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**DIT 803: RESEARCH REPORT**

# **NUDGE FOR GOOD**

**Bridging Choice Architecture and Co-creation for Inclusive Design**

*In the context of co-creation, how does the assessment of fundamental needs for creativity and participation in Melusi support the argument for choice architecture in design?*

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## DECLARATION OF ORIGINALITY

I declare that the mini-dissertation, *In the context of co-creation, how does the assessment of fundamental needs for creativity and participation in Melusi support the argument for choice architecture in design?*, which has been submitted in fulfilment of part of the requirements for the module of DIT 803, at the University of Pretoria, is my own work and has not previously been submitted by me for any degree at the University of Pretoria or any other tertiary institution.

I declare that I obtained the applicable research ethics approval in order to conduct the research that has been described in this dissertation.

I declare that I have observed the ethical standards required in terms of the University of Pretoria's ethics code for researchers and have followed the policy guidelines for responsible research.

Signature:

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke at the end.

Date: 25 June 2024



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## Abstract

The intersection of choice architecture and fundamental needs for creativity and participation in marginalised communities offers a distinctive avenue for advocating co-creation in design within the emerging field of Public Interest Design (PID). However, there remains a gap in understanding how this assessment can effectively support the argument for co-creation to address context-specific challenges in informal settlements.

This study explored how assessing and evaluating fundamental needs for creativity and participation bolstered advocacy for co-creation to address socio-economic challenges in the informal settlement of Melusi, South Africa. By aligning with choice architecture taxonomies, the objective was to guide future design interventions towards impactful and effective outcomes to nudge towards positive human behavioural changes.

This research adopted a mixed-methods approach within the pragmatic paradigm, primarily focusing on qualitative research methods to comprehend human behaviour. Narrative inquiry and action research were utilised for data collection, which included gameplay during fieldwork, focus groups, semi-structured informal interviews, and questionnaires. Employing a non-singular reality perspective and value-laden axiology, the analysis followed an inductive approach. Various tools and instruments, such as *Miro*<sup>™</sup>, *Zotero*<sup>™</sup>, and *ATLAS.ti*<sup>™</sup>, were employed for literature review, data capture, and analysis.

The findings demonstrated a holistic approach intertwining theoretical frameworks with practical community engagement, effectively addressing the complex dynamics of Melusi. The study emphasised the importance of sustainable, community-driven development by integrating principles from PID and Manfred Max-Neef's (1991) Human Scale Development (HSD) matrix with choice architecture concepts. These outcomes contributed to the discourse on development within marginalised communities.

This research underscored the significance of holistic approaches in addressing issues within informal settlements, using Melusi as a salient case study. It highlighted the interconnectedness of PID, HSD, and choice architecture, stressing the need for inclusive and collaborative design interventions. Recommending the empowerment of community members as active participants in the design process emerged as crucial, highlighting the potential to bridge the gap between impeded needs and utopian aspirations, which effectively captured the essence of how inclusive and participatory design (PD) can address both immediate challenges and long-term goals. This highlighted the importance of community engagement in creating sustainable and contextually relevant solutions. These findings have implications for design practitioners, policymakers, and community stakeholders, advocating for collaborative strategies to address socio-economic challenges and advance professional practice in PID.

**Keywords:** *Public Interest Design, Human Scale Development, Choice Architecture, community engagement, co-creation, Participatory Design, informal settlements, participation and creativity.*

## 1 Introduction and background

Following the promises of radical political transformation heralded by South Africa's democratic elections in 1994, the lingering socio-spatial ramifications of a segregated urban landscape persist, casting a shadow over the nation's progress (Ballard 2021). Architects aiming to confront these challenges often find themselves sidelined within broader architectural discourse, despite a growing global recognition of the imperative for social engagement and agency in design (Awan, Schneider, and Till 2011). South Africa's architectural scene remains entangled in these enduring legacies.

Despite the growing recognition of the importance of social engagement in design, there is limited understanding of how choice architecture principles can be effectively integrated with community-driven design practices in marginalised communities such as Melusi, an informal settlement in South Africa. This study will address this gap in knowledge by providing a comprehensive analysis of how assessing and integrating fundamental needs for creativity and participation can enhance co-creation in design, specifically within the context of Melusi. By aligning these needs with choice architecture taxonomies, the research offers a structured approach to guide design interventions toward more impactful and effective outcomes.

Through utilising a mixed-methods approach combining qualitative research methods such as narrative inquiry and action research, the study delves into the lived experiences and aspirations of Melusi's residents. This in-depth exploration uncovers the complexities of the community's everyday realities and aims to highlight the potential for design interventions to address their fundamental needs.

By integrating theoretical frameworks from Public Interest Design (PID) and Human Scale Development (HSD) with choice architecture concepts, this report illustrates a holistic approach that emphasises sustainable and community-driven development. This approach addresses the socio-economic challenges faced by the community. Further, it promotes social justice, equity, and resilience. Additionally, the report investigates the role of technology in facilitating co-creation and participation, providing insights into how digital tools can enhance community engagement in the design process.

Ultimately, this research intends to bridge the gap in knowledge by delving into a detailed and actionable framework for integrating choice architecture with community-driven design practices. It will demonstrate how this integration can lead to more inclusive and sustainable urban development. This will be done through an exploration into the macro-level challenges that underpin South Africa's socio-economic disparities, historical injustices, and urban development policies, all of which continue to perpetuate inequality. These overarching issues intersect with meso-level concerns, including power dynamics, community engagement, and institutional barriers, collectively shaping the context within which architectural interventions operate.

Delving deeper into the micro level, this study scrutinises the lived experiences, aspirations, and needs of residents in the informal settlement of Melusi. By highlighting the intricacies of their everyday realities, it seeks to unveil the potential for design interventions to appropriately address the resident community's fundamental needs, offering insights into pathways for transformative change within the urban fabric through the utilisation of choice architecture.



Figure 01: Urban Citizen Studio Logo  
(Unit for Urban Citizenship 2024)

## 1.II Context of research:

The Unit of Urban Citizenship (UUC), situated within the Architecture Department of the University of Pretoria (UP), aims to advance the exploration of civil engagement and participatory development in the dynamic African urban context (Zorn 2021: 57). Moreover, the UUC endeavours to conduct transdisciplinary research on urban citizenship, promote community engagement, and enhance social impact through evidence-based initiatives aligned with the UN Sustainable Development Goals (<https://www.up.ac.za/architecture/article/2933010/unit-for-urban-citizenship->).

## 1.III Background on Urban Informality and Melusi:

An overview of urban informality highlights the complex nature of informal settlements in Southern African cities. These settlements emerge as responses to exclusionary formal systems, providing housing solutions for migrants and displaced individuals (de Vos, Farha, de Beer & Banda 2019: 7). They represent spontaneous urbanisation that challenges the notion of systematic replacement with formalised conditions (Hugo 2021:1). Despite their unplanned and unstructured appearance, these spaces are intricate and organised, involving both formal and informal processes (Dovey 2015, as cited in Hugo, 2021:2). Urban informality is defined by what it lacks in terms of formality, planning, taxation, and regulation, rather than what it entails (Durand-Lasserve 2003, as cited in Huchzermeyer 2011: 70). This complexity raises questions about the feasibility of authentic co-production and the methods needed to achieve it (Zorn 2021: 65).

*African cities are characterised by incessantly flexible, mobile, and provisional intersections of residents that operate without clearly delineated notions of how the city is to be inhabited and used (Simone 2004: 407).*

### Post-Apartheid Era

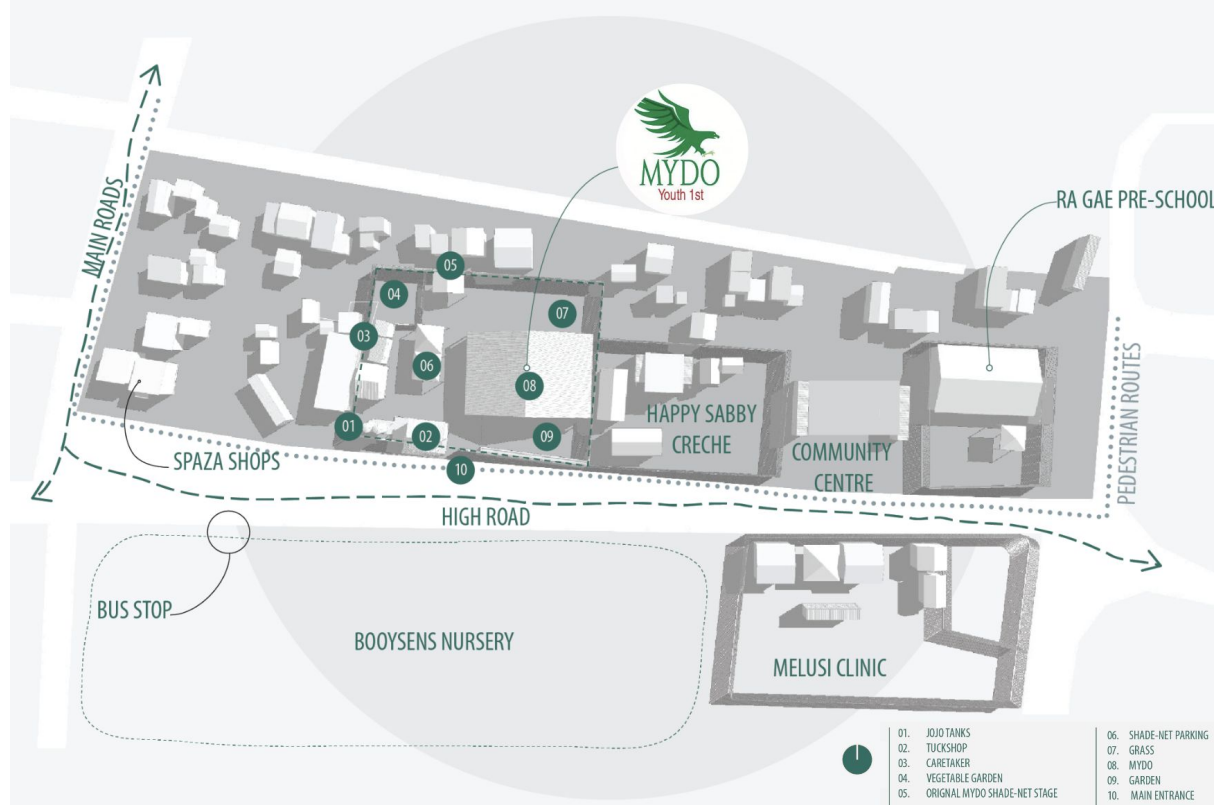
The democratic elections in 1994 marked the end of apartheid and promised radical political transformation (Ballard 2021). However, the socio-spatial legacies of a segregated urban landscape persisted, adversely affecting the population (Charman, Petersen & Govender 2020; Kotze 203; Simone 2004). In the wake of these changes, Melusi emerged as a response to the continuing exclusion from formal housing markets and urban opportunities.



Map 01: Locality map depicting 3 sections of Melusi, Pretoria West (Unit for Urban Citizenship 2024; edited by Author 2024)



The socio-economic challenges in Melusi are significant. High unemployment rates, especially among the youth, and limited access to education and health services perpetuate cycles of poverty. The informal nature of the settlement exacerbates these issues, as residents often lack legal tenure and access to basic municipal services such as water, sanitation, and electricity (Combrinck 2024). Consequently, the high population density and limited resources expose residents to adverse social, economic, and environmental conditions (Dovey 2015).



**Map 02:** Site activities on the high street of Melusi, designated as Melusi Youth Development Organisation (MYDO) and Early Childhood Development (ECD) centres on the map (Unit for Urban Citizenship 2023; edited by Author 2024)

## Melusi Youth Development Organisation (MYDO)

The Melusi Youth Development Organisation (MYDO), founded by Hlakudi Malatji in 2015, and registered as a non-profit organisation, with registration number 152-983 NPO, is a beacon of hope for the youth of the Melusi informal settlement in Booyens, Pretoria (Malatji 2024a). Recognising the myriad challenges facing young people in impoverished communities, MYDO aims to transform their lives through comprehensive education support and personal development. The organisation provides a nurturing and inclusive environment, promoting emotional, intellectual, physical, mental, and social growth. Through strong partnerships with local schools, clinics, the South African Police Service, the University of Pretoria, and various community-based organisations, MYDO fosters pro-social relationships, strong interpersonal skills, and a renewed sense of hope for the future.

The organisation runs four key programs:

- Education Programme (including after-school care),
- Feeding Scheme Programme,
- Sport and Art Programme,
- Youth Empowerment and Entrepreneurship Programme (YEPP)



**Figure 03:** Aerial footage of Melusi Youth Development Organisation (Malusi Youth Development Organisation 2023)

These programs impacted over 861 beneficiaries in 2023. Collaborations with UP students and various partners have enabled the creation of vegetable gardens, shade structures, and numerous workshops, further enriching the community. Through these efforts, MYDO has significantly improved school results, reduced local unemployment, and facilitated the establishment of Small, Medium, and Micro Enterprises (SMMEs) by the youth, cementing its role as a vital community hub (Malatji 2024a).



**Figure 04:** Images taken at MYDO community centre in Melusi, including their community garden project (left), signage and advertising at their entrance (middle) (Author 2024) and after-school lessons in session inside MYDO (right) (Malusi Youth Development Organisation 2023)

## Growth and Development

The settlement's growth and development reflect broader trends of rapid urbanisation and socio-economic challenges faced by many informal settlements in South Africa. This informal settlement exemplifies the fluid and adaptable coexistence within African urban settings, where residents forge bonds through transient interactions, contributing to temporary environments (Simone 2004: 426). However, the amalgamation of skills, desires, and vulnerabilities of city living often creates a harsh environment marked by pervasive risks (Dovey 2015). Despite minimal engagement in formal collaborative efforts, residents' basic existence carries a certain redemption. Their unique blend of identity, location, goals, and livelihoods propels an unpredictable momentum, whether locally confined or spanning great distances (Simone 2004).

Furthermore, Melusi epitomises township challenges: spatial constraints, mono-functionality, economic disparities, control and power dynamics, land use rights, access to finance, and social complexities (Charman *et al.* 2020; Simone 2004). Although informal settlements may appear unplanned and unstructured, it is essential to acknowledge our limited understanding of these spaces (Dovey 2015).

#### 1.IV Research Question:

In the context of co-creation, how does the assessment of fundamental needs for creativity and participation in Melusi support the argument for choice architecture in design?

#### 1.V Research Aims:

1. To identify and assess the fundamental needs for creativity and participation among the residents of Melusi using Max-Neef's HSD model (1991).
2. To align these needs with choice architecture principles to facilitate effective co-creation in design.
3. To provide actionable recommendations for designers on positioning themselves as facilitators of community-driven development, fostering participation and creativity.
4. To examine the potential of participatory and co-creative approaches to harness the collective knowledge and creativity of the Melusi community, addressing both immediate and long-term challenges.
5. To investigate the role of digital tools and technology in enhancing community engagement and participation in an informal settlement.

#### 1.VI Research Objective:

The primary objective of the study is to collaborate with the UUC in the second phase of the 3-year NRF/SAASTA funded study *Co-creating Wellness and Human Dignity Research Project* to ensure the research is grounded in community engagement. The researcher will identify and unpack the fundamental needs for creativity and participation among residents of Melusi, using Max-Neef's (1991) HSD matrix. These needs will be aligned with choice architecture to explore how to better facilitate co-creation in design in an informal context as well as to provide actionable insights for the UUC to co-develop a *Community Action Plan (CAP)* next year (Combrinck 2024).



**Figure 05:** National Research Foundation (NRF) and South African Agency for Science and Technology Advancement (SAASTA) (Unit for Urban Citizenship 2024)

## 2 Literature review / Theoretical framework

### 2.1 Introduction

*In reality, architecture has become too important to be left to architects (de Carlo 1971: 13).*

South Africa's socio-political landscape bears the enduring imprints of historical injustice, which have profoundly shaped the urban fabric of the nation. The legacy of apartheid continues to manifest in the form of informal settlements, such as Melusi, where residents grapple with multifaceted challenges including housing insecurity, inadequate sanitation, and limited access to essential services (Ballard 2021).

In response to these pressing issues, scholars and practitioners have turned to theoretical frameworks such as Human Scale Development (HSD), pioneered by Max-Neef (1991), and designers have witnessed the emergence of Public Interest Design (PID). HSD underscores the imperative of meeting fundamental human needs within sustainable frameworks, while PID advocates for community-centric, participatory approaches to architectural interventions (Anderson 2014).

Understanding the everyday needs and lived experience of residents in settlements, such as Melusi, is pivotal for crafting effective interventions that ameliorate their quality of life. Through the lenses of HSD and PID, designers and policymakers can delve deep into these needs, fostering inclusive, participatory interventions that directly address residents' fundamental needs.

This review aims to explore the intersection of Melusi's HSD needs within the context of PID, with a specific focus on the role of choice architecture in fostering creativity and participation. By examining this intersection, the review seeks to uncover the complexities and nuances inherent in design interventions within informal settlements. Through an extensive exploration of theoretical frameworks and empirical studies, this review endeavours to delineate the challenges, opportunities, and implications of addressing these needs through participatory design approaches.

### 2.11 Public Interest Design and Its Relevance to Melusi

Public Interest Design (PID) emerges as a dynamic approach to design, deeply rooted in principles of social justice and empowerment. Originating from Henri Lefebvre's (1991; 1996) concept of the *Right to the City* and *Production of Space*, PID advocates for the collective agency of urban dwellers in shaping their environments. By championing bottom-up, participatory methodologies, PID seeks to address socio-economic and environmental challenges through collaborative design processes.

Kim's research, as referenced by Karim (2018), outlines a taxonomy comprising nine PID models, guiding research and practical application within the domain of engaged architecture. Key emphases include participatory decision-making, co-design, and interdisciplinary collaboration, highlighting the nexus between architecture and society.

Moreover, Karim (2018) stresses the significance of community engagement as a foundational element of PID, contributing to the narrative of design aimed at serving the public good. Anderson (2014: 3) through his introduction of PID as a praxis, purportedly transforms the role of architectural agency. By actively involving diverse stakeholders and disciplines in the design process, architects can address socio-political concerns such as poverty, inequity, and homelessness (Awan *et al.* 2011).

Furthermore, effective PID necessitates a departure from conventional design methodologies, requiring greater awareness of the importance of social engagement and agency in design. Awan, Schneider, and Till (2011) present a compelling challenge to the traditional scope of architecture, which typically centres around building design and mere aesthetics. Instead, they argue for exploring alternative architectural solutions that prioritise social engagement and agency.

Consequently, PID challenges conventional design paradigms by foregrounding social processes over formal design outcomes. Marschall (1998: 106) aptly notes, *it is more the process that changes people's lives than the buildings themselves*. By redirecting attention from the outcome to the process, PID expands the range of architectural projects architects can participate in, encompassing engagement frameworks, decision-making structures, infrastructure, and policies (Kotze 2023: 34).

Some critics argue against architects prioritising political and economic concerns over social issues (Kotze 2023: 34). In response to this, Kim (2018) introduces the concept of the *Architect-Facilitator* in his taxonomy. Rather than merely solving problems, these architects serve as cultivators of collaboration and curators in the design process. They assume a range of responsibilities, encompassing not only the role of the designer but also those of negotiator, arbitrator, motivator, organiser, delegator, and facilitator (Ballinger & Silva 2020: 89).

Overall, the various taxonomies, tools, and frameworks developed illustrate the multifaceted nature of PID, offering valuable insights into diverse approaches and underscoring its potential to address complex socio-economic challenges (Abendroth & Bell 2019; Anderson 2014; Ferdous & Bell 2021). Leveraging an asset-based approach, PID endeavours to cultivate local capacities and promote self-reliance, transcending traditional notions of architectural practice. This acknowledges that a one-size-fits-all approach is insufficient; instead, it advocates for a plethora of opportunities for meaningful engagement (Feldman, Palleroni, Perkes, & Bell 2013: 83 - 86).

In South Africa, PID is deeply intertwined with the country's history of apartheid and ongoing socio-economic disparities. PID endeavours to address these legacies by promoting social justice, equitable development, and sustainable urbanism. Collaborative efforts between architects, community organisations, and government agencies, underscore PID's role in fostering inclusive, resilient communities (Karim 2018). However, it is crucial to ensure power is shared among all participants (Kotze 2023: 8). By critiquing entrenched power structures and neoliberal influences, PID seeks to empower communities to assert their rights in the built environment (Ballinger & Silva 2016: 86).

Combrinck (2017a: 43) argues that our discipline has the choice to either align with or resist socio-political power dynamics. By unravelling biased perspectives and discourse related to informal settlement upgrades, architects and urban planners can begin to engage more meaningfully with informal urbanism. Furthermore, in the intricate landscape of Melusi's context, PID provides a transformative framework for tackling deep-rooted socio-economic challenges and promoting sustainable, fair development.

Despite its transformative potential, implementing PID in contexts such as Melusi poses significant challenges. Community resistance, financial constraints, and power dynamics often impede the realisation of PID principles (Marschall 1998; Zorn 2021). Challenges persist in bridging the gap between community aspirations and architectural representations, underscoring the importance of inclusive design practices (Ballinger & Silva 2016: 87). Tailored strategies emphasising engagement and local collaboration are imperative in overcoming these barriers and advancing inclusive design practices (Marschall 1998).

### 2.III Understanding Max Neef's Human Scale Development Needs

Human Scale Development (HSD) embodies a holistic approach to development and needs assessment, centred on fulfilling fundamental human needs while ensuring sustainability by integrating social, environmental, and cultural dimensions (Max-Neef 1991). At its core lies the HSD matrix, advocating for a shift from economic indicators to human well-being as the cornerstone of development. Manfred Max-Neef (1991: 16) succinctly states that *development is about people and not about objects*.



Axiological	Existential	Being	Having	Doing	Interacting
	Subsistence	Physical & Mental Health, Adaptability, Humor	Food Shelter and Work	Feed, Procreate, Rest, Work	Living Environment, Social Setting
Protection	Care, Adaptability, Autonomy, Solidarity	Insurance, Savings, Social Security, Health Systems	Cooperate, Prevent, Plan, Take care, Cure	Living Space, Social Environment	
Affection	Self Esteem, Solidarity, Respect	Friendships, Family, Relationships with Nature,	Lovemaking, Caress, Express emotion, Share	Privacy, Intimacy, Space of togetherness	
Understanding	Conscience, Curiosity, Intuition, Discipline	Literature, Educational Policy, Teachers	Investigation, Experimentation	Schools, Academies, Universities,	
Participation	Dedication, Respect, Passion, Determination	Rights, Responsibilities, Duties, Work	Affiliations, Opiniate, Propose Ideas	Settings for Interaction, Communities, Churches	
Idleness	Imagination, Tranquility, Sensuality	Games, Spectacles, Clubs, Peace of mind	Daydreaming, Recollection, Relaxation	Spaces of closeness, Free time, Landscapes	
Creation	Intuition, Rationality, Curiosity, Inventiveness	Skills, Abilities, Work	Work, Invent, Interpret Design, Compose, Build	Productive/Feedback settings, Workshops	
Identity	Sense of belonging, Differentiation, Assertive	Symbols, Language, Work, Habits, Customs, Values	Commit oneself, Confront, Integrate oneself, Grow	Social rhythms, Everyday settings	
Freedom	Autonomy, Self-esteem, determination, passion	Equal rights	Dissent, Choose, Develop awareness, Disobey	Temporal/Spatial plasticity	

**Table 01:** Max-Neef's (1991) Human Scale Development (HSD) Matrix of Needs and Satisfiers (Adapted by Author 2024)

Max-Neef (1991) delineates nine axiological needs: *subsistence, protection, affection, understanding, participation, leisure, creation, identity, and freedom* (tab. 01). These needs acknowledge the intricate dynamics of human existence, ranging from tangible necessities such as *subsistence* and *protection* to intangible concepts such as *identity* and *freedom*, recognising the multifaceted nature of human experience (Gaspar 2022).

Implementing HSD involves embracing bottom-up, participatory methodologies that empower local communities to identify and address their development priorities autonomously. This process relies on a taxonomy that distinguishes between needs and satisfiers (methods of fulfilling needs), serving as a framework for policy design and strategic planning (Gaspar 2022: 4).

The HSD toolkit, as outlined by Des Gasper (2022: 175-6), proved valuable for several reasons:

1. It facilitated communication by framing development in the language of fundamental human needs, resonating with everyday experiences.
2. Max-Neef's (1991) classification of satisfiers aided individuals in examining their lives and seeking holistic solutions addressing multiple needs simultaneously.
3. The toolkit's inclusion of violator, inhibitor, and pseudo-satisfiers encouraged a deeper understanding of the interconnectedness within socio-ecological systems.
4. The emphasis on synergistic satisfiers prompted a shift towards sustainability and environmental stewardship, recognising the long-term implications for well-being.

Consequently, the HSD approach recognises the diverse range of needs, the multitude of satisfiers, and the complex interplay of factors shaping human existence (Gasper 2022, Max-Neef 1991: 38). Gasper posits that the use of the needs model itself acts as a synergistic satisfier (Gasper 2022: 15), promoting decentralised processes encouraging dialogue and critical analysis within communities to foster self-reliance, social cohesion, and cultural resilience (Max-Neef 1991: 61).

Moreover, PID and HSD converge in prioritising human-centred design, interdisciplinary collaboration, and empowerment of marginalised communities to evaluate the broader impacts of proposed solutions (Feldman *et al.* 2013; Max-Neef 1991: 37). Integrating PID principles into design interventions enables addressing residents' fundamental needs while nurturing self-reliance and agency (Karim 2018). These approaches diverge from traditional top-down design methods, which often overlook the diverse needs and aspirations of communities. Both PID and HSD perspectives offer architects and designers insights into community-centred design interventions, promoting inclusive practices and adaptable built environments.

Max-Neef (1991:65) asserts that self-reliant development facilitates the holistic fulfilment of human needs, fostering participation and creativity. This underscores the intrinsic link between human creativity and sustainable, inclusive development. At the macro level, it encourages inclusive decision-making, social creativity, autonomy, equity, agency, and respect for the expression of needs (Max-Neef 1991: 58-61). At an individual level, it enhances socio-cultural identity, creative potential, self-assurance, and the pursuit of freedom.

In South Africa, understanding the intricate spatial dynamics, including its fragmented urban landscape, is crucial for fostering inclusive and sustainable development (Simone 2004). Traditional urban development approaches often fail to recognise the active role of people in shaping and sustaining the city. Socio-economic disparities, cultural norms, and environmental conditions intersect to shape residents' realities and priorities. Therefore, it is important to respect and encourage diversity rather than control it (Max-Neef 1991: 10).

In the context of Melusi, the settlement's environment significantly influences residents' needs and experiences, underscoring the importance of contextual understanding in design interventions. This highlights the relevance of the HSD model, providing a practical framework for addressing complex societal challenges and emphasising the need for tailored interventions for effectiveness (Gasper 2022). The matrix serves as a tool for understanding the needs satisfied and impeded within the community, informing design decisions aimed at bridging gaps and fulfilling utopian aspirations, ultimately enhancing residents' quality of life. Lastly, to emphasise that the poor are not passive recipients of development or charity, Max-Neef (1991) introduces the term *actualise* instead of *satisfy*: *you actualise your need for understanding when you take steps to comprehend what is going on* (Boshuijzen-van Burken *et al.* 2020: 171, as cited in Gasper 2022: 17).

## 2.IV Choice Architecture in Design

The exploration of choice architectures was prompted by Thaler and Sunstein's (2008; 2021) influential work, *Nudge*, advocating for research on how predictable deviations from rational behaviour could be leveraged (or *nudged*) to guide individuals toward socially beneficial outcomes (Münscher, Vetter, and Scheuerle 2016: 511). This approach involves designing decision-making environments to influence human behaviour, drawing from disciplines such as behavioural economics and psychology (Thaler & Sunstein 2008; 2021).

In design contexts, choice architecture encompasses a bottom-up approach, akin to that of PID and HSD. It aims to empower individuals to make informed choices that align with their preferences, needs, and values. Thaler and Sunstein (2021) argue that there is no truly neutral design; every aspect, from furniture arrangement to design layouts, inherently *nudges* people in a certain direction.

Münscher, Vetter, and Scheuerle (2016) elucidate the cognitive processes involved in decision-making, contributing to a deeper understanding of human behaviour and ways to influence it. An effective system assists individuals in enhancing their capacity to understand and consequently choose options that benefit them (Thaler, Sunstein & Balz 2012: 435). Their taxonomy of techniques offers a structured framework for understanding how these interventions function across design domains, aiding researchers and practitioners in comprehending the diversity of choice architecture interventions.

These interventions include:

- **Nudges:** These aim to assist individuals in reaching their goals predictably, without resorting to severe disincentives such as mandates, fines, or bans. For instance, simply rearranging cafeteria layouts can *nudge* students toward healthier eating habits. The guiding principle is to offer *nudges* that are most likely to help while inflicting the least harm.
- **Default Settings:** Pre-selected options that influence decision-making when no active choice is made, is considered the default.
- **Reframing:** This technique shifts the focus of decision-makers by presenting existing information differently, without revealing new information.
- **Simplify:** This method significantly enhances decision-making by making pertinent information readily accessible.
- **Other Practical Strategies and Tools:** Effective implementations include considering context, timing, messaging, scalability of interventions, well-curated options, or even fun.

Designing choice architecture involves intentionally structuring decision-making environments to encourage specific behaviours while still allowing individuals to retain their freedom of choice. This concept, termed *libertarian paternalism* by Thaler and Sunstein (2008; 2021), blends the principles of libertarianism, which emphasises freedom of choice, with paternalism, aiming to guide individuals toward decisions that enhance their well-being.

Ensuring accountability, building trust, maintaining transparency, and actively seeking feedback from stakeholders are crucial for the public acceptance of choice architecture interventions. This approach delves into the ethical considerations surrounding the use of *nudges* in shaping individual and collective behaviour, addressing concerns about manipulation and coercion while advocating for policies and practices that promote decisions that improve welfare (Thaler, Sunstein & Balz 2012: 430). The key aim is to assist people in making decisions they would have made with perfect information, attention, self-control, without biases, and without resorting to harsh laws or prohibitions.

Henceforth, choice architecture intersects with PID in its emphasis on inclusive decision-making and empowerment. These themes collectively underscore the importance of choice architecture and facilitation in design, emphasising the role of the architect in shaping behaviour, fostering community empowerment, and improving decision-making processes while respecting individual and collective community autonomy. Empowering choice architects to act as agents of positive change involves equipping them with the tools and knowledge necessary to design environments that subtly guide individuals towards healthier, more productive behaviours while preserving their autonomy (Münscher *et al.* 2016).

This emphasis is particularly significant within the intricate socio-political landscape of South Africa, marked by a history of architectural exclusivity, especially in decision-making processes. Whereas, in rural African communities, inclusive decision-making and participatory meetings are long-standing traditions (Winschiers-Theophilus, Bidwell & Blake 2012: 92). The intersection of choice architecture and PID emphasises the necessity of participatory methodologies in addressing the needs of Melusi's residents, playing a pivotal role in shaping residents' interactions with their built environment.

While *nudges* are designed to simplify decision-making for users, the inverse—referred to as *sludge*—complicates matters, creating unnecessary barriers that impede individuals from achieving desirable outcomes (Thaler & Sunstein 2008; 2021). *Sludge* encompasses policies and processes that add friction to decision-making, often leading to delays, restrictions, or prohibitions that hinder development. For example, government policies, as explored in the book titled *Nudge*, can hinder development by creating bureaucratic hurdles. Impoverished urban communities often encounter governments or municipalities that are unwilling or unable to provide essential land and services (Watson 2014, as cited in Zorn 2021). This highlights the adverse impact of *sludge* on settlements such as Melusi, underscoring the need to address these challenges and devise appropriate ways to overcome them.

Furthermore, the effectiveness of choice architecture interventions is influenced by factors such as cultural norms and resource constraints (Thaler & Sunstein 2008; 2021). This emphasises the importance for designers to thoroughly understand the local context to create interventions that are both effective and respectful of the community's unique circumstances. By addressing the negative impact of *sludge* and focusing on creating streamlined, supportive environments, designers can better assist communities like Melusi in overcoming bureaucratic and systemic obstacles. This approach ensures that interventions are not only well-intentioned but also practical and achievable within the given socio-economic framework (Marschall 1998).

Therefore, designers must adopt a nuanced understanding of the local context to develop interventions that resonate with residents' lived experiences and aspirations (Thaler & Sunstein 2008; 2021). By appreciating the knowledge and viewpoints of the community through the HSD matrix, choice architecture offers a valuable framework for promoting community engagement and participation in needs finding and design intervention. This opens the door to exploring the intricate relationship between choice architecture and HSD, revealing tactics to amplify participatory design interventions.

## **2.V Evaluating Participatory Design for Creative and Participatory Needs in Melusi**

Participatory Design (PD) stands as a collaborative approach to design, emphasising stakeholder engagement, community participation, and co-creation (Van Eeden, Eloff, and Dippenaar 2022; Winschiers-Theophilus *et al.* 2012). This multidimensional approach spans various disciplines, including architecture, urban planning, and social work.

*The Routledge International Handbook of Participatory Design* by Robertson and Simonsen (2013) provides an extensive examination of PD theory and practice, encompassing a range of tools and techniques that enable diverse actors to express needs and aspirations effectively in real-world contexts (Kotze 2023: 6). However, participatory processes are inherently *not inclusive in and of themselves* (Eskilsson & Rifat 2021:19). Within this context, genuine participation in design is defined as a commitment to amplifying the voices of marginalised groups and communities in decision-making processes that directly affect them (Simonsen & Robertson 2013: 6).

At its core, PD seeks to democratise the design process by involving end-users in decision-making and empowering them to contribute their expertise, skills, and lived experiences, establishing a connection to choice architecture (Brandsen, Verschuere, & Steen 2020). Unlike user-centred approaches, which view people merely as recipients of design, PD regards them as valuable partners in the design and development process (Sanders 2013: 61).

However, participation without a redistribution of power is ineffective and disappointing for those without power (Zorn 2021: 27). It may give the impression that all perspectives were considered, but only some benefit from the outcome (Arnstein 1969: 2 as cited in Zorn 2021). In participatory planning, it is crucial for all stakeholders involved in the development process to have clear roles and for everyone to have a good understanding of the area. Knowing where each person stands can help identify common ground, share responsibility and authority, and ensure mutual accountability throughout the process (Hamdi & Majale 2003 as cited in Hamdi 2010: 97).

Additionally, anchor institutions, described as sizable, enduring, nonprofit entities with substantial assets, play a pivotal role in community advancement (Van Eeden *et al.* 2022). NGOs and charitable organisations participating in PD possess resources that can support community improvement, enhancing project effectiveness (Kotze 2023: 28). However, as noted by Winschiers-Theophilus *et al.* (2012: 90), *PD is not just about involving stakeholders in the design process; it is about acknowledging their expertise and perspectives as valuable contributions to the overall design outcome.* By valuing stakeholders' perspectives and involving anchor institutions, PD strives to create inclusive, responsive design solutions meeting diverse community needs, with the potential for upliftment and self-reliance.

Moreover, Kotze (2023: 28) found that expanding existing solutions yield greater long-term success and ownership than providing new ones. Instead of initiating projects from scratch, architects can reinforce existing initiatives by offering tangible solutions to community needs (Kotze 2023: 33). PD fosters social cohesion and trust within communities, empowering them to collectively problem-solve and take ownership and pride in their development (Marschall 1998: 105).

Hence, PD offers a promising avenue for addressing the human-scale design needs in Melusi, enabling residents to actively participate in the design process and provide valuable insights into their experiences and priorities (Winschiers-Theophilus *et al.* 2012). Leveraging existing community initiatives can enhance ongoing efforts to address identified issues while considering context and conducting comprehensive needs assessments contributing to societal transitions towards resilience and equity (Gasper 2023; Kotze 2023). Achieving meaningful participation and sustainable outcomes requires cultural sensitivity, empathy, and a departure from top-down design paradigms to prioritise local voices and values (Winschiers-Theophilus *et al.* 2012: 96). This echoes Zorn's (2021: 51) emphasis on local ownership for sustainable and inclusive development.

Moreover, in the paper *Community Consensus: Design Beyond Participation* by Winschiers-Theophilus *et al.* (2012), the concept of *Ubuntu* was discussed as a lens through which to understand the values and logic that shape participation in social networks in Africa and their link to concepts about personhood and identity. It was proposed that grappling with meanings about participation is critical to design, particularly in cross-cultural contexts such as Melusi, as societies and groups based on other value systems conceptualise participation differently, directly affecting the intercultural design process (Winschiers-Theophilus *et al.* 2012: 93). The paper explored how an African philosophy of humanness, as lived through African rural community practices, can re-frame PD paradigms and methods, offering guidelines to respond more effectively in developing contextually appropriate and consensual design methods with communities.

Regarding the fundamental need for creativity, the community's connection with structural interventions significantly impacts its future use, maintenance, and protection from vandalism (Marschall 1998: 105). Involving the community not only in establishing the project's objectives but also in the design and construction process is imperative for fostering genuine self-expression in architecture. This collaborative effort transforms the building into a tangible representation of communal unity.

Previous PD studies in Melusi, such as those spearheaded by the Unit for Urban Citizenship (UUC) (Combrinck 2024), Eskilsson & Rifat (2021), and Zorn (2021), underscore PD's transformative potential in addressing the residents' explicit needs and fostering active participation in design interventions.

In the pursuit of nurturing virtuous urban citizenship, collaborative identity formation can leverage spatial agency (Awan *et al.* 2011), engaging in interventions within existing cultural contexts (Cunningham, 2011:39 as cited in Combrinck & Venter 2020: 5). This shift in design attitude, favouring enablement over prescription, positions architects to act as catalysts for change rather than leading agents (Combrinck & Venter 2020: 23). By adopting a perspective aligned with residents' viewpoints and prioritising participation and enablement over prescriptive design approaches, designers can effectively navigate the dynamic spatiality inherent in the ongoing construction of urban citizenship (Blokland, Hentschel, Holm, Lebuhn, & Margalit 2015: 656 as cited in Combrinck & Venter 2020: 25).

However, implementing PD in informal settlements presents distinct hurdles, including lack of formal education, misinformation, and unequal resource access (Marschall 1998). Despite the advantages of community participation in architectural design, architects often encounter numerous discouraging instances and frustrations, leading to disillusionment and fatigue from wasted efforts and resources on fruitless discussions or substandard workmanship (Marschall 1998: 106). Therefore, PD faces challenges such as linguistic barriers, conflicting agendas, and dynamics of control, necessitating a shift from designers as sole authorities to enablers who integrate community knowledge and identity into the design process (Winschiers-Theophilus *et al.* 2012; Zorn 2021).

## **2.VI Co-Creation: Engaging Communities in Participatory Design Processes**

Co-creation embodies fundamental concepts such as co-learning, co-decision-making, co-development, co-design and more, forming the basis of collaborative design approaches according to Eskilsson & Rifat (2021). It emphasises shared decision-making and mutual respect, necessitating meaningful engagement between architects and residents (Brandsen *et al.* 2020; Robertson & Simonsen 2013). This approach fosters a collective vision, establishing creative connections through participatory practices in community development and spatial co-creation (Zorn 2021: 23).

Furthermore, Hamdi (2010) underscores the significance of ownership in community interventions, advocating for trust-building between architects and communities for effective solutions, as outlined in *The Placemaker's Guide to Building Community*. He introduces the term *placemaker* to encompass all contributors to human settlements, prioritising community involvement and responsibility. *Placemaking*, according to Hamdi (2010), integrates co-creation into design processes, emphasising citizen-led approaches. Hence *placemakers*, is defined as encompassing all those involved in creating and sustaining the quality of human settlements, including inhabitants, architects, planners, and experts (Hamdi 2010). While highlighting the value of ownership through participation, he cautions against dependency and the risks of disregarding community input, which can lead to project failures.

On the other hand, adopting co-creation necessitates a mindset shift for both designers and residents. Giancarlo de Carlo (1971) argues that architecture must transition from an authoritative act to a participatory process. *Designers must differentiate between planning for users and planning with them* (de Carlo 1971: 15). They should be receptive to residents' needs and aspirations, while residents must be empowered to voice their priorities and rights.

Furthermore, co-creation requires ongoing investment in capacity-building and skills development. Designers should equip residents with the tools, training, and resources needed for meaningful participation in design processes (Brandson *et al.* 2020).

Ultimately, co-creation offers a transformative framework for promoting social justice, self-reliance, equity, and sustainable development in informal settlements such as Melusi. By involving residents in all stages of the design process, designers can develop interventions that are responsive to their needs and desires (Eskilsson & Rifat 2021; Robertson & Simonsen 2013). Co-creative methods have the potential to address specific socio-economic and socio-political challenges (Zorn 2021: 27), contributing to the creation of resilient, inclusive communities that thrive amidst adversity through participation, empowerment, and shared decision-making.

## 2.VII Integrating Community Knowledge into Design Interventions

An integral aspect of co-creation involves integrating community knowledge into the design process. Local residents possess invaluable insights into their environment, encompassing social dynamics, cultural practices, and everyday challenges (Van Eeden *et al.* 2022). Incorporating this knowledge is crucial for crafting interventions that are contextually relevant and responsive to the needs and aspirations of residents. Designers can thereby overcome PD challenges with sensitivity and acknowledging the intrinsic value of local knowledge and expertise.

Furthermore, Ballard & Hamann (2021) underscore the importance of community knowledge in addressing socio-economic disparities and promoting social cohesion. They argue that by acknowledging and leveraging local expertise, designers can enhance social capital within communities, thus fostering equitable access to resources and opportunities. This perspective aligns with Simone's (2004) notion of *people as infrastructure*, advocating for holistic approaches that recognise individuals and communities as central to the nation's progress. Simone emphasises the significance of harnessing people's agency and acknowledging the social and informal aspects of infrastructure, which enriches cultural resilience amidst urban development challenges such as poverty and inequality. By facilitating platforms for residents to share their knowledge and skills, designers empower communities to lead their development efforts and promote self-reliance.

## 2.VIII The Role of Technology in Facilitating Co-Creation

Technological advancements offer new avenues for facilitating co-creation processes in design. Digital platforms and tools enable remote collaboration, allowing designers to engage with communities regardless of geographical boundaries (Eskilsson & Rifat 2021). According to Eskilsson & Rifat (2021), remote collaboration methods adapt traditional co-creation approaches to the digital realm. Their *Placemaker's Kit* offers suggested methods that align with users' previous choices, facilitating their processes (Eskilsson & Rifat 2021: 48). Additionally, co-creation methods are mapped based on their aims and the tangible and intangible aspects they require (Eskilsson & Rifat 2021: 35). This approach, akin to *nudges* in choice architecture, ensures contextual and project-specific re-appropriation in remote collaboration (Eskilsson & Rifat 2021: 44).

Moreover, digital tools can streamline data collection and analysis, enabling designers to gather feedback from a broader and more diverse range of stakeholders (Combrinck & Venter 2020). By harnessing the power of data and analytics, designers can gain valuable insights into community needs and preferences, informing an iterative design process.

Winschiers-Theophilus *et al.* (2012) discuss the role of Information and Communication Technologies (ICTs) as tools for empowerment within marginalised communities, enabling them to articulate needs, aspirations, and values, and negotiate consensus in the design process. However, they caution against techno-centric approaches that may disregard local realities and priorities. Designers, often assuming dual roles as facilitators and change agents, must ensure that activities permit stakeholders to explore options safely, aligning ICT understanding with community priorities (Winschiers-Theophilus *et al.* 2012: 95). The authors emphasise the importance of designers acting as enablers rather than monopolising the process, allowing community members to express the significance of their knowledge to their identity and needs (Winschiers-Theophilus *et al.* 2012: 96-97).

Additionally, Max Neef (1991) also acknowledges the role of technology in development. HSD advocates for the use of appropriate and context-specific technologies that enhance human well-being without harming the environment or undermining social cohesion. Thus, technology is perceived as a tool for meeting human needs rather than an end in itself.

However, it is crucial to recognise that technology is not a panacea and should be used judiciously to complement, rather than supplant, human-centred approaches to co-creation (Eskilsson & Rifat 2021). While digital tools can boost efficiency and accessibility, they must be implemented in a manner that respects the unique socio-cultural context of communities such as Melusi.

## 2.IX Longitudinal Impact Assessment: Ensuring Sustainable Outcomes

Hamdi (2010) argues that genuine ownership is nurtured through continuous community engagement throughout the entire process, ensuring project success.

Longitudinal studies offer valuable insights into the evolution of interventions over time and their broader socio-economic and environmental effects (Charman *et al.* 2020). Evaluating the lasting impact of design interventions is vital for sustainability and efficacy. In informal settlements, PD necessitates ongoing investment in capacity-building, skill enhancement, and community engagement to ensure intervention longevity. Kotze (2023: 33) found that architects could foster trust by consistently engaging with both project partners and the community.

Tracking key indicators such as service accessibility, social unity, and economic empowerment allows designers to assess intervention effectiveness and pinpoint areas for enhancement (Combrinck & Venter 2020). This iterative approach supports continual learning and adjustment, ensuring interventions remain aligned with the evolving needs of communities such as Melusi.

Furthermore, longitudinal impact assessment aids in identifying unintended consequences and mitigating potential risks (Ballard 2021). By proactively monitoring and evaluating interventions, designers can minimise adverse outcomes and maximise positive impacts on community well-being and resilience.

## **2.X Conclusion**

In conclusion, the convergence of HSD needs with PID in informal communities such as Melusi presents both challenges and opportunities in addressing complex socio-economic and environmental issues. By embracing participatory and co-creative approaches, designers can harness the collective knowledge and creativity of communities to develop contextually relevant and sustainable solutions. Incorporating theoretical frameworks and principles of PID, HSD, and choice architecture, designers can play a pivotal role in promoting social justice, equity, and sustainability in Melusi, thereby fostering more resilient communities that drive positive societal change amidst adversity.

This review has explored the intersection of HSD needs within PID, highlighting the catalytic role of choice architecture in encouraging creativity and participation. By emphasising participatory approaches and choice architecture, the review provides insights into crafting inclusive and equitable design interventions that resonate with residents' fundamental needs, contributing to a deeper understanding of the intricate dynamics shaping design interventions in informal settlements such as Melusi.

Through reviewing recent studies and engaging with PID, HSD, and choice architecture, this review has identified the knowledge gap concerning the application of choice architecture in informal settlements, specifically focusing on Melusi, and its potential role in facilitating co-creation within design interventions. Addressing this gap involves examining the application of choice architecture in informal settlements, specifically focusing on Melusi, and its potential role in facilitating co-creation within design interventions. The objective is to explore how evaluating fundamental needs for creativity and participation can contribute to advocating for choice architecture as a design strategy to address socio-economic challenges in Melusi.



### 3 Research methodology

#### 3.I APPROACH AND PARADIGM

This study integrates qualitative approaches to comprehensively explore human behaviour in the public realm of Melusi, highlighting socio-spatial injustices prevalent in our city. By documenting conditions impacting wellness and human dignity within these settlements through the lens of PID, the research sheds light on critical issues indicative of broader urban challenges (Combrinck 2024).

Consequently, the research adopts a mixed-method approach within the pragmatic paradigm, a framework well-suited for addressing practical problems through empirical inquiry (Combrinck 2024; Leavy 2017). By embracing a non-singular reality and value-laden axiology, the pragmatic paradigm emphasises the need to solve real-world problems by acknowledging the existence of multiple social realities and integrating diverse methods to gain a comprehensive understanding of human behaviour and socio-spatial dynamics (Kivunja & Kuyini 2017: 33-35). By utilising narrative inquiry and action research methodologies, this study aims to capture the nuanced lived experiences of individuals and collectives within the informal settlement of Melusi and understand how these experiences are shaped by socio-economic challenges and spatial injustices.

#### 3.II PARTICIPANTS AND SAMPLING

Participants in this study included 254 residents of Melusi, selected through a non-probability convenience sampling method based on their availability and willingness to participate (Leavy 2017). The findings are specific to Melusi and its unique socio-economic and cultural context. The applicability of these findings to other informal settlements may be limited without considering contextual differences.

The study was limited to individuals who happened to pass by, as no prior advertising was conducted. Inclusion criteria required participants to be over the age of 18 and legally capable of providing informed consent. The sampling process aimed to capture a diverse cross-section of the community, though it faced several limitations. Access to participants was restricted to five specific areas within the settlement, and data collection was confined to three weekdays, potentially excluding working individuals and those with physical disabilities. Additionally, some participants were intoxicated during data collection, potentially leading to outlier responses that were flagged for further consideration. Furthermore, some participants were hesitant to answer questions in large groups.

These issues were mitigated by the inclusion of focus groups, which consisted of two or three randomised participants who were given the opportunity to sign up for these sessions. The focus groups allowed for intimate conversations and in-depth answers. Additionally, a semi-structured interview was conducted with Hlakudi Malatji, selected for his extensive knowledge and his position as the founder and executive of MYDO. He provided valuable insights and served as a cross-referencing resource for any outliers or uncertainties. Despite these limitations, the study sought to include a broad range of perspectives to ensure a comprehensive understanding of the community's needs.

#### 3.III INSTRUMENTS AND TOOLS

Several tools and instruments were utilised to support data collection and analysis. *Miro*<sup>™</sup> and *Zotero*<sup>™</sup> were used for literature review and data organisation, while *ATLAS.ti*<sup>™</sup> was

employed for qualitative data analysis, including the needs-finding analysis and focus group data capture. The use of these tools facilitated systematic data management and ensured the reliability and validity of the findings.

### 3.IV DATA COLLECTION

The Melusi study employed a variety of qualitative data collection methods, including gameplay, focus groups, semi-structured informal interviews, and questionnaires. These methods were chosen for their ability to capture diverse perspectives and facilitate an in-depth exploration of themes related to human needs, social interactions, and community dynamics. Focus groups with community members enabled interactive discussions, while the interview with Mr. Malatji provided additional insights into the community's challenges and potential points of intervention. This comprehensive approach to data collection facilitated a deeper exploration of themes with minimal pressure on participants, fostering an environment conducive to open and candid responses (Cohen & Crabtree 2006). All questionnaires were meticulously developed, drawing on insights from relevant literature and serving as a flexible guide for the researcher during data collection (refer to Appendix A).

The data collection is rooted in the principles of co-creation. Through a series of games and direct engagement with Melusi's residents, the study aims to assist the community in co-developing a CAP (Hamdi 2010). Consequently, the project has multiple layers of potential impact: it benefits the residents by addressing their needs, provides valuable insights for the CoT in terms of urban planning and development, and enhances the students' curriculum and research outcomes by providing real-world, hands-on experience in PID and co-creation (Combrinck 2024).

The data collection methodology was phased as follows:

#### PHASE 01: Preparations

As part of the fieldwork process, five Master's students, each registered for their professional master's degrees in architecture and interior architecture, forming part of the UUC, were tasked with creating games to serve as tools for data collection and to capture the information using the HSD matrix (Max-Neef 1991). Collectively, the Master's students developed questions to populate the HSD matrix, which was pivotal in facilitating participation through individual and group discussions and enabling a deeper understanding of the community's contextual needs. Each of the games utilised the same questions to explore *Satisfiers*, *Impediments*, and *Utopian* needs, ensuring a consistent approach across all activities. According to Gasper (2022: 16), the HSD toolkit is useful due to its ability to consider the *plurality of needs, the variety of satisfiers, and the systems of interconnection that structure life patterns*.

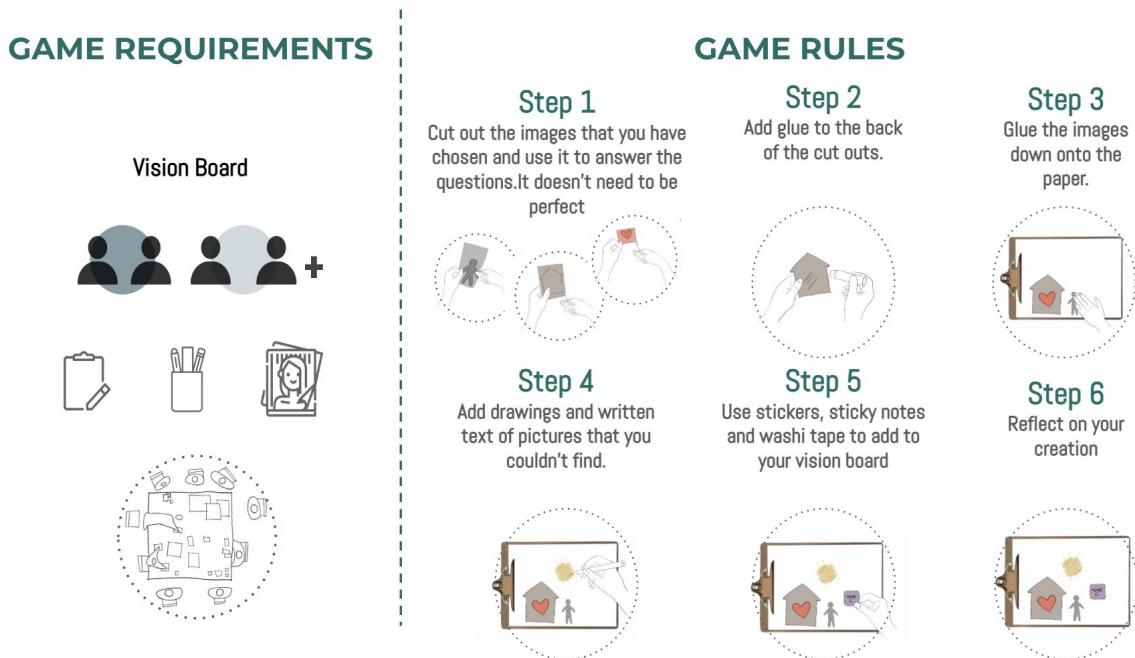
The developed participatory methodologies drew on the concept of *serious games* as explored by Habraken and Gross (1988), Hamdi (2010: 201), and Zorn (2021: 2). These methodologies prioritise inclusivity, diversity, adaptability, and empowerment, thereby fostering more sustainable design-research outcomes.

The *serious games* were carefully designed to gather comprehensive data on the community's values, needs, and aspirations, ensuring that the data collection process was both effective and engaging for the participants.

The games developed included a variety of engaging and interactive activities:

- **Drawing Game:** Encouraged participants to express their ideas and needs through illustrations.
- **Building Blocks Game:** Utilised *Jenga*™ blocks to simulate conversations.
- **Playing Game:** Incorporated elements of soccer to facilitate discussions.
- **Matrix Board Game:** Focused on identifying and addressing human needs through a structured board game format using the HSD matrix.
- **The Making Game:** Created by the researcher, this game integrated model making, mapping, and visual collages. It was specifically designed as an avenue for individuals who may not feel confident with drawing to express their ideas through the creation of models and other forms of visual representations.

The value of these games is supported by similar didactic approaches developed by other researchers, which were incorporated to enhance learning and engagement. Eskilsson & Rifat (2021: 39) found that *Community Mapping Exercises* allowed participants to map their community, identifying key resources, problem areas, and potential improvements. Abt (1974), as cited in Hamdi (2004: 136), demonstrated that *Visioning Workshops* facilitated sessions where participants could articulate their dreams and aspirations for their community, creating a shared vision for future development. Zorn (2021: 51) utilised model making, which was found to be effective in encouraging participants to express their ideas and contribute to the design process through tangible, creative outputs.



**Figure 06:** Instructions for making vision boards in *The Making Game* (Unit for Urban Citizenship 2024; edited by Author 2024)

## GAME REQUIREMENTS

### Mapping & Modeling



## GAME RULES

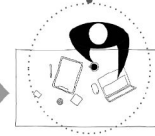
### Step 1

A series of questions are asked to the community member by the facilitators and the observer/ intern



### Step 2

The participant (community member) with the assistance of the facilitator using stickers, maps out the satisfier, impediment or utopia



### Step 3

The participant (community member) then using modeling clay, models the described satisfier/ impediment/utopia



Figure 07: Instructions for mapping and modelling in *The Making Game* (Unit for Urban Citizenship 2024; edited by Author)

## PHASE 02: Trial Runs and Iterations

Each of the Master's students was randomly assigned an intern to assist them. Additionally, five or six community leaders or members, most of whom were affiliated with MYDO, were also randomly assigned. The developed games underwent iterative testing and refinement during trial runs to enhance their effectiveness as data collection tools. These trial runs were conducted at MYDO, and feedback from the respective community members in each group regarding the efficiency of the game and their comprehension of the HSD matrix questions was taken into consideration.



Figure 08: Images of the trial run of *The Making Game* at the community hub with assigned community members and leaders (left & middle) (Oberholster 2024) and a vision board made by a participant (right) (Author 2024)

Furthermore, two or three UUC students completing their architectural Honours degrees were involved based on their interest in specific games. During this time, the researcher integrated a mapping element into the model-making process based on the Honours students' feedback, which proved successful in gathering data on community spatial needs, particularly for the *interaction* (settings) column of the HSD matrix (Appendix A).



Figure 09: Vision board of HSD needs made by a community member during the trial run of *The Making Game* (The Making Game group 2024)

Additionally, after the first day of fieldwork, it was found that creating visual collages was too time-consuming. Instead, the intern pre-made collages and used these images as visual prompts for conversation. All the tools and materials for visual collages were still made available for participants who had free time and wished to create their own collages.

## CHANGED GAME APPROACH

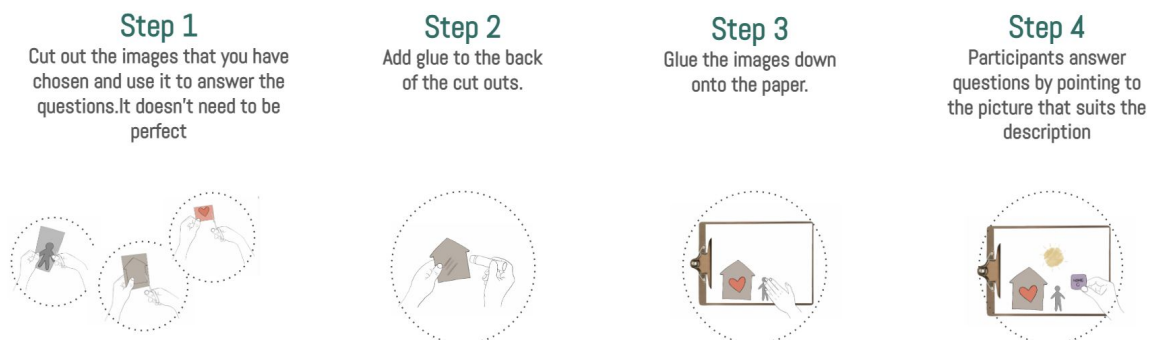


Figure 10: Changes made to *The Making Game* after the first day of fieldwork (Unit for Urban Citizenship 2024; edited by Author 2024)

### PHASE 03: Fieldwork Data Collection

The research process hinged on fieldwork data collection, which included community engagement and a comprehensive needs-finding assessment utilising the HSD matrix questionnaire. Fieldwork was conducted over three days at five different stations throughout the Melusi settlement (see map 03). These stations were randomly assigned and alternated over the three days to ensure that data collection was contextually relevant and responsive to the community's unique needs and experiences.



Map 03: Map of five stations positioned throughout Melusi during field work (Unit for Urban Citizenship 2024; edited by Author 2024)

Over three days, participants were asked questions from the finalised questionnaires, developed during the trial runs, through the different games. While some games were not able to cover the full questionnaire, *The Making Game*, with its twofold strategy, was particularly effective in addressing all the questions multiple times. Each day focused on a different questionnaire: satisfiers, impediments, or utopian needs, respectively (Appendix A). Participants provided their personal information and consented to participate in the study. Additionally, using participatory data capture, the *ukuDoba* method, GIS data of participants' locations were captured and stored (Combrinck 2024). Participants could volunteer their contact information to facilitate further data collection in the focus groups.



Figure 11: Images of *The Making Game* in action during fieldwork data collection (Oberholster 2024)



**Figure 12:** Models made on the first day of *The Making Game*, showcasing the satisfiers (left) and a participant proudly showing a model of their house they made (right) (Author 2024)

#### **PHASE 04: Focus groups**

Focus groups were conducted to delve deeper into the respondent's needs and preferences, aiming to identify synergistic satisfiers that could enhance community well-being. Each Master's student developed a set of questions tailored to their specific research question and design brief.

The questions posed by the researcher focused on themes such as the fundamental need for *participation*, *creativity*, and *subsistence*, which were identified as predominant needs in the initial needs assessment (Appendix B). Additionally, inquiries were made about community building, participatory design, and the significance of creativity in facilitating the design process. These discussions provided rich qualitative data, revealing the community's priorities and aspirations.

Willing participants who had previously participated in the fieldwork and expressed interest in the focus groups were randomly assigned to a Master's student. During this period, the Honours students were engaged in their assignments and facilitated their own focus groups, although their answers were not included in the data analysis.

Lastly, an informal semi-structured interview with Mr. Malatji was conducted a week later to validate and corroborate the findings of the Master's students.

#### **PHASE 05: Consolidation and analysis**

As previously mentioned, *serious games* (Habraken & Gross 1988; Hamdi 2010: 201; Zorn 2021: 2) were employed as a method to gather human needs data, followed by subsequent analysis.

All the data collected from fieldwork and the Master's students' focus groups were reviewed and consolidated to accurately represent the needs analysis. The qualitative data analysis employed narrative and thematic analysis, incorporating both deductive and inductive approaches. This phase involved rigorous content analysis and thematic

coding, guided by Lincoln and Guba's (1985) criteria for trustworthiness, to ensure the reliability and validity of the findings.

Additionally, quantitative secondary *Co-Creating Wellness* data collected in 2023 by the UUC was integrated into the analysis. This allowed for a comprehensive comparison between the qualitative findings from the fieldwork and focus groups and the quantitative data, providing a more robust and triangulated understanding of the community's needs.

### 3.V DATA ANALYSIS

The qualitative data analysis process involved multiple steps to ensure a comprehensive understanding of the collected data. The research utilised theoretical frameworks such as HSD, PID, and choice architecture to guide the process, establishing connections between these frameworks and the findings from needs assessments to identify overarching themes. Initially, inductive coding was performed to identify patterns and themes, focusing on connections between PID, HSD, and choice architecture within the dataset, guided by the pragmatic paradigm and a non-experimental approach (Kiger & Varpio 2020). The analysis focused on inductively identifying satisfied, impeded, and utopian needs as well as bridges, pseudo-satisfiers or inhibitors captured during fieldwork and focus group discussions. Subsequently, a deductive approach was employed to further refine the identified themes, ensuring a thorough and systematic analysis (Thomas 2006). The analysis aggregated codes and thematic identifications, resulting in the categorisation of 26 data documents from game-playing and focus group sessions. This process yielded 419 codes from 2353 quotes, systematically categorised to ensure a comprehensive understanding and analysis.

### 3.VI ETHICS

Ethical considerations were integral to every phase of the research process, prioritising participant confidentiality, informed consent, and adherence to ethical guidelines. The study commenced with the acquisition of Ethics Clearance under reference number EBIT/15/2022, approved by the EBIT Ethics Committee (Combrinck 2024) (Appendix C). Participants were fully informed about the study's objectives, procedures, and potential risks before providing their consent. Ethical guidelines were strictly followed to ensure the protection of participants' rights and well-being throughout the research process.

To anonymise participants, all quotes in the study followed the naming convention as outlined below:

**Drawing Game:** D Participant  
**Building Blocks Game:** BB Participant  
**Playing Game:** P Participant  
**Matrix Game:** Mx Participant  
**Making Game:** M Participant  
**Satisfiers:** S  
**Impediments:** I  
**Utopia:** U  
**Focus Group:** FG Participant

For example, a participant in *The Making Game* discussing Satisfiers would be referred to as MS Participant.

## 4 Results

At the core of this study lies the application of the HSD matrix to conduct a needs-finding assessment in Melusi. It enabled the systematic identification of community needs and aspirations, thus guiding potential design interventions aligned with local requirements. Thereafter we will discuss how, in the context of co-creation, assessing Melusi's fundamental needs for creativity and participation strengthens the argument for using choice architecture in design.

### 4.1 SATISFIERS:

The data results depict a vibrant and tightly-knit community in Melusi, characterised by a strong sense of community unity and support among locals, as well as pride in cultural heritage. Residents find comfort and fulfilment in various activities, such as attending church, engaging in artistic endeavours, participating in community events, and supporting each other's businesses. The most satisfied fundamental needs were identified as *participation* and *subsistence*, although these are also among the most impeded and utopian needs, thereby pseudo-satisfied (fig. 13).

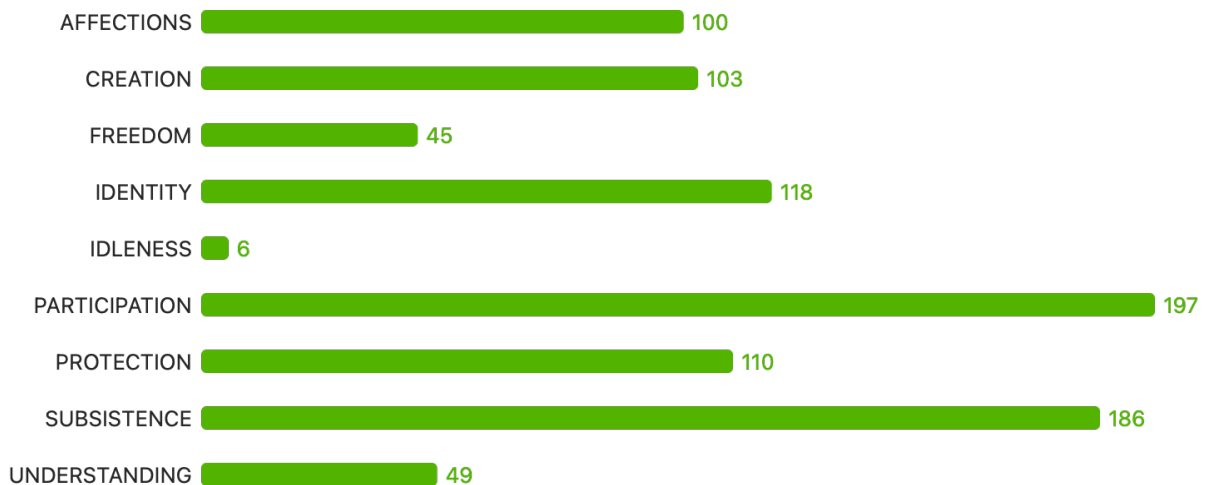


Figure 13: Bar chart of satisfied fundamental needs via ATLAS.ti™ (Author 2024)

Key themes that were uncovered deductively include community safety, entrepreneurship, education, and cultural preservation. Despite facing challenges, the community remains resilient and optimistic about the future, with aspirations for continued growth and development.

The most prevalent satisfied themes from the coding are as follows:

#### Community Life:

- Some residents feel safe and supported within their community, actively participating in activities such as patrolling for safety.
- There is a strong sense of unity and trust among community members, who support each other financially, emotionally, and practically.
- Various community initiatives, such as MYDO, support youth education and entrepreneurship.

**Individual Activities and Talents:**

- Many individuals engage in artistic activities such as drawing, pottery, music, and dance as creative outlets.
- Soccer is a beloved sport in the community, with individuals playing, participating, coaching, and supporting soccer-related activities.
- Some individuals own small businesses, such as taxi services, hair salons, and event décor, to support themselves and their families.
- Personal talents range from singing and acting to construction and carpentry.



**Economic Activities:**

- Entrepreneurship is common, with individuals starting businesses such as *spaza* shops while others offer services such as security and tutoring.
- Community members find various ways to generate income, including selling products, making crafts, coaching sports, and participating in government projects such as a community gardening initiative.

Figure 14: Model of participant playing soccer to express their satisfaction with participating in sports (MS Participant 2024)

**Future Outlook:**

- Residents have hopes for community development, including improved infrastructure such as legal electricity connections, taps on every street, and better roads.
- They seek more permanent municipal connections and access to essential services such as healthcare and education.

Overall, the community of Melusi is characterised by its strong sense of unity, diverse talents, and entrepreneurial spirit, with residents actively working towards their personal and collective well-being.

**4.II IMPEDIMENTS**

The data reveals a multitude of challenges and impediments faced by the community of Melusi. The most critical impeded needs identified were *protection* and *subsistence* (fig. 15). Challenges regarding *subsistence* range from necessities such as housing and amenities to unemployment, lack of capital, limited job opportunities, inadequate education and qualifications, and community infrastructure issues such as unreliable electricity and water supply. The overwhelming dissatisfaction with *subsistence* takes precedence over the satisfaction of this need in the aforementioned section. In terms of *protection*, these issues included safety and crime concerns.

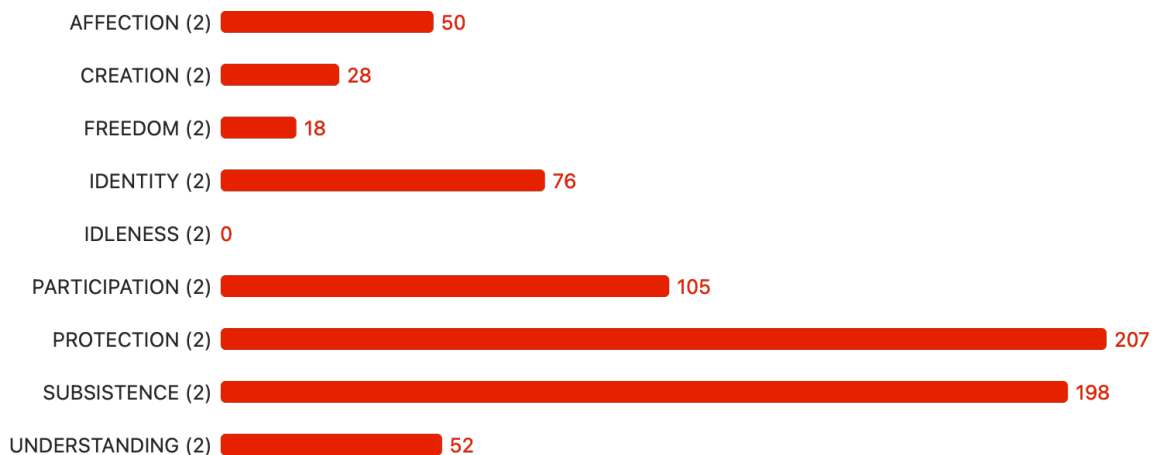


Figure 15: Bar chart of impeded fundamental needs via ATLAS.ti™ (Author 2024)

The most prevalent impeded themes from the coding are as follows:

#### **Basic Needs and Infrastructure:**

- Ongoing difficulties predominantly related to access to necessities including but not limited to water, electricity, transportation, and healthcare, underscore the urgent need for infrastructure development and support systems.
- Residents also expressed needs for housing, amenities, improved materiality and community spaces.
- Last year's data also highlighted the need to include safer and more conducive buildings (see fig. 16: *top*). Malatji (2024b) highlighted that current community facilities are often dilapidated, and there is a call for resources to rebuild them from scratch with improved building materials and techniques.
- Environmental challenges such as heat stress and the need for proper ventilation in buildings are highlighted as areas needing improvement.
- Lack of electricity, clinics, hospitals, and sanitation facilities diminish residents' sense of pride in their settlements.
- Infrastructure issues namely the *poor-quality* roads, illegal electrical connections, and inadequate access to essential services hinder daily life.

#### **Crime and Safety Concerns:**

- High crime rates, including theft, drug-related crimes, and gender-based violence, are attributed to unemployment and limited opportunities.
- Residents face safety concerns due to inadequate lighting resulting in the prevalence of illegal electrical connections, and criminal activities in certain areas.
- Police misconduct, including assaults and bribery, exacerbates feelings of insecurity and mistrust in law enforcement.
- Taverns are seen as the most unsafe setting. The community feels *stressed* about going to the taverns due to violence.

#### **Unemployment and Economic Challenges:**

- Limited job opportunities and reliance on personal connections or bribes for employment hinder economic growth and exacerbate crime.
- Financial constraints (see fig. 16: *bottom*) restrict residents from pursuing entrepreneurial ventures, limiting their creativity or ability to showcase or explore their talents.
- Limited educational opportunities, lack of qualifications, and insufficient information dissemination within the community.
- Lack of access to education coupled with a lack of skills development perpetuates unemployment and economic stagnation.

#### **Social Dynamics and Inclusion**

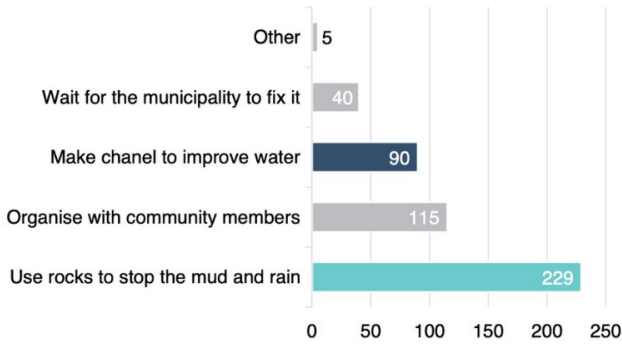
- *Foreign nationals* face xenophobia and exclusion, limiting their integration and contribution to the community.
- Lack of communication and transparency from community leaders exacerbates feelings of exclusion and mistrust.
- Social issues such as substance use, family dynamics, and limited access to social spaces, most of which are limited to taverns, impact community cohesion and overall well-being.

#### **Desire for Change and Community Engagement**

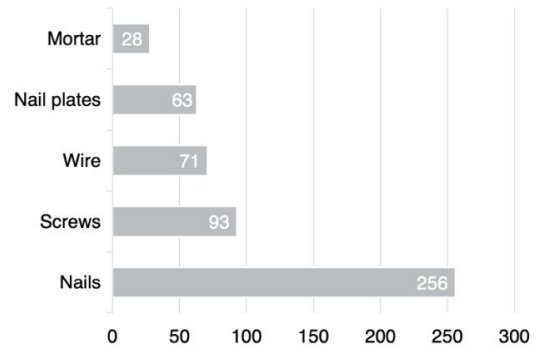
- Residents expressed a desire for formalised, transparent and inclusive community meetings, increased youth participation, and enhanced collaboration to address issues effectively.

# NEED FOR CREATIVITY

## NEED FOR EFFECTIVE CONSTRUCTION KNOWLEDGE

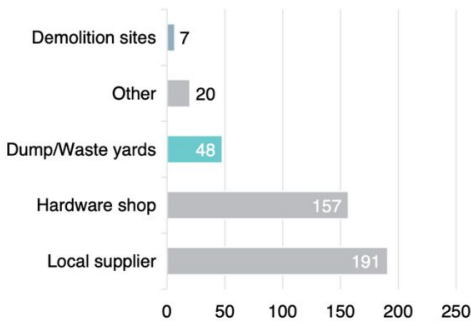


HOW DO YOU FIX ROADS IN THE SETTLEMENT?

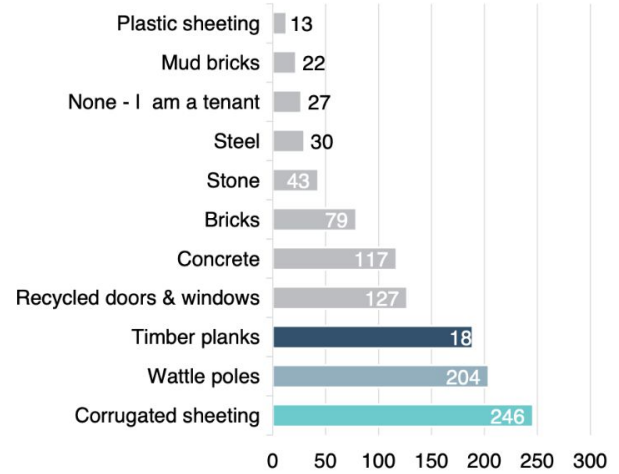


WHAT JOINING TECHNIQUES DO YOU USE?

## NEED FOR SUSTAINABLE SOURCING OF MATERIAL



WHERE DO YOU GET MATERIAL FROM?



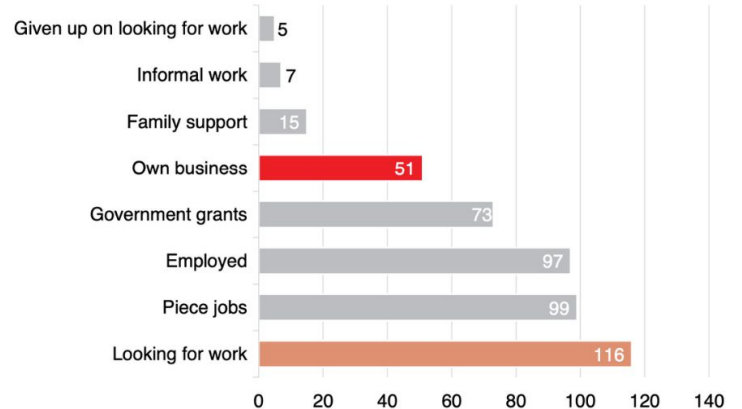
INDICATE 3 MATERIALS YOU USE MOST OFTEN TO BUILD WITH?

# NEED FOR SUBSISTENCE

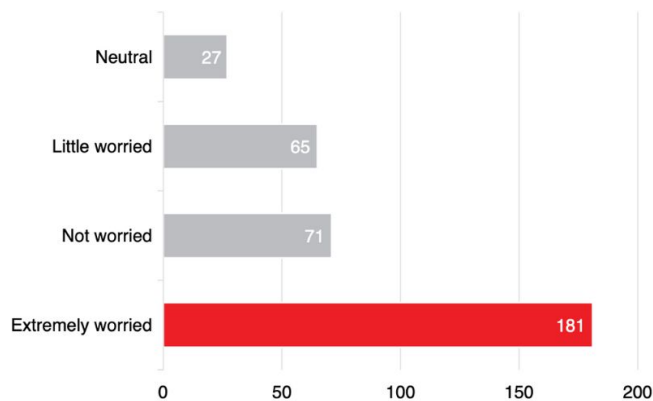
## JOB CREATION AND LIVELIHOOD



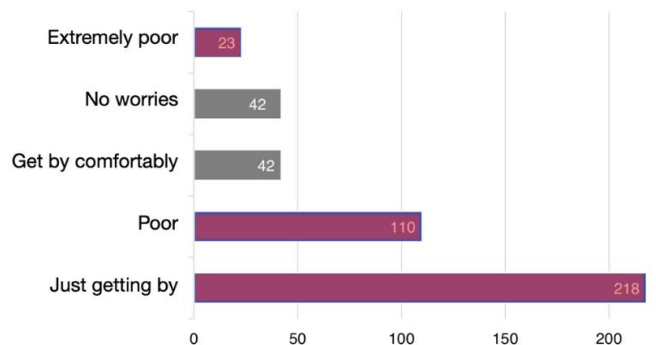
LIVELIHOOD



HOW DO YOU SUSTAIN YOUR HOUSEHOLD?



HOW WORRIED ARE YOU ABOUT HAVING A JOB?



HOW WOULD YOU DESCRIBE YOUR FINANCIAL SITUATION?

Figure 16: Quantitative secondary Co-Creating Wellness data, collected in 2023 by the UUC via ArcGIS Survey123™, highlighting the challenges facing creation (top) and subsistence (bottom) (Unit for Urban Citizenship 2023; edited by Author 2024)

Overall, the data highlights a complex web of challenges facing the community, ranging from infrastructural deficits to social and economic barriers. Addressing these issues will require comprehensive interventions, community engagement, and collaboration between residents, leaders, and strategic stakeholders.

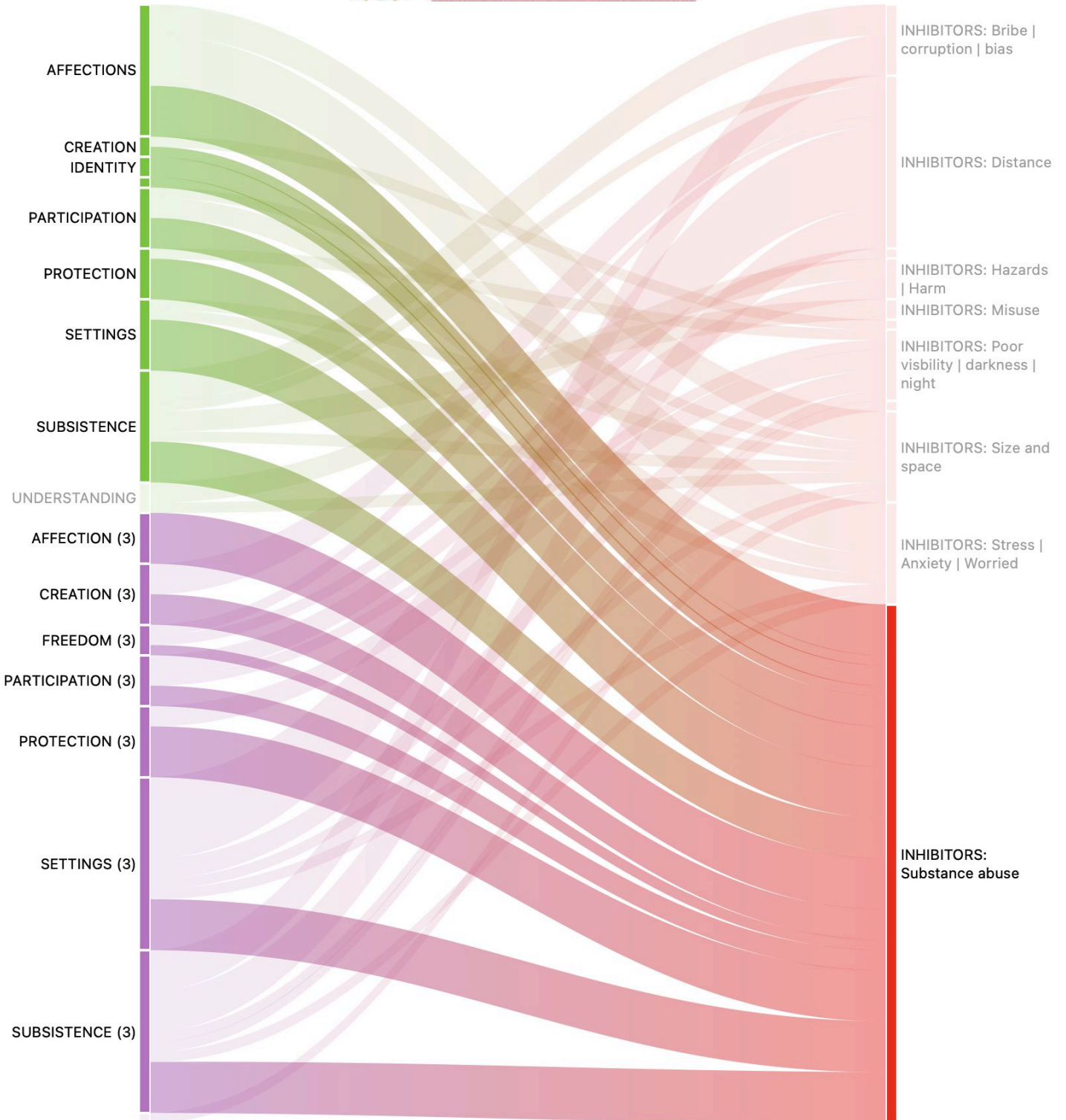
#### 4.III INHIBITORS IDENTIFIED

In Melusi, community members voiced profound concerns regarding prevalent issues including drug use, alcoholism, limited access to essential services, corrupt practices within law enforcement, and political leaders' failure to fulfil promises. Moreover, there are apprehensions regarding safety and the proliferation of criminal behaviour stemming from impeded *subsistence* needs.

However, the most pressing inhibitor identified from the data was substance use. Community members expressed significant concern about the widespread prevalence of substance abuse, particularly among the younger demographic. Their worries include combating drug dealing, substance misuse, and alcohol-related problems, underscoring the urgency of the situation. This unexpected finding was not included in the initial proposal, but it provides additional context and helps to further explain the overall findings (see fig. 18).



**Figure 17:** Image of empty alcohol bottles in Melusi, illustrating the substance use issue in the community (Author 2024)



**Figure 18:** Sankey diagram illustrating the inhibitors identified in Melusi, with a focus on the prominence of substance use, based on data analysis conducted via *ATLAS.ti*™ (Author 2024)

**Legend:**

- Satisfiers
- Impediments
- Utopia

According to Malatji (2024b) there is a pressing need for behavioural changes to address the deteriorating morality within the community. Public drinking, especially on weekdays as witnessed during the data collection, and drug use among the youth is widespread, often exposing children to harmful behaviours, while disrespectful conduct has become normalised. The proliferation of taverns as one of the few recreational outlets with public amenities seems to exacerbate this decline in moral standards. Respect towards others, regardless of age, is lacking, and there is a distressing prevalence of disrespect towards women. These issues highlight a lack of social cohesion within the community, despite social unity being prominently noted during the uncovering of satisfiers.

Recognising the detrimental ramifications of these challenges on community well-being, residents earnestly expressed the need for avenues to mitigate this negative impact, including initiatives aimed at empowering youth to resist substance temptations and curbing the activities of drug peddlers. To address these challenges, community members advocate for proactive measures such as turning taverns into education centres or churches for community safety, fostering educational and job opportunities, enhancing safety measures, and combating bribery and corruption. Actively seeking assistance and collaborative solutions, residents are committed to forging a safer and healthier environment conducive to the well-being of their families and the collective community.

Mr. Malatji and many other individuals felt that engaging in hands-on activities and finding a sense of purpose can effectively deter such behaviours. A noteworthy finding from the data suggests a potential gap for MYDO to add a community-based program to serve as a form of rehabilitation for youth who have unfortunately fallen into the grip of addiction. There is also a pressing demand for increased community resources, such as educational, creative or sports programs, to tackle the widespread substance use and crime effectively.



**Figure 19:** Images of taverns throughout Melusi, including the Sunshine Tavern (*left*) (Oberholser 2024), an interior view showcasing recreational amenities like a pool table (*middle*) (Unit for Urban Citizenship 2023), and the Rooftop Tavern near Vincent's Sports Ground (*right*) (Author 2024)

#### 4.IV UTOPIA

The data results reveal the multifaceted community of Melusi have a wide range of utopian needs, aspirations, and desires, including desires for better job opportunities, improved infrastructure, more community spaces, and access to services, funding and resources. Participants also highlighted safety concerns, the importance of community engagement, and aspirations for personal growth and exploration. The most utopian fundamental need was identified as *subsistence* (fig. 20), whereby the data revealed the need for vocational training, skills development, and access to resources that enable individuals to sustain themselves economically.

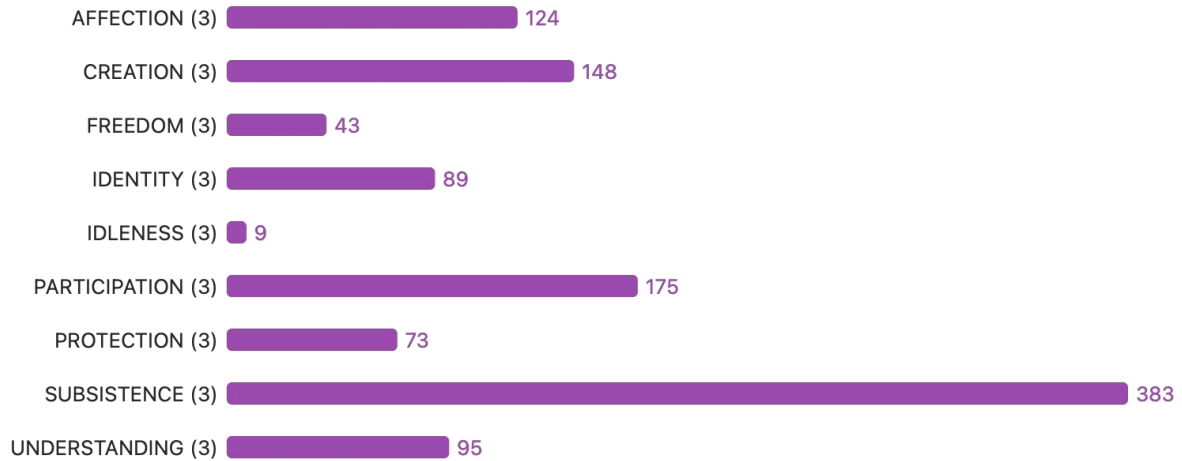


Figure 20: Bar chart of utopian fundamental needs via ATLAS.ti™ (Author 2024)

An overview of the most prevalent themes from the coding include:

##### Infrastructure and Living Conditions:

- There is a strong desire for improved infrastructure, including roads, electricity, water supply, and sanitation facilities such as toilets.
- Many express dissatisfaction with the current lack of development in Melusi and see RDP housing as a potential solution.



Figure 21: Models of utopian desire for an RDP house created by participants during *The Making Game* (MU Participants 2024)

### Employment and Entrepreneurship:

- The community seeks job opportunities and entrepreneurship to improve financial stability and living conditions.
- There is a desire to start various businesses, including catering, taxi services, clothing design, and restaurants, as well as a need for skill-building and job placement programs.
- There is a significant emphasis on the need for vocational skills such as bricklaying, plumbing, and electrical work. This is crucial because the community requires artisans to support both residential and industrial growth.
- Companies such as Coca-Cola Beverages Africa (CCBA), located nearby Melusi, recruit skilled workers, highlighting the demand for specific technical skills that are currently lacking in the community.



Figure 22: A participant's utopian desire is to be employed at CCBSA, depicted by modelling himself as a happy employee (MU Participant 2024)

### Community Engagement and Safety:

- Residents emphasise the importance of community engagement, safety, and support.
- This includes initiatives such as security patrols, community gatherings, and collaborative efforts to address issues of crime and drug dealing.

### Cultural Preservation and Creative Expression:

- Cultural preservation and creative expression are highly valued in the community, with interests spanning from traditional dances and attire to arts, crafts, and music.
- Teaching and sharing traditional knowledge and practices, including languages and crafts, involve older and younger generations working together. This not only preserves and promotes cultural heritage but also fosters intergenerational collaboration and strengthens community bonds.
- Encouraging the teaching and sharing of traditional knowledge and practices, such as languages, crafts, and cultural celebrations, helps preserve the community's heritage and fosters a sense of identity, belonging and pride.
- Additionally, there is a strong desire for spaces and resources to showcase talents and engage in creative pursuits, to further enrich the cultural fabric of the community.



Figure 23: Images of MYDO's annual Heritage Day celebration, held on the 4th of September (Malusi Youth Development Organisation 2023)

**Education and Skills Development:**

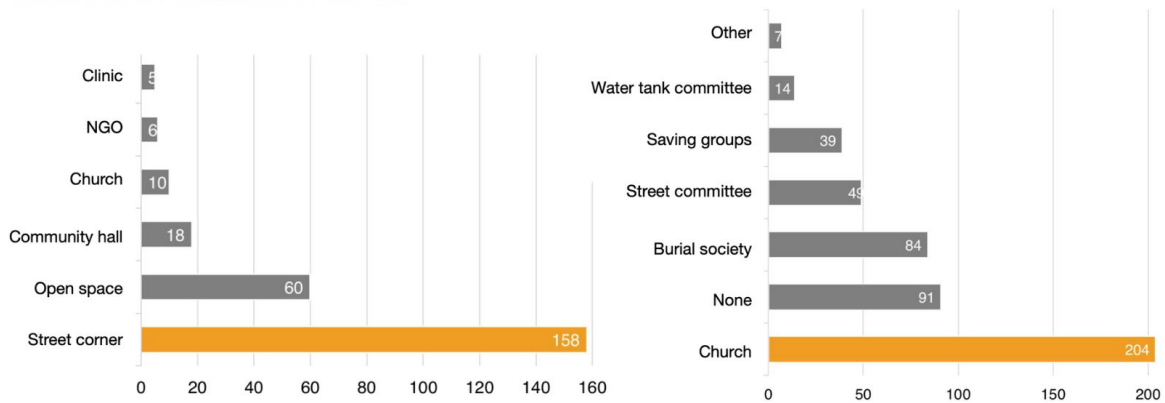
- Education and skills development are seen as crucial for personal growth and community empowerment.
- This includes a desire to access language classes to learn English and teach children traditional languages, as well as vocational training in trade areas such as plumbing and construction.

**Healthcare and Social Services:**

- Access to healthcare, counselling, and social services is highlighted as important for community well-being.
- There is a need for community spaces such as community hubs, creative studios, clinics, childcare centres, and rehabilitation support for the substance use issue, especially amongst the youth.

**NEED FOR PARTICIPATION**

NEED FOR A COMMUNITY SPACE



WHERE DO YOU MEET FOR COMMUNITY MEETINGS?

WHICH COMMUNITY GROUPS DO YOU PARTICIPATE IN?

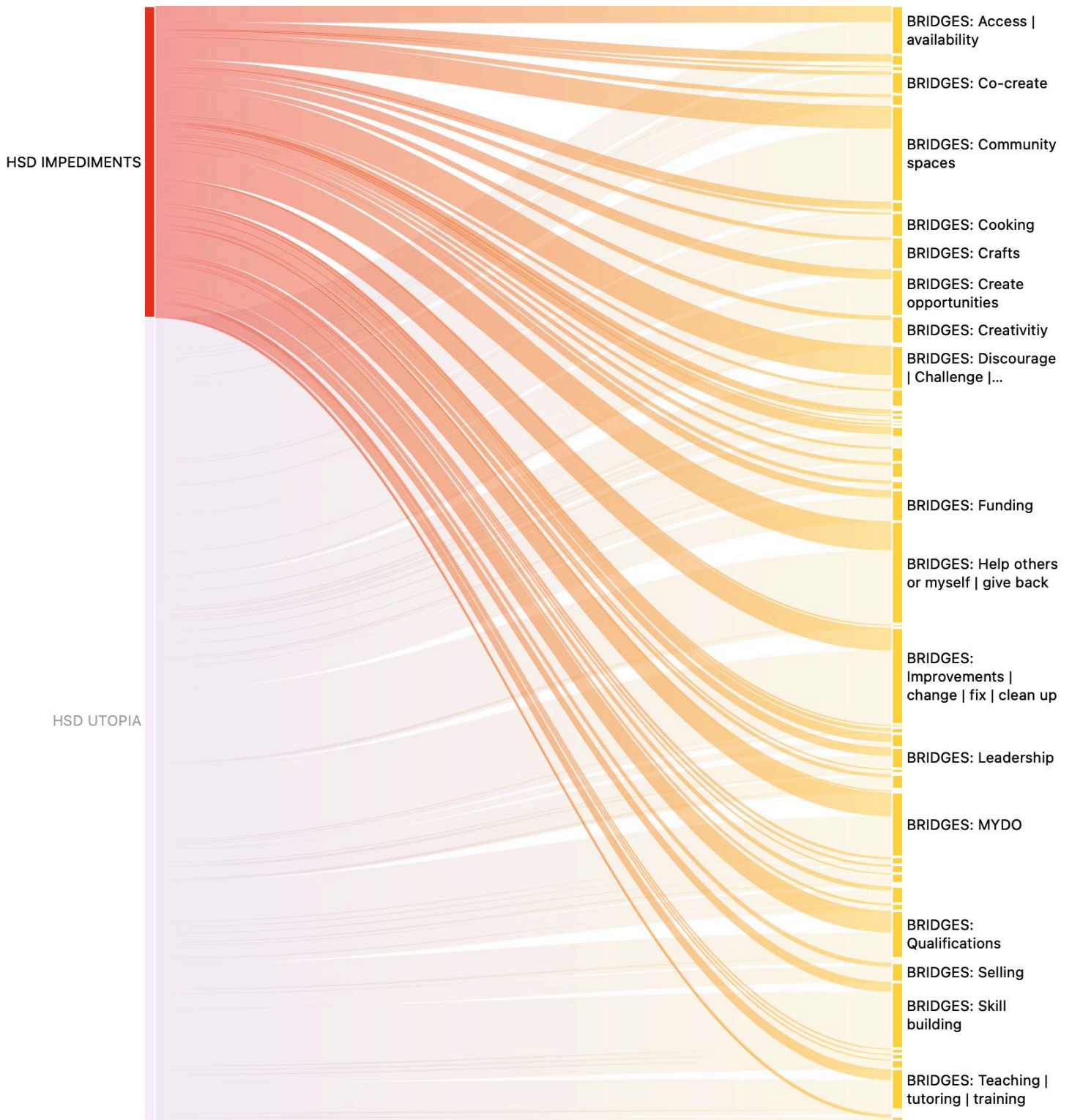
**Figure 24:** Quantitative secondary *Co-Creating Wellness* data, collected in 2023 by the UUC via *ArcGIS Survey123™*, highlighting the need for a community space (Unit for Urban Citizenship 2023; edited by Author 2024)

**Community Collaboration and Support:**

- Collaboration, communication, and support within the community are seen as vital for addressing challenges and achieving collective goals.
- This includes initiatives such as community halls for gathering/meeting, support groups, and government assistance programs.

Overall, the data reflects a community striving for improvement and empowerment, with a strong emphasis for self-reliance, community cohesion, and holistic development.

#### 4.V BRIDGES BETWEEN IMPEDIMENTS AND UTOPIA:



**Figure 25:** Sankey diagram illustrating the deduced bridges between impediments and utopia to satisfy utopian aspirations and desires, based on data analysis conducted via *ATLAS.it*<sup>TM</sup> (Author 2024)

**Legend:**

- Impediments
- Bridges
- Utopia



### **Community Empowerment and Skill Development:**

- There is a strong emphasis on empowering individuals through skill-building activities such as carpentry, engineering, agriculture, crafting, and jewellery making.
- Many community members want to be involved in teaching these skills and promoting creativity.

### **Entrepreneurship and Economic Empowerment:**

- Residents are engaged in various entrepreneurial endeavours, from selling vegetables and livestock to starting baking and catering businesses.
- However, challenges such as lack of resources and access to funding hinder business growth.

### **Community Collaboration and Co-Creation:**

- There is a call for collaboration and community involvement in addressing issues and designing future projects collectively.
- Initiatives such as workshops, and skill-sharing programs could potentially foster cooperation and collective creativity.
- There is a focus on skill exchange programs, where community members can teach each other various skills, such as carpentry, plumbing, and computer skills, and provide opportunities for intergenerational and intercultural interaction and learning.

### **Safety and Crime Prevention:**

- Community members are actively involved in crime prevention through initiatives ranging from the Community Police Forum (CPF) to youth patrols.
- There is a need to focus on addressing the root causes of crime, such as providing alternative activities for the youth.

### **Access to Essential Services:**

- Residents express concerns about unequal access to healthcare, education, and infrastructure.
- Improving access to these services, as well as advocating for government support, is a priority for many.

### **Community Events and Cultural Preservation:**

- Events and activities, including traditional dances, workshops, and heritage celebrations, could play a crucial role in community engagement and cultural preservation.
- There is a desire for more widespread advertising and promotion for such events.

### **Youth Engagement and Education:**

- Youth empowerment and education are central themes, with a focus on providing opportunities for skill development, job creation, and talent showcasing.
- There is also a desire for improved access to education and resources for youth.
- Create programs that engage young people in sports, arts, and vocational training. This not only keeps them away from negative influences but also builds a foundation for future community leaders.

### **Government Support and Advocacy:**

- Residents seek government assistance in areas such as infrastructure development, access to education, and job creation.
- Advocacy for improved services and equal opportunities is a recurring theme.

Overall, the data reflects a vibrant community striving for positive change, economic empowerment, and social cohesion through collaboration, creativity, and community

engagement. Despite individual differences, the community shares common challenges and aspirations, suggesting the need for collective good.

## 5 Discussion

From the data results, it is clear that Melusi is a township burdened by socio-economic challenges such as high unemployment, inadequate infrastructure, and social inequality, serving as a poignant case study for exploring the integration of creativity, participation, and design. By applying Max-Neef's (1991) HSD framework and principles of choice architecture, participatory design (PD), and co-creation, this discussion aims to provide essential insights into leveraging these elements to bolster community engagement, well-being, cohesion and agency in Melusi. These concepts are positioned within the broader discourse of PID in terms of community development and sustainable design practices, emphasising relevance and applicability.

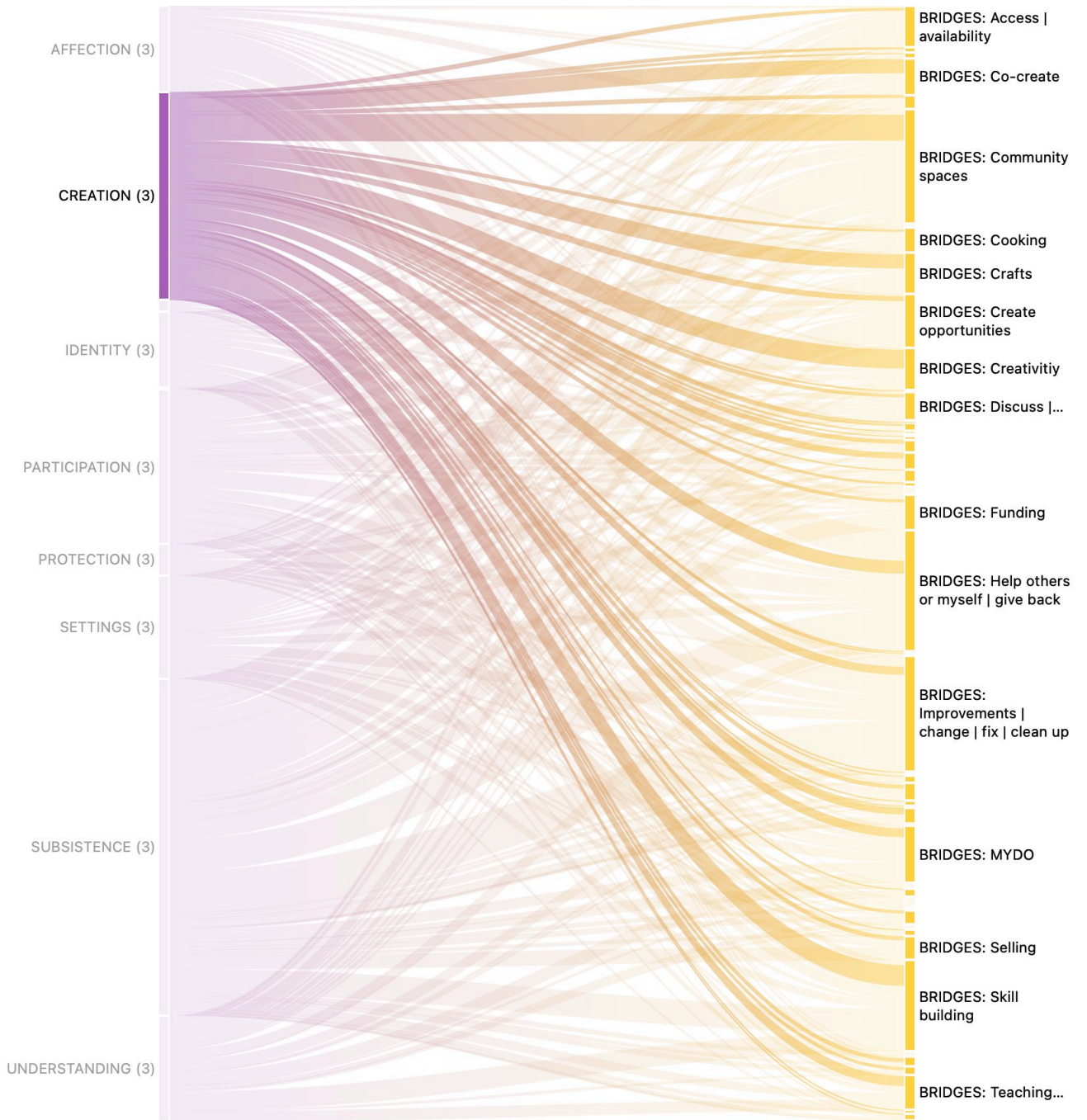
### 5.1 HUMAN SCALE DEVELOPMENT (HSD) AND THE NEEDS FOR CREATIVITY AND PARTICIPATION IN MELUSI

Max-Neef's (1991) HSD framework underscores the importance of fulfilling fundamental human needs as the foundation for sustainable development. In Melusi, the data revealed that the needs for *creation* and *participation* are particularly significant, fostering individual growth and self-expression while bolstering community cohesion and collective empowerment. This framework proved highly relevant in this marginalised setting, as the results reflect the community's nuanced aspirations to meet their needs through creative and participatory initiatives. This discussion intends to supplement the argument for the necessity of contextual and community-driven interventions for future development in Melusi.

#### Creativity in Melusi



Although the data set indicates that creativity is not one of the most pressing needs, it was identified as the third most utopian need. This need is essential concerning the research inquiry, particularly through the lens of co-creation.

The assessment of *creation* reveals that residents engage in various artistic activities such as pottery, carpentry, singing, and dancing. Participants highlighted the joy and fulfilment derived from these activities, underscoring their importance in personal and societal development. These activities not only fulfil the need for self-expression and cultural preservation (Marschall 1998), but also strengthen social ties within the community. For instance, one participant mentioned, *We like to create things with our hands but lack the materials like acrylic and tools to make them properly* (FG1 Participant 2024). Another adding ... *but no resources to start a business or buy material to make shoes, clothes* (FG2 Participant 2024). These quotes encapsulate the potential of creative activities to enhance personal welfare and income generation while also highlighting existing barriers to fully realising this potential. These activities reiterate Max-Neef's (1991) framework, emphasising *creation* as a fundamental human need. By creating environments that support these activities, we will explore how choice architecture can play a pivotal role in enhancing well-being and cohesion, thereby supporting the argument for its implementation.



**Figure 26:** Sankey diagram illustrating bridges to satisfy the utopian fundamental need of *creation*, based on data analysis conducted via *ATLAS.ti™* (Author 2024)

**Legend:**

-  Bridges
-  Utopia

### Economic Implications:

The economic potential of creativity in Melusi is significant. The data suggests that creative activities can address unemployment through vocational training, skills development, and access to resources. Gasper (2022) supports this perspective, highlighting the role of creativity in job creation and economic empowerment.

However, the lack of access to resources and infrastructure poses significant constraints, limiting the community's ability to fully leverage its creative potential, thereby pseudo-satisfied. Participants have expressed a need for more resources to support their creative endeavours, such as tools, materials, and spaces for activities such as carpentry, pottery, arts, crafts, music, and gardening. Hence, the data from Melusi highlights the need for infrastructure and resources to support creative endeavours. This mirrors findings from other studies (Charman *et al.* 2020), which identified similar constraints in resource-limited settings and emphasised the need for targeted interventions to unlock economic potential.

Establishing the need for studios, providing materials, equipment, and tools, and creating community spaces can facilitate co-creation and economic empowerment. Infrastructure for creative activities—such as those listed—should be established to bridge this need. These spaces can facilitate gathering and potential co-creation if *nudged* in that direction. However, it is crucial first to determine whether there is a need for co-creation by examining the relationship between creativity and participation.

### Social Cohesion:

Creative activities are instrumental in fostering social cohesion by bringing people together and promoting cultural exchange. Community art programs and cultural events, such as those organised by MYDO, including dance, poetry, and performance, provide platforms for artistic expression and venues for social interaction and collaboration. Events such as the annual Heritage Day celebration significantly enhance social cohesion by uniting people from diverse backgrounds to celebrate their cultures, thereby improving community morale, engagement, and pride (fig. 23). According to Malatji (2024b), *every year we do the heritage event on the 4th of September, and we see (the cultural) diversity (of Melusi) ... on that day*. However, data from focus groups revealed a need for better acceptance and awareness of multiple cultural heritages and differences. This pseudo-satisfied need for *understanding* can be facilitated more effectively through regular events and activities rather than relying on just one annual event to enhance intercultural *understanding* and cohesion. These findings align with those of other researchers (Charman *et al.* 2020; Simone 2004; Winschiers-Theophilus *et al.* 2012), who discuss how community-driven activities, including cultural practices, play a crucial role in social cohesion in diverse communities.

By intentionally designing shared spaces, or the suggestion of more MYDOs, subtly suggesting continuous cultural and creative activities, choice architecture can further enhance social cohesion, building a stronger and more united community. These community spaces can serve as hubs for ongoing cultural exchange and artistic *participation*, promoting mutual respect and fostering the need for *understanding* among community members. This approach aligns with the principles of HSD, emphasising the importance of creating environments that support social interaction and community bonding (Max-Neef 1991). Through thoughtfully designed environments, choice architecture can significantly contribute to the holistic

development of Melusi by fostering a bolstered sense of unity and cultural appreciation. This is consistent with findings from Hamdi (2010), who advocate for the creation of placemaking initiatives to support social cohesion and cultural exchange.

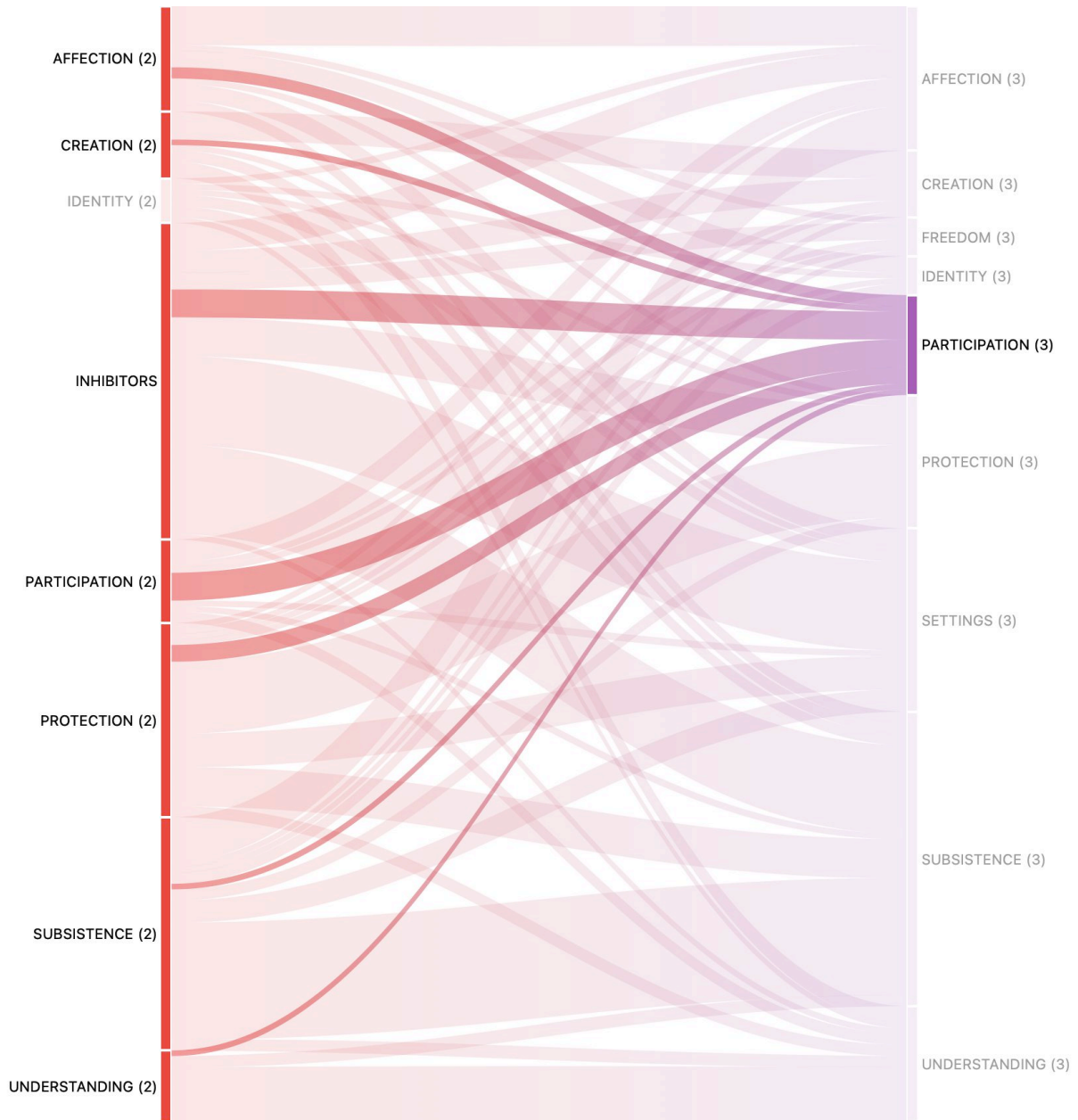
#### Implications for HSD and Choice Architecture:

Creativity supports HSD principles by fulfilling the need for self-expression and community involvement. By integrating choice architecture, designers can create environments that promote creative expression, thereby enhancing individual well-being and social cohesion. This approach supports the argument that choice architecture can guide residents toward positive behaviours and outcomes without restricting their freedom. For instance, designing public spaces that encourage artistic activities can *nudge* residents to engage in creative practices, fostering a sense of community and personal fulfilment. Synergising with Max-Neef's (1991) framework, underscores creativity as essential for both personal and societal development.

The integration of choice architecture in promoting creativity involves designing environments that make it easy and desirable, or fun, for residents to participate in creative activities (Thaler & Sunstein 2008; 2021). Practical suggestions from the participants include community spaces or hubs with studios, performance spaces, and exhibition areas or even competitions to facilitate creative engagement. These interventions can nurture creativity and participation, ultimately contributing to the holistic development and well-being of the community. The findings from Melusi also underscore the importance of accessibility. By strategically placing these interventions, one can *nudge* engagement for co-creation by providing convenient access to resources and opportunities for collaboration. This principle is supported by the work of Münscher, Vetter, and Scheuerle (2016), who emphasise that simplifying decision-making processes can lead to better outcomes by making relevant information more accessible and easier to use. Simplifying access encourages engagement. By uniquely integrating choice architecture into community development practices, this study positions itself within a new intersection of design and behavioural economics.

#### **Participation in Melusi**

Participation is another cornerstone of HSD, underscoring the importance of involving community members in decision-making processes. It is also essential for community development and empowerment (Awan *et al.* 2011; Kim 2018; Marschall 1998). Notably, *participation* was the third most impeded need and the second most utopian need, highlighting its potential role in Melusi if this need were better satisfied. The study found that community members are eager to engage in co-creative activities as well as future co-design projects. However, issues of exclusion, discrimination, and xenophobia present significant challenges to achieving true inclusivity. One participant noted, *There is a lack of information on all the opportunities and activities in the community. MYDO does not inform (us) about gatherings or opportunities, we want communication from them* (Mxl Participant 2024). These findings are similar to those of other studies (Anderson 2014; Winschiers-Theophilus *et al.* 2012), which identified communication barriers as a significant obstacle to community participation in marginalised settings.



**Figure 27:** Sankey diagram illustrating impediments, or barriers, to achieving the utopian fundamental need for *participation*, based on data analysis conducted via ATLAS.ti™ (Author 2024)

**Legend:**

- Impediments
- Utopia

**Barriers to Participation:**

When residents are actively involved in decision-making processes, they are more likely to take ownership of projects and initiatives, leading to better outcomes and sustainability (Hamdi 2010). The data analysis reveals several multifaceted barriers to participation in Melusi, including limited community engagement, lack of awareness about opportunities, socio-economic constraints, and inadequate infrastructure for communal activities. One participant noted, *I do not currently feel heard in the*

*community meetings, we need to formalise them. We (must) stop having them in the streets and start having them in the community hub with a community leader (MxU Participant 2024).*

The absence of reliable communication channels exacerbates these issues, as the data underscores the need for improved communication and information dissemination. Without reliable channels for sharing information, many residents remain unaware of opportunities for engagement and job opportunities. Moreover, socio-economic factors, or *subsistence*, such as financial constraints and time limitations, hinder participation as some residents prioritise immediate economic needs over community involvement. Lastly, the inadequate infrastructure for communal activities and recreation significantly hampers the community's opportunities to gather, interact, and engage in collective activities.

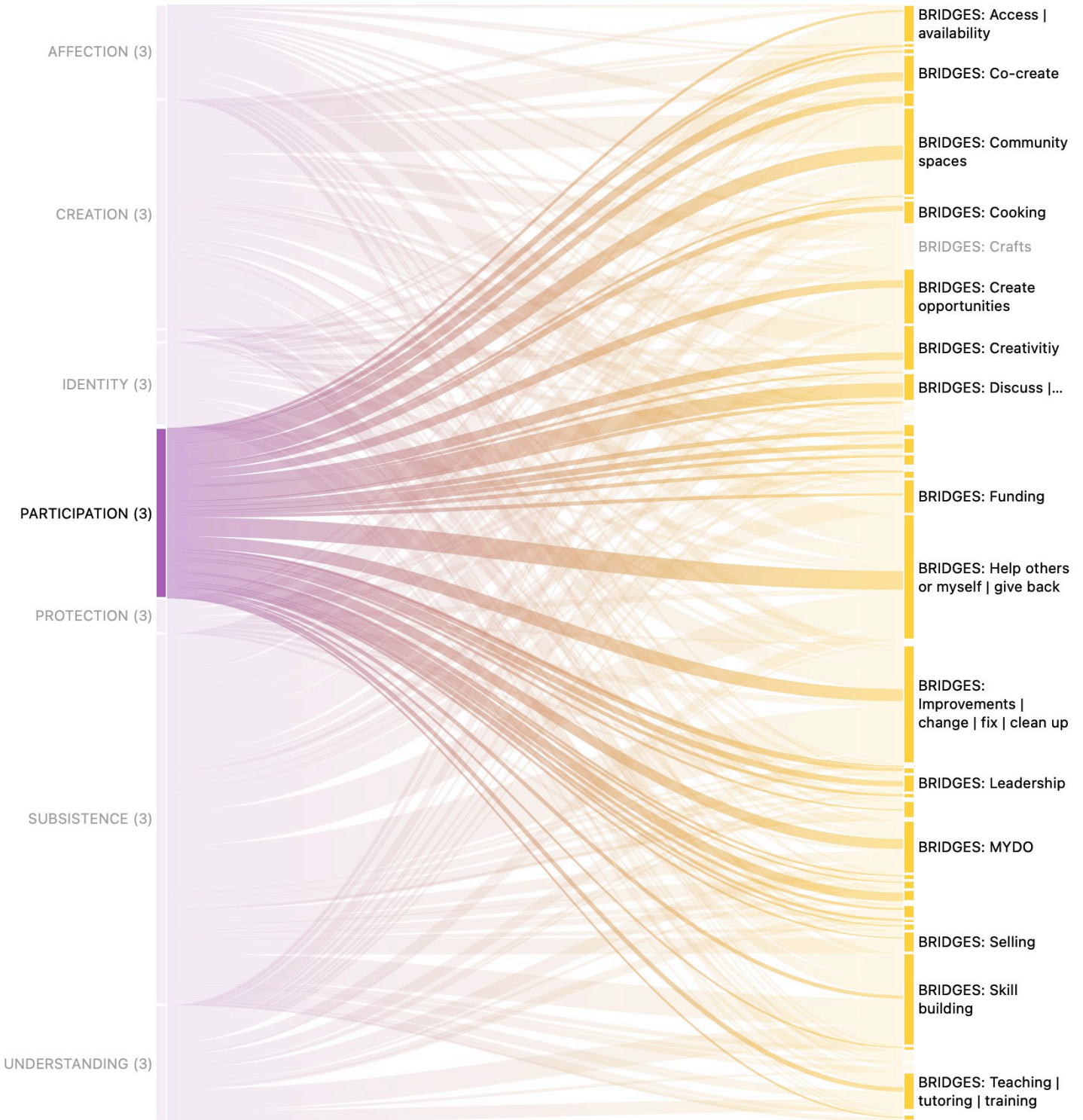
Addressing these barriers, or *sludge*, requires reliable communication channels and proactive measures to promote inclusivity and transparency in decision-making. Inclusive communication methods can help ensure that all residents are informed about opportunities for participation. Socio-economic constraints can be alleviated through initiatives that provide financial support. Enhancing infrastructure for inclusive communal activities can foster a more engaged and empowered community. This approach aligns with the principles of HSD, emphasising the need for inclusive and participatory development processes (Max-Neef 1991).

Choice architecture techniques, such as or flexible participation options, can help mitigate these challenges and enhance community participation. These observations align with findings from other researchers (Anderson 2014; Hamdi 2010), who identified similar barriers in other marginalised communities and suggested targeted interventions to enhance participation. By implementing these measures, Melusi can move towards a more inclusive and participatory community, ultimately fostering a stronger sense of ownership and responsibility among residents.

#### Enhancing Participation:



Practical suggestions to disseminate information more effectively include both analogue and digital methods, such as community notice boards, social media groups, and local radio announcements; a topic that will be explored in greater detail later. Malatji (2024b) noted, *Our main resource is our Facebook™ page... it's one platform that we've been using for years now.* Strengthening community networks and facilitating open dialogue are essential steps toward creating a more cohesive social fabric.

Promoting participation involves creating an environment where all residents feel included and valued. This requires transparent decision-making processes that actively involve community members and address issues of exclusion and discrimination. Hence, strengthening community networks and facilitating open dialogue are essential steps toward building trust and fostering inclusivity. By promoting intercultural understanding and ensuring that all voices are heard, Melusi can create a more cohesive and resilient community. Choice architecture can play a crucial role in this process by making it easier for residents to access information and participate in community activities. Literature, such as that by Simonsen and Robertson (2013), supports the importance of participation in community development.



**Figure 28:** Sankey diagram illustrating bridges to satisfy the utopian fundamental need of *participation*, based on data analysis conducted via *ATLAS.ti™* (Author 2024)

**Legend:**

-  Bridges
-  Utopia

## Interconnectedness of Creativity and Participation

Creative expression and participation are interconnected, with creative activities often serving as gateways for community engagement. Data from Melusi illustrates this interconnectedness through community projects, such as the gardening project, that involve collaborative efforts and promote social interaction. The interplay between *creation* and *participation* in Melusi highlights the interconnected nature of fundamental human needs. This aligns with findings from similar studies in other marginalised communities globally, as explored by Ferdous and Bell (2020), who highlight the importance of socially engaged architecture in fostering community resilience through creativity and participation.

The desire for creative expression is often linked to opportunities for participation in communal activities. The study also revealed that aspirations for job creation and skills development, that is *subsistence*, are closely tied to the needs for *creation* and *participation*. However, the data clearly shows that *subsistence* is the most pressing need to be addressed. Notably, most answers throughout the HSD matrix consistently linked back to *subsistence*, highlighting the urgency of addressing this need. Throughout the rest of the discussion, we will explore how creativity and participation in the form of co-creation can help address the significant socio-economic issues plaguing this community.

This observation contrasts with some literature which primarily associates *creativity* and *participation* with *identity* formation and cultural exchange or *understanding* (Max-Neef 1991; Winschiers-Theophilus *et al.* 2012), while the data highlights economic challenges.

The interconnectedness of creativity and participation underscores the importance of addressing both needs simultaneously to foster positive change in the community. By promoting creativity and participation, Melusi can enhance individual and collective well-being. These needs can be supported by choice architecture by creating environments that encourage both.

### Implications for HSD and Choice Architecture:

From what we have established thus far, effective community development in Melusi needs to involve addressing shared challenges and promoting collective well-being. Embracing open dialogue, participatory decision-making, and celebrating collective achievements is crucial for collaboration. Adopting this approach will encourage a sense of agency and solidarity among community members in Melusi. Literature, such as Awan *et al.* (2011) and Max-Neef (1991) agree with sentiment, both emphasising the holistic fulfilment of human needs through community involvement.

By fostering participation and creativity, choice architecture can *nudge* residents toward engaging in community activities, enhancing their sense of ownership and responsibility. It simplifies decision-making, making it easier and more enjoyable for residents to participate in community activities. Well-organised events and accessible information can further promote engagement. Addressing creativity and participation is crucial for empowering the community.

Practical applications of choice architecture include designing environments that facilitate collaboration and hosting events that encourage participation. By simplifying decision-making and removing barriers to participation, these interventions can enhance overall resilience, ownership, and cohesiveness. This approach aligns with

the principles of HSD and PID, emphasising the importance of addressing fundamental human needs holistically and inclusively (Karim 2018; Max-Neef 1991).

### Empowering Youth Through Creativity and Participation

Youth in Melusi expressed a strong desire for vocational training. One participant mentioned, *I would like to work at MYDO, teaching the youth how to grow and develop their skills, especially the girls* (MxU Participant 2024).

Empowering youth through creativity and participation is essential for community resilience and fostering future leaders. The results underscore the significance of providing educational and vocational pathways, mentorship programs, and platforms for youth-led initiatives, to nurture leadership skills and civic engagement. Intergenerational collaboration and dialogue can further enrich this process, ensuring that wisdom and innovation come together to positively shape the community's future. Encouraging collaboration between different age groups can enhance community cohesion and ensure the transfer of knowledge and skills across generations, fostering mutual respect and learning, as supported by Simonsen and Robertson (2013). Focus groups highlighted the crucial role of intergenerational collaboration in Melusi and the importance of youth engagement in community activities, indicating the potential for co-creation programs that involve both young and older residents. Choice architecture can foster youth empowerment by creating environments that *nudge* youth participation, intergenerational collaboration and leadership, thereby contributing to the long-term development of the community.

### Preventative Measures:

Creative and participatory initiatives can serve as preventative measures to steer or *nudge* youth away from major negative influences such as substance use and criminal activities. Community participants emphasised the need for these initiatives to provide positive outlets for energy and ambition. Malatji (2024b) added that by engaging youth in meaningful activities, the community can create a safer and more prosperous environment for future generations. By providing constructive and creative outlets and opportunities for personal growth, such a program could offer a pathway towards rehabilitation and positive community integration. This approach aligns with the principles of behavioural design, which seek to create environments that *nudge* individuals towards positive outcomes (Münscher, Vetter, and Scheuerle, 2016).

The participants drove home the importance of preventive and rehabilitative measures as being crucial for addressing issues such as substance use and criminal activities among youth. By providing positive outlets to deal with the lack of recreational outlets and boredom, creative and participatory initiatives can help *nudge* young people towards positive behaviours and away from negative influences. Sports clubs, arts programs, and vocational training were identified as constructive activities that promote personal growth and community involvement. Participants in the focus groups, along with Mr. Malatji, highlighted the role these initiatives can play in creating a sense of unity and emphasising the needed values of enhanced respect and consideration for others, bridging behavioural gaps. By strategically implementing these measures, Melusi can foster a supportive environment that encourages, reducing negative influences among its youth.

## Economic Empowerment and Collaboration

Small businesses such as spaza shops and local services contribute to the economic vitality of the community by providing opportunities for social interaction and mutual support, which are essential elements of community cohesion and self-reliance (Max-Neef 1991).

Economic implications of creativity in Melusi extend beyond individual income generation. Creative activities can support local economies by promoting small businesses and entrepreneurship. For instance, participants expressed a desire to have more resources to sell their handmade crafts locally and showcase their talents to broader markets and stakeholders. This perspective is reinforced by research from others (Charman *et al.* 2020), who argue that supporting local creative industries can lead to broader economic benefits for the community.

Consequently, both creative and participatory initiatives can catalyse economic empowerment by promoting entrepreneurship and job creation. The data suggests that collaboration with local businesses and government can showcase creative talents and address unemployment. These collaborations can mobilise resources and expertise to address pressing issues collectively. This harmonises with Van Eeden's (2022) *anchor institution theory*, which emphasises the pivotal role of established local institutions in driving sustainable development and community resilience. For instance, showcasing creative talents through local markets or exhibitions can help promote entrepreneurship, establish key partnerships and generate income for residents.

Harnessing creative initiatives can thereby aid in addressing the major impeded need of *subsistence*, including economic security. This aligns with the broader goals of HSD, which prioritise the holistic fulfilment of human needs over mere economic growth, emphasising the role of creativity in economic empowerment (Gasper 2022; Max-Neef 1991).

Correspondingly, choice architecture can support economic empowerment by fostering collaboration and collective action, creating opportunities for economic growth and community development. By creating environments that facilitate these collaborative efforts, choice architecture can help communities leverage their creative potential to achieve economic resilience and development.

### *Social Justice and Equity in Design Interventions:*

The study highlights the importance of needs-focused design approaches tailored to the specific requirements of marginalised and underserved populations. It reveals the critical role design can play in addressing fundamental needs for *creativity* and *participation*. Participants expressed a need for public spaces where everyone feels welcome and can participate without fear of violence or crime, emphasising the importance of inclusive and equitable spaces.

Resultantly, interventions in Melusi should focus on safety, belonging, and self-reliance to satisfy other fundamental needs, including *protection*, *freedom* and *identity*. By doing so, designers can create interventions that act as synergistic satisfiers, resonating deeply with the community of Melusi and fostering long-term positive outcomes (Max-Neef 1991). This aligns with Max-Neef's framework and PID's taxonomy (Kim 2018), emphasising the importance of community-focused design. Choice architecture can promote PID principles of social justice and equity by designing inclusive public spaces

that encourage participation and ensure that all community members feel valued and safe.

#### Implications for HSD and Choice Architecture:

The community of Melusi already exhibits a strong sense of unity and support, significantly contributing to resilience. MYDO, exemplifies this through its programs focused on education, sports, arts, and entrepreneurship. These initiatives, which align with Manfred Max-Neef's (1991) principles of participation and creativity, provide immediate benefits to the youth and build a foundation for long-term community resilience. By fostering collaboration and collective action, choice architecture can guide residents by creating environments that encourage community involvement, thereby enhancing the impact of such initiatives (Thaler & Sunstein 2008; 2021).

Despite the community's strengths, significant challenges impede development and well-being in Melusi. Issues such as inadequate housing, unreliable electricity, poor sanitation, and limited access to clean water are prevalent. Crime and safety concerns, exacerbated by unemployment and substance abuse, pose serious threats to its community. Addressing these basic needs and infrastructure deficits is critical for improving the overall quality of life and enabling the community to thrive. Interventions designed through the lens of HSD and choice architecture can prioritise these fundamental needs, ensuring that solutions are both contextually relevant and sustainable (Max-Neef 1991; Thaler & Sunstein 2021). However, addressing these shared challenges and deficits requires collaborative efforts.

## **5.II PARTICIPATORY DESIGN (PD) AND CO-CREATION IN MELUSI:**

During the study, participants expressed interest in collectively participating in building projects and other activities, such as mural painting. The success of previous co-design projects highlights the potential for further participation in such initiatives. In 2023, the UUC undertook a co-design project that community leaders from the author's *Making Game* often mentioned with fondness. Mr. Malatji (2024a) noted that other universities have also conducted co-design projects in the settlement. While these projects have not been formally analysed, their positive impact and lasting imprint are clear, and there is a strong interest in further participation in such initiatives. Additionally, this approach has already been previously undertaken in other Melusi studies (Eskilsson and Rifat 2021; Zorn 2021) and other settlements in the CoT (Combrinck and Venter 2020; Kotze 2023), demonstrating its effectiveness in fostering continuous community engagement and ownership. In Melusi, expanding PD can further empower residents by involving them in building projects and other creative activities. By positioning PD within the broader discourse of community-driven development, this study highlights its potential to address local challenges and needs effectively.

### Facilitating Co-Creation

Facilitating co-creation involves designers creating opportunities for residents to actively engage in the design and implementation of development projects, collaborating with community members in decision-making processes to ensure contextually relevant and sustainable outcomes, as demonstrated by Brandsen *et al.* (2020), Hamdi (2010), and Winschiers-Theophilus *et al.* (2012). Within the context of Melusi, PD can serve as a conduit for fostering creativity and engendering community engagement through structured processes of collaboration. Our research approach recognised community members as active agents with valuable insights into their own needs and aspirations. By involving community members in the decision-making process, PD supports choice architecture, ensuring that interventions are both relevant and sustainable.

## Entrepreneurial Endeavours and Community Empowerment

Interest in PD in Melusi is directed towards facilitating entrepreneurial endeavours in sectors such as clothing design, carpentry, and artisanal crafts. These initiatives can function as platforms for co-creation, fostering creative innovation and socio-economic empowerment. By foregrounding community voices and local expertise, PD interventions are poised to yield contextually relevant solutions and imbue stakeholders with a sense of ownership over the developmental trajectory of their locale. Hamdi (2010) and Marschall (1998) agree that ownership and dependency are crucial for the success and sustainability of community projects, highlighting the role of PD in entrepreneurship. Involving the community in the design process fosters ownership, leading to better maintenance and sustainability of initiatives. Hence, choice architecture can support entrepreneurial endeavours by creating collaborative spaces that promote skill development and economic empowerment. Real-world applications include designing collaborative spaces for entrepreneurial activities, thereby fostering a resilient and engaged community.

Community members in Melusi are eager to participate in constructing and upgrading their homes and public facilities. This involvement will not only provide practical skills but also fosters a sense of ownership and pride in the community. This collaborative approach aligns with the principles of choice architecture and PD, which emphasises shared decision-making and mutual learning between designers and users, respectively (Simonsen & Robertson 2013; Thaler & Sunstein 2021; Winschiers-Theophilus *et al.* 2012).

Another initiative identified in the data findings is gardening projects. These kinds of community projects offer opportunities for creative expression, skill-building, and economic empowerment. Residents who currently engage in gardening activities benefit from improved food security and a sense of accomplishment. These activities not only enhance the community's resilience but also provide a platform for residents to showcase their creativity and contribute to the local economy. Through systematic engagement with local stakeholders and a nuanced understanding of contextual realities achieved through the utilisation of the HSD framework, these endeavours aspire towards the realisation of sustainable and community-driven transformation (Max-Neef 1991).

Moreover, entrepreneurship is a critical pathway for addressing unemployment and economic challenges in Melusi. The youth empowerment programs under MYDO, particularly those focused on entrepreneurship, demonstrate the potential of local businesses to create job opportunities and stimulate economic growth (Malatji 2024a). Supporting these activities through PD and co-creation can enhance community resilience by providing sustainable income sources and reducing reliance on external aid (Hamdi 2010). This approach aligns with the principles of choice architecture and HSD, wherein intentionally designed environments can encourage entrepreneurial activities, thereby guiding economic self-sufficiency (Max-Neef 1991; Thaler & Sunstein 2008; 2021).

## Co-Creation for Skill Development and Job Creation

The data from Melusi reveals a strong interest in skills development, particularly in areas that can lead to job creation. This is evident in the residents' desire to participate in vocational training and skill-sharing programs. For instance, the following was captured during a focus group session:

**Researcher:** *What skills do you need?*

**Group Discussion:** *How to start a business... Working with hands ... these can then be taught to others... Building ... I want to learn how to build from the ground up so that I can build better houses for my children... Baking... I already know how to bake some things (like vetkoek) but would like to learn more to teach the community (FG Participants 2024).*

Consequently, co-creation initiatives focusing on vocational training could equip residents with the skills needed to start their own businesses or find employment, addressing economic challenges and enhancing community well-being. PD initiatives that integrate vocational training and skill-sharing programs empower residents by providing practical skills and knowledge (Ferdous & Bell 2021). This approach could address impeded *subsistence* needs and foster a culture of continuous *understanding* and *participation* within the community. By creating opportunities for skill development and job creation, co-creation initiatives can significantly contribute to the socio-economic upliftment of Melusi.

#### Addressing Systemic Barriers through Co-Creation

In Melusi, PD initiatives are motivated by a dual imperative: to address prevailing socio-economic challenges and to harness latent creative potential within the community. Despite expressed interest in creative pursuits and skills acquisition, tangible manifestations of these aspirations are hindered by infrastructural deficiencies, prominently exemplified by limited access to electricity and funding. Such constraints underscore the necessity for PD methodologies to negotiate and mitigate systemic barriers (*sludge*) impeding creative expression and economic advancement.

PD methodologies must address these inhibitors by creating interventions that incorporate the community's input and address their specific needs. For example, ensuring reliable access to electricity can significantly enhance the capacity for creative and economic activities, thereby empowering residents and fostering long-term development.

By leveraging local knowledge and involving community members at every stage of the design process, PD has historically created resilient and sustainable interventions that benefited the community. The interview with Malatji (2024b) provided insights into previous co-creative efforts in Melusi, such as those by the UUC, highlighting how these approaches successfully fostered community engagement and emphasised the value of community involvement in design and development. Research by Combrinck and Venter (2020), Eskilsson and Rifat (2021), Kotze (2003), and Zorn (2021) also underscores the success of community participation in ensuring contextually relevant interventions for informal settlements. Engaging residents in planning and decision-making ensures that projects reflect the actual needs and desires of the community, leading to better acceptance and sustainability of initiatives, as supported by Marschall (1998).

Implications for HSD and Choice Architecture:

PD strategies in Melusi represent a concerted effort to catalyse creative output, strengthen community bonds, and foster inclusive socio-economic development. By integrating PD and co-creation principles, Melusi can enhance community engagement and promote sustainable development. These approaches ensure that projects are tailored to the community's needs, enhance local skills, and create a sense of ownership among residents, as recognised by Hamdi (2010). The aspirations of Melusi's residents include improved infrastructure, better job opportunities, enhanced community engagement, and cultural preservation.

By involving community members in the planning and implementation of projects, designers can ensure that interventions are aligned with local needs and preferences (Hamdi 2010; Robertson & Simonsen 2013). Thus, PD and co-creation offer effective strategies to address the community's impeded needs and utopian aspirations.

Choice architecture can further support these efforts by designing environments that intentionally encourage participation. Practical suggestions include creating workshops and collaborative spaces that foster a sense of belonging and responsibility, and promoting skill development, entrepreneurship, and collective action. By providing opportunities for engagement, choice architecture can enhance community resilience and well-being.

Harmonising with the principles of HSD (Max-Neef 1991), it is essential to address fundamental human needs through community-driven and inclusive interventions. Through collaborative efforts, Melusi can bolster its resilience and vibrancy, becoming better equipped to effectively address its socio-economic challenges.

**5.III ROLE OF TECHNOLOGY IN CO-CREATION & PARTICIPATION**

In Melusi, technology enhances communication and engagement. Digital platforms such as mobile apps and websites facilitate community participation by providing up-to-date information and ease of access. Currently, limited digital literacy workshops improve residents' skills, promoting innovation and creativity. By positioning technology as a critical enabler of co-creation and participation, this study aligns itself with current trends in digital community engagement and initiatives (Eskilsson & Rifat 2021; Thaler & Sunstein 2021).

Enhanced Communication and Engagement

During the study, technology improved communication, data collection, and management. Additionally, the focus group participants highlighted the role of technology in community engagement. Platforms such as *Facebook*<sup>TM</sup> and *WhatsApp*<sup>TM</sup> serve as primary tools for information sharing and participation in decision-making processes and events in Melusi. Specifically, MYDO's *Facebook*<sup>TM</sup> page (fig. 30). and the MYDO's *Breaking News* digital newsletter work alongside analogue tools such as posters, and an anonymous suggestion



MYDO will be having an outreach program this Saturday the 09th March 2024, 12:00, @open space next to rooftop in Melusi 3.

The purpose is to recruit learners and youth to benefit from MYDO programs as we will be starting a new branch called "MYDO Melusi 3 Branch". Come and meet with us to learn more about our programs such as trainings, after-school care, sport&Art etc.

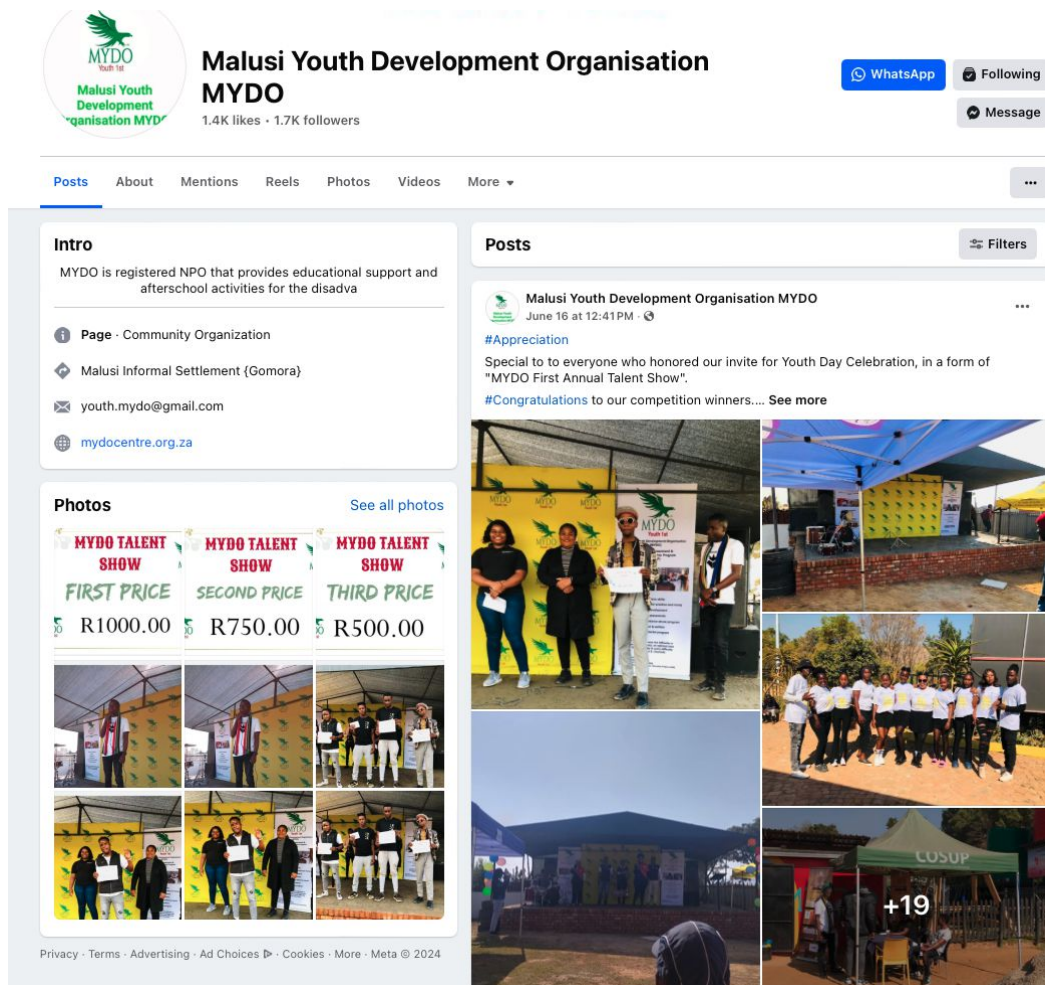
Our new branch will start operating from Monday the 11th March 2024, at the hall behind Mohamed shop and spin city, (New Stand).

For more info: Email: [youth.mydo@gmail.com](mailto:youth.mydo@gmail.com) Call or call/whatsup 083 734 2689.

**Figure 29:** MYDO's Breaking News digital letter informing residents that a new MYDO branch is coming to Melusi 3, encouraging residents to meet at the open space next to the rooftop and engage (Malusi Youth Development Organisation 2024)

box at MYDO, crucial for keeping residents informed about opportunities, vacancies and events, such as the new MYDO branch (fig. 29). Ensuring these channels are effective, accessible, and widely used is essential for active participation.

Technology supports choice architecture and co-creation by enhancing communication and engagement, making it easier for residents to access information and participate in community activities. Practical applications include setting up comprehensive community information systems (ICTs) and digital tools to facilitate engagement and ensure residents are well-informed and involved, as echoed by Winschiers-Theophilus *et al.* (2012).



**Figure 30:** Screenshot of MYDO's Facebook™ page, illustrating the use of this social media platform to encourage participation and understanding (Malusi Youth Development Organisation 2024)

### Digital Literacy Workshops:

During focus groups, participants linked technology to fostering innovation and creativity. They expressed a desire for learning opportunities in coding and IT, advocating for services like free CV creation, and forming inclusive digital groups for information sharing. Hence, conducting digital literacy workshops can enhance residents' skills and promote innovation. Access to technology opens new

opportunities for economic growth and social cohesion, as emphasised by Eskilsson & Rifat (2021).

Promoting digital literacy with the unique employment of choice architecture to enhance community participation by nudging residents to engage in digital platforms with the necessary skills. Practical applications include conducting digital literacy workshops to enhance skills and drive innovation. Offering programs to satisfy the need for digital literacy and technology skills can help residents adapt to the digital age and improve their employability.

### Overcoming Barriers to Access

While technology improves communication and engagement, data suggests these platforms are not fully meeting community needs, indicating a need for more inclusive communication methods. Addressing disparities in access to technology is crucial for promoting digital inclusion and engagement. During *The Making Game*, one individual expressed a utopian desire for a smartphone, while others desired computer and laptop skills, which they lack due to limited access, ownership and training opportunities, highlighting the community's aspirations for better technological access (see fig. 31). Participants highlighted other barriers such as exclusion from *WhatsApp*<sup>™</sup> groups and limited access to MYDO's computer programs, which are mostly available to the enrolled youth, excluding residents over 35. Suggestions include promoting workshops through online advertisements and raising awareness within the community.



Limited access to reliable electricity complicates digital communications, underscoring the need for sustainable solutions such as MYDO's solar-powered computer rooms, despite their challenges during cloudy periods (Malatji 2024b). The community also values analogue tools such as posters and advocates for using various communication channels, including introducing radio stations. Overcoming access barriers through choice architecture involves promoting inclusion by designing environments that effectively facilitate digital engagement, as recognized by Marschall (1998) and Winschiers-Theophilus *et al.* (2012).

**Figure 31:** A participant created a model of her utopian desire for a smartphone during *The Making Game* (MU Participant 2024)

### *Practical Applications to Enhance Equal Access:*

- **Community Information Systems:** Setting up digital platforms to provide up-to-date information on community projects, job opportunities, and training programs.
- **Digital Literacy Workshops:** Conducting workshops to improve digital literacy, focusing on essential skills such as using computers, accessing the internet, and basic software.
- **Educational and Vocational Programs:** Offering programs that provide residents with the tools and skills needed for community development and participation in the digital economy.

By implementing these applications, Melusi can enhance digital inclusion and engagement, ensuring all community members could have the opportunity to participate fully in the digital age and economy.

*Implications for HSD and Choice Architecture:*

Integrating technology in community development can significantly enhance communication and engagement, amplifying the impact of choice architecture, PD, and co-creation. Providing accessible digital tools can *nudge* a more inclusive and active community, ensuring residents can contribute to and benefit from sustainable development initiatives (Eskilsson & Rifat 2021). Digital platforms that facilitate community engagement and provide information about local initiatives can help residents make informed decisions and actively participate in development. This aligns with HSD principles of innovative and inclusive approaches to satisfying needs (Max-Neef 1991).

Technology integration enhances community engagement and development by providing tools for participation, articulating needs and aspirations, and negotiating consensus in the design process, emphasising alignment with HSD principles of *understanding*, *subsistence*, and *participation*, supported by Winschiers-Theophilus et al. (2012). Hence, A significant finding in Melusi is that access to technology bridges gaps in education, infrastructure, and communication, addressing the needs for *understanding*, *subsistence*, and *participation*. This unique intersection is a valuable area for further research.

Therefore, choice architecture can promote digital inclusion and participation by designing environments that facilitate engagement. Practical applications include enhancing community engagement through digital tools and platforms, and promoting sustainable development and resilience. By leveraging technology, Melusi can foster greater community involvement, ensuring development projects are relevant and sustainable.

#### **5.IV LONG-TERM SUSTAINABLE OUTCOMES**

The study did not specifically assess long-term engagement; however, actionable insights from existing sustainable practices in Melusi can inform priorities for future development and resilience efforts. These insights can guide the *Co-creating Wellness and Human Dignity Research Project* towards a CAP.

*Continuous Engagement and Feedback:*

Currently, feedback loops are established through community engagement events and discussions at designated spaces or at MYDO. These meetings gather feedback and involve leaders in problem-solving. However, these feedback loops do not fully meet the community's need for *understanding* and can be somewhat exclusionary to non-leaders. Participants emphasised the need for continuous improvement and more inclusive feedback mechanisms. As supported by Kotze (2023), effective PD requires ongoing interaction and mutual learning between designers and community members, fostering a collaborative approach to problem-solving. Continuous engagement and feedback loops are essential for adapting to evolving needs and ensuring that development projects remain relevant and effective (Thaler & Sunstein 2021). This process improves the quality of projects, strengthens community trust and cooperation, and makes development efforts more resilient and inclusive, as supported by Brandsen et al. (2020).

### Comprehensive Approach to Sustainability.

Addressing environmental, economic, and social dimensions of sustainability ensures long-term benefits for the community (Hamdi 2010). In Melusi, this means focusing on projects that improve infrastructure, enhance access to services, and promote economic opportunities while respecting the environment (Max-Neef 1991). The data indicates that residents prioritise long-term solutions such as permanent housing, reliable electricity, and better roads. These improvements are crucial for long-term sustainability and enhancing the overall quality of life. By embedding these principles, proposed interventions can contribute to the community's long-term prosperity and resilience.

The opportunity for skills, knowledge, and cultural exchange regarding sustainable construction techniques and building knowledge is immense. There is a willingness to teach and learn new methods, crucial for sustainable development. The community's density of skills, needs, and aspirations can be effectively *nudged* through choice architecture to inform potential design interventions.

Central to sustainability is establishing alternative energy sources. The increased demand for proficiency in electrical and solar installation techniques among community members presents a viable opportunity for job creation. A participant highlighted that the solar installation business is a sought-after skill in the area, reflecting the community's interest in renewable energy solutions. Having established that equipping community members with necessary tools, skills, and knowledge fosters a culture of self-reliance and continuous improvement; ongoing capacity-building and skills development can therefore empower residents. Thus, *nudging* local production and alternative energy as defaults can contribute to environmental sustainability and economic resilience, aligning with HSD principles (Max-Neef 1991).

Lastly, one can encourage solutions that shift existing sustainable techniques, by presenting existing materials and construction differently and more effectively by designers utilising their expert knowledge, without revealing new information, as in line with choice architecture principles (Thaler & Sunstein 2021). By reframing existing solutions, proposed interventions are more likely to be relevant, sustainable, and widely accepted by the community, as echoed by Marschall (1998).

### Use of Local and Recycled Materials:

Several focus group participants highlighted the benefits of using local materials. Recycled, found, and reclaimed materials are inexpensive and readily available. Corrugated sheets and bricks are preferred for their affordability, reusability, and cost-effectiveness, making them suitable for sustainable building projects in Melusi. Although, there is a need for enhanced construction knowledge to better respond to environmental challenges, sustainable sourcing and improved material use are essential. The community engages in recycling initiatives, such as repurposing bricks and utilising found materials for waterproofing. One participant stated, *I would like the community to drop off their recycling so that I can use the items and (upcycle) them as decor for me and to sell* (MxU Participant 2024). Promoting sustainable practices in construction by using local and recycled materials can reduce environmental impact and promote local craftsmanship (Hamdi 2010), in turn satisfying the need for *creation*.

By focusing on sustainable materials and practices, communities such as Melusi can build a more resilient future, rooted in their actual needs and desires. However,

sustainability extends beyond environmental considerations in Melusi, and is instead driven by necessity due to a lack of basic infrastructure and resources.

*Implications for HSD and Choice Architecture:*

Choice architecture can support sustainable development by creating environments that promote positive behaviours and long-term viability (Thaler & Sunstein 2021). Practical applications include community-driven interventions that provide lasting benefits without compromising future generations' ability to meet their needs. Designing environments that make it easy and desirable for residents to engage in sustainable practices. Münscher et al. (2016) and Thaler & Sunstein (2021) support the idea that choice architecture, when integrated with sustainable practices, can guide communities to bridge behavioural gaps, ensuring long-term viability and resilience.

Additionally, sustainability and durability serve as guiding principles in material selection supporting permanence and skill acquisition, positioning the community to realise enduring socio-economic benefits while advancing environmental stewardship objectives. Focusing on environmentally sustainable practices ensures development efforts do not compromise future needs of the community, aligning with the broader goals of HSD (Max-Neef 1991).

In essence, the discussion highlights the critical assessment of fundamental needs for *creation* and *participation* in an informal settlement, providing essential insights into leveraging these elements to build community resilience and foster sustainable development. This substantiates the argument for employing choice architecture in design by demonstrating how intentionally designed environments, with specific *choices, defaults, framing, feedback loops* and *structures*, can *nudge* positive community behaviours and outcomes, enhancing overall well-being, social cohesion, and sustainable development.

By bolstering collaborative creative efforts and committing to sustainable development practices, future designers working in informal settings such as Melusi can use choice architecture principles, especially *nudge theory*, to guide residents toward positive and sustainable behaviours. This approach empowers residents to use suggested interventions to continuously contribute to the community's long-term prosperity, development, and resilience, even after designers have left.

The discussion intentionally focused on the fundamental needs of *creation* and *participation* based on the research inquiry, while also addressing synergistic satisfiers and other coinciding needs such as *subsistence, identity* and *understanding*. A more detailed exploration of the remaining needs may have been conducted if the time allowed and scope of study were expanded.



## 6 Conclusion

In essence, integrating HSD and choice architecture principles in the design and development processes in Melusi can significantly enhance community resilience and well-being. The strong sense of unity, support, and proactive youth initiatives form a robust foundation for addressing the community's challenges. By leveraging creative activities, supporting small businesses, and addressing critical infrastructure needs through PD and co-creation, Melusi can move towards a more resilient and sustainable future. These efforts will improve the quality of life for residents and serve as a model for other informal settlements facing similar challenges (Max-Neef 1991; Thaler & Sunstein 2008; 2021).

Overall, this research highlights the potential of integrating choice architecture, PID, and HSD principles to address the socio-economic and environmental challenges in informal settlements such as Melusi. The study emphasises the importance of participatory and co-creative approaches, where designers and planners should *nudge* the latent potential and utopian aspirations for collective participation and creativity among community members. By developing sustainable and contextually relevant interventions, these approaches can address pressing needs, such as *subsistence* and *protection*, and tackle major inhibitors of development, including substance use, crime, and lack of jobs and opportunities. Initiating actions that synergistically satisfy multiple needs is the best course of action to *nudge for good*.

The study highlighted the importance of empowering community members as active participants, as a means to bridge the gap between their impeded needs and utopian desires. The findings reveal that meeting these fundamental needs encourages community members to engage actively. One crucial finding is that a collaborative approach not only has the potential to enhance the effectiveness of interventions but also strengthens the social fabric of the community, fostering greater cohesion and solidarity. Participation in addressing socio-economic issues through creative means could be instrumental in addressing the impeded *subsistence* needs and fostering a sense of ownership, intergenerational exchange and agency among residents of Melusi.

This study fills a knowledge gap concerning the application of choice architecture in informal settlements, by specifically focusing on Melusi as a salient case study. The study deduced the potential beneficial role of designers as facilitators and potential enablers, *nudging*, rather than prescribing in a co-creative development process. By assessing and aligning fundamental needs for creativity and participation with choice architecture principles, one can guide design interventions towards more impactful and effective outcomes, promoting long-term social justice, equity, and resilience. This supports the argument for incorporating choice architecture in design, which enables designers to create environments that *nudge* residents toward positive behaviours and improved well-being.

Furthermore, digital tools and technologies have been identified as promising avenues for facilitating co-creation and enhancing community engagement in Melusi. These tools can help overcome participatory barriers, enabling more comprehensive and inclusive participation. However, it is essential to tailor the use of technology to the specific socio-cultural context of the community, respecting local values and behaviours.

The research highlights the importance of ongoing capacity-building and skills development to ensure the sustainability of design interventions. Equipping community members with the necessary tools, skills and knowledge, fosters a culture of self-reliance and continuous improvement. Hence, designers can enhance the overall effectiveness of interventions by aligning with HSD principles advocating for human-scale and sustainable development.

## 6.II The Bottom-Line.

Ultimately, this research contributes to the discourse on PID considering sustainable development in marginalised communities, offering a framework that integrates theoretical insights with practical applications. The implications extend beyond Melusi, providing insights, principles and strategies for improving well-being in informal settlements globally. By advocating for a holistic, participatory, and context-sensitive approach —incorporating fundamental needs for creativity and participation, utilising choice architecture, engaging in PD and co-creation, leveraging technology, and focusing on long-term sustainability—communities can become more resilient, inclusive, and empowered to address complex socio-economic challenges effectively.

## 6.III Contribution to Knowledge

The intersection of real-world challenges, theoretical frameworks, and empirical research in this study deepens our understanding of how HSD, choice architecture, PD, and co-creation can be applied to informal settlements. A unique contribution of this research is its holistic approach, combining theoretical frameworks with empirical data, highlighting the potential of these concepts to foster more inclusive, creative, and sustainable development.

### Key Findings & Contributions:

**Integration of Human Scale Development:** The study reinforces the importance of addressing fundamental human needs, particularly creativity and participation, in community development. By prioritising these needs, development projects can create more resilient and cohesive communities.

**Role of Choice Architecture:** The research illustrates how choice architecture can be used to design environments that promote positive behaviours and enhance community well-being. This approach can be particularly effective in informal settlements where resources are limited, and strategic design can make a significant impact.

**Participatory Design and Co-creation:** Meeting the fundamental needs for creativity and participation, considering co-creation, encourages greater community engagement, to ensure that interventions are reflective of the community's immediate HSD aspirations and realities.

**Leveraging Technology:** The research demonstrates the potential of technology to bridge gaps in education, infrastructure, and communication. By leveraging digital platforms and tech workshops, communities can empower residents with new skills and opportunities.

**Long-term Sustainability:** The study emphasises the need for sustainable development practices, both socially and environmentally, that provide long-term benefits without compromising future generations' ability to meet their needs. By focusing on sustainable materials and practices, communities such as Melusi can build a more resilient future, rooted in the actual needs and desires of the community.

## 6.IV Recommendations for Future Research

While this study offers significant insights, further research is needed to explore the following:

1. **Long-Term Impact Assessment:** Conduct longitudinal studies to evaluate the sustainability and long-term effects of co-designed interventions, such as practical skills training, inclusive community programs, and cultural activities.
2. **Scalability and Adaptability:** Investigate the scalability and adaptability of these approaches in different cultural and socio-economic contexts.
3. **Technology Integration:** Explore the effectiveness of various technological tools in facilitating co-creation and improving access to information and services.
4. **Skill Development and Capacity Building:** Identify and evaluate practical skills training and capacity-building programs that enhance community self-reliance and participation.
5. **Policy and Practice Interface:** Analyse the role of policy frameworks, in supporting or hindering participatory approaches and recommend strategies for better integration.
6. **Behavioural Changes and Community Dynamics:** Study the psychological and social impacts of design changes on community behaviour and interaction.
7. **Sustainability and Environmental Impact:** Evaluate the socio-ecological benefits and potential challenges of sustainable development practices.
8. **Equity and Inclusion:** Investigate the effectiveness of these processes in ensuring that the needs of all community members, including the most vulnerable, are met.

By addressing these areas, future research can build on this study's findings, offering clearer guidance for subsequent studies and enhancing the understanding of effective strategies for sustainable and inclusive community development. Addressing the study's limitations, such as the lack of long-term impact assessment and the focus on community members without broader stakeholder perspectives, will further improve the effectiveness of co-creation and choice architecture in informal settlements.

## 6.V Implications for Practice and Policy:

To build on the insights from this study, it is recommended to prioritise continuous community engagement and participation in design processes to foster ownership and ensure relevant interventions. Collaboration between stakeholders, including local authorities, NGOs, and policymakers, is crucial to support holistic approaches. Advocating for policies that support inclusive PD methods and integrating choice architecture principles in urban planning and development will further enhance the impact.

### Policy Makers:

**Invest in Infrastructure:** Prioritise projects that address basic needs and promote long-term sustainability, such as improving housing, electricity, and transportation.

**Support Community Initiatives:** Support initiatives that foster community participation and creativity, through art programs, sports facilities, and community hubs.

**Promote Sustainable Practices:** Implement policies encouraging sustainable practices in community development including incentives for recycling and local production.

### Practitioners:

**Facilitate Participatory Design Processes:** Actively involve community members in decision-making to ensure their needs and preferences are incorporated into outcomes.

**Utilise Choice Architecture:** Design environments that promote positive behaviours and social interactions, focusing on creating safe and inclusive public spaces.

**Leverage Technology:** Enhance digital inclusion and sustainable development by providing digital platforms and tech workshops that empower residents through improved communication, education, and access to services, fostering greater community participation and engagement.

### Community Engagement:

**Engage in Co-creation:** Ensure that development projects meet specific needs and aspirations through active participation in community meetings and initiatives.

**Foster Creativity and Participation:** Organise and participate in community creative projects, workshops, and sports activities. Create spaces where residents can gather and collaborate.

**Embrace Technology:** Participate in digital literacy programs and utilise digital platforms to access information and services, as a tool for empowerment and development.

By embracing these recommendations and principles, stakeholders can significantly enhance the quality of life in informal settlements, specifically in Melusi, bolstering resilient and inclusive communities. This research has demonstrated the transformative potential of holistic, participatory approaches in community development, offering a valuable blueprint for other informal contexts.

## **6.VI Final Impressions**

In closing, fostering positive change in communities such as Melusi requires nurturing residents' creativity and participation, designing environments that promote positive behaviours, and using sustainable practices and technology to build resilience and inclusivity. This study highlights how design interventions can *nudge* communities towards positive

behavioural changes, benefiting well-being, resilience, and cohesion. It underscores the transformative potential of an integrated, holistic approach that seeks to address fundamental human needs through choice architecture, enhancing overall well-being and sustainable development. By fostering creativity, participation, and sustainability, and embracing co-creation and choice architecture, collaborative efforts can equip Melusi to address complex socio-economic issues. The study calls for designers, policymakers, and community stakeholders to embrace co-creation and choice architecture as essential components of inclusive community development, creating environments that meet residents' immediate needs while supporting their long-term aspirations and well-being.



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8 Appendices  
APPENDIX A1 - FIELDWORK HSD QUESTIONNAIRE  
FIELDWORK

**SATISFIERS**

	A	B	C	D
Need	Being (qualities)	Having (things)	Doing (actions)	Interacting (settings)
<b>1 Subsistence</b>	Could you please describe the means by which you currently support and sustain yourself financially?	What do you have that makes life easier?	Which activities are you doing to receive money?	Where are the work opportunities based in Melusi?
<b>2 Protection</b>	You have been living in the area for some time, could you please describe how you feel about safety in the area?	What do you have that makes you feel safe(?)?	What do you have in place that makes you feel safe?	Where do you go to feel safe?
<b>3 Affection</b>	Could you describe your feelings towards the level of caring or sense of warmth within the community?	Who do you value the most in your life?	How do you give back to the community?	Where do you go to do activities with family/ friends?
<b>4 Understanding</b>	As a resident of the area, could you describe the extent of learning and communication in the community?	Suggestion: What things/aspects do you have that helps you to learn and grow?	In what way do you participate in knowledge and skill exchange?	Where can you go to learn or be educated in the community?
<b>5 Participation</b>	What is the extent of your participation or involvement in community activities within your residential area?	What community activities do you take part in?	How do you encourage the community to take part in activities?	Where do you go to meet up with community members/ people within the community?
<b>6 Leisure</b>	What activities do you engage in during your spare or free time within your community?	What things do you use to make you feel relaxed?	What do you do for relaxation and fun?	Where do you go to relax within the community?
<b>7 Creation</b>	how do you express your skills, talents and ideas within your community?	What have you made that you are proud of?	What activities do you do that showcases your skills, talents and ideas?	Where is your most successful community project?
<b>8 Identity</b>	How do you see yourself? What makes you unique here?	What do you own that makes you feel fulfilled?	Which cultural activities do you love to participate in?	Which areas in the community do you go to often?
<b>9 Freedom</b>	How do you feel about your freedom in your community?	What do you own that makes you feel free?	Are you free to achieve your goals?	Where and when do you feel most free in the community?



APPENDIX A2

IMPEDIMENTS

	A	B	C	D
	Being (qualities)	Having (things)	Doing (actions)	Interacting (settings)
<b>1 Subsistence</b>	What is keeping you from making a living?	What are you missing that would help you to make a living?	What is preventing you from working?	What areas of the community is there where you can't make an income making an income?
<b>2 Protection</b>	What makes you feel unsafe?	What do you not have that would make you feel protected?	What is preventing you from protecting yourself?	What areas in the community make you feel unsafe/uncomfortable?
<b>3 Affection</b>	What aspect within the community makes you feel alone?	Are there things you have that negatively affects your relationship with the community?	What in the community is preventing you from feeling included?	Where do you feel restricted to go and spend time with family/friends?
<b>4 Understanding</b>	What makes you feel that people within the community don't understand you?	What experience/qualification do you lack that would improve your life?	What prevents you from immersing yourself in the community/surroundings	Where can you go to voice your opinions?
<b>5 Participation</b>	What makes you feel disconnected from the community?	What prevents you from actively engaging in community activities?	From your perspective what does the community do that hinders you from taking part in activities?	Are there areas that are keeping you from engaging with the community?
<b>6 Leisure</b>	What makes you unable to engage with activities of leisure?	What things stop you from relaxing?	What is responsibilities are preventing you from relaxing?	Which areas in the community do you find stressful within leisure?
<b>7 Creation</b>	What is stopping you from feeling creative?	What things are you lacking that is preventing you from exploring/expressing your skills ideas and talents ?	What actions are keeping you from expressing your skills talents and ideas ?	What areas are you not allowed to be creative
<b>8 Identity</b>	Which aspects of your identity do you not like?	How does not owning things affect your sense of identity?	What about the community do you not agree with?	Which areas do you not gather often? Why?
<b>9 Freedom</b>	What is stopping you from being free?	How does what you own limit you from sense of freedom or makes you free to achieve life goals?	What actions/activities that you do prevents you from experiencing freedom?	Where in the community do you feel the most restricted?



APPENDIX A3

UTOPIA

	A	B	C	D
	Being (qualities)	Having (things)	Doing (actions)	Interacting (settings)
<b>1 Subsistence</b>	In your ideal world, if circumstances were different what would you do to receive an income?	In your ideal world, what basic necessities would you have to ensure your well-being and basic needs are met?	In an ideal world what extra activities would you participate in to receive extra income?	In your ideal world where would you like to be within the community?
<b>2 Protection</b>	Ideally, what does a community look like where you feel protected?	How would you ensure access to healthcare and safety measures for yourself in your perfect community?	In an ideal world, what would you introduce to improve the safety within melusi?	In an ideal world, which of the unsafe areas would you like to change?
<b>3 Affection</b>	How can the community environment make you feel more cared for and more connected?	In an ideal world, what things could you own that would improve your relationships with family and friends?	What kind of support would you appreciate in your life?	Ideally, where do you wish to go to spend time with family/ friends?
<b>4 Understanding</b>	In an ideal world, how would you like to have access to education and opportunities to learn new things/skills?	In your ideal world, describe the educational resources and opportunities you would possess to learn and grow intellectually in your utopian society.	Ideally, what action can you take to overcome your daily challenges?	Ideally, where would you like your community to deal with public issues?
<b>5 Participation</b>	Ideally, if you were included in the community how would that make you feel?	In an ideal world, what tools would empower you to actively participate in decision making processes and community activities?	Ideally what could be done to make you take part in the community activities?	Ideally where would you meet up with members of the community?
<b>6 Leisure</b>	Ideally what activities do you like to do to relax?	In your ideal world, what would you need in order to fully relax ?	What activities would you like to do to relax?	In an ideal world, where would you like to go to relax?
<b>7 Creation</b>	How can the community ensure that you have opportunities to share your ideas and talents with others?	How would you express yourself creatively, and what materials or resources would you possess to do so?	In an ideal world, what creative activities would you like to participate in to showcase your ideas, skills and talents?	Ideally where would you like to showcase your ideas, skills and talents?
<b>8 Identity</b>	In your ideal world, how do you celebrate and embrace your cultural or social identity?	Ideally, what objects or things would help celebrate your cultural, religious or social identity in your community?	In an ideal world, how do you wish to express your identity?	Where do you wish to see your place within the community in 5 years time ?
<b>9 Freedom</b>	In a perfect world what does freedom look like to you?	Describe the things or resources that would allow you freedom without judgement?	In an ideal world what could contribute to you to be able to feel more free?	In an ideal world where would you like to go within your community that is currently off-limits to you?



**APPENDIX B - FOCUS GROUP QUESTIONS**  
FOCUS GROUPS

**FOCUS GROUP QUESTIONS**

**Monique Teixeira**

**GENERAL QUESTIONS**

NEEDS	BEING	HAVING	DOING	INTERACTING
<b>SUBSISTENCE</b>	What can the people of Melusi do to improve the community employment rates?	What is needed to facilitate future development and job creation?	What is needed to encourage skills and knowledge exchange in Melusi?	What are your thoughts on whether Melusi 3 would be the ideal location for a new branch of MYDO?
<b>CREATIVITY</b>	How can design, making, arts and culture bring people together?	What does creativity mean to you?	What making or crafts do you participate in?  <u>Examples:</u> <b>Soft skills:</b> weaving <b>Hard skills:</b> power tools (See Appendix A)	Where do you think we could create more spaces for community creativity and participation in Melusi?
<b>PARTICIPATION</b>	What types of community participation would you like to see more of in Melusi to improve your neighbourhood?	What is needed to encourage community participation and support in Melusi?	How can you improve participation in the community?	

**IN DEPTH QUESTIONS**

**Community Building:**

1. How can future community (design) projects in Melusi make people outside of Melusi aware about what you need as a community and help improve the everyday conditions for everyone? (*How could a design project promote social change or raise awareness about the community needs?*)
2. What is the benefit of having community (design) building projects in Melusi?
3. How can residents of Melusi be encouraged to participate in the co-creation (co-design) process of future projects?

**Design:**

4. How can a community project advance the development of skills and job creation throughout the process of design and implementation?
5. What materials do you think would be best for future community building projects in Melusi? (See Appendix B)
6. How can architects and local organisations work together to design and implement projects that benefit your community?
7. How can a design project in Melusi include traditional knowledge, heritage and local identity?



## APPENDIX C - ETHICS CLEARANCE



UNIVERSITEIT VAN PRETORIA  
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YUNIBESITHI YA PRETORIA

### Faculty of Engineering, Built Environment and Information Technology

Fakulteit Ingenieurswese, Bou-omgewing en  
Inligtingtegnologie / Lefapha la Boetšenere,  
Tikologo ya Kago le Theknolotši ya Tshedimošo

30 January 2024

Reference number: EBIT/274/2022 Line 1

Dr C Combrinck  
Department: Architecture  
University of Pretoria  
Pretoria  
0083

Dear Dr C Combrinck,

This is to notify you that the annual renewal to your application entitled "Co-creating wellness and human dignity", have been approved by the EBIT Ethics Committee.

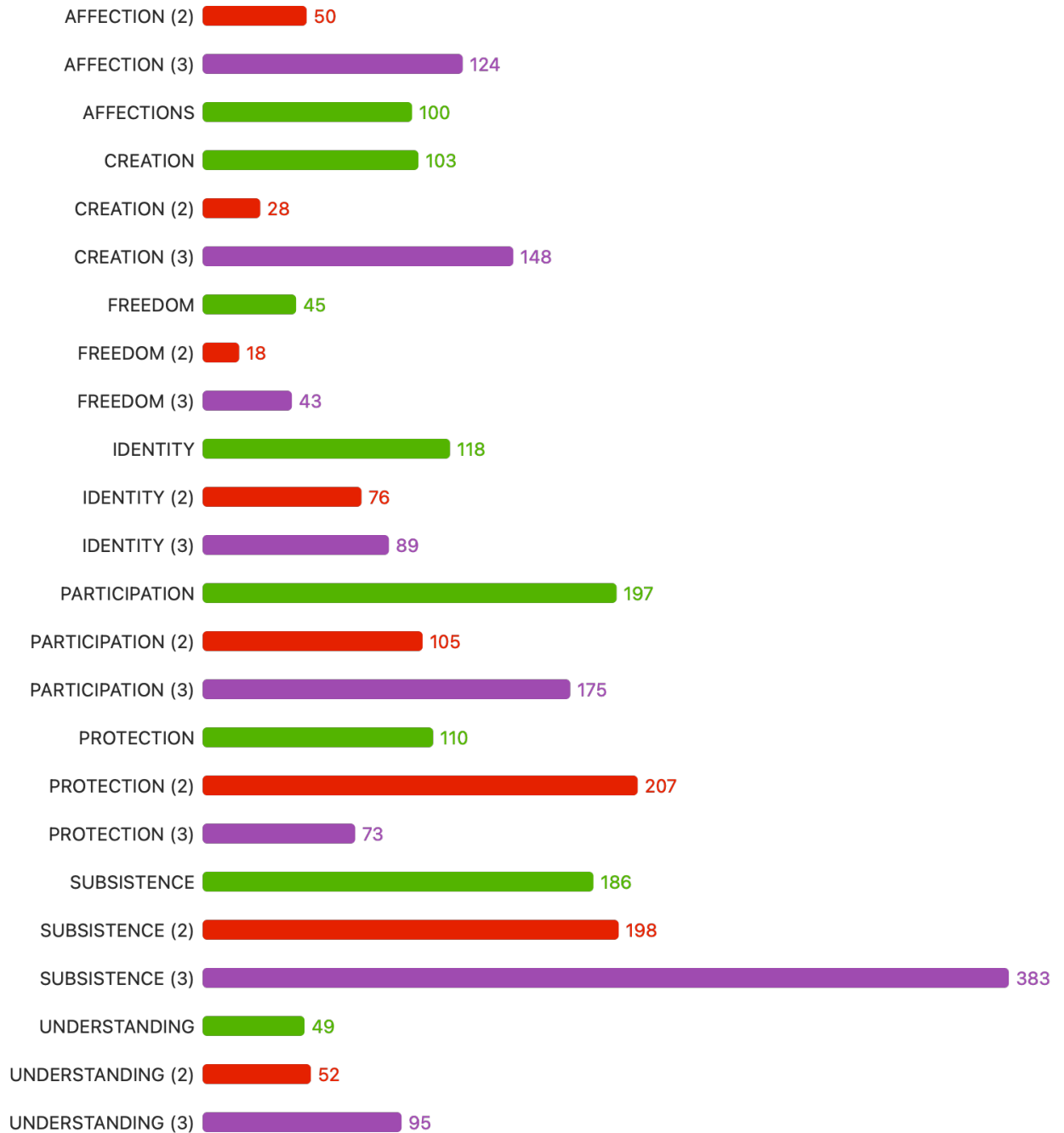
Kind regards

**Prof K.-Y. Chan**

Chair: Faculty Committee for Research Ethics and Integrity  
FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY



## APPENDIX D - ATLAS.TI™ HSD NEEDS CODED



### Legend:

