen et al., 2020; Trevisan et al., 2022). The WMS activities were bottom-up learning process, it emphasized significantly on the decentralized way of knowledge sharing and producing, this fitted into to the notion of '*…being treated equally without a hierarchical division of powe*r' (Trevisan et al., 2022, p. 294). Similar autonomic behaviours were also observed among the WMS communities, so were the non-hierarchical pattern in the management of the WMS as an NGO. Therefore the entrepreneurial circular ecosystems of the WMS was indeed a *'co-evolving, dynamic and potentially self-organizing configuration'* (Vargo et al., 2011, p. 185).

4.4 | Longitudinal Impact of the WMS Entrepreneurial Innovation Ecosystem

The concept of community resilience as an acupunctural remedy for the acute weakness in community towards shocks and disturbances, is where the WMS communities reaches maturity: A stage, where functioning as an incubator that nurtures community resilience to its fullest, can trigger the adaptability for system to remain in the threshold, or transformability that leads to system change (Chen et al., 2022). The investigation of the inter-organizational collaborations was embedded in a multi-level perspective framework, as shown in Exhibit 7. Herein, we have identified fundamental insights that have defined the resilience of a community to a paradigm shift: the transition from linear to circular production on social aspects of an entrepreneurial ecosystem.

The framework being presented, has defined the different shock levels and mechanisms along the micro, meso and macro level of longitudinal impact regarding the three categories of entrepreneurial community resilience (initiatives, emerging qualities and longitudinal impact). Through the multi-level perspective framework, the community resilience insights can be extrapolated to the Entrepreneurial Innovation Ecosystem implementation.

A. Longitudinal impact (micro):

The first category on the entrepreneurial level, includes aspects of values, knowledge, and outlook. It is a predominant outcome thanks to the social engagement and connectivity activated by the WMS communities. These initiatives laid the very foundation of the WMS communities as a community of practice, defining the WMS communities for what they are.

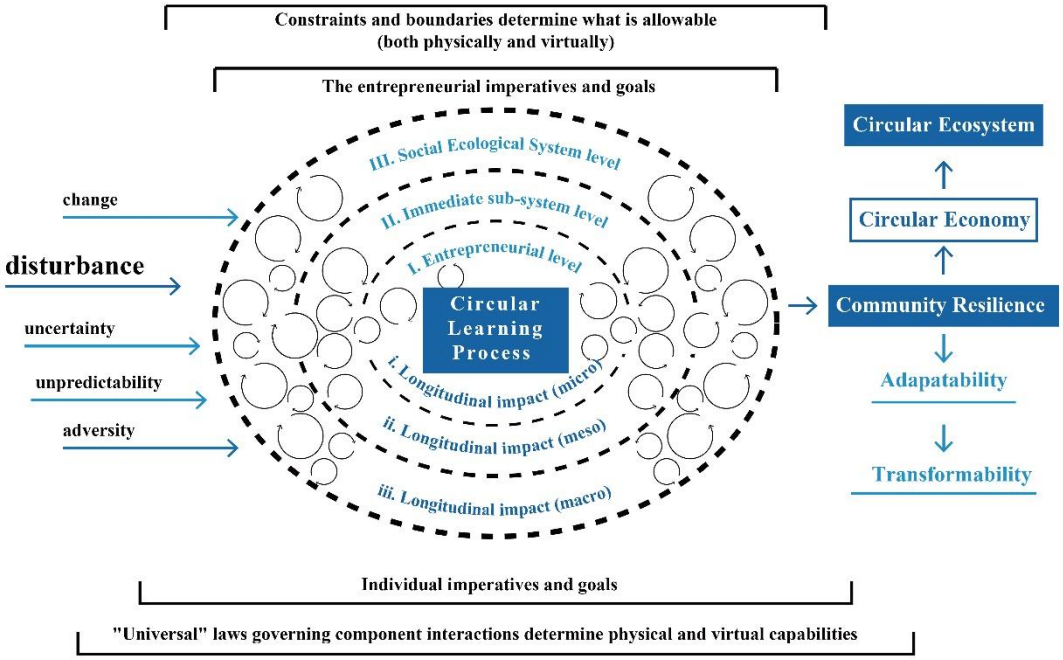
B. Longitudinal impact (meso):

The second category on the immediate sub-system level, includes aspects of connections, networks, and empowerment. It enhances community resilience on strategic level to tackle the issue of disconnection. These qualities emerged from rounds of iterations that occurred in the WMS communities. Such emerging qualities influence the immediate social ecological environment around the WMS communities.

C. Longitudinal impact (macro):

The third category on the social ecological system level, includes aspects of innovative governance, circular ecosystems and community infrastructure. It identifies influence on the WMS communities through social ecological subsystem within its overall system. Such an impact significantly empowered the system dynamics within the WMS communities, with all aforementioned emerging qualities of community resilience.

Exhibit 7. Emerging characteristics nurtured by the WMS communities through the Circular Learning Process that indicate resilience, forging an Entrepreneurial Innovation Ecosystem that indicates social sustainability (Adapted from Nousala & Hall (2008))



Through bottom-up approaches, system change can happen when the micro, meso and macro levels can fundamentally sustain changes that are longitudinal. By saying longitudinal, this means the accumulation of changes over time that pass system threshold. When the focal point shifts from the WMS communities as subsystems level to the overall social ecological systems level, circular ecosystems, innovative governance and community infrastructure become more of a constant. This is due in no small way of longitudinal impacts of higher-level system dynamics, where community resilience has a fundamental role to play (Nousala & Marlowe, 2020).

5 | Conclusions

Based on feedback loops and observation, a series of critical characteristics regarding the WMS communities emerged, which led to the emergence of the WMS community resilience. Approaching the WMS case study as an analogy of social ecological systems, this research exposed the unique nexus of the structured entrepreneurial circular ecosystem and community resilience.

This research adopted the CE Entrepreneurial Ecosystem perspective from the Circular Ecosystem typology (Aarikka-Stenroos et al., 2021). This research presented a comprehensive picture of such Entrepreneurial Innovation Ecosystem characterized by the Circular Learning Process. A comprehensive theoretical framework (Trevisan et al., 2022) that synthesized five main and unique elements of a circular ecosystem was adopted for the analogy between the emerging characteristics of community resilience and the unique elements of a circular ecosystem, to tackled the research question of How did a circular ecosystem enable circularity within an Entrepreneurial Innovation Ecosystem, fostering social sustainability? Such analogy bridged the WMS community resilience with the entrepreneurial circular ecosystems, fundamental insights were unfolded through five key elements of a circular ecosystem (1. Value, 2. Actors, 3. Data, Materials and flows, 4. Circular activities and strategies, and 5. Governance). The observation of this case study suggested that social sustainability can be achieved through the circularity of an Entrepreneurial Innovation Ecosystem, as in this case study, the World Music School. As of the date of this study, the World Music School had expanded to Portugal and Spain, this is where the synthesized model proposed by this research could have practical implications.

Traditionally, "top-down" approaches adopted by many learning organizations have been unable or unwilling to utilize the "bottom-up", more general systemic approach which makes the process overly reliant on governance processes (Hall et al., 2012; Nousala et al., 2009). The complexities of overlapping approaches and disciplines within top-down learning organizations need to be aware of the silos that can form because of the difficulties of horizontal communications between varies groups or individuals. Bottom-up approaches have traditionally suffered due to being viewed as non-empirical, yet these approaches are possible to track and rigorously go through longitudinal means (Nousala & Marlowe, 2020). This is also why the systemic general aspects applied within the WMS approach have gained understanding over time, through longitudinal observation and experience which has in turn been shared through cycles and feedback loops between various actors. Longitudinal approaches also provide valuable understanding via data and long-term observations and field experiences (Aguirre et al., 1998; Tosey, 2006).

In the context of recent extensive emigration across the world, and while facing the post pandemic crisis, the topic of human connectivity is more than ever, a subject of importance. Restriction on movement, involuntary or otherwise has produced a range of outcomes that may significantly impact human well-beings for some time to come. This study has aimed at exposing various elements of connectivity within systems and sub-systems that can be redeveloped and created under specific conditions. The development of connectivity enhances structures such as the WMS communities. These are interesting phenomena to pursue as a set of characteristics to increase the entrepreneurial community resilience of its close environment and subsequently society, and ultimately fostering Circular Ecosystem in innovative ways, reaching socially oriented sustainable goals (United Nations, 2015). The social implications of this research contribute directly to understanding the emergent systems of entrepreneurial communities and entrepreneurial circular ecosystems.

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