Young people's perceptions towards the planning of the future 'smart city' in Europe:

Teenagers' voices and participation in Birmingham, Manchester, Valencia and Sofia

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Abstract

The rapid advancement of technology in the twenty-first century has profoundly reshaped the structure and operation of society. While digital innovation has broken down many barriers to citizen interaction, it has simultaneously created new forms of exclusion - particularly in the ownership, governance, and interpretation of data. The concept of human-centred smart cities has gained prominence, providing fresh opportunities for previously marginalised groups to participate in urban life. However, the risk of exclusion remains high when technology-driven systems fail to represent all voices.

This doctoral thesis investigates one such group - teenagers in late adolescence -who are often overlooked as stakeholders in urban planning processes. Addressing a notable gap in participatory planning literature, the study foregrounds bottom-up perspectives, exploring the perceptions, awareness, and priorities of young people regarding urban planning and future city visions.

Focusing on teenagers in Bulgaria, Spain, and the UK, the research examines their understanding of, and ability to engage with, the planning process, as well as their aspirations for the future 'smart city'. An inductive, multi-case study approach was employed, centring on Birmingham, Manchester, Valencia, and Sofia. Across these cities, 121 teenagers aged 15 - 19 were interviewed during a period spanning the COVID-19 pandemic, which necessitated a shift between in-person and digital research methodologies.

The findings reveal widespread exclusion, a lack of awareness, and limited understanding of urban planning among teenagers. The research identifies both context-specific barriers and enablers to participation, highlighting the diverse experiences of young people in different urban settings. While short-term priorities for city improvement vary, there is a remarkable convergence of long-term priorities for smart cities across national contexts. Strong themes of humanism, justice, and equality emerge from the data, challenging technocratic approaches to city-making. Teenagers generally support the vision of smart cities but offer nuanced perspectives on fairness, implementation, and inclusion.

The thesis makes several key contributions: it reframes and contextualises Hart's Ladder of Participation (1992) for contemporary urban planning and introduces the notion of 'situated participation' exploring learning and participation as two coins of a process of empowerment of citizens. It introduces the 'ladder of situated participation' as a tool of negotiating intergenerational participation in urban planning. It offers actionable recommendations for inclusive policy and practice - especially concerning methodology, engagement, and youth inclusion- and articulates a critical teenage perspective on smart cities. The research introduces new domains for interrogating technologically driven urban futures, advocating for more equitable and participatory approaches to future city planning.

Keywords: young people, teenagers, urban planning, youth participation, situated participation, ladder of participation, smart cities, future cities

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I would like to thank to all the young people who took their time and volunteered to be interviewed or completed the survey online. Being a teenager is already exhausting and taking part in a research project might not be cool, but more than 150 teenagers engaged with the project, either by taking part directly or promoting the survey online throughout the pandemic. Thank you!

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On a personal level I would like to thank all my family, friends and colleagues who have supported me throughout the process, especially my partner Harry, sister Mihaela, mom - Nadezhda and dad, Georgi.

Посвещение (Dedication)

Тази дисертация е посветена на баба и дядо – Симеон и Найда Щебунаеви, които няма никога да могат да я прочетат. Благодаря ви за всичко.

Declaration

I declare that the work in this doctoral thesis is all my own work, except where otherwise indicated. It has not been previously submitted to any other university or institution of a higher education, in total or in part for the award of degree. Parts of the thesis have appeared in previous publications and conference attendance by the author, particularly in:

Shtebunaev, S., Gullino, S. and Larkham, P.J. (2023) Planning the smart city with young people: Understanding and addressing teenagers' perceptions, values and visions of smartness., Urban Planning (ISSN: 2183-7635), Volume 8, Issue 2, https://doi.org/10.17645/up.v8i2.6411 (This publication is made available as Appendix 9, as per BCU requirements)

Shtebunaev, S. (2021) 'Young People of the Past fantasising the Future Cities of the Present', Testing Ground, Issue 03 Youthhood, University of Greenwich, p.p. 24

Shtebunaev, S. (2021) 'Sofia's 'Future City' vision seen through the lenses of its young people', paper presented at the RGS/IBG Annual Conference, London (with S. Gullino and P.J. Larkham)

Shtebunaev, S. (2021) ' Youth's perceptions of Smart City Models: Comparative analysis of the Smart City Wheel through the eyes of teenagers across Europe' paper presented at the 5-th International Conference: Urban E-Planning, Lisbon, 7th September 2021

Shtebunaev, S. (2021) 'Teenager's Perceptions of the planning of smart cities in the UK', paper presented at the UK-Ireland Research Conference, Newcastle, 9th September 2021

Shtebunaev, S. (2021) 'Can teenagers plan the future 'smart city'? Learning from embedding smart city research teaching in the citizenship curriculum.' paper presented at the UiS/Nordic Edge Smart City Research Symposium, Stavanger, Norway, 22nd September 2021

Shtebunaev, S. (2020) '10 Reasons: Giving young adults voice & power over what gets built. Advocating for youth participation in planning, regeneration, and neighbourhood management.', desktop research project commissioned by Grosvenor Britain & Ireland, in Youth Engagement Toolkit: Voice Opportunity Power. Accessible at: https://www.grosvenor.com/Grosvenor/files/c5/c5487204-eae2-4a54-9cf8-13445d2bc6a5.pdf (This publication is made available as Appendix 10, as per BCU requirements)

Shtebunaev, S. (2019) Including young people in the planning and design of our cities Academy of Urbanism Journal 'Here and Now, Issue 14, Accessible at: https://issuu.com/theaou/docs/here_now_autumn_2019__compressed/

Shtebunaev, S. (2019) The future of the Smart City is in its citizens: Do they know?, Presentation at the 4th E-Planning Conference, April 2019, Lisbon, Portugal

Shtebunaev, S. (2019) The Future Smart City, presentation at the Sofia Knowledge City, Sofia, 28th of February, organised by Bloomberg TV Bulgaria.

In the interest of confidentiality, all the case study data used throughout the thesis have been anonymised and only specific age, location and gender data is used to situate participants in their socio-demographic context.

Wordcount: 80,339 words

Contents

Chapter 1. Introduction

1.1. Background to the project

This research emerged from the question of power dynamics within the creation of future city visions – in particular, smart cities as one of the dominant imaginaries in recent years. I aimed to understand what power dynamics citizens are engaged in and how smartness was embedding in the planning system, a democratically controlled process shaping the spatial arrangements of cities. In some ways, smart cities were bypassing the planning system, creating future city visions which lack democratic input and scrutiny. Public participation in the planning of future cities is a politicised area, especially within current debates around growth and sustainability, therefore it was key to understand whether future imaginaries can be collectively produced and who can take part.

The development of the smart city model is shaped by a complex mix of technological, social and economic factors, governance arrangements, policy and business drivers (Manville et al., 2014). There is an apparent gap in understanding of the lived experience and opportunities for citizens to participate in their city's transition towards smartness. Previous independent research undertaken by the author entitled: *Smart Future: Exploring citizen participation and perceptions towards Smart City initiative in Spain* (Shtebunaev, 2017) in the North Spanish context served as the basis for this project. That short research study concluded there is a complex political and power dynamic in the implementation of smart city agendas in the cities visited. Citizens interviewed were largely unaware of agendas, while governance was often enmeshed with private interests. The initial doctoral in 2018 was directly concerned with the emerging planning strategies for citizen participation in the co-production of future cities. It sought to understand if and how power relations in the creation of smart cities' agendas could achieve transparency and democratic scrutiny by their citizens.

The public is not a homogenous group, yet public participation often tends to favour specific groups (Inch et al., 2019). Further examining the data collected in Spain (Shtebunaev, 2017) a trend emerged. Young people under eighteen years of age were more likely to be unaware of their city's smart agenda than other age groups interviewed. Such trends are in a stark contrast to the received wisdom that young people are the most digitally active and savvy generation. The focus of the doctoral project then narrowed from the initial exploration of wider citizens participation in the future city to examine youth's perceptions and participation in the co-production of the future 'smart city'. The project aimed to engage, connect and empower young citizens in the planning of future cities in Europe. As a usually marginalised demographic, young people could be a litmus test to the strength of participation in the planning of the future city. A hypothesis emerged - if young people are provided with the opportunities to meaningfully engage, then the likelihood of a robust participatory process for all citizens is higher.

Policy often understates the role of imagination, and especially the imagination of under-represented groups such as youth. At societal level, adultcentrism prevails. In literature, imagination as the fantastical has been relegated to the side, often to the 'unserious' (Le Guin, 2007) realm of young people's literature, in preference for the realistic novel, espousing a wider societal preference towards the supposedly evidenced and well-researched realism of fiction novels. Le Guin (2007) argues that this is a manifestation of the overarching shift towards a capitalistic society, an unspoken understanding that fantasy is unserious. As we imagine future cities through propositional plans and

strategies, a question emerged if similar attitudes are professed within current planning practice. Taking Le Guins' view of imagination a parallel emerges:

"What fantasy [alternative visions of the future] *generally does that the realistic novel* [read the smart city vision based in economic rationale] *generally cannot do is include the nonhuman* [read young people, under-represented groups, non-human actors] *as essential. The fantasy element of Moby-Dick is Moby Dick. To include an animal* [or a teenager] *as a protagonist equal with the human* [read homo economicus as full citizens] *is – in modern terms – to write a fantasy. To include anything on equal footing with the human, as equal in importance, is to abandon realism.'* (Le Guin, 2007:85)

By focusing beyond the homo economicus, this thesis aims to question how the future city is imagined and how young people can be better included. Phelps (2021) argues that imagination is no longer in the sole purview of planning departments and that a new contract needs to be agreed between the multitude of stakeholders influencing future planning. This thesis aims to provide teenagers with a seat at that table at which the new contract is drafted.

1.2. Thesis aims

The relationships between urban planning, young people and the future smart city are central to the research. Understanding and challenging how we imagine future cities and whose ideas get to shape visions, policies and developments is important for testing the democratic processes which underpin the planning system. There are three main relationships which are under-examined in the literature:

1. The link between future city imaginaries and the traditional planning system, how they affect each other, and which is the leading one when spatial developments and land use in the urban context are to be examined.

2. The role that young people play as citizens in a democratic society (including its systems such as planning) designed around adult-centric needs and requirements; and

3. The mechanics of youth inclusion within planning and policy processes as perceived by young people themselves.

The creation of future city visions is an educated guess, often influenced by data, politics and power. Batty (2018) takes a critical stand on predicting the future city, quoting historical failures, and poses a key argument that we collectively invent futures – a plea to implement agency. Examining future city narratives, citizens' perceptions and the effects they have on the ways in which cities are planned can illuminate the hidden dynamics of power and question the processes of creation.

1.2.1. Research Questions and Aim

The study has two main Research Questions which focus on defining the role of young people in the planning of future cities.

1. What are young people's (teenagers transitioning between childhood and adulthood 15-19)

perceptions and awareness of urban planning and future smart city visions in the planning of four cities (Birmingham, Manchester, Valencia and Sofia) within European democracies (England, Spain and Bulgaria)?

2. How can teenagers (15-19) be enabled towards wider participation and co-production in the planning of future cities within the European context?

The research aims to appraise the perceptions, engagement and awareness of teenagers transitioning between formal childhood and adulthood (15-19 years of age) towards urban planning and smart city visions in selected urban areas in the European context, and evaluate how situating their perceptions and priorities in the wider context of structural challenges young people face can hinder or enable their participation in the planning and envisioning of future cities.

There is a supporting strand of enquiry which emerges from the nature of conducting research with teenagers focused on the methodology and ethics of working with that demographic, broadly answering the second research question.

To achieve this, the research adopted a multi-case study approach focusing on the cities of Birmingham and Manchester in England, Sofia in Bulgaria and Valencia in Spain. The methodology and methodological objectives are further explored in Chapter 3.

1.3. Youth, Participation in Planning and Future Cities

Adolescents, defined by UNICEF as 10- to 19-year-olds, comprise 1.3 billion people across the world, making up 16% of the total world population (UNICEF, 2025). In the UK more than 8 million people (UNDESA, 2024) are adolescents or roughly 12,5% of the total population. In the last decade, youth inclusion in the practice of planning and architecture has become a prominent topic, to a degree driven by the obligations developers and local authorities incurred under the Equality Act 2010 and the Social Value Act 2012 and wider global shift to evaluating investments through environmental, social and governance lens (ESG), as well as maturing of practices of youth engagement. Although theory and policy are yet to catch up, practical examples of youth inclusion are becoming more ubiquitous, demonstrated by the diversity of entries in the awards scheme instituted by the Thornton Education Trust in 2021 and grown in popularity ever since. Internationally, organisations such as Youth Engagement in Planning - YEP! – a United States based non-for-profit organisation – have had a significant impact on both American Planning Association and Royal Town Planning Institute (RTPI) debates and practices. The RTPI (Wood et al., 2019) published guidance on the inclusion of children and young people in planning, concluding that the Scottish and Welsh governments are leading the way in promoting youth inclusion.

Maturing of the field is also a reason for its increased popularity: practices such as PlacEd in Liverpool, Archimake in Southeast of England, A Place in Childhood (APiC) in Scotland and Matt+Fiona based in London can all point to more than a decade of active work in youth inclusion in planning and architecture. New forms of youth engagement such as the Greater Cambridgeshire Planning Service's Youth Engagement Service (YES) (Kwok, 2023) are providing examples of youth participation being institutionalised within planning practice.

However, problems persist. Research by Grosvenor (2019) of 16–18-year-olds found that 89% of the young people interviewed across England had never been asked about their opinion of the future of their neighbourhood, even though 1 in 10 had taken part in some form of community engagement. The same research found that young people have little to no trust in local authorities, property developers and the national government. Adultcentrism prevails with older age groups (25+) less likely to see young people positively (#iwill Movement, 2024) and a general low understanding of young people's needs prevents them from being active citizens. Yet, as the Chartered Institute of Building's survey (CIOB, 2025) demonstrates, young people are interested in understanding their local environments with 53% of young people aged 16-24 interviewed interested in taking a GSCE subject in the built environment.

The emergent youth climate movement has struggled to maintain momentum in the post-pandemic world. Across the UK and the world, cities declared climate emergencies in 2019 and 2020, often engaging young people in the policy process to establish Climate Emergency Plans. The post pandemic recovery has sidelined climate action, with concepts such as net zero and 15-minute cities becoming politicised (Caprotti et al.,2024). Young people are finding that their imagination and adults' promise for the future city are now being taken away, facing the harsh reality of investment decisions. Climate anxiety (Wu et al., 2020) is causing concern amongst young people and challenging their imagination of future horizons.

There are some positive movements in the English context with the Town and Country Planning Association (TCPA, 2024) publishing an influential report advocating for the inclusion of children and young people in the creation of the places they live in. The report is based on evidence review from the Levelling Up, Housing and Communities Committee inquiry (UK Parliament, 2024) into children, young people and the built environment. Extracts of the findings of this thesis were submitted to the inquiry and cited in the TCPA report. There is a clear need for better inclusion of young people in wider society and specifically in the processes that shape their neighbourhoods and cities.

Participation in planning is in a global crisis, mirroring the crisis of deliberative democracy evident during the last decade, partially driven by the confluence of technology and capitalism in the hands of a small group of people (Sadowski, 2025). Politicisation of planning participation in the simplified YIMBY vs NIMBY debates, especially in North America (Brouwer and Trounstine, 2024) and emphasised through social media discourse internationally, sees legitimate citizen concerns dismissed due to party political ideologies. Throughout 2024 and 2025, UN-Habitat and partners have worked together to collect data for the SDG 11.3.2 indicator on civic engagement in urban planning and management (UN Habitat, 2024a). This vital indicator was at risk of being dropped from the SDG Global Database due to a lack of sufficient data, and its future is still under question at the time of writing. The lack of internationally agreed frameworks on participation and reliable data collection have started to erode the argument for including people in planning. In this context, there is a risk that the needs of marginalised groups such as young people are either being dismissed or overemphasised, in a process that uses the appeal of youth to obscure more nuanced issues. This thesis hopes to develop the image of teenagers as citizens who can be active decision-makers and democratically engaged within complex planning processes.

The rapid acceleration in digitalisation of services and proliferation of social media has meant that there is a real challenge to the collective imagination and understanding of what cities are. The smart city is one such vision driven by the change in technology, and one that is persisting throughout the past few decades. A promise of the future, the smart city's appeal rests in the optimisation of city life, yet its empirical manifestation is rare, retaining the ability to be malleable to different agendas and policies. There is little evidence that smart cities are becoming embedded into

the English planning system in formal policies (Cowley and Caprotti, 2018), however, their rhetoric is embedded across municipalities. There is a greater need to understand the role that citizens can play in tackling (understanding, impacting, working on, imagining, co-creating) such visions and their appetite for formalising them.

1.4. Philosophical Positioning and Approach

"The urban environment is a precise emotional condition. Being in the city feels a certain way." (Caruso, 2008:43)

1.4.1. Ontological and epistemological positions

In this thesis, the position taken is influenced by several major philosophies broadly situated in critical theory (Malpas and Wake, 2013) - such as feminist and queer studies (Broto, 2021) and critical pragmatism (Forester, 2013). The former influences understanding how reality is constructed collectively, and the latter reflects the author's experience of working as a professional in the built environment, where the capacity of a theory to address and solve "live" problems is how effectiveness is evaluated (Rezac and Husbye, 2024).

The study adopts critical theory perspectives in its interest in a marginalised demographic – teenagers, whose viewpoints and experiences have largely been omitted in planning discourse. The ontological position is influenced by feminist and queer theorists, although the focus on gender and sexuality is not the primary one. The thesis adopts the notion that people construct their own realities in connection to the social conditions they are in, and that there are structural power relations which influence their behaviour, perceptions and ideas, whether because of their positionality such as gender (Malpas and Wake, 2013), knowledge, age or other, and which exert influence on the reality they experience. Influenced by feminist and queer ontologies (Broto, 2021), the thesis explores the social construct of the teenager as the main focal point through which to understand the experience of participatory planning and the creation of the future smart city.

Knopp (2007) discusses the relationship between feminist and queer geographies, stressing the possibilities that adopting such approaches can present for geographers in modifying ontological imaginations to see objects of study as more relational, embracing their messy and fluid realities, leading to research which is less elitist and deterministic and more human. Epistemologically, this results in the elevation of young people as valid subjects of study, acknowledging their emotions, motivations, desires and embodied experience of the city. Their awareness of democratic systems, such as the planning system, and their perceptions and visions of the future, are valid sources of knowledge and define not only their internal view but also their interaction within society.

The approach adopted is an inductive one – by exploring young people's perceptions, it illuminates the experience of this section of society and establishes a foundation for future evaluation of young people's positionality in the planning of future cities. Generalisation is not the primary aim, but rather stress-testing of planning processes against the experience of young people.

The approach to research design taken is intrinsically influenced by philosophies of education and the author's experiences of teaching. It is impossible to do research with young people and not consider it an educational experience from the perspective of the researched. The author's learning

and teaching philosophy is strongly rooted in personal experience and research in higher education and teaching in secondary and higher education settings, such as past research into the 'live projects' pedagogies as applied to architectural education (Shtebunaev, 2016) and how higher education techniques can be applied by practitioners in secondary school context (Shtebunaev and Belova, 2019). The adopted philosophical approach is not clear-cut but often aligns with and leans on the theories of social constructivism (Vygotsky, 1987), experiential (Kolb, 1984) and situated learning (Lave and Wenger, 1991). The author adopts the position that humans create meaning of the world through the social and spatial processes in which they engage and that this is a constant, recurring and iterative process heavily reliant on culture and context.

The author's positionality of a trained architectural and planning professional influences the adopted philosophy rooted in critical pragmatism (Forester, 2013). Critical pragmatism (Rezac and Husbye, 2024) emphasises the importance of applying theoretical insights ethically to tackle real-world challenges. Forester (2013) emphasises the need for focus on the consequences rather than purely the intentions of actors within planning, arguing for critical pragmatism as a tool of engaged and probing mode of analysis and action.

The thesis lends great importance to the link between theoretical knowledge and practice – the praxis, theorised by Paulo Freire (2000) as a transformative action through which the practitioner can reach critical awareness. In the author's positionality of an Orthodox Christian, 'praxis' also rings true through its more ancient origin in the Byzantine tradition of 'action; applying the faith', where the theological worship is meaningless unless applied in daily life, as the widely quoted dictum of Saint Maximus the Confessor states:

"Theology without action is the theology of demons." (Fabella and Torres, 1983)

Research should support learning both by the individual conducting it but also throughout the process of research and wider dissemination. Research and learning are seen here as processes of empowerment and self-realisation, leading to a more critical and informed way of navigating and shaping society. This research project explores the practical applications of the knowledge collected, influenced by the assertion of the political and power nature of knowledge as exposed by Freire (2000) and Foucault (2008).

1.5. Research informed by action

Combining the practice of working with young people alongside the research aimed to situate and frame better the author's understanding of young people's experiences. The choice of a demographic to be explored was partially driven by the findings of a previous research project, conducted in North and Central Spain concerning citizen's perceptions of smart cities (Shtebunaev, 2016) which indicated that young people were largely unaware of such developments even when their cities had flagship programs. The demographic choice was also driven by the author's experience of organising and teaching teenagers in Bulgaria at a week-long annual summer school at the Minu Balkanski foundation (Shtebunaev and Belova, 2019). The importance of being informed by practical experiences was carried over throughout the duration of the research.

Throughout the doctoral project, the author worked closely with the Brilliant Club, devising and delivering secondary school courses based on the thesis' research questions. This has led to publications by students and allowed an understanding of the practical barriers to exploring the topic of smart cities within the English educational system. Similarly, in the Bulgarian context, the 2020 iteration of the Minu Balkanski summer school focused on the future city of 2050, presenting an insight into the context. The author's positionality at the time as a young person under the age of 30 in Birmingham, resulted in joining the Beatfreeks Youth Panel in 2019. and part of the Commonplace (a digital planning consultancy) Youth Panel in 2019. On an international level the author helped set up and develop the Theory of Change for the 13th youth network of the Commonwealth – The Commonwealth Youth for Sustainable Urbanisation, situated in international debates around youth inclusions in an interdisciplinary way.

"We can no longer make the excuse that young people do not want to engage with, participate in and contribute to society. The above reiterates that young people want a seat at the table, but our current methods and structures of civic, political, and societal participation leave them without a chair, plate, or cutlery, let alone anything to eat." (Beatfreeks, 2019:51)

The author has remained actively engaged in shaping planning debates around young people in the UK, working closely with the Thornton Education Trust to convene a community of practice and present at multiple events; contributing to the Voice, Opportunity, Power toolkit by contextualising the need to engage young people, led by Grosvenor (2019). I The author also contributed with evidence to the Planning White Paper 2020, The DLUCH Built Environment Select committee's inquiry on youth and children 2024 and to the DfE consultation to the National Curriculum 2025, in all cases presenting some of the findings discussed in Chapters 5 and 6. All of those activities have allowed a much more nuanced and layered understanding of the political, practical and theoretical challenges to youth participation.

Voices of Youth
Where possible the thesis utilises quotes from the collected data to fully illustrate the role and views of the young people interviewed in their own words.

1.6. Contribution to the field

This thesis makes a substantive and ambitious contribution to the interdisciplinary fields of urban planning, urban sociology, youth studies, planning practice and action research by critically interrogating the role of older teenagers (15 to 19-year-olds) in shaping the future of cities. Situated at the intersection of these disciplines, the research advances theoretical and conceptual understandings of youth participation within the context of smart city development and urban planning, challenging established paradigms and offering new approaches for inclusive future city visioning.

The thesis extends key theories of participatory planning - Arnstein's ladder of participation (1969) and Hart's revisions (1992) - by reframing them through the lived experiences and perspectives of young people, as evidenced in multiple international case studies. It interrogates the epistemological boundaries of youth participation and urban citizenship, providing a conceptual critique of adultcentric planning discourses and advancing a mixed-mode and multilevel model for youth

engagement. The research positions teenagers not as passive recipients but as active agents in urban transformation, thereby contributing to a re-conceptualisation of participation theory and democratic practice within planning scholarship. It introduces the emergence of theory of situated participation which aims to develop a model of intergenerational planning negotiated through learning.

The thesis deepens the discourse on smart city theory by foregrounding youth perspectives in the co-creation of urban futures, challenging techno-centric and managerial approaches to smart urbanism. It demonstrates how the inclusion of teenagers' voices can enrich urban sociology's understanding of spatial justice, identity, and belonging in rapidly evolving cities. In planning practice, the research advances knowledge by formulating critical praxis that bridges theory and application, informed by feminist and queer ontologies and the principles of critical pragmatism.

Methodologically, the thesis innovates through the deployment and refinement of action research, situating it within interdisciplinary urban studies and demonstrating its efficacy in capturing the complex realities of young people's urban experiences. This approach not only generates rich empirical insights but also models ethical and transformative modes of engagement between researchers, practitioners, and youth, specifically in using social media as a tool of research and engagement.

1.7. The Structure of Thesis

The thesis is laid out in six more chapters. Chapter Two situates the project within the literature and explores the relevance of focusing on young people in the planning of future cities by exploring the intersection between the fields of participatory urban planning, geography, youth studies and smart cities debates. The literature review draws on current debates on youth inclusion and smart city planning across multiple disciplines: however, the thesis' aim is to inform primarily the field of urban planning and to highlight the importance of cross-discipline pollination. Within the fast-moving academic and practical domains of youth inclusion and smart cities, key research gaps are identified which drive the study – the lack of empirical research and situated citizen perspective in smart city, the shortcomings of youth participation models and the need for better practical guidance for working with teenagers.

Chapter Three focuses on the methodological approach that the research took and discusses in detail how and why the case study method was developed. In particular, the chapter describes pandemic adaptations and discusses how primary data collection had to be adapted to respond to the digital-only restrictions of early 2020, reflecting on the benefits and limitations of the process. The chapter reflects on the growth of the author as a researcher. It explores the ethics of conducting work with young people and reflects on the process of data collection undertaken, stressing the importance of current lack of regulation when working with young participants in the online domain.

Chapter Four provides the top-down policy context to the study and examines the developments of future city narratives in Europe. It describes closely the case study selection, the rationale behind it and establishes the policy background within which the study operates. The chapter explores the state of smart city strategies across the selected three countries – England, Spain and Bulgaria, and the selection of the four cities in question – Birmingham, Manchester, Sofia and Valencia. It also presents a summary and discussion of the ways in which young people are seen in smart city visions – primarily as economic and educational resource to be upskilled and eventually incorporated into the dominant financial system within each city.

Chapter Five explores the primary data collected from young people in Bulgaria, Spain and England over the period 2019 – 2021. It discusses the main themes that emerged from the data analysis and situates the outcomes within current debates about the future of examined cities. The chapter explores the breadth and depth of opinions presented by young people – from their general lack of awareness of planning to daily experiences. The chapter also discusses the mismatch between teenagers' priorities for the future smart city and the current models of delivery – teenagers' desires for a more humanistic and ecologically-minded smart city are presented. The chapter also looks at the self-identification of teenagers as children and poses a question about the suitability of the language of child-friendly planning practice.

Chapter Six consolidates the main findings and relates them to the examined literature, suggesting recommendations for planning practitioners and researchers in the English context. It reconciles the Ladder of Participation (Hart, 1992; Arnstein, 1969) models from the lens of teenagers in the four cities examined and presents a critique of the model aimed at a reformed youth inclusion practice. It introduced the notion of situated participation. The chapter reflects on the Smart City Wheel (Cohen, 2018) and critiques it from the viewpoint of young people, breaking it down and presenting alternative ways of thinking about the smart city. The chapter focuses specifically on the ways that built environment professionals, institutions and regulators can implement better processes to engage and involve young people.

Chapter Seven presents the conclusions of the research and reinstates the original contribution to knowledge the thesis makes. It focuses on the emerging strands for future research to be explored further and which the research has identified. As the thesis adopts an inductive approach focusing on under-researched demographic from an urban planning point of view, there are multiple pathways for future researchers to test further and explore the sentiments of teenagers towards urban planning and the smart city.

Glossary

Throughout the project there are specific terms that require defining. Chapter 2 explores specifically the contested nature of both the term "smart city" and "young people", both of which are complex and understood differently depending on the context in which they are used. For the purposes of the project a "smart city" is seen as a future imaginary, a proposal for the planning and governing the future city, not necessarily a technological manifestation. The project focuses on "teenagers" in the later stages of adolescence between the ages of 15 and 19, however, Chapter 2 and 5 further explore and situate the nuances of defining young people. Finally, the terms "urban planning", "urban planning" and "planning" are used interchangeably throughout the project. Chapter 3 and 4 explore some of the linguistic and cultural specificities of the terminology used, especially in the context of conducting research in languages other than English.

Chapter 2: Literature Review and Conceptual Underpinnings

2.1. Chapter Outline

This chapter presents a conceptual framework which sets out the main relationships between the diverse bodies of literature explored. The literature examined comprises three key strands which overlap: the smart city as a future city imaginary, the specific focus on young people within participation practices and finally the focus on participation in planning practice, specifically the planning of future cities. The research questions are concerned with the democratic inclusion of young people in the production of their future cities and how their participation can be encouraged. The interdisciplinary nature of the research is explored. The chapter presents the current state of smart city research in relation to urban planning and future directions. It presents a short overview of the main theoretical framework on planning participation and specifically explores the state of youth inclusion in planning and smart city research.

2.2 Conceptual Framework

This section presents the scope of the research and how the project sees the different theoretical concepts of technology-driven planning, participatory planning and youth studies. The research questions explored situate the literature broadly in three domains – those of the development of the future city driven by the advent of digital technologies, in particular the smart city imaginaries; the theories of participation in planning and the literature surrounding youth inclusion in democratic processes, such as planning (See Figure 2.1). The participatory, planning and democratic arguments are largely bounded in the European context, specifically the English planning system, with which this study is primarily concerned and towards which recommendations are aimed in Chapter 6; however, the work is informed by the wider European tradition in planning. The technologically driven imaginaries of the smart city acknowledge the global domain and influence over the concept.

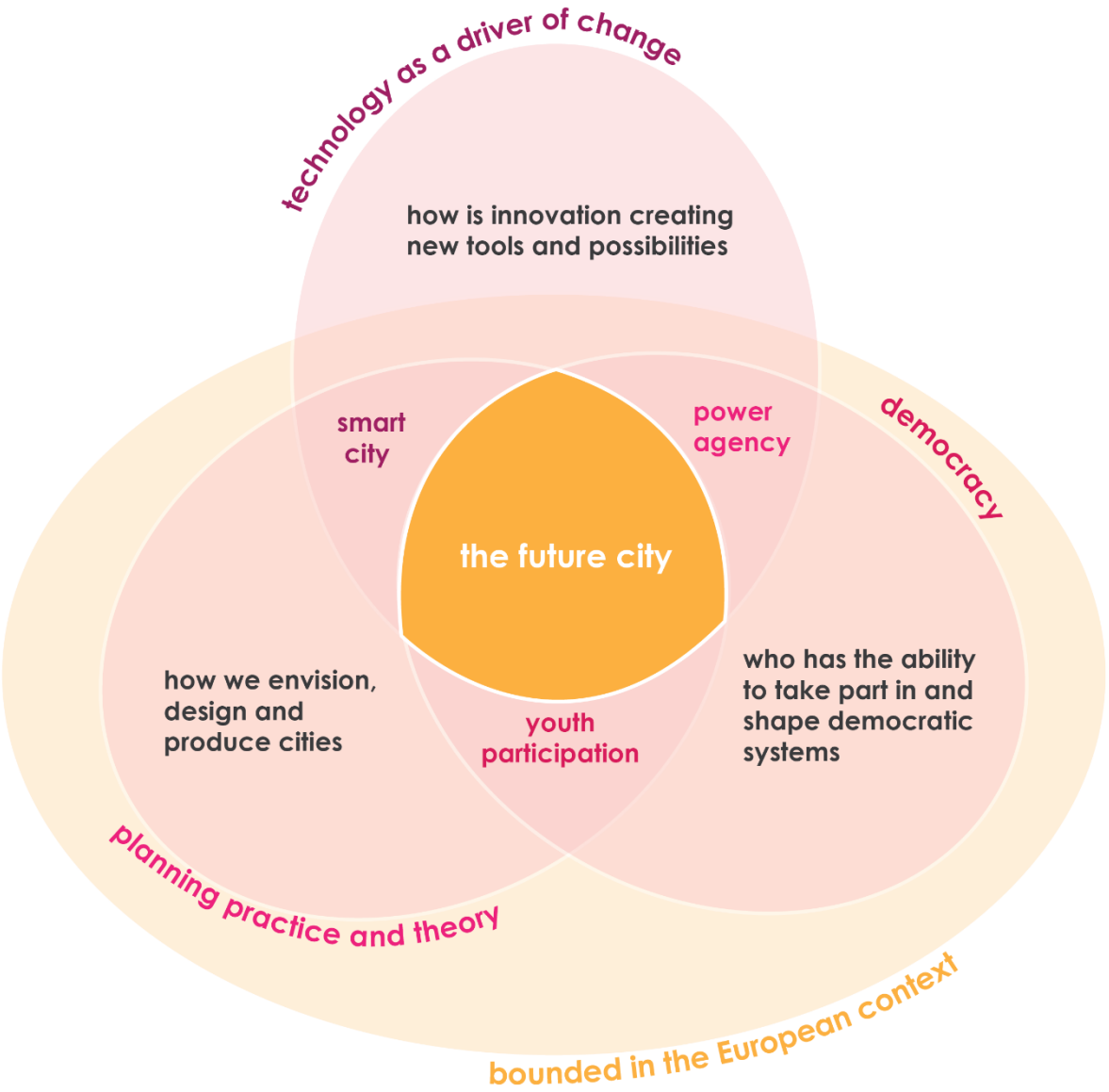

Figure 2.1. Main conceptual domains explored in the study.

The literature explored within the project is diverse, straddling multiple fields, reflecting the complex and contested nature of both smart cities as a concept and youth inclusion in participatory processes. (See Figure 2.2) The traditional literature on planning participation, situated in the theories and practice of planning, is the starting point. Smart cities discourses straddle literature from computer science, engineering, governance studies, architecture, urban planning and sociology, amongst others. Similarly, youth participation literature is diverse and largely rooted in human geography, urban sociology, environmental and citizenship studies, international development and youth studies. All three are complex and contested notions, where understanding of practice is still emerging and the field is still largely concerned with building a detailed picture of the phenomena. Theorisation is fragmented and there is no universal approach to either smart city planning or youth participation in planning.

Figure 2.2. The main literature domains explored in relation to the research questions

The conceptualised relationship between the three main domains of literature study is explored in Figure 2.3. The doctoral projects' inductive approach is largely predicated on the fact that those relationships are yet to be fully explored in the literature. The relationship between urban planning and the smart city relies on both the spatial manifestations of the smart city and, in turn, how the visions of smartness impact planning practice and theories. The imagined smart city relies on current and future citizens' buy-in and digital uptake and literacy, placing youth at the forefront of its focus. However, the current process of imagining future cities in both the formalisation of planning policy and smart city visions leaves out young people from processes which are largely not designed to enable their participation.

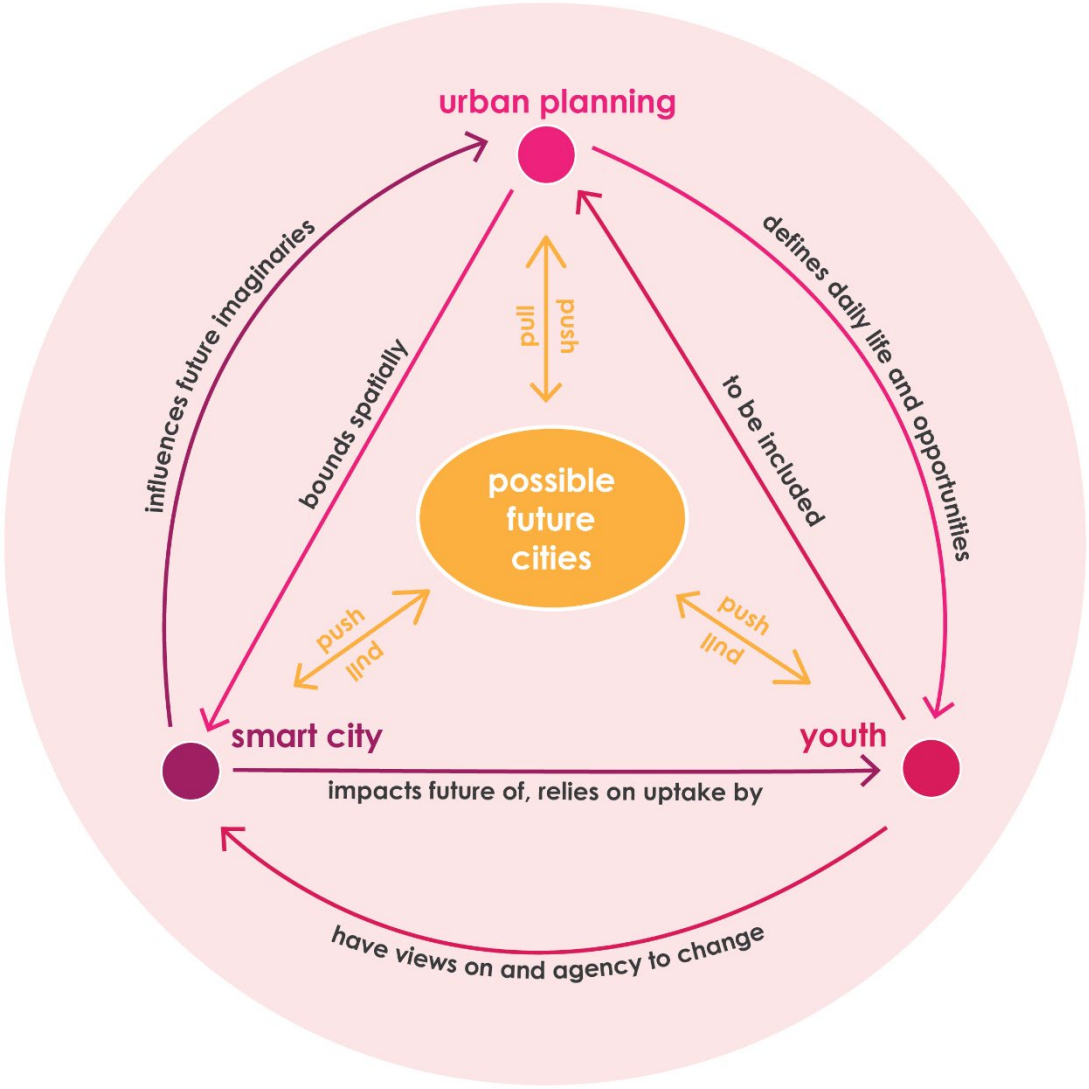

Figure 2.3: Conceptual relationships between the main subjects of exploration.

This project sees the city as the arena where localised democratic arguments and the needs of young people from the bottom up meet the top-down decision-making processes which are often driven by multiple agendas and increasingly influenced by big data. (Figure 2.4.) The research aims to rationalise how the tensions between the planned city, its future imaginary and its current and future residents can be understood and unravelled. This literature review builds a picture of the current state of debates within the smart city as a manifestation of globalisation and shifting power-dynamics, linking it to the current progress in including young people in processes of planning.

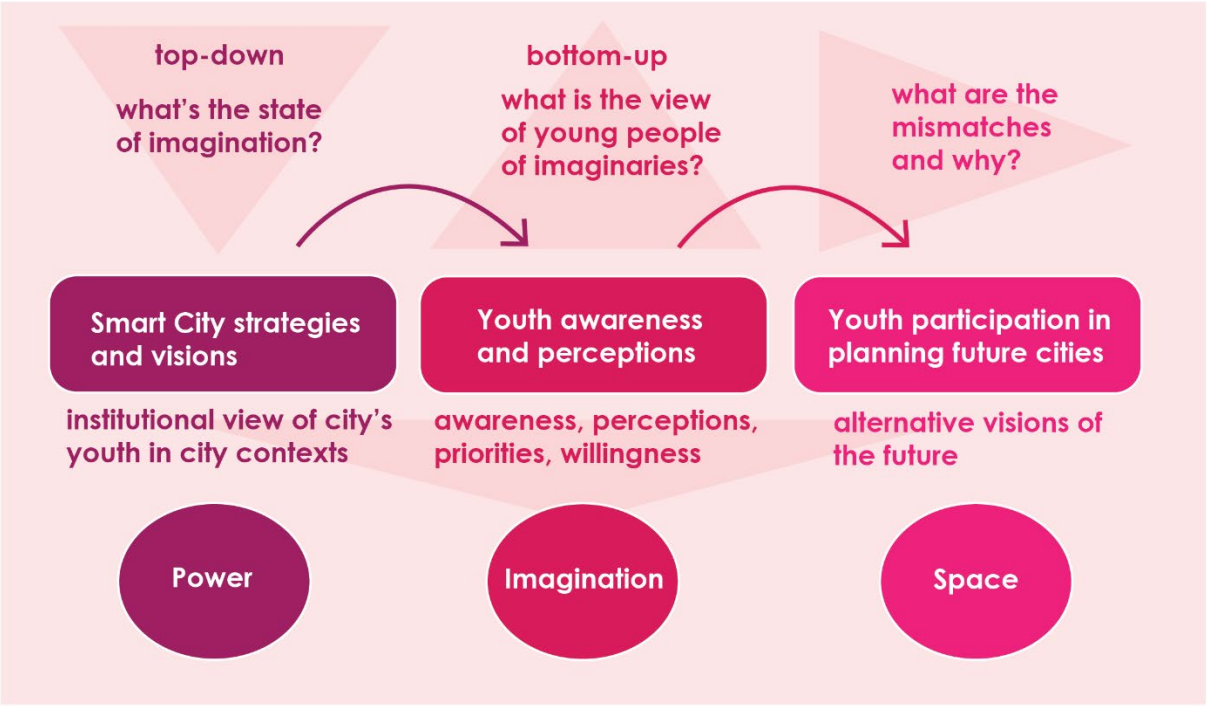

Figure 2.4: Approaching the tensions inherent in the research questions

2.3. Imagining the future smart city

Recent years have seen calls for planners to rediscover imagination (for example Phelps, 2021) as a tool to address the purpose of planning in a post-pandemic world. The smart city is one such response: a recent iteration in a long series of utopias concerning the city to the present day (Angelidou, 2015; Datta 2015b), one driven by the emergence of digital technologies.

Visions of the future city have evolved over a century, beginning with Ebenezer Howard's Garden City (1898), which sought to resolve the perils of early industrialisation by integrating green belts and self-sufficient rural environments into urban life (Dunn et al., 2014). This was followed by the High Modernist era, where figures like Le Corbusier proposed Vertical Cities and the "skyscrapers in the park" model, which championed a "clean slate" (tabula rasa) approach and machine-like functional efficiency. Later mid-20th-century paradigms shifted toward Flexible and Hybrid Cities, which explored modular structures and the emerging overlap between physical place and digital space. These early stages provided the foundation for contemporary smart cities, marking a transition from physical urban reform and "new town" planning to a modern emphasis on data-driven informatics and the knowledge economy (Willis and Augiri, 2018).

At the core of any utopian world is the desire for reconciliation between humans and the natural world. Cugurullo (2018) discussed the smart city imaginary, tracing its origins from Francis Bacon's New Atlantis stressing how, from its early origins, the technological and urban planning driven narratives often have ignored socio-environmental needs. For Cugurullo (2018) the smart city lacks higher order concepts such as justice, happiness and democracy. Unlike previous utopias in the planning psyche such as the Garden City the smart city lacks a defined spatial and value driven approach but rather is focused on the process of optimisation (Datta, 2015). This raises the key question by and for whom the future city is planned?

The smart city concept is intertwined with envisioning the future of urban areas (Marvin et al., 2015). It is often presented as a seductive and normative vision where digital technology acts as the primary catalyst for change. It is also viewed as a potential remedy for the challenges posed by urbanisation, climate change, and an enabler of a sustainable and liveable urban future (Yigitcanlar et al., 2018a). Debates and practice about smart cities promote the sustainability and citizen-friendly credentials of digital optimisation in the city (Girardi & Temporelli, 2017); yet the validity of such claims remains unproven. This aspiration to address complex urban challenges and facilitate a transition to more sustainable, liveable and inclusive environments in an efficient way has led to the prominence of the concept (Ghafoor-Zadeh, 2023; Prateeppornnarong, 2025). In practical terms the smart city is generally understood as harnessing technology to improve environmental sustainability, fuel economic development, and enhance residents' quality of life through governance and services (Schelings et al., 2023).

Grossi and Pianezzi (2017), see the smart city utopia as an expression of neoliberal ideology, one that presents itself as a collective imaginary but promotes the interests of a small group of powerful actors, masking inequality issues on the ground. Batty (2018) similarly takes a critical stand on predicting the future city, quoting the failure of historical efforts to do so, and poses a key argument that we collectively invent futures – a plea to implement agency in the creation of future cities.

Creating Future City Visions

Meadows (1994) writes about visioning as the most important part of the policy process, yet she suggests that we are deprived of meaningful discussions about their creation not only in the policy

process but also in society at large. Meadows stresses that sharing visions with others is essential: only a shared vision can be a responsible one. Smart city strategies as visions of the future are rarely discussed in the public realm. The failed Sidewalks project promoted by Google in Toronto Quays (Bozikovic, 2022) is an example of the contradictions which a smart city vision can encounter when put to the test. The project faced scrutiny by the public and community actors, which eventually led to its withdrawal.

Smart city visions bear similarities to science fiction stories—grounded in realism and technocratic approaches but subservient to current political and economic narratives, casting aside the alternatives possible under a more open and community-led approach. Smart city visions based on current politico-economic realities often glance over the non-rational human and fail to accommodate alternative imaginations of the future. Future city visions should address the issues of climate change and citizen participation to be truly transformational, considering not only the human-centric factors but also the flora and fauna which inhabit the city, a sentiment echoed by the youth climate strike movement (Gorman, 2021). Yigitcanlar et al. (2018a) advocate a post-anthropocentric smart city which prioritises a long-lost way of thinking about our habitats—as parts of the natural world.

Communities, and historically marginalised members of society, are often sidelined in the visioning process. Adopting the viewpoint of youth, as one such demographic, can help us to test the validity of smart city planning and start questioning top-down future visions. Changes brought about by digital technologies have made consulting youths much more practicable. Digital transformations have also brought the so-called digital divide (Stratigea et al., 2015) and young people have become one of the prime targets of educational programmes by state actors to upskill them in preparation to become smart citizens. Innovative ways of consulting are becoming integrated in practice, such as utilising place-based education (Heffez & Bornstein, 2016), virtual and augmented reality tools (Argo et al., 2016) as well as large online multiplayer games (Potts et al., 2017).

2.3.1. Digitalisation as a driver of change

The ongoing transition from industrial to knowledge-based societies is affecting the development of cities (Losasso, 2018). The introduction of Information and Communication Technologies (ICT) across societal processes has cultivated a trend towards incorporating “smartness” into all spheres of daily life (Sanchez-Corcuera et al., 2019; Alaoui et al. 2025).

Underpinning the smart city imaginaries are the possibilities introduced by digitalisation of urban planning processes and city services, the concept seen as a response to contemporary challenges (Viitanen and Kingston, 2014). Digitalisation and technology are major forces driving changes in urban development (Axelsson and Granath, 2018; Bibri and Krogstie, 2017). Historically, concepts such as the “wired city,” which envisioned extensive telecommunications networks providing data and information, and the “digital city,” focused on widespread broadband infrastructure for e-governance and public transactions, laid the groundwork for the smart city idea (Joshi et al., 2016; Komninos and Mora, 2018). The concept of the “digital city” emerged in the 1990s alongside the development of ICTs, asserting that urban development was intricately tied to digital technologies (Willis and Aurigi, 2018).

The increasing mobility and wireless nature of ICTs, including smartphones, have facilitated new forms of civic exchange in urban governance (Wiig and Wyly, 2016). Cities are even described as enveloped in a “haze of software instructions” due to pervasive digital connectivity (Wiig and Wyly, 2016). Increasingly, the smart city concept is associated with advanced technologies like algorithms and artificial intelligence, which are considered paramount to the governance, operations, and

experience of cities (van der Graaf, 2020).

2.3.2. The contested definitions of the Smart City

There is a lack of consensus regarding the definition of a smart city (Losasso, 2018; Manitiu and Pedrini, 2016; Mora et al., 2017; Ojo et al., 2016; Stankovic et al., 2017). The concept is part of a constellation of imaginaries such as intelligent cities, virtual city, knowledge city, and digital city (see Figure 2.5) which has contributed to this conceptual confusion. The concept of a "smart city" lacks a single, universally accepted definition (Hollands, 2008). There are conflicting conceptual models (Angelidou, 2015). Ruhlandt (2018) attempts a composite summary:

smart cities are a multi-dimensional mix of human, infrastructural, social and entrepreneurial capital, that are merged, coordinated and integrated into the fabrics of the city using new technologies, to address social, economic and environmental problems, involving multi-actor, multi-sector and multi-level perspectives. (Ruhlandt 2018:1)

As an interdisciplinary area of research there are several main academic disciplines producing research on the topic of Smart Cities. Major research is undertaken in the sphere of ICT and computer science (Wamba et al., 2017), which is split between system design, data analytics and ICT; Media and Information Studies (Lindtner et al., 2016; Lindtner and Avle, 2017); Governance and Administration Studies (Meijer and Bolívar, 2016; Ruhlandt, 2018), Built Environment (Angelidou, 2015; Batty, 2017; Deakin, 2011; Kummitha and Crutzen, 2017; Mora et al., 2017) and Urban Sociology (Hollands, 2008; Mattern, 2017; McFarlane and Söderström, 2017). Further standardisation of the smart city definition can be observed in the definition delivered by the International Standards Organisation in their ISO 37122:2019 standard.

Smart cities as a largely technocratic idea have permeated the visioning process not only in local municipalities but on national and international levels. The adoption of "smart city" aspirations in the European context was largely driven by the European Commission's agenda and the European Marketplace for Smart Cities (Neirotti et al., 2014). Translated into the national context, specific frameworks were created to fund the digitalisation of cities and their integration into the new "knowledge economy." The European Parliament in 2014 recognised the "Smart City" notion as concerning many issues driven by both ICT and non-technical factors. Its overall aim is to address public issues via ICT-based solutions through multi-stakeholder, municipally based partnerships (Losasso, 2018). Smart city concepts have made their way into the renewed Horizon Europe, heading one of the five missions on 100 climate-neutral and smart cities by 2030 (European Commission, 2022a). A rather more critical approach has been adopted by the UN-Habitat which has developed a flagship programme on people-centred smart cities (UN-Habitat, 2022), which, while attempting to critique the concept, establishes it firmly as a future city vision on the international stage.

Townsend (2014) describes the actors influencing the development of the smart city, plotting in detail the mix of different actors, especially the corporate ones – from Cisco's 2011 co-operation with the city of Songdo in Korea to IBM's 2010 Smarter Cities Challenge programme which was adopted in places such as Rio de Janeiro. Townsend (2014), however, makes the point that in most contexts the smart cities agendas meet a civic movement led by democratised access to technology such as the smartphone which is driving the push towards digitalisation seen at municipal and corporate levels. A decade later, the emergence of large-language models and artificial intelligence is

presenting another new challenge to personalisation of citizens' experiences and digitalisation of city services (Duberry, 2022).

The lack of a universally agreed-upon definition can lead to confusion for urban policymakers trying to define appropriate development policies (Stankovic et al., 2017). However, it also means that the future imaginary of the smart city is contested and able to be challenged.

This project adopts a working definition of the 'smart city' based on McFarlane and Söderström (2017) and Marvin et al. (2015). While not intended as a comprehensive literature review, this research adopts a working definition of the smart city as a technologically deterministic vision of urban development, often framed through a corporate-driven utopian narrative. In this framing, the city is conceptualised as an optimisable 'system of systems' where complex socio-environmental challenges are reduced to technical problems solvable through high-tech interventions, big data, and software-mediated regulation. Crucially, this definition highlights a significant shift in power dynamics; as multinational corporations seek to become 'obligatory passage points' for urban development, they increasingly influence how cities are understood and managed, often prioritising technocratic efficiency and neoliberal interests over traditional democratic or participatory planning processes.

2.3.3. Approaches to conceptualising the smart city

Academic research on smart cities has been described as fragmented and lacking cohesion (Mora et al., 2017).

The primary academic debate distinguishes between a technology-driven (technocratic) and human-driven (integrated) approaches (Borsekova et al., 2018; Komninos and Mora, 2018). Academic debate surrounding smart cities often revolves around the tension between the techno-centric and human/social-centric approaches but also can be seen in the embedded manifestation of the concept in cities (Moumen et al., 2024). Coletta et al. (2019) divide the field between advocates and implementers, and critics; but note that this division is an oversimplification, acknowledging that advocates are increasingly mindful of critiques and attempting to reframe initiatives as more citizen-centric, while many critics recognise the potential of smart city technologies and focus on modifying their implementation to minimise perils rather than advocating their abandonment. Broadly, there are two main schools of thought - a European one supporting a holistic perspective, and another from the North American business community focused on a techno-centric understanding (Mora et al., 2017). This techno-centric vision often frames the smart city as a driver for ICT companies, motivated by exploiting a promising market. Large corporations are noted for deploying ICTs as vehicles for urban innovation. A third way of thinking can also be conceptualised after reviewing the literature, one which is broadly a practical one, where the smart city is seen as a pragmatic approach to improving governance or urban services. Three main vantage points from which the smart city is conceptualised were derived on reviewing the literature described below.

Techno-centric approach

Firstly, there is the technologically driven approach which attempts to view the city from the perspective of urban analytics. It combines debates from the computing world (Kong and Woods, 2018; Rathore et al., 2016; Sun et al., 2016) to governance studies and the built environment (Batty, 2017, 2013; Caragliu and Del Bo, 2018; Deakin, 2012; Deakin and Al Waer, 2011; Komninos, 2014; Paskaleva, 2011) and is characterised by its emphasis on the optimisation of processes in the city. The smart city paradigm is viewed in its core as a model for optimisation and efficiency brought to

the urban realm through technological advances. There is a wide range of private technology companies which propagate a similar view of the city such as IBM, Cicso and Huawei due to its emphasis on technological advances and market fit (Smart City Hub, 2017).

The techno-centric view often prioritises technical solutions, particularly the extensive use of modern ICTs in urban planning. This approach, sometimes referred to as 'digital', 'cyber', or 'intelligent' cities, can be criticised as a technology-led urban utopia. The technology-driven model, particularly supported by corporate interests, has been criticised for focusing on technology solutions provided by ICT companies to cure urban inefficiencies, potentially leading to a corporate smart city model. Critics argue this approach can be misleading regarding the complexity of urban systems and may fail to effectively serve people's needs (Komninos and Mora, 2018).

There is a tendency towards centralised, top-down implementation, often driven by technology (Spicer et al., 2023; van der Graaf et al., 2021). Smart cities, implemented in this manner, can reproduce and create new inequalities (Castilla and Muller, 2024). They have been associated with increased surveillance, particularly of vulnerable populations, and what is termed 'algorithmic violence'. Chen et al. (2022) argue that smart cities have largely been driven by government and corporate interests rather than citizen interests. The discourse around smart cities has been based on biased assumptions favouring economy and technology, with ICTs promoted by businesses and technology vendors as solutions for urban problems, particularly economic revitalisation. This can lead to a focus on business interests, potentially excluding poorer populations and communities (Chen et al., 2022).

Embedded Approach

The ‘embedded’ approach aims to conceptualise the inner workings of cities in their digital transition and is situated in disciplines such as public administration, urban studies and the built environment. Conceptualisation tends to take place ‘from within’, for example where academics are situated in programmes working closely with cities and interested in the ways public administration can transition effectively towards a future city governance which stimulates city growth and digital uptake. Examples include Dublin (Cardullo and Kitchin, 2018; Kitchin, 2014, 2016), Flanders (Walravens, 2012, 2015) and Vienna (Fernandez-Anez et al., 2018). A description of a smart city in the Belgian context seen from the perspective of urban administration is provided below:

' A smart city is a city where all relevant urban actors within the 'quadruple helix' collaborate towards more efficient and more effective solutions for urban challenges, characterised by making innovative solutions possible - together - while considering the local context and identity of the city. Collecting, processing, sharing and opening data with interested stakeholders is key to formulate policy and its translation into solutions. Depending on the projects, the affiliated actors and the technological solutions, the city government can take up various roles: to initiative, to facilitate, to steer, to stimulate, to regulate, to experiment, to test, to validate, to implement, ... The city government fulfils this function at the service of and for the protection of the public interest' (Walravens, 2018)

Other debated dichotomies include top-down versus bottom-up planning (Komninos and Mora, 2018). Top-down approaches originate from city government leadership, defining a specific strategy, but can have limited citizen engagement. Bottom-up planning relies on self-organisation and grassroots efforts, stressing the importance of citizen and civic group involvement. Another debate concerns how city intelligence is produced: through collective intelligence of human communities or through data-driven intelligence from sensors, networks, and data analytics. While collective intelligence focuses on human ingenuity, collaboration, and learning, the data-driven perspective

links intelligence to awareness produced by collecting and processing vast amounts of data to enable real-time responses.

Critical and Human-centric Approach

The final approach towards the smart city adopts a critical viewpoint and incorporates a wide range of disciplines such as urban sociology, architecture, urbanism and media studies (Greenfield, 2013; Hollands, 2008, 2015; Marvin et al., 2015; McFarlane and Söderström, 2017). The smart city is seen as a construct of the corporate in the public realm, as a utopia focused on optimisation, posing challenges to existing democratic processes in its implementation, the move towards which in the long term could exclude citizens from participating in urban life. Academics adopting this viewpoint unpick critical aspects of future cities which the predominant smart city rhetoric tends to obfuscate or omit, such as sustainability (Cugurullo, 2018; Vanolo, 2014), gendered cities (Datta, 2015b), power dynamics (Klauser et al., 2014; Wang, 2017), branding strategies (Söderström et al., 2014) and citizen participation in the process (Stratigea et al., 2015). It is in this school of thought that this investigation is situated.

This contrasts with the more technological approach which attempts to view the city from the perspective of urban analytics (Caragliu & Del Bo, 2019) and the "embedded" approach which aims to conceptualise the inner workings of cities in their digital transition and is situated in disciplines such as public administration, urban studies, and the built environment (Cardullo & Kitchin, 2018).

The human-centric approach advocates for the importance of human aspects alongside technology (Borsekova et al., 2018). It seeks a balance among human, social, cultural, environmental, economic, and technological factors for smart city development (Lee et al., 2014). This perspective aligns with the view that smart cities should start with people and human capital, rather than solely relying on IT to automatically improve cities (Komninos and Mora, 2018). Shortcomings of current approaches include the tendency to focus heavily on technological advancement and efficiency, sometimes without sufficient consideration for sustainability (Bibri, 2019; Bibri and Krogstie, 2017). There is also criticism that the focus on technology can overshadow real community problems (Anthopoulos et. Al., 2016) and that the gains from ICT may be superficial (Hambleton, 2015), with scant evidence of enhancing democracy or citizen empowerment.

In response to these shortcomings, calls for a "right to the smart city" have emerged, advocating for principles and practices that promote social justice, equality and inclusion (Castilla and Muller, 2024). This aligns with the human social approach, which emphasises participation and social capital (Moumen et al., 2024). There is a strong advocacy in the literature for bringing residents and communities back into the planning and implementation of smart cities, highlighting the importance of a citizen-centric view (Chen et al., 2022; Yigitcanlar, 2021; Clarinval et al., 2023).

Technology is increasingly viewed as an instrument for improvement, not the defining feature (Nilssen, 2019). There is a growing scholarly advocacy for an extensive approach to smart urban innovation that goes beyond mere technology. A revision of the concept is taking place, shifting from a technology-driven to a more holistic approach that integrates city attributes/functions to pursue smart and sustainable development (Stratigea et al., 2015). This includes the argument that smart city solutions should start with the "city," not the "smart," by matching different types of "smartness" (technologies, tools, applications) with specific urban functions and contexts (Stratigea et al., 2015). Research is contributing to debates around human-centred smart cities and how smart urbanisation can address social problems and improve well-being (Trencher, 2019). Empowering citizens through technology, enabling them to shape the city and contribute to change, is highlighted

(Stratigea et al., 2015). Adopting technology should empower citizens by adapting it to their needs, rather than forcing citizens to adapt their lives.

There are still further explorations to be undertaken. There is a need for more clarity on the relationships between citizen engagement, social equity, and quality of life, which are considered crucial components of social sustainability in smart cities (Chen et al., 2022). A clear definition and operationalisation of social equity and quality of life are often missing, making it challenging to understand how citizen participation concretely contributes to the smart city development.

2.3.4. International policy context

The adoption of 'smart city' aspirations in the European Context is largely driven by the European Commission's Agenda 2020 and the European Marketplace for Smart Cities (Neirotti et al., 2014). Translated into the national context, specific frameworks are created to fund the digitalisation of cities and their integration to the new 'knowledge economy'. In the case of Spain, the Digital Agenda (2013) promotes the adoption of Smart Cities initiatives. The 'Plan Nacional de Ciudades Inteligentes' (2015) ran from 2015 to 2017, promoting the adoption of the 'smart city' concept nationwide and supporting this with regional funding. Meijer and Bolívar (2016) suggest that issues of the power balance and legitimacy of governance are central to the successful implementation of smart city technologies. Chapter 4 explores the national policy context in further detail.

Internationally, UN-Habitat has established a strong research programme focused on People-Centred Smart Cities[1] . Resolution HSP/HA.2/Res.1 in 2025 has committed the organisation to develop International Guidelines on People-centred Smart Cities throughout 2025 and beyond. The organisation also published a global assessment of smart cities – the World Smart Cities Outlook (UN Habitat, 2024b).

2.3.5. Smart City and urban planning and design

The smart city is intrinsically linked to spatial planning and development (Yigitcanlar et al., 2018; Stratigea et al., 2015) as spatial factors can differentiate smart city policies (Angelidou, 2014). The concept is often considered a planning and development paradigm, and some smart city models incorporate aspects of urban planning as fundamental dimensions (Anthopoulos, 2015). The acceleration of urbanisation has pushed planners and policymakers to look towards technology-based solutions to enhance citizens' quality of life, leveraging technology and data to improve urban systems, design and planning processes (Klauser and Söderström, 2015). Smart city approaches have been gaining momentum in city planning and urban design (Kummithaa and Crutzen, 2017; Axelsson and Granath, 2018; Komninos and Mora, 2018). Planning worldwide is undergoing major changes to incorporate new perspectives such as digitalisation, quality of life, citizen participation, equality and diversity (Wilson and Tewdwr-Jones, 2022; Axelsson and Granath, 2018).

Visions for the future smart city often include cyber-physical integration within existing, renovated, and new districts, as well as sustainably planned new districts (Anthopoulos, 2017) in diverse geographic contexts primarily focused on Europe, North America, and Asia (Cocchia, 2014; Cowley et al., 2019). Cities such as New York City (Anthopoulos, 2017), Montreal, Edinburgh (Anthopoulos et al. 2016), New Songdo City, Singapore, Freiburg, Copenhagen (Ghaffarianhoseini et al., 2018), Busan, and Incheon (Komninos and Mora, 2018) are often presented as the forerunners of smartness yet often

[1] https://unhabitat.org/programme/people-centred-smart-cities

have only specific policies or areas which are targets of interventions. The extent to which these integrate smart city solutions into specific national planning systems is not consistently elaborated (Cowley and Caprotti, 2018).

Barcelona's adoption of the Smart City concept is often widely quoted as one of the prime case studies for smart cities (March and Ribera-Fumaz, 2016). Specific expressions at different spatial levels include the Media-ICT building, district heating/cooling networks, and 'self-sufficient blocks' (Barcelona's super blocks). March and Ribera-Fumaz (2016) note that the implementation has faced contradictions, such as framing it as a '"smart sustainable fix"', controversial use of citizens, and difficulties in upscaling from pilot projects. Barcelona's pursuit of the smart city highlights the need to re-politicise debates and centre citizens in urban discussions, the introduction of the digital participatory planning platform Decidim[2] is one example of how the city has responded to these challenges. Exploring North American case studies, Mattern (2021) reflects on the failure of Toronto's Waterfront development and Hudson Yard, New York to materialise smartness: the former in its adoption of top-down traditional master planning approaches, ultimately failing to involve citizens, and the later in its failure to create a functional civic place.

The smart city approach is increasingly adopted as an urban policy, focusing on digital and technology-driven urban innovation (Verrest and Pfeffer, 2018). The smart city paradigm can be framed within a broader reimagining of the urban environment, aiming to create new connections between flows, objects, and citizens (March and Ribera-Fumaz, 2016). Comparing the processes of smart city visioning with traditional planning systems highlights differences, such as the debates between top-down and bottom-up approaches (Komninos and Mora, 2018).

Planning policies and the development of participatory methods are seen as significant challenges but are necessary to promote social justice, equality, and inclusion within smart cities (Willis and Aurigi, 2018; Castilla and Muller, 2024). Spicer et al. (2023) discuss that the projects which cities pursue may not always align with residents' preferences, highlighting the need for broader and deeper community engagement in the design and implementation phases of smart cities. The patchy implementation observed in some secondary cities reflects a lack of a holistic approach, including integrated urban planning (Prateeppornnarong, 2025). Smart city initiatives are sometimes seen as a departure or even "anti-planning" in traditional terms (Cowley and Caprotti, 2018). Allmendinger (2021) stresses that while cities and their challenges have evolved, not least because of rapid digitalisation of citizens' lives, the model of planning has not. The networked citizen is uncoupled from the physical space and jurisdiction of a planning system which focuses on the physical boundaries of a city, and development moves at timeframes which often outpace the current planning process. This is further explored in Chapter 4 where the smart city visions often sit outside the respective planning systems. (Figure 2.6)

[2] https://decidim.org/

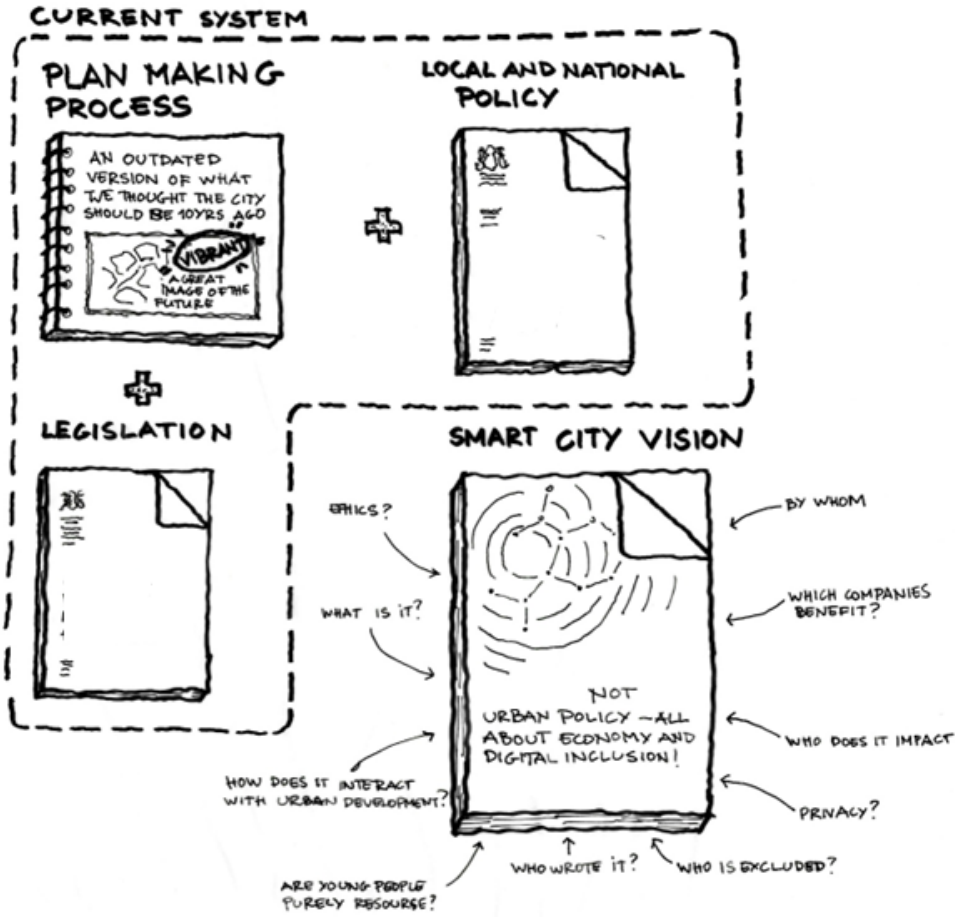

Figure 2.6: Illustration of the smart city visions resting outside the traditional plan making processes. Source: Author

2.3.6. Future of Smartness

Allmendinger (2021) draws out the narratives underpinning the shift to smartness and sets out the need for a new story of the smart city, one that is inclusive and recognises the hybrid future between digital and physical. The sudden and virtually worldwide pandemic move to life online has accelerated existing trends and Allmendinger takes a critical view of the smart city story, a promise of a future transformed by digitalisation but one which risk oversimplifying the complex problems that cities face.

The concept of smartness, particularly in urban contexts, is intricately tied to visions of the future city (Luque-Ayala and Marvin, 2015). Smart urbanism discourses often present digital technology as the primary driver for shaping these futures. The smart city concept is explicitly identified as a future scenario (Stratigea et al., 2015) and a potential enabler of a sustainable and liveable urban future, offering remedies for urbanisation challenges and climate change (Yigicanlar et al., 2018). It represents a response to the aspiration of creating future cities that guarantee citizen well-being and ensure environmental sustainability in urban planning (Sanchez-Corcuera et al., 2019).

Despite the promise, smart cities still face implementation challenges, future opportunities exist, along with issues that must be addressed (Sanchez-Corcuera et al., 2019). The smart city has the potential to introduce new concepts in urban planning by integrating the capabilities of the real and virtual worlds to solve urban problems.

The understanding of “smartness” in cities is evolving from purely techno-centric approaches towards human-centred and inclusive models that prioritise social sustainability, equity, and residents' well-being (Moumen et al., 2024; Clarinval et al., 2023). The most divisive issue in the smart city discourse continues to be the very definition and conceptualisation of this “urban intelligence” or “smartness” (Moumen et al., 2024). Hambleton (2015) suggests moving beyond the narrow focus on “smart” and technology towards cultivating “wise cities,” where decision-making is guided by sound judgment and public learning rather than solely technological advancement. Technological innovations should serve a public purpose and smart city governance approaches should integrate a deeper understanding of democratic innovation and public engagement. Aligning global technological advancements with local urban dynamics and needs is crucial for digital technologies to effectively support sustainable urban growth in the future (Komninos and Mora, 2018).

While rapid growth in the smart city industry is observed globally, with many major cities pursuing some form of smart city strategy or incrementally adopting the technology, the fundamental question of whose vision is being implemented remains pertinent given the historical tendency towards top-down design (Spicer et al., 2023).

Smart, Social and Sustainable

Townsend (2014) argues that social sustainability needs to be systematically integrated into the planning of new smart city services to understand what the risks are in excluding communities and demographics who might not have the ability to contribute to the smart city development process due to internet access, wealth or age. Yigitcanlar et al. (2018) are critical not of the concept itself but the framework in which smart cities operate, as in their view the failure of both sustainable and smart urbanism is bounded by their performance within an anthropocentric practice. Hollands (2008) stressed that progressive smart cities need to be founded on the needs of the people inhabiting them instead of uncritically promoting the role of IT as a panacea, which has led to a range of critiques of the smart city.

“Perhaps the main issue behind the failure of both sustainable and smart urbanism attempts is that they are still being performed within the boundaries of the unhealthy Anthropocene practice.” (Yigitcanlar 2017:7)

For the smart city to be fully transformational and address the issues of climate change, then in its programming it should consider not only the human-centric, but the flora and fauna which inhabit the city. Yigitcanlar (2017) advocates for a post-anthropocentric planning system which prioritises a long-lost way of thinking about our habitats – as parts of the natural world. This doctoral project aims to respond to this challenge by trying to examine how youth’s perceptions and participation in urban life relate to a post-anthropocentric world, where the gaps of knowledge are and how can youth be seen to drive a new debate, one which respects the intergenerational contract of sustainable development. Such developments can already be observed with the emergent Youth for Climate strikes across the world. Theorisation of such developments in the context of urban planning is needed.

2.3.7. Smart City Limitations

A range of research gaps are identified across the literature on smart cities.

Defining the future smart city

There is a recognised lack of a universally agreed definition and a need for clarification of the

concept (Angelidou, 2014; Losasso, 2018), leading to confusion for policymakers (Stanković et al., 2017). The manifestations of the smart city concept require further investigation to provide substance, moving beyond technology for its own sake to focus on solving core urban problems. A fundamental gap is the lack of a widely accepted operational definition of the smart city term itself (Panagiotopoulou et al., 2025).

Spatial Impact

Willis and Aurigi (2018) discuss the lack of a consistent view about the spatial effects that digital technologies have on the planning and organisation of cities. Planning systems do not systematically engage with digital and ICT's impacts. The aspects of strategic planning for smart city development are still largely unexplored (Angelidou, 2014). There is a lack of attention to implications beyond city administrative boundaries in smart urbanism research (Verrest and Pfeffer, 2018).

Governance and transparency

Figueiredo et al. (2019) discuss the question of agency and control within smart city systems. The smart city is: "the clearest architectural and urban expression of Giles Deluze's conception of the societies of control" (pg 8.), pointing to the concealed nature of data collection, algorithmic decision making and devices underpinning the smart city. Future research should investigate models of governance specifically for smart cities and strengthen the connection between smart city governance debates and collaborative governance literature (Meijer and Bolivar, 2016). Research needs to better understand the politics and implications of technocratic and corporate governance on different urban groups and address tensions with alternative agendas (Verrest and Pfeffer, 2018). It is crucial to critically unpack how data (collection, storage, processing, use) is handled in smart city projects (Verrest and Pfeffer, 2018). Zukin (2020) sets out a challenge to city officials who must manage the integration of new technologies and social communities, questioning who controls innovation in cities.

Frameworks

There is a need for integrated frameworks that connect reference models, associated challenges, and considerations for creating value from urban data for stakeholders (Lim et al., 2018). Proposed conceptual frameworks require testing and validation through expert review or real-case studies (Anthopoulos, 2015). Green (2019) set out a need for deeper research into the social, political, and structural determinants that constrain or shape technology's impacts in urban environments, moving beyond analyses focused solely on technical capabilities and a more critical analysis and research into the values, assumptions, and potential biases embedded in the architecture and design choices of specific smart city technologies, and their real-world consequences.

Geography

There is a need for greater empirical understanding of how alternative smart city interpretations and strategies are developing in different geographical contexts (Trencher, 2019). Additional contextual research is needed to adapt and apply the global smart city concept to specific regional contexts, such as African cities, which may not yet have reached an ideal performance level (Monumen et al., 2024).

Effectiveness

Much of the existing literature has focused on idealised visions, with little research tackling the actual enabling factors that make cities smart (Nam and Pardo, 2011). A gap exists regarding how cities' services transition towards smart services and the methodologies they follow in this transformation (Letaifa, 2015). Limited effort has been made to capture a comprehensive

understanding of how the complex and multidimensional drivers of smart cities are linked to desired outcomes (Yigitcanlar et al., 2018), including success factors and challenges (Ojo et al., 2015). A clear explanation of what is needed for successful smart city development strategies is still missing. Current research is unable to overcome the knowledge gap presented by divergent strategic principles (Mora et al., 2018).

Sustainability

Critical issues related to the contribution of existing models of sustainable urban form to overall sustainability goals remain unsettled and less explored (Birbi and Krogstie, 2017). More effort is needed to develop smart solutions specifically oriented towards addressing environmental concerns and socio-economic needs (Bibri, 2019). Deeper analysis of the interconnectivity and multi-faceted relationships between different sustainability pillars (social, environmental, economic) is needed to understand the trade-offs and opportunities faced by smart cities (Chen et al., 2022). Evaluating and monitoring smart city performance in terms of sustainability remains an unresolved challenge, with a lack of a widely accepted indicator framework. The selection and deployment of appropriate frameworks require expert knowledge and can be complex (Panagiotopoulou et al., 2025). Little evidence exists on how sustainability outcomes are incorporated or achieved within smart city initiatives (Yigitcanlar et al., 2019).

Empirical evidence on the ground

There is a surprising lack of studies providing practical knowledge derived from real smart city projects, which is significant for future development (Lim et al., 2018). Research should be grounded in empirical studies of existing smart city technologies (Wiig and Wyly, 2016). Few scholarly contributions empirically address the full scope of different innovative functions that the smart city concept is intended to comprise (Nilssen, 2019). The existing literature is seen to benefit from more empirical studies, particularly comparative studies across multiple cities, moving beyond single-city case studies (Ward et al., 2025). The empirical knowledge needed to bridge the gap between theory and practice has not yet been generated, with more multiple-case study analyses required (Mora et al., 2018). Halegoua (2020) sets out a need for more ethnographic and qualitative work to understand what people genuinely want from future smart cities. In this context this doctoral project provides a multi-case study of smart city imaginaries.

Citizens' Perspective

Thomas et al. (2016) highlight the absence of "situated" citizen perspectives on what a smart city should be. There is a gap in bringing a comprehensive resident perspective to the evaluation of smart city performance, with many studies focusing only on single cities or specific services (Spicer et al., 2023). There is a need for more clarity and operationalisation of key concepts within the human-centric view, such as social equity and quality of life (Chen et al., 2022). Further investigation is required into the relationships among citizen engagement, social equity, and quality of life as elements of social sustainability in smart cities. This includes evaluating the effectiveness of different participatory methods (Chen et al., 2022). Calzada (2021) highlights the citizen's perspective and the need for reclaiming the smart city debate towards one based on social accountability, addressing techno-political challenges and rooting research in the social sciences. More in-depth theoretical and conceptual approaches are needed to account for the individual, organisational, inter-organisational, and contextual factors (enablers and challenges) that determine the level of equality, inclusion, and residents' well-being in a smart city (Chen et al., 2022). This doctoral project contributes to this gap by building up the knowledge base on perceptions and priorities of teenagers of the future smart city.

2.4. Participation in urban planning

Public participation in planning is a relatively new academic field, emerging in the 1960s (Damer and Hague, 1971). Formal sanction for the term was not provided until the 1968 Town and Country Planning Act in the UK, where it was firmly endorsed by an official mandate (Damer and Hague, 1971). Public participation in the UK has its roots with the Skeffington Report (1969), which is widely credited as one of the first proposals for public participation in the planning context of Europe (TCPA, 2018). A review of the evolution of the planning discipline in Britain over the last century makes references to the American experience as a comparator and source of influence (Davoudi and Pendlebury, 2010). Thorpe (2017) argues that public participation was not introduced in the twentieth century but rather reimagined and formalised in the now established planning discipline in the Anglo-Saxon context.

The ways in which cities are produced extend beyond formal planning channels, and an understanding of participation as planning involves exploring collective forms of spatial production, particularly those emerging from the Global South, which address the limitations of formal planning in engaging with diverse city-making processes outside dominant practices (Inch et al. 2019). In the wider context of Europe, The Aarhus Convention of 1998 defines the right of citizens to participate in planning processes. The Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (UNECE, 1998) was devised by UNECE and has the European Union as a signatory. The convention guarantees the principles of public participation and access to environmental information and participation in decision making (TCPA, 2019).

2.4.1. Key developments in planning participation

Lane (2005) describes the evolution of different models of planning – from the technocratic origins of blueprint planning focused on top-down decision making without public participation, to the so-called synoptic model dominating the 1960s with tokenistic participation. The 1960s led to the turn in planning defining transactive planning, introducing ideas such as advocacy planning and bargaining, which resulted in the communicative turn in planning (Healey, 1996) emerging in the early 1990s, largely defining the current approaches in planning practice. The emergence of technological solutions, however, is presenting a new opportunity and challenge to planning practice and participation.

Among the first attempts to theorise public participation was the ladder of participation by Susan Arnstein (1969). This has become a central theoretical framework in discussions of public participation (Slotterback and Lauria, 2019; Botchwey et al., 2019; Nyseth et al., 2019; Ianniello et al., 2018; Innes and Booher, 2004; Thorpe, 2017). Arnstein (1969) contends that the primary problem in public participation is citizens' lack of power and measures the value of participation in terms of a ladder of citizen power (Innes and Booher, 2004). Rocha's "ladder of empowerment" (1997) is comparable to Arnstein's, also reflecting the amount of power held by citizens, although it does not characterise the participatory structure in which this power is exerted (Rocha, 1997). The Ladder is further explored later in this chapter.

In the shift to transactional planning practices, Davidoff (1965) introduces the concept of advocacy planning in a similar timeframe. This concept proposes a role for advocates, essentially providing professional assistance to disadvantaged groups, aiming to increase their relative power (Innes and

Booher, 2004). Davidoff's theory formed the basis for empirical research, added a new “model” to the field, and stimulated debate about planning practice, including criticisms regarding representation, empowerment, and implementation power (Checkoway, 1994).

The communicative turn in planning theory has led to the emergence of statutory requirements for public participation as a central issue concerning inclusionary discourse and the institutionalisation of more democratic planning practices (Monno and Khakee, 2012). Collaborative and communicative planning approaches have gained a central place within planning literature, following seminal work by authors such as Patsy Healey (Healey, 1997). This has generated rich debate about the locations where planning and participation occur, both within and beyond collaborative spaces (Inch et al., 2019). Other related theoretical concepts include collaborative rationality (Innes and Booher, 2010), co-production (Nyseth et al., 2019) and critical perspectives that challenge mainstream planning histories (Thorpe, 2017). Discussions also touch upon insurgent planning, particularly in the Global South (Miraftab, 2009).

While various participatory activities and models exist, there is a recognised need for further attempts to compare them in practice to address the noted gap between rhetoric and reality. There are also identified barriers to the institutionalisation of participatory planning that warrant further exploration (Monno and Khakee, 2012). In the digital and AI-realm, related to the use of Arnstein's ladder, Du et al. (2023) note that only a few papers specifically focused on participation levels between tokenism and citizen power, with most concentrating on methods for delivering information, leading to questions about whether digitalisation is indeed empowering residents. This project critiques the ladder as a model of participation in detail, due to its resilience in establishing itself in the field of youth participation and develops a new “situated” approach to participation, see Chapter 6.

2.4.2. Participation in the Digital Age

The advent of information technology and new web tools, particularly Web 2.0 (introduced in 2004), is considered a means to improve public participation (Bizjak, 2012). New technologies broadly under the guise of the term ‘plantech’ (planning +technology) have revolutionised the way in which public participation takes place (Alizadeh, 2017; Angelidou and Psaltoglou, 2017; Poplin, 2014). The availability of urban data online provides new tools and avenue for consulting citizens. However, often digital participation can be passive, therefore the design of the digital tools needs to be well considered (Bizjak, 2012).

Planning organisations are increasingly utilising online participatory tools (OPTs) for public engagement (Afzalan and Muller, 2018). Wilson and Tewdwr-Jones (2022) argue that they can help attract more citizens, engage a more diverse population, disseminate information more broadly, gather local knowledge, and facilitate consensus building. They can also collect local knowledge and mobilise citizen action through instant communication. Different types of OPTs have varying capabilities for instance, participant-led tools like online neighbourhood forums may be more useful for mobilising action, while planner-led tools can be better for gathering targeted information (Afzalan and Muller, 2018).

However, there are also challenges and criticisms. OPTs can intensify social injustice and an unequal distribution of power, as well as create or worsen issues related to privacy, security, and data management (Afzalan and Muller, 2018). While research suggests that OPTs can be effective in achieving participation goals such as inclusive planning, consensus building, and learning from local knowledge, their effectiveness is significantly dependent on how they are implemented and integrated into the overall participation process and existing digital infrastructures (Wilson and

Tewdwr-Jones, 2022). Innovative methods, including the creative use of digital technology, are emerging to induce participation and capture lived experience (Lawson et al., 2022). The advent of large language models and AI-enabled participatory tools throw future challenges to devising effective participatory methods.

2.5. The role of young citizens in city making

It is widely accepted that involving communities in the creation of the villages, towns and cities in which they live is a cornerstone of successful placemaking (Inch et al., 2019). Meaningful participation in the planning and design process through involving diverse stakeholders promises to lead to better social inclusion, conflict management, sustainable development, economic benefits, and reduction of public opposition. Yet underrepresented groups can be excluded from those processes either by design or by their lack of access to economic, knowledge or social capital. Children and young people often fall in the latter category and so are rarely effectively consulted as stakeholders in the planning and design process. In policy documents the term 'young people' is usually accompanied by the term 'children', often generating perceptions of inexperienced, and therefore insignificant, voices: engaging with them may serve to tick off diversity goals, yet their voices are largely ignored. In recent years, increasing attention has rightly been devoted to children's right to play (Voce, 2015), be safe in and to occupy urban environments (Bornat, 2025). However, a significant demographic of young adults – teenagers - is often forgotten between the dichotomy of children and adults, a demographic that often tends to be simply placated by city officials or developers by the construction of a skate park or other, perhaps inappropriate, leisure facility (Costa, 2020).

The inclusion of young people in urban planning and governance is increasingly recognised as integral to democratic principles and civic engagement (Saltiel and Sklias, 2023). Their participation ensures that young people have a voice in decisions directly affecting their lives, fostering a sense of ownership and responsibility within their communities. Youth involvement is considered essential for the long-term sustainability of democratic systems, as it encourages the active participation of future generations in political processes (Saltiel and Sklias, 2023). Recognising youth as stakeholders is also crucial in preparing them to manage the world around them effectively as they mature (Palmy David and Buchanan, 2020). Children and young people are both current users of the built environment and future stakeholders affected by current policies and the long-term vision of a community (Palmy David and Buchanan, 2020). Despite their daily and intensive use of public spaces, children and young people are often marginalised in planning debates (Lauwers and Vanderstede, 2005). Historically, this younger demographic group has not been central to urban spatial planning policy and practice (Rodela and Norss, 2022). There is significant work required to bring the needs of teenagers more directly into how public space is planned (Wood and Hamilton, 2023).

2.5.1. Why focus on young people?

"Everything that concerns the organization and design of cities, their legibility, beauty or ugliness, hospitality or brutality, accessibility or inaccessibility, has impacts on all who inhabit them"
(Lennar and Lennard, 2000:15)

Lennard and Lennard (2000) explore how children (defined as anyone under the age of 18) in urban settings become adults and the extensive affects the built environment has on them. They argue that there is systemic failure over years for built environment professionals, politicians and developers to engage with and consider the effects on children brought forward by their interventions in the urban realm. One of the earliest authors to make the case for youth inclusion in planning was Colin Ward. Ward's (1978) groundbreaking text "The Child in the City" laid out questions about the way in which planners are designing out children and particularly – play. The two primary enemies to a child-friendly city are identified as the subservience of development to real estate capital and the dominance of the car. Almost half-a-century later, late capitalistic structures in the Western world have displaced children and teenagers from the urban realm, in many cases having denied them access to economic and democratic participation.

It is important to note that most of the authors described here root themselves in the United States planning system and context or are themselves working or have been educated in the United States, Australia or the UK. The international funding for many of the projects and the diverse geographical distribution of the case studies conflicts with this anglophone centric concentration in the literature. A major critique of the above-mentioned literature is also the lack of individual youth voices. Much of the literature adopts a methodological approach in its distance of the participant and theorisation based on observations and interviews but no active co-authorship with youth or clear presentation of youth's views on the matter.

In recent years, built environment professionals are increasingly recognising the valuable knowledge and insights that youth can contribute (Botchwey et al., 2019) Within the English planning debates, the 2020 White Paper 'Planning for the Future' (UK Government, 2020) identified young people as 'those who stand to gain from development' but whose voice is 'not heard loudly enough'. The Raynsford Review of Planning in England (Raynsford Review, 2018) advocates a wider participation of communities in the planning process, and in particular young people. Communities which traditionally have not participated in planning should be a main target of engagement. The revised National Planning Policy Framework 2024 (UK Government, 2024) for the first time ever explicitly mentions young people, albeit confined to paragraph 76 concerning the location of fast-food restaurants.

Engaging young people directly helps avoid exploitative or coercive forms of participation. Young people represent a large and diverse segment of the population, spanning various racial, political, religious, and socio-economic backgrounds, who have historically faced significant discrimination and lack an institutionalised voice in policy decisions (Palmy David and Buchanan, 2020). Allowing young people to participate can help bridge this gap between civic knowledge learned in school and the actual practice of civic engagement, potentially increasing overall engagement. Focusing on and including young people in planning and decision-making is supported by numerous arguments across the literature.

Democratic Principles and Civic Engagement

Adolescents between the ages of 10 and 19 currently constitute 16% of the world's population (UNICEF, 2025). Youth participation in local governance is considered integral to democracy, ensuring that they have a say in decisions affecting their lives and fostering ownership and responsibility (Saltiel and Sklias, 2023). It is essential for the long-term sustainability of democratic systems to encourage the active involvement of the next generation. Beyond fulfilling their rights to participate, youth involvement offers benefits like personal skill development and can address their current needs (Bertram, 2019). The Convention of the Rights of the Child recognised youth as active

agents of change within society (UN, 1989). Youth possess attributes like dynamism, doubt, flexibility, adjustability, and willingness to change, rendering them potential problem solvers who can bring fresh and innovative ideas to societal concerns (Marava et al., 2020). Rodela and Norss (2022) note the value of engaging children and youth as active agents of change in consultation or participation processes. Young people have faced a long history of discrimination without proportionate representation and still lack an institutionalised voice in policy decision-making (Palmy David and Buchanan, 2020). Local governments are more likely to make informed decisions when considering the perspectives of all demographic groups (Saltiel and Sklias, 2023). Young people often bring fresh ideas and innovative solutions to the table, which can lead to more comprehensive and inclusive policies (Saltiel and Sklias, 2023).

Adultcentricism

Young people often feel undervalued by adults in their communities (Palmy David and Buchanan, 2020). Young people's needs and preferences for the built environment might differ from adults', such as the need for independent mobility, unstructured play spaces, and diversity in land uses. Adults are not always able to accurately or effectively represent youth interests unless they engage youth directly. Historically, young people have complained about not having enough to do, while communities complained about anti-social behaviour, often stemming from a misunderstanding of the developmental phase of 'teenhood' (Wood and Hamilton, 2023).

Sustainable Development

There is global agreement on the need for increased citizen participation, including children, to achieve the goals of sustainable development (Stenberg and Fryk, 2021). Youth participation has a value in pursuing sustainable development objectives (Marava et al., 2020). Progress on safeguarding human rights and a better living environment for children and youth impacts their mental and physical health and well-being (Rodela and Norss, 2022). Two Australian programs demonstrated that involving young people helped develop their sense of spatial competence, confidence, efficacy, and ultimately, their well-being (Wilks and Rudner, 2013).

Freeman and Cook (2019) summarise the case for involving children and young people in planning, formulating several arguments: their unique experience and knowledge of childhood; their civil rights; the need to redress power and rebalance decision-making; the need to improve consultation processes to enable their inclusion. Freeman and Cook (2019) see the planner's response as either a researcher, advocate, facilitator or manager of the experience of children in cities.

Youth engagement inherently refers to the meaningful voluntary participation of young people in decision-making and governance of organisations or programmes (Rahbany, 2013). In the context of formal participation in projects, programmes, and policymaking in the public arena, the focus is often on "children as citizens," particularly within Western-style representative government systems (Carroll et al., 2019). This positions young people as having a legitimate role in defining how urban spaces should be designed to accommodate their needs and concerns, rather than being excluded and losing their claim to be present citizens and participants (Simpson, 1997). The value of involving children and young people in participatory processes relevant to planning and urban design matters is explicitly highlighted, linking to active civics and citizenship (Wilks and Rudner, 2013).

2.5.2. Cities of Diversity

Creating cities for all citizens involves integrating children and youth, particularly those from marginalised populations, into city planning (Rudner, 2017). This aligns with the concept of the "just city," which implies considering the needs and perspectives of all residents, regardless of age (Rudner, 2017; Fainstein, 2014). Making planning practice and urban design more inclusionary

involves grappling with the inherent tensions of traditional expert-led approaches versus respecting children and young people's civic participation and agency (Wilks and Rudner, 2013).

In the planning debate, youth have been an elusive demographic often taken to mean children and adolescents. As diverse and as complicated as society itself, the benefits of involving youth in the planning process (Frank, 2006) have often not materialised. With the changes brought by digital technologies, consulting youths has become much more practicable. Digital transformations have, however, also generated the so-called digital divide (Stratigea et al., 2015) and young people have become one of the prime targets of educational programmes by state actors. Today, perceptions of youth towards society are largely shaped by the digital realm, which in turn shapes their physical expression in cities. Innovative ways of consulting have become commonplace, such as utilising place-based education (Heffez and Bornstein, 2016), virtual and augmented reality tools (Argo et al., 2016) as well as large online multiplayer games (Lindtner and Nardi, 2008). Gamification (Bogost, 2008) of participatory techniques as effective tools had increased in popularity. Young people's perceptions of the built environment often are first introduced and defined by their experiences in game form, as with Pokemon Go (Potts et al., 2017) and games like SimCity (All et al., 2013).

Involving children and youth aligns with democratic and political theories advocating broad citizen participation (Heinrich and Million, 2016). Governance theories, such as multi-actor governance and social network analysis, offer ways to understand the intricate structure of local policy and identify various stakeholders, including "hidden actors," suggesting that policy is a result of negotiation and interaction between different parties rather than a single central authority (Lauwers and Vanderstede, 2005). This perspective is valuable for mapping potential children's advocates and understanding how networks can influence decision-making to enable children's participation (Lauwers and Vanderstede, 2005). The concept of "Building Communities from the Inside Out" (Power et al., 2009) also supports inclusive approaches by focusing on mobilising a community's assets, including its youth.

Achieving better living environments for children and youth involves changes that cut across multiple policy areas, not just social policy or education; spatial planning also has tremendous implications for their well-being (Rodela and Norss, 2022). Making spatial planning more inclusionary for young people, guided by principles like the UN Child Convention, can contribute to promoting social and environmental justice in urban governance (Rodela and Norss, 2022). While the importance of involving children in urban planning from the perspective of their human rights is documented, integrating this perspective into newer concepts like "smart cities" is an area of ongoing discussion (van der Graaf, 2020). Systemising and answering the question: "Why should young people be involved in planning?" is further discussed in Chapter 6.

2.5.3. Defining youth

Defining youth is an uneasy task. Blakemore (2018) examines the boundaries of teenagers, and whereas the beginning of adolescence can be defined biologically in the early teens, the upper boundary seems to be a socially constructed one, dependant on the culture within which young people live. From the United Nations' (United Nations, 2018) statistical definition of youth ranging between the ages of 14 and 24 years of age to the African Charter on Youth (African Union, 2006) which defines it as between the ages of 15 and 35, youth is an elusive concept, shaped by the societies in which it is defined. In the European context there is a similar diversity of definitions as presented by Perovic (2016). (Figure 2.6) This project adopts adopt the predominant definition amongst European countries which defines youth between the ages of 15 and 30 as a working definition and specifically looks at older adolescence between the ages of 15 and 19, as defined by

UNICEF (2025). The demographic crisis of European societies means that the diminishing percentage of young people will have to take on the burden to support the increasingly older part of society.

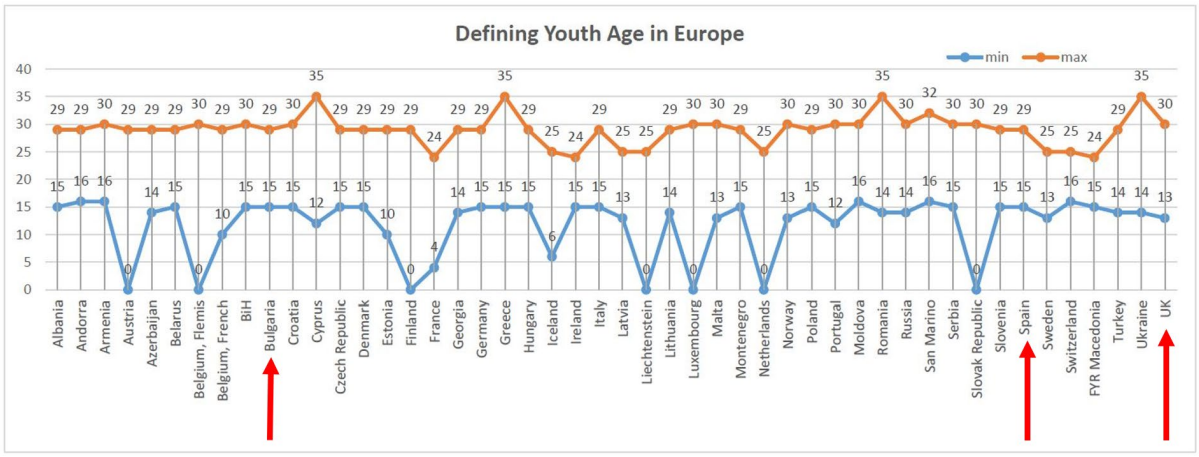

Figure 2.7: Youth as defined by national policies across Europe, arrows point to definitions in the three countries examined in this project. Adapted from Perovic, B. (2016)

Citizenship

Young people are increasingly recognised as citizens and experts in their own lives who should be involved in public participation (Davidson, 2017). The concept of citizenship has been explored in the literature as a way of enfranchising young people within democratic processes. By applying the notion of citizenship to youth, Jones and Wallace (1992) present key tensions. Young people's ability to exercise citizenship rights is often contested and often influenced by their economic status. A critique to the static approach of policy towards age is presented, young people are not seen as fluid in their development – something which often is the issue in planning processes. Many children and young people are de facto citizens by proxy, a problematic state which leaves them open to dependence and social control. (Banaji et al.,2018) The ability for young people to exercise choice is also questionable in market driven societies where they are at disadvantage within the overarching structures of society. Jones and Wallace (1992) bring attention to the balance of rights and responsibilities into the discussion about youth citizenship, something echoed by the African Youth Charter (African Union, 2006) which sets out responsibilities towards society that youth must embrace.

De Winter (1997) explores this notion from a social perspective, concluding that the educational focus on what is to be a citizen is the primary one when children and young people are engaged in debates around citizenship. Young people are trained to become citizens yet are rarely seen as capable individuals at the present, in contrast they are often painted in a negative light. De Winter (1997) stresses that the creation of possibilities for citizenship of children and young people is the opposite of the presumptions that youth are a problem to be dealt with in society. It is worth noting, though, that in some municipalities children and young people have been represented in the form of youth mayors or representatives since the 1970s, often however in a symbolic or outreach capacity.

Adultism – the predominant societal view of youth from an adult perspective – defines their daily experience. Frank (2006) develops four key views: developmental, romantic, vulnerable and legal. Young people are either to be trained or educated, romanticised as producers of youth culture,

protected or defined in strict legal boundaries. Yet teens and young adults have historically proven ability not only to integrate but emulate and contribute to the running of societies. Light (2020) explores the performance of adulthood and constructing youth within an examination of the George Junior Republic, now a youth centre, originally called the Freeville Junior Republic founded in 1895 within the United States. In this experiment, young people aged 14 to 21 were in charge across public services, developing a fascinating model of youth-led governance. Closer to present day, Davidson (2020) lays out the history of the Well-being of Future Generation (Wales) Act 2015 and the role young people played in developing, advocating and implementing its outcomes, demonstrating the ability of young people to deliberate, construct policy and maintain momentum in implementation.

Distinction between children and teenagers

Across the literature terms such as "children," "young people", "youth", "adolescents" and "teenagers" are sometimes used interchangeably (Rodela and Norss, 2022; Knowles-Yanez, 2005; Hagemann et al., 2024) a product of the large gaps in literature exploring the nuances between different groupings. In one of the longest-running case studies of youth participation - the participatory design process in Boulder, Colorado, young people are defined as aged between 4-16 (Derr and Tarantini, 2016). In the examined literature the arguments for inclusion of children and young people are often aligned, though their capacity or methods of engagement may vary by age group (Frank, 2006).

Development of teenagers

There is a continued misunderstanding of the developmental phase of 'teenhood' and its implications on how young people act (Wood and Hamilton, 2023). This is a contributing factor to challenges in planning for teenagers and addressing community complaints about their behaviour. Acknowledging the unique characteristics and needs of this age group is crucial for effective engagement and planning (Wood and Hamilton, 2023). Blakemore (2018) explores adolescence from a neuroscience perspective to reframe the negative perceptions that accompany this stage of human development. Only in the last few decades have scientists been able to map the brain development post-childhood and Blakemore (2018) demonstrates how increased risk-taking, heightened self-consciousness and spending time with peers are symptoms of a key stage of brain development towards adulthood. On the other hand, some aspects of the creativity appear to be stronger in adolescence than in other stages of human development. Adolescence is identified as a specific age group studied in the literature review on youth participation in planning (Frank, 2006). "Older" young people are often invisible in most urban planning contexts or are conflated with children (Hagemann et al., 2024), potentially undermining their distinct needs and perceptions and approaches to engaging them may need to be tailored. Teenagers, therefore, require more exploration and provide an interesting can exploring how their participation can strengthen broader city inclusion approaches.

2.5.4. Planning with Young People

The field of youth participation in urban planning has evolved from limited academic analysis to a growing area of research and practice (Simpson, 1997). While some planners and scholars have considered issues related to children and included them in practice, there has been no coherent approach in the literature on how children have been involved in land-use planning (Knowles-Yanez, 2005). The movement to include children in community decision-making is an amalgam of various streams, including youth activism, public participation, children's rights, experiential education, and sustainability (Knowles-Yanez, 2005).

More recent literature reviews explore different dimensions of teenager participation in local governance, including its importance, challenges, and potential solutions, drawing from academic and policy sources (Saltiel and Sklias, 2023). The focus is on aspects of political participation, youth participation, and democracy, as well as changes and challenges in youth involvement (Saltiel and Sklias, 2023). Palmy David and Buchanan (2020) examine the extent to which youth participation is institutionalised in local government planning efforts. There is growing literature reporting on youth-centred participatory spatial planning, particularly in contexts like Sweden and Norway, offering insights into the current situation and the impact of institutional changes like the transposition of the UN Child Convention into national law (Rodela and Norss, 2022). Reviewing institutional changes over time demonstrates how progress in safeguarding the rights and well-being of children and youth is marked by changes across multiple policy areas (Rodela and Norss, 2022). In Norway, the Planning and Building Act (2008) ensures participation rights for children and youth in the planning process, raising the question of how local government can enable meaningful participation where youth input contributes to plans and design (Hanssen, 2019). Sharing knowledge and skills between planning professionals and young people can lead to more meaningful and influential contributions from youth in planning and urban design processes (Wilks and Rudner, 2013). Programs jointly conducted by local councils, universities, and schools can support this participation.

Young people's participation in shaping public spaces has long been a topic in both grassroots and academic work in urban planning and development (Frank 2006; Heinrich and Million 2016). Hagemann et al. (2024) observe that the value young people ascribe to their everyday environments play at best a marginal role in planning and decision-making. This means that instead of being supported in taking up new roles and responsibilities, 'older' young people are seen as problematic elements in public space or as 'unfinished citizens'.

Including young people in urban planning goes beyond mere consultation to meaningful participation where their opinions and contributions are valued and can influence outcomes. It involves creating environments where young people feel their voices are heard regarding issues that affect them personally. Throughout the literature arguments are presented on the importance and benefits of planning *with* young people, rather than just *for* them (Wilks and Rudner, 2013; CABE, 2004; McKoy et al., 2015). This includes involving them in the design, development, and management of public spaces (CABE, 2004). Specific approaches involve enabling children and youth to transfer their knowledge about their living environment using methods like mapping, GIS, and child-led walks, which are used for inventory and analysis in the planning process (Rodela and Norss, 2022). International examples, such as UC Berkeley's Y-PLAN initiative, demonstrate models for engaging youth directly in planning initiatives. These initiatives aim to ensure that youth come to planning processes not as "window dressing" but as genuine agents of change who work with policymakers, supported by data and evidence (Rodela and Norss, 2022). Planners are encouraged to listen when youth express themselves, as young people have valuable insights to teach about their neighbourhoods and play spaces (McKoy et al., 2015). Young people are interested in city issues and are enthusiastic about being active in urban development processes and acting as "city builders" (Heinrich and Million, 2016). They have been involved at different scales, from regional and city-planning to neighbourhood planning and public space design. While they may not use formal planning terminology, their activities and perspectives are relevant to urban development.

2.5.5. History of children and young people's participation in planning

Research into youth participation in community and environmental planning has evolved over the past five decades, with studies dating back to at least 1987 (Frank, 2006). Despite academic

discourses promoting the benefits of youth involvement, translating this into widespread participation in planning practice has historically been challenging (Bertram, 2019, Palmy David and Buchanan, 2020). However, there has been increasing youth participation literature and practice in the last decade. Inevitably, to discuss the role of teenagers in urban planning, we need to first look to the broader development of the field of children and youth's participation in decision-making processes, specifically focusing on lessons applicable to the theory and practice of urban planning.

Kevin Lynch (1977) is seen as one of the early propagators of involving children in planning processes with the Growing up in Cities project – a UNESCO sponsored project which is still being replicated, most recently by Deakin University (2025). The research establishes the perceptions of young people of their cities promoting youth inclusion in planning processes. A turning point in the promotion of children and young people's participation in urban planning is the adoption of the United Nations Convention on the Rights of the Child (UNCRC) in 1989 by the UN General Assembly. The UNCRC (Wood, 2015) enshrines in its Article 12 the rights of young people under the age of 18 to be consulted on decisions concerning them. The convention has been signed by 196 countries as of 2022, however, it has had a patchy implementation into practices in planning (Wood et al., 2019).

A further significant step in the promotion of youth inclusion comes with the publication of the UNICEF report *Children's Participation: From tokenism to citizenship* authored by Roger Hart (1992). In the essay Hart adapts the ladder of participation authored by Arnstein (1969) to provide an updated model of the conceptual framework which is directly concerned with children's participation. Hart's model retains some of the lower rungs of the original ladder, however, unlike Arnstein's model, which is ultimately concerned with power transfer towards citizens, Hart's model reaches a natural ceiling where at the top rungs the involvement of adults is still present. This reflects previously examined debates around citizenship and young people, where youth are seen as un-finished adults.

The original essay is further developed in a book focusing on theory and practice of involving young citizens in development - Hart (1997). Hart's work is situated in international development presenting practical lessons and methods from across the world. (Figure 2.7)

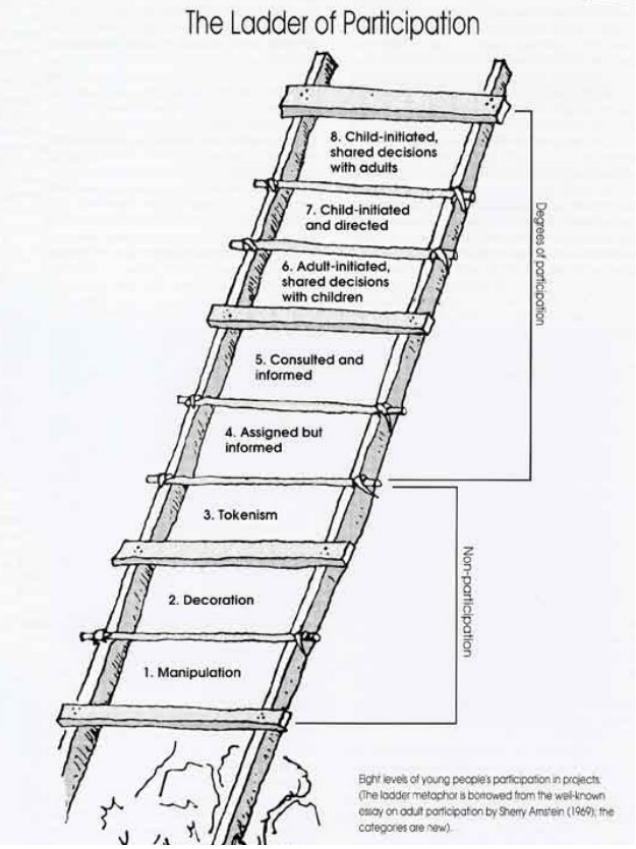

Figure 2.8: The Ladder of youth Participation, adapted from Hart (1992)

The ladder of youth participation has found a fruitful adoption across practice and in many cases has morphed from a conceptual framing to a practical model of implementation (See Figure 2.8). Hart (2008) returns to the ladder of participation and reviews the way in which the theory has influenced the field of youth participation. Hart reaffirmed the notion that the ladder should not be seen as a sequential progression through the different steps but a scale asserting the children's competence to take part, not pressure to perform. Hart (2008) also takes issue with the preoccupation of children's power – in his view the aim shouldn't be to have children in charge, but that it is morally

correct to recognise the rights of others to have a voice – a notion that could be applied both ways. Hart notes the cultural limitation to the model and points the creation of the African Charter on the Rights and Welfare of the Child by the African Union (1990) which stresses the responsibilities of children as well as their rights. Warning about the ease of misinterpretation of the ladder, Hart (2008) calls for the need of a new model, one that recognises that youth participation is a continuous intergenerational process. He warns against the professionalisation of youth inclusion and the need for reconciliation of theory emerging from academia and practice. It is in this tradition that this thesis reconciles the two ladders and contextualises them in a ladder of situated participation, see Chapter 6.

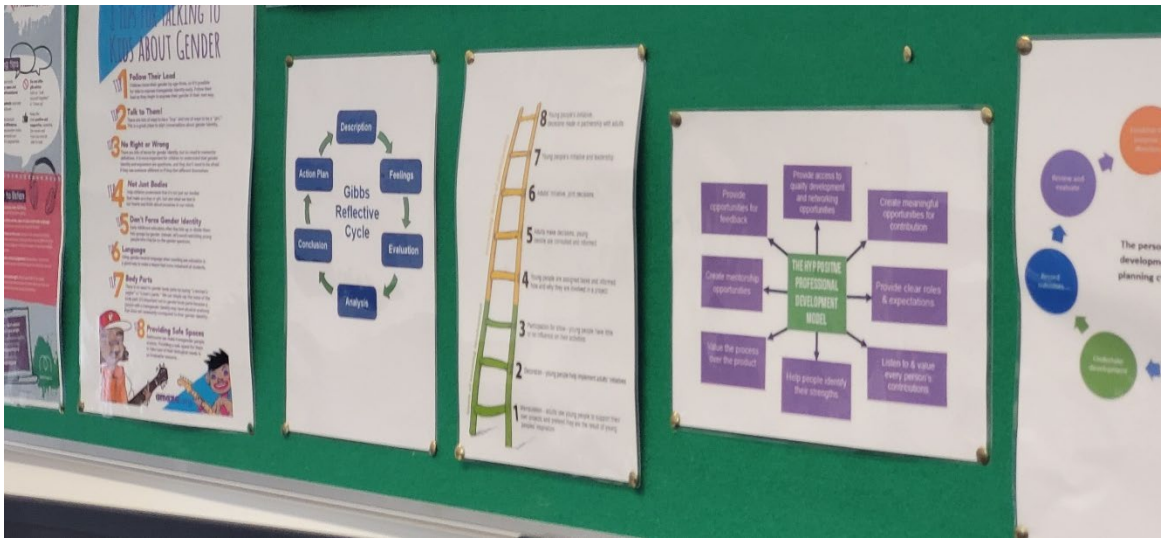

Figure 2.9: The Ladder of Participation in the Red Point Youth Centre, Woodberry Down, Hackney

One of the first analysis of youth participation as related to the planning theory and systems is by Brian Simpson (1997), who examines the development of the field of youth participation in relation to law and the competing interests in the urban planning systems. A key point is also emphasised that the historic perceptions of children as "future citizens" rather than citizens of the now has hampered their inclusion in planning processes. This relegation to the future allows for exclusion:

"Narrow perceptions of who the public are must lead to narrow laws which fail to involve the community because they misunderstand who constitutes the community." (Simpson, 1997:917)

Public participation is seen in competition with other ideologies to assert itself in planning law – specifically private property and public interest. Simpson's call for a holistic rethink of how we plan and design cities to be able to include the interests of children and youth fully and meaningfully. Bartlett et al. (1999) expand on the UNCRC and therefore works in the context of children being anyone under the age 18, within the concept of a rights-based approach. Bartlett et al. (1999) introduce the notion of 'urban children' which defines the interface of the habitat and the child in the development period from birth to justice and work, exploring the role of local governance and its importance to children and young people's inclusion. It is important to note that the work of Hart (1992,1997) and Bartlet et al. (1999) has been funded by UNICEF and Lynch (1997) by UNESCO, highlighting the role of the United Nations agencies in fostering the debate on youth inclusion. The turn of the millennium sees a renewed interest in the topic of youth participation and attempts at taking stock of the field both in urban planning and wider disciplines concerned with youth work.

Driskell (2002) reworks the ladder of children's participation into a participatory model, drawing on the revived Growing Up in Cities Project. Chawla (2002) also presents learning from the Growing up in Cities programme conceived by Kevin Lynch at MIT in 1970s and revived in the 1990s. Both books focus on the experience of 10–15-year-olds, in cities across the world. Human development is the cornerstone of the projects examined. Both books demonstrate youth priorities for urban development - their sources of satisfaction such as safety and freedom of movement, social integration, a variety of interesting activity settings, peer gathering places, cohesive community identity, green areas, provision of basic needs, secure tenure, community organising. Chawla (2002) systemises the barriers and sources of alienation which push young people away from participating - stigma and social exclusion, boredom, fear of harassment and crime, racial tensions, heavy traffic, cleanliness, lack of basic services and political powerlessness. Chawla (2002) presents a framework of indicators of environmental quality on a socio-physical matrix which can be employed to ensure successful participation.

In the early 2000s literature reviews of the emergence of the field of youth participation in planning can be seen in papers on children's participation in the planning process by Francis and Lorenzo (2002) and Knowles-Yanez (2005); and Frank (2006) provides another extensive literature review on the topic. Francis and Lorenzo (2002) provide a historical analysis of the development of child participation in practice, situating the existing literature into seven realms – the romantic, approaching children as future city builders; advocacy based – planning for children, represented by adults; needs based – addressing the needs of children in practical manner; learning based – one that focuses on educating children about planning; rights based – focusing on citizenship rights and decision-making; institutionalisation based – planning by children but within institutional boundaries set by adults, authorities and clients, one which is the predominant way of planning with children currently; and finally proactive based – an approach around participation with a vision, facilitated by specially trained designers and planners. Knowles-Yanez (2005), on the other hand, defines four approaches to the topic from an academic perspective: scholarly, practice, educational and rights-based. Each one of the different approaches synthesises an enabler for children's participation – their capability and ability to contribute to participatory processes; the participation process provides opportunities; the methods to engage children are available and because it is their right. Finally, Frank (2006) explores youth's capacity for participation, making important observations concerning young people's interest in participation, suitable skills and ability to mobilise, culminating in lessons for effective planning practice aimed at practitioners. Frank recognises that long-term studies of the effects of children's participation in planning have been missing in the literature, since authors such as Stratchan (2024) have reflected on long-term youth inclusion in planning situated in higher education context.

Checkoway (2011) provides an overview of what constitutes youth participation in attempt to define the developing field of practice. Checkoway adopts the right-based approach quoting Article 12 of the Convention of the Right of the Child which enshrines the right of children to participate in decision-making processes. The remaining general propositions are that youth participation is a process, it is active and not passive engagement, it assumes that young people are competent citizens, noting that participation always has various objectives, outcomes and criteria, and employs diverse strategies. For Checkoway (2011), young people have limitless issues often overlooked: many of them are not involved in public affairs but small proportions are highly active, income brackets influence the ways in which young people participate, facilitation happens by youth leaders and

adult allies and there are clear barriers to involving young people, not least in the form of adultism and resources.

The subsequent decades have also seen the publication of several texts, signifying a gradual maturing of the field. Percy-Smith and Thomas (2010) present a diverse overview and collection of theoretical and practical insights from across the world, focusing on social participation and seeing children as active citizens. Participation is conceptualised as a variable construct and the voice and agency of young people and their relationships with and role of adults are drawn to the forefront. Horschelmann and van Blerk (2012) focus on how society imagines children and youth in the city, particularly drawing attention to social inequalities. Bishop and Corkey (2017) present a critical examination of the narrow lens in which youth are situated, and move from broader theory to practical examples, policies and perspectives of youth inclusion. By providing case studies of youth engagement and participation, all three are building up the practical examples in the pursuit of a wider theorisation of the field.

Derr et al. (2018), in the spirit of Driskell (2002), take a more practical approach and aim to systemise and provide manuals for practitioners and academics in the built environment space in approaching the topic of children and youth participation. Taking the learnings from Boulder, Colorado and the Growing up Boulder Project, Derr et al. present participatory practices for planning sustainable communities with young people. The book presents a manual of diverse methods to engage youth, focused on the methods and draws conclusions of their qualities. Strong methodological approaches drawn from the diverse experience of the authors from decade of engaging with younger teenagers. Derr et al. (2018) distil key principles of the methods involved: local and place-based, transparent, inclusive, relevant, educational for all parties, sustainable, voluntary, playful. There are multiple political barriers that exist to young' people's participation with spatial exclusion being as detrimental to youth participation as social one.

Most recently, Stratchan (2024) presents a handbook aimed at planning practitioners in the United Kingdom, systemising learnings from diverse educational practices in Newcastle. Stratchan (2024) explores in detail the barriers to youth engagement in planning in the English context and derives a framework for the skills planners need to be able to engage with young people, dispelling myths surrounding youth inclusion. By focusing on the reflective practice of the planning practitioner, Stratchan (2024) presents a different angle to youth inclusion, one which recognised the importance of institutional uptake and personal capacity to enable youth participation.

2.5.6. Models of Youth Participation in Practice

Various models and typologies for understanding and implementing youth participation. Arnstein's "Ladder of Citizen Participation" and Hart's ladder are foundational frameworks used to classify levels of participation, ranging from tokenism to citizenship (Botchwey et al., 2019). However, these models do not fully capture the diverse forms of participation that have emerged as youth have become more involved in planning. Botchwey et al. (2019) propose new rungs specifically for youth participation such as "consent," "advocacy," and "incorporation," positioned between "placation" and "partnership" on Arnstein's ladder.

Case studies of youth-focused planning initiatives like Youth–Plan Learn Act Now (Y-PLAN), Youth Engagement and Action for Health (YEAH!), and Growing Up Boulder (Derr et al. 2018) illustrate different levels and types of participation (Botchwey et al., 2019). Y-PLAN, for example, is described

with core conditions including partnering youth with a civic client, focusing on social justice and equity, being place-based, using a school-based curriculum, and employing a rigorous 5-step research methodology (Mckoy et al., 2015). Another categorisation identifies three forms of youth participation in urban development: state-led (often top-down), integrating youth-led projects, and youth advocate-led participation. These forms are not always strictly separate but can overlap and blend (Heinrich and Million, 2016). Formalising youth involvement in community decision-making can involve emerging models where youth collaborate with adults and assume leadership roles in the political arena (Mullahey et al.,1999).

2.5.6.1. Short overview of key models and frameworks

Models of youth participation span diverse academic and practical domains, often rooted in youth studies and work, policy and international development. However, many of those have permeated and engaged with environmental sciences and built environment studies, such as planning. A short overview is provided here of some of the key participation models (Karsten, 2012) and systemised according to their intellectual linkages.

Developing the Ladder

As discussed previously, the ladder of Citizen Participation (Arnstein, 1969) is the foundational theory which posits that citizen participation is synonymous with citizen power. It argues for a redistribution of power to enable marginalised citizens to influence decision-making processes and share in societal benefits. Building on Arnstein, Hart (1992) developed the Ladder of Children Participation which outlines increasing opportunities for children to participate in society, particularly in the public domain beyond the family. It distinguishes between non-participation (manipulation, decoration, tokenism) and degrees of participation, culminating in child-initiated, shared decisions with adults. Reworking Hart's ladder, Treseder's (1997) Degrees of Participation model challenges the idea of a fixed hierarchy or sequence, advocating no predetermined limit to young people's involvement. It emphasises five essential conditions, including access to power, information, real choices, independent support, and grievance mechanisms, necessary for genuine youth participation and empowerment. Bernof & Li (2010) adapt to the online world proposing the Ladder of Online Participation - this ladder profiles online activity across seven levels, from spectators to creators. While illustrating increasing degrees of participation, these levels represent overlapping profiles rather than a strict sequential progression of involvement. The ladder of participation is the model of participation which has established itself firmly within the literature, in the English youth inclusion practice: for example, organisations such as Matt+Fiona (2025) employ the ladder as their foundational approach to co-designing with young people. It is this model that this doctoral project will critique further in Chapter 6.

Dimensions of Participation

David Driskell (2002) adapts Arnstein's and Hart's ladders to create a conceptual framework called Dimensions of Youth Participation focusing on two dimensions: young people's power to make decisions and affect change, and their interaction with the community. Real participation provides both power and interaction, allowing young people to range from leading smaller projects to being equal partners in influencing larger issues through shared decision-making. The model is further developed in Driskell & Neema's (2009) Key Dimensions of Participation, focused on community-based practice, the framework views participation as a spatial practice shaped by five interacting dimensions: normative, structural, operational, physical, and attitudinal. Meaningful and sustained youth participation requires the presence of all five dimensions, which collectively enable and open spaces for involvement.

Other geometries

The ladder has given way to alternative conceptualisations, increasingly employing different

geometries and approaches. Davidson's (1998) wheel of participation, developed for community planning, offers an approach to visualising various communication and engagement dimensions. Its purpose is to reduce ambiguity associated with consultation and support effective engagement processes by clarifying different levels of citizen participation. Gaventa's (2006) Power Cube analyses participation by exploring the interrelationship of power across different dimensions. These dimensions include the levels of decision-making (local, national, global), potential spaces for action (closed, invited, claimed), and how power manifests (visible, hidden, invisible).

Alternatives to the ladder

An alternative to the dominant ladder approach, Shier's (2001) Pathways to Participation serves as a practical tool for planning and evaluating children and young people's participation, identifying five distinct levels of involvement. Structured as a matrix with a flow chart logic, it highlights three stages of commitment: openings, opportunities, and obligations. The model has established itself as an alternative to the ladder and was further developed by Shier (2009) based on work in the Global South. It supports bottom-up approaches by recognising young people as capable "public actors" who can influence development. It advocates non-tokenistic participation, ensuring that young people are not merely manipulated to fulfil adult agendas but are genuinely empowered. Lundy's (2007) model of child participation is another alternative to the ladder of participation. Conceptualised around the rights-based approach of Article 12 of the UNCRC, the model explores four key dimensions of space, voice, influence and audience. The model focuses on the contextual dimensions of children's participation by explicitly stating the contextual requirements needed for meaningful participation to take place. Both Shier (2001) and Lundy (2007)'s models are well used in practice.

Institutional Approaches

Alongside individual authors, institutional actors have also developed participatory models to youth inclusion. OECD's (2001) Active Participation Framework defines citizen engagement in policymaking across three levels - Information, Consultation, and Active Participation. Information is a one-way flow; Consultation involves two-way feedback on government-defined issues and Active Participation signifies a partnership where citizens actively engage in shaping policy process and content. UNICEF's (2001) Strategic Approach to Participation aims to foster meaningful participation for adolescents aged 10-19 at global, country, and community levels. Its goal is to ensure young people possess the necessary capabilities, opportunities, and supportive environments to participate effectively across enlarged spaces, commensurate with their evolving capacities. The International Association for Participation's (IAP, 2007) Spectrum of Public Participation develops the OECD model and aims to assist in determining the appropriate level of public participation in a given process based on specific goals, resources, and the level of public concern. It outlines five levels – Inform, Consult, Involve, Collaborate, Empower – each defined by a specific public participation goal and a corresponding promise to the public.

Empowerment

Some of the emergent framework from governance and health studies focus on the capacity building and empowerment of the individual. Lawndes and Pratchett's (2006) diagnostic tool "The CLEAR Participation Model" identifies five key factors – Can do, Like to, Enabled to, Asked to, Responded to – that influence citizen participation and links them to policy responses. It suggests that participation is most effective when citizens have resources, feel connected, are provided opportunities, are

mobilised, and see their views considered. Wong et al. (2010) conceptualise the Typology of Youth Participation. It presents five types of youth participation (Vessel, Symbolic, Pluralistic, Independent, Autonomous) within an empowerment framework to assess developmental potential and youth-adult relations. It suggests that equal youth-adult partnerships and shared control are optimal for healthy development and empowerment.

2.5.6.2. Shortcomings of models of participation

There are clear gaps in the models on youth participation. Throughout the models there is an insufficient focus on power and control. Many models classify degrees of participation but often lack of emphasis on the crucial element of power distribution (Arnstein, 1969). Karsten (2012) critiques the OECD's Active Participation Framework for ignoring citizen control and the transfer of power from representative bodies to citizens, suggesting that it barely moves beyond tokenism as identified by Arnstein (1969). Ignoring the question of power is a key reason why participation efforts may lack impact (Martin, 2010). Uneven power dynamics, particularly between youth and adults, are highlighted as challenging, with the need for adults to share responsibility for empowerment (Wong et al., 2017).

Excluding young people from urban planning often results in ‘adult-only’ environments that over-prioritise car-centric design and overlook the need for safe sidewalks and informal play spaces, effectively restricting youth autonomy. (Garau and Annunziata, 2020; Malone, 2002; Wood, 2017) On the other hand, participatory initiatives like Growing Up Boulder have successfully integrated youth perspectives to create inclusive solutions such as sanitation stations for the homeless, while children in Auckland influenced the design of interactive, "touchable" water features in public squares (Derr and Tarantini – 2016).

Lack of attention to the process and journey of participation can risk obscuring individual issues. While ladder models depict levels, some critique the idea that participation necessarily follows a progressive hierarchy or a specific sequence (Treseder, 1997). The “Pathway to Participation” model attempts to address how young people can progressively increase their involvement within an organisation, emphasising the importance of making this journey clear and easier, providing support, and allowing individuals to choose their level of involvement (Shier, 2012). The lack of opportunities for young people to gain experience and build confidence within institutionally controlled participatory processes is noted as a barrier to them engaging in higher levels of influence (Davies, 2009).

Conditions and supportive environment necessary for participation are often ignored. Beyond classifying participation levels there is a need for classifying the underlying conditions which define the ability to take part. These include access to those in power and relevant information, real choices, support from a trusted person, and a means of appeal (Treseder, 1997). Elements such as individual resources, motivation, opportunities, mobilisation, and responsiveness from public entities as crucial for effective participation (Lowndes and Pratchett, 2006). Sustained and meaningful participation requires attention to normative, structural, operational, physical, and attitudinal dimensions within organisations (Driskell and Neema, 2009). Failure to account for diverse forms, contexts, and roles in participation is present. While some models use a single dimension (such as the ladder approach), others argue for multi-dimensional frameworks to capture the complexity of participation across different approaches, spaces, levels (local, national, global), and forms of power (visible, hidden, invisible) (Davies, 2009). Participation also involves a variety of roles and dynamics within communities, which simple classifications may miss.

Overlooking underlying interests, motivations and internal dynamics throughout the models of participation ignore the political and power dynamics of participatory processes. Participation is not always straightforward; it can mask multiple forms and serve different interests (White, 1996). Models do not always adequately address the factors that incite participation, such as a sense of challenge, the capacity to make a difference, and feeling connected to others (Jans and De Backer, 2002). The internal feelings of potential participants, such as not feeling worthy or not knowing how to get more involved, can also be overlooked.

Insufficient focus on practical implementation challenges throughout the models risks relegating them to a purely theoretical sphere. Karsten (2012) points to the practical difficulties in implementing participation, such as navigating bureaucracy. Transparent criteria should be identified for when public engagement and involvement may not be appropriate in a planning process, for instance, if decisions are already made or the engagement is merely a tick-box exercise (Warburton, 2009). This suggests that some models may lack guidance on assessing the feasibility and genuine purpose of participation initiatives.

In Chapter 6, the suggested introduction of 'situated participation' as a theoretical framework and the ladder of situated participation aim to address the gaps above.

2.5.7. Youth Activism

Young activists such as Greta Thunberg (Youth 4 Climate School strike), Malala Yousefzai (girls' right to education), and Emma González (youth protest against gun violence) are having global repercussions in the past decade (Stenberg and Fryk, 2021). These movements demonstrate children and youth coming together in the belief that adults are not taking sufficient responsibility for human survival on Earth (Stenberg and Fryk, 2021). They highlight the growing tendency for youth to engage in high-profile political activism around critical global issues like climate change. Saltiel and Sklias (2023) focused on the impact of teenagers' participation in local governance, with a particular focus on climate action. This underscores the significance of involving teenagers in addressing such critical issues. Youth are increasingly using their voices to demand action and influence policy on matters they deem crucial.

In the context of planning, youth advocates have campaigned for more liveable cities (Dennis, 2006). Advocacy is described as youth bringing proposed plans or design changes directly to decision makers, sometimes without these ideas being solicited (Botchwey, et al., 2019). Youth participation can involve operating in the political arena to mobilize resources for programs that support youth (David and Buchanan, 2020). However, youth civic engagement has reportedly decreased, and allowing young people to learn by participating in government is suggested to help bridge this gap and increase engagement. Dennis (2006) notes that youth from minority backgrounds can be isolated, disempowered, and stigmatized in community-planning processes.

Young people currently lack an institutionalised voice in policy-related decision-making and overall civic engagement among them is low. There is a perceived gap between civic knowledge gained in school and practical civic engagement. Palmy David and Buchanan (2020) define barriers to institutionalising youth participation in local government as primarily capacity related. Planners face challenges due to a lack of experience working with young people and communicating effectively at an equal level, with the distribution of power often unclear (Heinrich and Million, 2016). Projects sometimes fail to effectively reach and activate young people for involvement. Ensuring regular and influential youth involvement in ongoing discussions, developments, and decision-making processes remains a key challenge (Stratchan, 2024).

Current issues surrounding youth participation in planning and political action include the need to overcome barriers and ensure their voices are influential. While young people are capable of activism (Gorman, 2021) and operating in the political arena (Mullahey et al., 1999), they face challenges. In planning contexts, there are still doubts about young people's interest and capabilities, which act as significant barriers (Bertram, 2019). The cost for practitioners to organise youth-friendly events can also be prohibitive due to additional costs and considerations around ethics, incentives and preparation of working with youth (Bertram, 2019). A notable issue is the difficulty in ensuring that youth involvement translates into actual influence on planning goals and decisions (Rodela and Norss, 2022), as children and youth are sometimes treated more as recipients than participants in decision-making.

2.5.8. The example of debates on play

In urban planning, architecture and urban design studies, a primary debate on play has been dominant when children and young people are considered more in the past decade. Voce (2015) advocates and focuses on policies for play in a rights-based approach, drawing on advocacy-based approaches. The Play Commission (Centre for Young Lives, 2024) has been a recent re-imagining of the Labour government's Play Strategy of 2008-11. Creating opportunities for play is one of the primary arguments in Gill (2021) and in the wider child-friendly movement in Europe. Gill (2021) devises three pillars of family-friendly neighbourhoods – housing, services and public realm, deriving the notion of visibility of children's play as a key indicator of a healthy city.

Bornat (2025) similarly focuses on play, however, within the design process. Gill (2021) focuses on children rather than teenagers, although Bornat (2025) addresses teenagers by expanding the notion of play to include wider participation in design. Play sufficiency is an increasingly popular notion advocated by authors and enshrined in law in Wales with the Play Sufficiency Duty under the Children and Families (Wales) Measure 2010. However, few publications focus exclusively on the issues of late adolescents and young adults, which often differ from wider issues faced by children. The literature on play and children participation is starting to converge however; political appetite seems to be focused on the former. Although an important issue, play debates can mask the issues faced by older teenagers and potentially make policy interventions more palatable, but with limited impact on transforming power-relations between adults and young people in the public realm.

2.6. The role of teenagers in urban planning and envisioning the future city: addressing the gap

"Future research could also focus on young people's perspectives on how they would like to participate and how to make such participation meaningful." (Palmy David and Buchanan, 2020, p. 24)

Further research is needed to refine proposed models for youth participation (Botchwey, 2019). Better understanding the theoretical underpinnings of and evidence for the benefits of youth participation is needed (Dennis, 2006). Information is often lacking on whether youth involvement has an actual impact in practice (Rodela and Norss, 2022). This is the key evidence gap Chapter 5 addresses.

There is also a need for more research and best practice experience, especially regarding youth participation at city-wide and regional levels, ensuring regular and influential involvement, understanding the role of planning authorities, and addressing the provision of appropriate spaces for adolescents (Heinrich and Million, 2016). There is a noted lack of England-specific investigation into youth participation in planning since the reforms of the Coalition government in 2010 (Bertram,

2019). Several research gaps can be identified regarding youth participation in urban planning, particularly relevant to teenagers and their role in envisioning the future city. While young people are recognized as the longest-term stakeholders who will inherit the future consequences of today's planning decisions (Bertram, 2019), the specific focus on teenagers and their capacity or contributions to envisioning the future city is an area that could benefit from further concentrated study.

There is a need for greater research on youth participation in local government and planners' responses to engaging youth (Palmy David and Buchanan, 2020). Studies are also needed to refine models of participation and explore them within larger contexts of planning theory and shared decision-making history (Botchway, 2019). Broader and comparative studies, beyond single case examples, are rare (Heinrich and Million, 2016). Examining how children change participatory practices within municipalities and assessing the generalisability of these impacts warrants further study (Derr and Tarantini, 2016). Longitudinal studies are needed to identify the long-term strength of participatory impacts on children and how their ideas translate into built environments (Derr and Kovacs, 2017). There is a lack of planning guidelines regarding children and youth's needs in the built environment at the initial planning stage (Rodela and Norss, 2022).

Further research and best practice experience are needed regarding the levels of youth participation at the city-wide and regional level, regular and influential involvement in current discussions and decision-making processes, the role and cooperation of planning authorities and other city departments and the provision or creation of spaces for adolescents, especially in areas with limited space (Heinrich and Million, 2016).

"There is significant work required to bring the needs of teenagers' more directly into how we plan public space in our towns, cities, and countryside. A review of the evidence shows that for generations young people have complained that there is not enough for them to do, while communities as a whole have complained about the anti-social behaviour of some young people. There is continued misunderstanding of the developmental phase of teenhood and its implications on how young people act. However, there is increasing interest in improving things for younger and future generations, and a will from many professionals to find solutions. " (Wood and Hamilton, 2023, pg.80)

The right to the future city

Lack of participation from the public in the creation of the smart city has been a key issue in academia (Stratigea et al., 2015; Vanolo, 2016) but little addressed in practice due to its complexity. Greenfield (2013) addresses the threats to diversity in the smart city, driven by algorithms which prioritise financial profit, optimisation of public services and energy consumption and which supress inefficiencies. Sassen (2011) expresses a similar concern – the randomness of a city, the elements of serendipity that create urban life are under threat by the highly technical visions of algorithmic controls. Both are concerned by the ability of citizens to perform citizenship in an urban arena where power balance is shifted, and the urban experience is highly controlled.

The right to the smart city (Willis, 2019) has emerged as a contested debate, occupying the realm of digital technologies; however, it follows in a long tradition of urban innovation displacing and disenfranchising citizens. The four powers which shape our cities as seen by Zukin (2010) in her analysis of cultural developments in the city remain largely in charge in the smart city too – the economic power of capital, the state, the media and consumer taste. Mattern (2017) discusses a similar interplay of forces shaping the city in the 21st century, in a digital age where cities have become both a marketplace for technologies and product on their own right. Local governments

have largely started to address such critiques. There is an observable shift towards citizen participation in smart city governance and strategies, progressing from contestation and acceptance to collaboration (Przeybilovicz et al., 2022). Youth in the city are no different. They exercise their tastes and largely drive the technological debate in the city. They are one of the primary consumers of digital media, the trendsetters and the digital disruptors.

The doctoral project aims to uncover how their perceptions and their behaviours interact with the other three forces and shape the smart city within planning processes. This is a key contribution of the project.

Teen participation in the smart city

Planning theories of participation are critical in being re-framed in the 'smart city' debate (Stratigea et al., 2015). There are hundreds of Smart City Projects in Europe taking place, however, a lack of understanding of local factors and how they impact innovation uptake by the population at large has been identified as a key challenge (Manville et al., 2014). There is an emerging literature on the involvement of young people in smart cities, however, similarly to the literature on youth participation and smart cities themselves, the studies are still largely building up a theory. In the context of smart cities, increased participation, including that of children, is seen as a way to counter critiques of early top-down approaches. Seeing children as legitimate and capable political subjects is also a driving factor (Castilla and Muller, 2024). The role of youth in participating in and developing city visions is currently largely absorbed by overarching theories of citizen and community engagement. This reflects the underdeveloped theoretical field in urban planning literature concerning the inclusion of children and young people. Nearly three decades ago, Simpson (1997) called for a fundamental rethinking in the way we design and plan cities to include children and youth; however, little progress has been made. Youth-focused planning case studies such as Growing Up Boulder (Derr & Kovács, 2017) exemplify the practical and contextual aspect of working with young people and the need for further theorisation.

New technologies broadly under the guise of the term "plantech" (planning and technology) have revolutionised the ways in which public participation takes place (Alizadeh, 2017). The availability of urban data online provides new tools and avenues for consulting citizens. However, digital participation can often be passive, therefore the design of the tools needs to be considered in detail (Bizjak, 2012). Emerging plantech and smart city tools demonstrate that higher engagement levels with young people can be achieved, as reported by private companies such as Commonplace (2019). Digitalisation is promoting the enfranchisement of a wider population in the planning process, in particular young people. Digital methods should, therefore, consider youth's different needs, skills, and values. There is a risk that we transplant the same biases existing in physical consultation methods to online ones. Digitalisation potentially, allows for youth to engage in the planning conversation but can as easily constrain the diversity of ideas and opinions. It is also crucial to understand the validity of the general assumption that generations who have grown up with the internet would by default be more willing and able to engage with new technologies. The points above have a direct impact on the confidence of young people to take part in the future smart city.

The experiences of young people in the smart city are starting to be explored in the literature. In Braamfontein, Johannesburg, Cohen, Backhouse and Ally (2017) have surveyed young people to understand their expectations of smart city living. In Lisbon, Portugal, Costa (2020) explores teenagers' spatial practices, needs, and opportunities in placemaking, including thematic living labs with teenagers, stressing the importance of localised practice. Fennell et al. (2018) explore the

dimension of smart cities and villages in the Indian context arguing that rural youth can benefit from increased access to information and employment opportunities. Peacock et al. (2020) explore the conditions needed to include children in the planning of the future smart city and arguing for a more proactive role they can play in the evidence-gathering and analysis part of vision setting. In Morrocco, Alaoui et al. (2025) explore the perceptions of young people towards the smart city, finding a positive sentiment but one predicated on the direct benefits young people see the smart city brings to themselves. Young people are considered important to cities, bringing skills and energy. They are uniquely positioned to contribute to bottom-up smart city projects (Cohen, Backhouse and Ally, 2017) and participate in shaping future urban areas (Himmel et al., 2014). These studies demonstrate that there is an emerging exploration of the role children and young people can play within the smart city and how such developments are impacting their lives.

Other studies explore the impact of digital participatory tools on the experience of young people. Public Participation GIS (PPGIS) was noted as a tool that can better reach the voices of young and working aged people in Helsinki who are often underrepresented in consultation workshops (Kahila-Tani, et al. 2019). In Maribor and Košice, Klimovsky et al. (2016) have found connections between age and technology use, with younger people more likely to use the internet and mobile phones for diverse purposes. Masucci et al. (2020) describe how youth reflect on how technologies affected the city, their neighbourhoods, and their own lives, noting both convenience (e.g., charging ports on buses) and a lack of transformative societal impact.

Masucci et al. (2019) expose a conundrum as young people who are usually open to digital advances do not recognise emergent technologies working for the benefit of their communities. Cohen et al. (2016) recognise the role that young people can play in bottom-up approaches to the smart city. Costa et al. (2020) stress the positive role that ICT can play in involving teenagers in placemaking processes but warn about the potential challenges of ownership, privacy, and surveillance. Gamification approaches to e-participation in planning such as the use of Minecraft (Rexhepi et al., 2018) also provide new avenues for empowerment and engagement, promising a power shift towards youth. While these studies evaluate specific aspects of the concept of digitalisation and smart cities in relation to young people, they do not examine the validity or alignment with the demographic's values. If smart cities are becoming a dominant paradigm in municipal vision-making, it is important to understand what youth, traditionally under-represented in decision-making, think of the concept.

In his book *Smart City Citizenship*, Calzada (2020) proposes a fifth helix in the multi-stakeholder framework of innovation in the smart city—the social helix including activists, entrepreneurs, and assemblers. As a demographic often lacking a strong presence in the traditional four domains—public, private, academia, and civic society—some young people have gravitated toward the social domain, taking on the role of activists as seen in the climate movement (Gorman, 2021). However, youth is not a homogenous group. It is important, therefore, to understand what visions diverse teenagers have for the future and whether they differ from those that municipalities prioritise.

2.7. Conclusion

The literature reviewed within the three domains of imagining the future smart city, planning participation and youth inclusion paints a picture of relatively young fields of exploration. Participatory planning began to be codified and theorised in the 1960s (Arnstein, 1969), youth

participation emerging in the decades following (Lynch, 1977; Hart, 1992, Driskell, 2002) and smart city discourse beginning in the 2000s (Townsend, 2014). The academic literature on youth participation in planning and the literature on smart city are fast moving fields of study, with fundamental theorisations and definitions still contested. There is also emerging cross-over studies exploring the role of children and young people in the creation of smart cities.

This research is positioned in the critical and human-centric approach to the smart city as discussed in section 2.3.3. There is a distinct gap in the literature in establishing the role of young people (Peacock et al., 2020), in particular teenagers, within smart cities. By adopting a case studies approach common for the field and exploring the views of teenagers in four cities in Europe, this aims to contribute to the building a picture of their preferences and priorities. It addresses the gap in the literature concerned with a comprehensive perspective of the view of the smart city from a citizen's perspective. It also addresses calls for empirical studies of the smart city. Teenager's perceptions address the current debates about defining the smart city by providing a perspective which is not widely collected. The interplay between planning and the creation of the future smart city is also not fully understood. How planning can intervene the future of smart cities is a contested debate, and this study aims to address how planning participation can inform the creation of the future smart city.

Digital advances are changing participation in planning (Du et al., 2023) and the literature identifies gaps in understanding of how technology is shaping planning participation. This study explores teenagers' attitudes and ideas towards digital technologies in the city, addressing the gap in understanding how digitalisation can enfranchise a young audience in planning. The literature demonstrates a proliferation of participatory models since the 1990s, however, there is a distinct lack of studies that ask young people directly about their experience of participation. As a recent field of study, the literature on children and young people's participation focuses on children and rarely explores the upper boundaries of adolescence, straddling the early stages of adulthood. This study aims to address this gap and looks to citizenship and youth studies to understand how being a teenager in the city defined young people's willingness to take part in and perceptions of urban planning.

Chapter 3: Methodology and Approach

3.1. Introduction

The methodology has been driven by the primary question aimed at understanding the views and perceptions of young people, as well as their relation to power dynamics in the creation of future smart cities. The research is situated within Urban Sociology and Children's, Young People and Families geographies. It adopts an inductive qualitative approach through several case studies to develop a hypothesis about an under-researched phenomenon – the participation of teenagers in planning. The data collection took place between 2019 and 2021 across four contexts of Birmingham and Manchester, England, in Sofia, Bulgaria and Valencia, Spain. The project initially focused on Birmingham, UK as the case study as the place in which the researcher was situated. Chapter 4 details the way in which the case study cities were selected, the reasoning behind it and the main outcomes of the selection process.

This chapter examines the development of the methodology, identifies the key research questions and how the research was designed to answer them.

3.1.1. Research Questions, Aim, and Objectives

The research questions which drove the study were:

What are young people's (teenagers transitioning between childhood and adulthood 15-19) perceptions and awareness of urban planning and future smart city visions in the planning of four cities (Birmingham, Manchester, Valencia and Sofia) within European democracies (England, Spain and Bulgaria)?

How can teenagers (15-19) be enabled towards wider participation and co-production in the planning of future cities within the European context?

The research aims to appraise the perceptions, engagement and awareness of teenagers (15-19 years of age) towards urban planning and smart city visions in selected urban areas in the European context and evaluate how situating their perceptions, challenges and priorities in the wider context of structural challenges young people face can hinder or enable their participation in the planning and envisioning of future cities.

The project's methodology was driven by the following objectives:

Objective 1: To identify and compile three European case study cities relatively comparable to Birmingham, UK, and have smart city visions that identify "youth" as key stakeholders, either through initiatives with direct impact on youth demographics, or through youth-oriented programs in the case of a lack of a formal smart city strategy

Objective 2: To devise methods to collect data on perceptions and awareness of urban planning and smart city initiatives amongst a sample of young people (specifically teenagers aged 15 to 19) across

the four case studies

Objective 3: To analyse young people's perceptions and awareness of urban planning in the selected cities, identifying examples of participation barriers, youth's levels of engagement and key priorities to inform future city planning

Objective 4: To situate the broader themes emerging from youth participation initiatives and perceptions of smart cities developments in the selected case study cities within the wider theoretical framework of participatory planning theories and future cities discourse.

Objective 5: To develop theoretical and practical recommendations for municipalities, public bodies and grassroots organisations derived from the multi-case studies, highlighting both the benefits of, and barriers to, youth inclusion in the production and occupation (experience?) of urban space in the digital age.

Objective 6: To reflect on the proposed recommendations in relation to existing theories of youth participation – namely the Ladder of Participation (Hart, 1992)- as well as existing conceptualisations of the smart city and practical approaches to youth inclusion in a case study city or selected case study cities and suggest avenues for further research.

3.1.2. Developing a research question

The objectives of the PhD evolved from the original proposal, driven by the literature review but also from a methodological standpoint of feasibility of researching young people as a vulnerable population, geographic and linguistic restrictions, as well as the COVID19 pandemic occurrence. The question of citizen power and the relationship between politicians and citizens is where the doctoral project started.

The doctoral project proposal had an original question which looked at how citizens can influence the development of future cities. The PhD's direction narrowed down from a primary focus on future cities and citizens, to exploring the imaginaries of the "smart city" visions and its relevance to teenagers' involvement in urban planning and the creation of future city visions. By narrowing down the broad definitions of future city and citizens, a more controlled testing of the power dynamics in creating future cities could be explored. The literature review and practitioners' experiences pointed to this as the key question to be explored reflected on further in this chapter.

Smart city policies are viewed as a case study of future city visions within this wider context. The study adopts an inductive approach to the main research questions to establish the state of youth inclusion in the selected city contexts.

Smart cities are a vision of the future, not necessarily followed by tangible manifestations. We can observe an increase in political buy-into technological visions of the future, often at odds with democratic processes, driving the spatial developments of our cities. The research questions, aims and objectives evolved and narrowed down as it became clear the smart city is an intangible and malleable vision of the future, one which often doesn't have a lot of interplay with traditional planning systems. The project strayed away from deeper exploration of the interplay between smartness and planning systems so as not to deviate from the original research question which was looking at public participation and power. The research scope was further refined through the deliberate selection of a specific demographic (15–19-year-olds) with whom the researcher had prior

working experience of working to test the ability of the wider public to take part in planning the future city. The choice of demographic was intentional, as it incorporated a key transition into adulthood and citizenship.

3.1.3. Overview of the Chapter

The remainder of this chapter explores in detail the nuances of conducting research with young people. It presents the philosophical underpinning of the research. It explores in detail the data collection methods and specific issues concerned with smart city and the demographic in question of older teenagers (15- to 19-year-olds). It presents the recruitment and sampling strategies, and an overview of how the participant selection was undertaken. It demonstrates the pandemic adaptations to the research and how it affected the research progress.

It reviews the different methods of analysis of the primary data and reflect on the approach to analysis. The chapter also discusses in detail the ethical considerations throughout the project, from internal ethical processes to risk mitigation, legal and ethical frameworks, access and verification. It explores the dynamics and issues within qualitative research with young people.

The chapter finally reflects on the research methods, their suitability, limitations and replicability. It presents reflections from the participants themselves and the researcher on the methods.

3.2. Philosophical Underpinnings

In the introductory chapter a broader situation of the philosophical underpinnings within interpretivist and pragmatic ontologies was presented, which was then expanded by the researcher's positionality as an action oriented. This section explores in detail how the ontological perspective has defined the choice of methodology.

Theoretical Framing

The starting point of the researcher as an academic and practitioner are the disciplines of architecture and urban planning, which by their nature are concerned with the practicality and physicality of creating places, spaces and buildings, and therefore inevitably span diverse ontologies.

Architecture and planning as disciplines have influenced the broader epistemological outlook which largely can be seen as a mixture of interpretivism and pragmatism. The doctoral project emerged as an interrogation of the power-dynamics and influences over the future city – what imaginations are creating the future city visions we are pursuing and how are they in turn shaping opportunities for participation.

The first element of the question presupposes an interpretivism outlook – there are different imaginations and understandings of reality which might align broadly across groups but ultimately reside in individuals' perceptions of the world. Specifically, feminist and queer epistemologies (Malpas and Wake, 2013) have influenced seeing children and teenagers' knowledge as a valuable and valid way of understanding the world.

The second, by the nature of the system of interest – planning – offers a more pragmatic understanding of the world. Planning and construction processes are highly contextual, hard to

extrapolate and systemise, often a complex contradiction of compromises and political processes. Yet they do produce outcomes which largely detach language as a description of reality, transforming it to a tool for achieving pragmatic goals. This is especially the case in the English planning system, where language is a para-legal tool to achieve and shape the built environment, the material outcomes of which often diverge from their original descriptions and designs.

Forester (2013), advocating critical pragmatism, captures exactly this nuance. We cannot focus solely on process or outcomes but must appreciate the multiple and contingent forms of knowledge which are shaped by the complex contexts in which planning operates. Most importantly, he is sceptical of the validity of knowledge and assumes that knowledge claims reflect the power relations within systems.

The choice of methods, therefore, follows from the epistemological underpinnings in interpretivist and critical pragmatism epistemologies. Youth participation in urban planning is overall an under-researched phenomenon (Frank, 2006). The approach to the doctoral project is inductive and explores the views of the world held by young people, and the interpretivist approach leads to a qualitative research methodology. A multi-case study approach bounds the study and the context of the groups of people examined, which combined with the examined demographic of 15–19-year-olds allows deeper engagement. Fewer participants but deeper engagement is sought. The study uses thematic analysis to start composing the narrative of teenager's experiences and perceptions of urban planning and the smart city. The critical pragmatist approach to planning practice leads to document and content analysis within documents.

3.3. Research Design

The project adopted a qualitative case study approach, aiming to establish a baseline understanding of the perception of young people and their ability to engage in urban planning within the ongoing transition towards digital planning and evolving smart cities imaginaries.

The first objective aims to assess the prominence of youth-related metrics and goals in smart city plans and agendas. Desktop study and secondary data analysis available on smart city metrics (Gil-Garcia et al., 2015) and municipal websites (Caragliu et al., 2011) were the main methods employed in analysing cities in the selected countries. By focusing on the top-down view of young people in the smart city visions of the examined case studies it aimed to establish an understanding of the role and positionality of youth as seen by decision makers in cities in Spain, England and Bulgaria. This is achieved by a screening of policy and smart city strategies and a secondary data review. Chapter 4 explores this in detail.

After the initial desktop analysis, a further selection of cities was undertaken by establishing broadly comparable cities in size to Birmingham to be used as case studies. Following the selection of key cities, the primary data collection part of the project employed a mixed methods case study approach (Angelidou, 2016; Bernardino et al., 2018; Caragliu et al., 2011; Cowley et al., 2018). It is worth noting that whilst employing similar methodologies in all four case studies, the project does not employ a comparative approach but instead attempts to establish a baseline understanding of youth experiences in the planning of smart cities. The reason for choosing an exploratory muti-case study approach notwithstanding the limitations in generalising from the findings (Yin, 2009;2012) is because of the multitude of variables present when discussing the overlap between citizens' participation, planning systems and smart city developments in three different countries: controlling

for all variables would be almost impossible in the timeframe of a PhD project. Instead, the project attempts to uncover broad thematic similarities and contextual differences and to position the current rush toward “smartness” (Figueiredo et a. 2019) within the intersections of urban planning and youth inclusion. Data across case studies is combined to establish a general trend of youth perceptions in Europe and compared to distinguish nuances.

The main primary data collection method is focused on the bottom-up view in this case defined as level of awareness and perceptions amongst young people about urban planning and smart city initiatives in their locale. The study employed primarily qualitative research methods such as interviews, observations and ethnographic approaches with the aim to establish more nuanced narratives illustrating the challenges and opportunities faced by teenagers. The choice of methodological approaches is driven by two factors – the gap of previous investigations in the topic of youth, specifically teenagers, discussed in Chapter 2, and the speed of development of smart city discourse, having competing dominant conceptual frameworks and definitions.

The semi-structured interviews formed the main part of the primary research methods within the case study of Sofia and were later adapted to online survey and social media research in the case studies of Birmingham, Manchester and Valencia due to pandemic restrictions. The reason for employing semi-structured interviews and online surveys was to be able to understand how young people perceive the planning system, the concept of smart cities and how they participate in it (Dandekar, 2005) in their own words. Other methods were employed to provide an in-depth description of the four case studies (Yin, 2009) which included analysis of audio and visual data from smart city initiatives and social media engagement, ethnographical tools such as memoing and observations, and secondary data analysis of city-relevant policies and initiatives.

3.3.1. Project Overview and Timeline

It is important to contextualise the methodological approach and the project development undertaken within the broader doctoral research journey. The COVID19 pandemic happened at the beginning of the primary data collection stage, necessitating a rapid revision of methodology, resubmission for ethical approval and a shift from full-time to part-time research All these changes affected the researcher’s ability to work in a traditional manner on the project. They also provided unique insights in the role of a researcher and academic which a traditional doctoral project would not have enabled. The shift between in-person and digital methodologies provided a unique insight into working with teenagers, however, complicated the analysis of data and write-up. A brief overview of the PhD journey is provided below.

The early PhD journey
The PhD study began in September 2018. Research questions, aims and objectives were finalised in early 2019. Secondary data analysis – the screening of smart city policies across the three national context was undertaken throughout 2019 and case studies were selected. Ethical approval for working with young people in the four contexts was also received in July 2019, enabling the recruitment of participants to take place. Primary data collection took place in person in Sofia, Bulgaria over several visits in late 2019 and early 2020. The PhD project followed a traditional narrative up to this point.

The Pandemic

The breakout of the COVID-19 pandemic coincided with a scheduled travel to Bulgaria in March 2020 to explore further sampling of 19-year-olds. In early 2020, the recruitment process of educational partners was also under way in Manchester and Birmingham, UK and approaches made in Valencia, Spain. A redesign of the methodology to become fully digital took place in Spring 2020 and ethics re-approval was sought in June 2020. Detailed impact and risk assessment records were kept as the future trajectory of the pandemic was unclear. In July 2020, ethics forms were resubmitted and a new ethical approval for the new methodology was received. The uncertainty of the pandemic and the new digital methods employed presented a steep learning curve: it also presented initial challenges in terms of hardware with accessing a laptop and suitable working location from home. Data collection took place primarily via social media platforms simultaneously in Birmingham, Manchester and Valencia with the majority of the surveys collected between November 2020 and March 2021. The samples matched the aim of the research. The pandemic also coincided with personal matters, which had a lasting impact on researcher's mental health.

The Post-Pandemic shift

In February 2021, the researcher took a break from the doctoral project to take over a year-long maternity cover as a Senior Lecturer in Urban Planning at Birmingham City University which allowed to further embed tehmselves into academia. Between October 2021 and March 2022, the researcher was also a Principal Investigator on the AHRC-funded "Are you game for climate action" project (Award Reference AH/W004526/1), which resulted in the creation of the board game Climania (www.climaniathegame.com), providing further first-hand experience of co-designing with teenagers. This break in the doctoral project largely coincided with the conclusion of data collection, although some responses in the early months of full-time teaching in 2021 were still being collected. Data analysis largely happened alongside teaching responsibility, but the data was comprehensively analysed throughout 2022, with the write-up of the thesis beginning in earnest in 2023, resulting in a first-author publication from the data analysis in 2023 (Shtebunaev et al., 2023). The researcher took a full-time position in April 2023 with the research company Social Life as a Senior Researcher, shifting to a part-time study mode of one day a week expanding their work with teenagers in practice. A a health-related six-month break from studies was undertaken in the second half of 2024 and studies resumed in December 2025 to complete the project.

As can be seen, the pandemic had a profound impact on the methods employed and the progress of the doctoral project and had a big impact on health. However, it allowed for a unique experience and raised key questions about the ethics of working with young people, enabling a comparison between in-person and digital practices, which otherwise would not have been possible. As an academic and researcher, the ability to serve as a Senior Lecturer, be a Principal Investigator and work as a Senior Researcher in private practice, alongside the doctoral project, challenged previous professional experience in architectural practice. It allowed for a much more diverse and full experience of an academic and research career, before concluding the project. This pathway potentially would not have happened if the pandemic had not occurred.

Throughout this chapter, those nuances are presented where they are relevant, especially in cases around comparability of the data, ethical implications of the method, replicability of the methodology and personal academic growth.

3.3.2. Case Study Approach

To understand the phenomenon of youth inclusion and their perceptions of the planning of future smart cities, a mixed-methods approach was selected to allow for the collection of rich and diverse data to be interpreted in a narrative format. An inductive and flexible approach was considered most appropriate to capture the complexity of the subject matter. Birmingham, as both the host city for

the doctoral project and the researcher's base, served as the starting point for shaping the overall case study design. The case study methodology addresses the research gaps of lack of empirical evidence of teenager perceptions in planning and lack of situated citizen perspectives of the smart city explored in Chapter 2.

Following Curry and Nunez-Smith (2015) and Creswell and Plano Clark (2018), the research adopted an exploratory embedded mixed methods design. This approach was best suited to the need of the doctoral project, with qualitative data collection serving as a primary method. Quantitative data (e.g. age, preferences, demographic data) was collected and consulted as appropriate, to explain specific sub-sections of the qualitative analysis.

Focused case comparisons approached (taken as a baseline to the exploratory multi-case study direction finally adopted) as discussed by Druckman (2002:23) have specific features on which the project based the research design – they usually comprise two to four carefully matched case studies, predominantly employing qualitative methods and allowing for thin to thick case penetration depending on the phenomenon studied. The method allows the role of the context to be emphasised in the studies; however, by its definition it allows limited generalisation from the case studies and limited applications of the findings. This approach suited the open exploration of an under-researched phenomenon but necessitated a careful matching of many variables, which was impractical for the inductive nature of this research. A more loosely bound, exploratory approach to the case studies was chosen to allow emergence of themes and hypothesis without having to match case studies on all but a few variables.

Druckman (2005) discusses that loosely bound exploratory case studies are often performed in an inductive-emic tradition that allows for inventiveness at all stages of the research. This flexibility has suited the research questions as little literature exists describing and evaluating smart city developments from the youth perspective, hence adopting a pre-existing theoretical framework allowing for a deductive approach is problematic. It also serendipitously allowed for flexibility in the approach and re-design of the research methodology in the context of the pandemic. The exploratory nature of the case studies means that the primary data is often combined to establish a baseline of youth perceptions and then compared between the different city contexts to define nuances and plot future lines of enquiry.

Focused case studies compare a small number of similar cases matched on all but a few variables. This was the key difference between the final multi-case exploratory approach taken and the traditional focused case study approach. As the conceptual framework incorporated diverse domains in different stages of development, matching on all but a few variables was impractical. In the doctoral project, the cities were selected primarily due to their comparability in population size with Birmingham, the host city of the research and the primary case study. The cities also carried similarities in that they are all within the European context of developed democracies, largely have aligned legislation (although divergencies have occurred due to Brexit), and all being classified as Beta cities by the GaWC (2018) rankings, integrated in the world economy. The cities all had a type of "smart city" strategy or vision and a youth-focused policy or targets within that vision. The full rationale for selection is explored in Chapter 4 which focuses on the cultural and policy context of the three national contexts and goes in detail into the selection process, following the smart city analysis.

However, there are significant differences which have been contextualised in the analysis – such as the different political systems, relative affluence, planning systems, youth policies, level of engagement with "smart city" rhetoric, cultural and demographic differences. As such, the Birmingham and Manchester examples provide the best baseline for comparison, with the Valencia

and Sofia examples providing a wider European contextualisation of the broader themes emerging. Therefore, the final approach is better categorised as a loosely bound multi-case study approach which aligns the methodology with existing focused comparative case studies but does not claim such close comparability. As the priority was to define a phenomenon (youth perceptions towards future city planning) this was deemed suitable. The detailed method of selecting the case studies across the three countries is described in Chapter 4.

3.3.3. Data Collection Methods

A mixed method approach was designed to respond to the key research objectives. The two key design methods included: secondary data collection through desk-based research on the smart city visions examined, and primary data collection involving semi-structured interviews and online surveys. To allow better triangulation, ethnographical approaches such as observations, memoing and self-reflections were also employed. Field research and visual analysis of specific contexts were also included where relevant. The methods are described in detail below.

3.3.3.1. Secondary Data Collection and Desktop Research

The main reason for employing document analysis was concerned with the evaluation of current smart city and planning practices and policies and their relevance to the research questions. This method also informed the case study selection. The data and documents analysed have been acquired from publicly accessible sources (such as Local Authorities, Governments, Councils, Charity Reports, NGOs and other public or private organisations working in the field of smart cities or urban planning). In the case of the wider smart city policy analysis, qualifying Local Authority websites were manually searched for smart city related policies. Overall, more than 200 authorities were explored across the three contexts. Chapter 4 presents in details the outcomes of this part of the research.

Ethical implications such as the origin, intended audience, date and access routes were considered within the acquisition of policies and, ultimately, only publicly accessible documents were selected for analysis. This was because the project adopts a citizen-led lens and, therefore it was important to understand the visions that Local Authorities made available to their populations. The screening process took place throughout 2019, which means that in many of the contexts, policy and publications have since evolved, but nevertheless this process presents a comprehensive picture of the context of pre-pandemic smart city discourse.

In some cases, visual and content analysis of websites and online platforms was performed to derive an understanding of how young people form their perceptions towards the examined smart city initiative and how the local authority presents its smart city strategy to citizens. Notes were taken on the user design and search for secondary data, reflecting on participation avenues and their accessibility. In all cases the websites analysed were in the public domain. The analysed websites were recorded offline with the date and location of access noted to provide a full record of when the data was harvested and to provide future researchers with ability to track any changes throughout the period of the research project. Smart city literature and policy is fast-changing, and the analysis captures only a specific moment of that development.

Policy analysis largely followed the same considerations as document analysis as it largely formed part of it as only specific urban planning policies were examined. The research also is grounded in

the English planning system primarily, hosted in Birmingham and Chapter 6 relates the findings to it. In some rare cases, policy statements in the public domain by politicians, chief technology officers, etc. were included in the data analysis or consulted if they provided context for statements made by young people. The reason for examining policy is to understand the direction of travel regarding the future planning system and youth's role in it in the respective countries of Spain, England and Bulgaria. The results of this review and the case study selections are further discussed in detail in Chapter 4.

3.3.3.2. Semi-structured Interviews and Online Surveys - Questionnaire design

The primary data was collected through semi-structured interviews in Sofia and through online surveys largely emulating the same questionnaire in Manchester, Birmingham and Valencia. The questionnaire design was based around the research objectives and broadly had three key stages:

1. Urban planning
2. Future Smart Cities
3. Engagement and future participation

The pacing of the questions and biasing of the participants were considered in the design of the questionnaire. In all contexts, the participants were aware of the general purpose of the research, but no detailed information was provided about the content of the survey such as explanations of terminology. The Information and Consent Sheets are provided as appendices. Those were translated into all the languages by the researcher. A page on the researcher's website was also made available, containing information about the research. For the online surveys, an Instagram page and a YouTube[3] video were provided but again contained no detailed explanation of concepts. These nuances of internet-mediated research are explored later in this chapter.

The first section of the questionnaire explored teenagers' general perceptions of urban planning and their cities. It tested individuals' awareness of the term, key actors within the planning process and their general barriers to participation. This section also asked more general questions about young people's habits within their cities and what change they want to see. It was important to generate this baseline before the concept of smart city was introduced. A control question was introduced - young people were asked to self-assess by asking them to also compare to their peers.

The second section of the questionnaire focused on the future smart city. It explored trends in digitalisation and the ability of teenagers to recognise digital technologies in the urban realm. It also explored general sentiment towards definitions of the smart city and awareness of the term. This allowed a level of knowledge of the concept to be built-in within the survey to provide young people with some contextual understanding, before a more in-depth testing of priorities and perceptions was undertaken. The questionnaire relied on the Smart City Wheel (Cohen, 2018) as a method of engagement with the topic and used the concept as a tool to rank young people's priorities for the future city. This was the main method to try and relate the participants to a vision of a future city and what it might mean to themselves.

Finally, the survey focuses on the young persons' perceptions about their future, including

[3] https://www.youtube.com/watch?v=TyG-kL940tw

perceptions of digital skills and how digitalisation can change participation, their awareness of opportunities to participate, as well as, in the survey, collecting impressions about the impact of the pandemic.

The comparative data being collected was considered through the lens of proportionality. As the survey was already focusing extensively on the experience of an age group, it was deemed that collecting further protected characteristics beyond gender would be disproportionate at this stage of the research. This decision is further explored later in this chapter. The survey also collected data on each participant's education or employment status, as well as their general geographical location within the city subdividing each city in four sections. (Figure 3.1). The full questionnaire is available as an appendix.

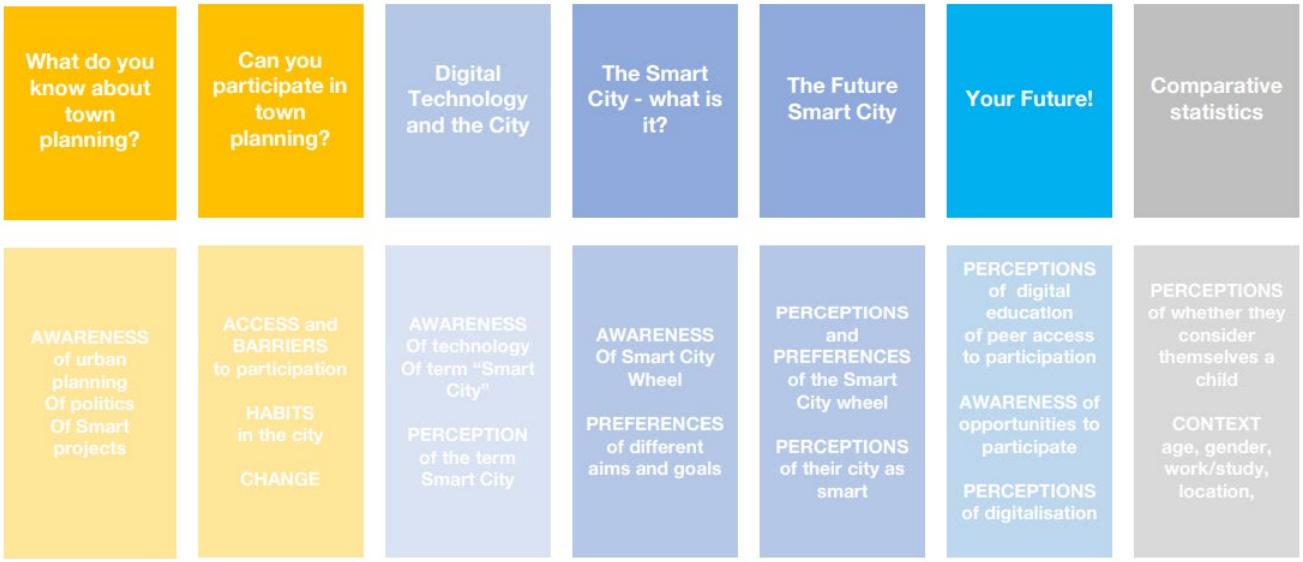

Figure 3.1. Research Questionnaire themes

Design Principles

The design of the questionnaire was guided by key principles that took into account the age group and the likely limited prior knowledge young people may have regarding urban planning.

1. *Easy to understand language and style*: The questionnaire adopted a non-technical language to attract participants and make the survey accessible. Questions were adapted to be as short and as easy to understand as possible, while retaining the necessary complexity. A second-person conversational style was adopted to ensure that both interviews and surveys engaged participants in a relaxed and informal manner. The questions were run through a legibility checker and, where possible, terminology was replaced with more accessible words.

2. *Engaging*: Interviews and surveys aimed to be enjoyable and establish a dialogue with the young person on an informal level. Any online method had to be engaging to be able to recruit young people in a saturated online environment where attention spans are short. The in-person interview used printed physical props, while the online survey employed visual cues and graphics to orient participants and maintain interest.

3 *Embedded learning:* The employed online and in-person methods all included embedded learning, by explaining concepts involved in the research or redirecting the participant to future learning

opportunities at the end of the survey or interview.

4 *Feedback opportunities:* Opportunities to provide further feedback were embedded in the survey, and the young people taking part in the questionnaire were invited to leave their contact details if they wanted to receive updates about the research findings allowing a feedback loop as detailed in the ethical and consent forms. Not every participant expressed such desire.

5 *Reward*: To encourage participation, the methods included incentives such as charitable donations and access to downloadable, shareable content hosted on the researcher's website which provided more information about the built environment. These measures were deemed necessary to address the non-personal approach of data collection online and approved by the ethics committee.

3.3.3.3. The Smart City Wheel as a Method of Engagement

To engage young people in smart city debates, it was necessary to adopt a framework that was both accessible and easy to dissect. One of the more influential models of smart cities is the Smart City Wheel (Cohen, 2018), which has been widely quoted by city authorities and smart city consultants and widely referenced in research on cities such as Dubai (Virtudes et al., 2017), Guadalajara (Mexico; Ceballos & Larios, 2016), and the EU CITYKeys project (Bosch et al., 2017). (Figure 3.2)

The wheel is a graphical representation of key areas of progress and indicators. It is based on the methodology developed by Giffinger et al. (2007) at the European Smart Cities research group at the Centre of Regional Science of Vienna University of Technology. The project European Smart Cities 4.0[4] , led by Giffinger, benchmarked the progress of European cities towards smartness and achieved wide publicity, including influencing the European Commission's early image and idea of the smart city. The methodology was later adopted by the Smart City Wheel, developed by Cohen (2018). The wheel outlines 6 key dimensions and 18 indicators, claiming to present a holistic strategy for cities to become 'smart'. However, this rigid presentation and completeness of the model were not suitable to elicit views from young people on alternatives

[4] https://smart-cities.eu

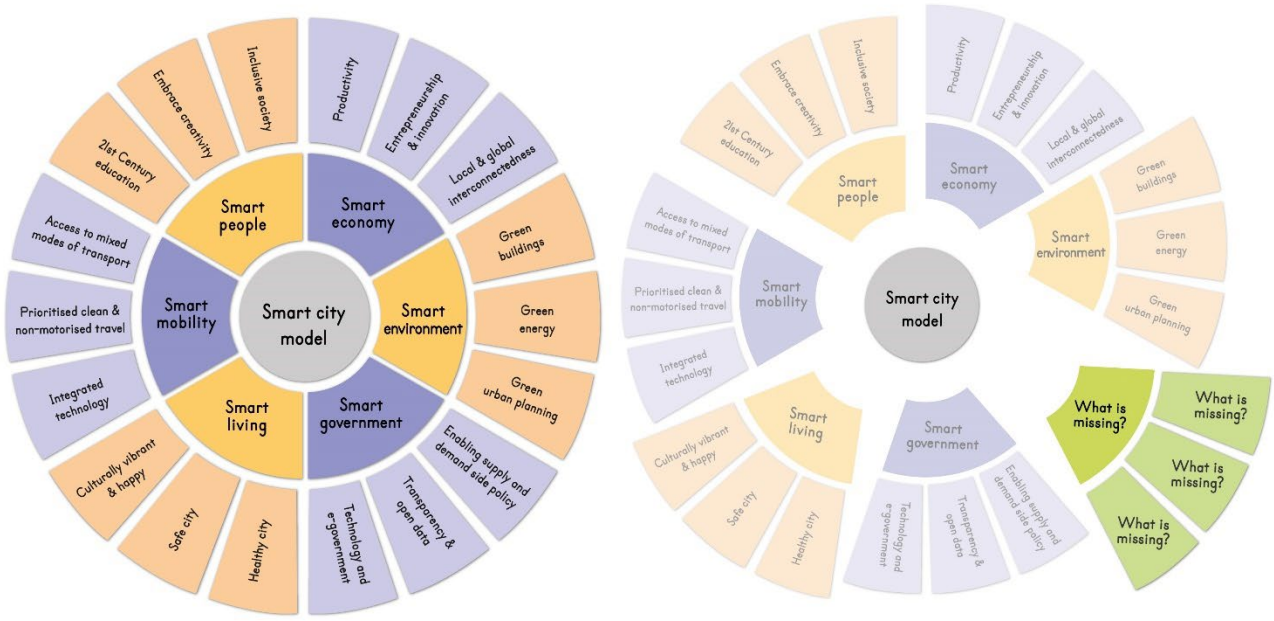

Figure 3.2. Smart city wheel as presented to the young participants. Note: On the left is the complete wheel and on the right is the amended version developed as part of the doctoral project. Source: Authors' work adapted from Cohen (2018).

The wheel was presented to the participants in both a complete and a broken-down form to elicit responses (Figure 3.2). The wheel presented a useful framework focusing young people's understanding on the possibilities and domains of the city in which technological advances are considered. It provided a visual representation of the smart city concept and allowed for the evaluation of aspects of cities that might be overlooked when the focus is solely on smart technologies. Young people were asked to first identify their top priorities from the outer circle of indicators and then to select one of the six core dimensions where they would like to see technological advances in their city. Finally, teenagers were asked to consider what elements might be missing from the model. Once reflections were collected, the research applied analysis approaches developed from grounded theory. The data was analysed using inductive thematic analysis, where codes emerged from the text. The analysis then compared the emergent themes across all four case studies.

3.3.3.4. Supplementary Methods

Supplementary methods were employed to reach a better understanding of the context in which the young people formed their perceptions. Primarily, this was done by recorded observations and field visits.

Detailed notes of observations and impressions were taken by the researcher in the in-person interviews, as well as in the process of producing content and recruiting participants online. In ethnographic fashion, a notebook was kept throughout the full duration of the research, recording the author's impressions of issues picked up in the process of research, outside the formal semi-structured interviews or the survey form. Some of those are picked up on later in this chapter, specifically when the internet-mediated research process is discussed.

Field visits were undertaken to each of the cities to fully familiarise the author with the context and observe specific expressions of youth and smart city policy in the city. The original research design envisioned a longer stay in each of the host cities, to be able to conduct on street interviews as well as collected detailed observations, however, this was adapted to the post-pandemic context. Birmingham, as the host city of the project and the author's place of residence, has provided an evolving understanding of the data collection. Living in the city allowed me to explore some of the survey data in detail, for example picking up on specific mentions of places or advertisements that have influenced young people's perceptions as mentioned by them. Manchester was visited in late 2019 to recruit gatekeepers and schools to allow access for the in-person interviews. It was also visited on several occasions in 2021 and 2022 for post-pandemic and post-data collection and work with Manchester School of Architecture and RTPI UK-Ireland Planning Research conference, which allowed observations and sense making of survey responses. Sofia was visited throughout the autumn of 2019 on several occasions to conduct the in-person interviews with teenagers. It included longer stays as per the original research design, which allowed in-depth observations of the city. Valencia was visited in 2022 when the pandemic allowed international travel to third countries. The visit allowed me to make sense of some of the locations young people had indicated in their responses as well as to familiarise the researcher with the Smart City initiatives the city was undertaking and how they were expressed in the built environment.

3.4. Recruitment and Sampling

3.4.1. Sampling and target demographic

When considering sample size within a qualitative case study, Morse (2000) points to several main factors:

1. *Scope of study* – Given that the research question examined in this study explores both the broader participation of young people in smart city planning and the specific nuances of the case studies and given the lack of previous research on the topic, the sample size had to be taken into account and balanced between the need for wide and varied collection of views and feasibility of conducting the research. Saturation for the overall issue of youth participation reached in the overall sample of 121 as well as overall perceptions towards participation and smart cities in the European context and clear themes emerged. Within each of the case studies, saturation of answers was more difficult to ascertain, although clear themes did emerge from each of the samples. The narrowing of the research question to a specific demographic helped to guide the sampling strategy.

Morse (2000) suggests that for shallower studies adopting an inductive approach, a larger sample size might be required - 30 to 60 people - whereas for more detailed phenomenological studies, a smaller sample of 6-10 people might be enough, due to the large amounts of data collected. The proposed doctoral study originally aimed for sample sizes of at least 10-20 people in each city examined, envisioning the ability of the researcher to spend time in the city and collect more extensive ethnographic data, allowing for deeper penetration into the case study. As the pandemic emerged, however, it was decided to restrict the sample to the lower boundary for a shallower study, as it was clear that in-person and ethnographic methods would not be feasible. It was envisioned that in each of the four cities that are identified, a sample size of 30-35 people would be interviewed. This led to a total participation in the project of 121 people.

2. *Nature of topic* - The topic of research is relatively clear: to establish perceptions of young people towards smart city developments and situate them in processes of engagement in the urban planning, smart city agendas and initiatives. Sample sizes were sufficient to enable trends to emerge and to capture diverse views in the examined cities.

3. *Quality of data* - Quality of data was ensured in the in-person interviews, which were rich and often overran the allotted 30-minute slot. The online surveys produced a rich picture, but to explore emerging themes and strengthen the quality of data collected, additional questions were added, specifically around COVID19 and self-description of awareness. More opportunities and prompts were introduced in the form of non-mandatory answer boxes, allowing for the survey method to capture additional reflections.

4. Study Design - The study design balanced the need to collect extensive data with the feasibility of conducting the research within the resources and time allocated. The longitudinal approach was considered optimal; however, it was not proportionate for this study. The questionnaire was therefore expanded to allow more data collection points, and a larger sample number was sought.

5. Shadowed Data – The in-person interviews allowed the collection of shadowed data, and this was embedded in the design of the questionnaire where teenagers were asked to comment on others' experiences (Morse, 2001). When examining perceptions and attitudes, shadowed data can provide a deeper understanding of issues, informing continuous research design.

The research initially took a convenience sampling approach. However, this sampling strategy was deemed appropriate since the project included four different contexts and did not rely on a representative sampling approach. Consequently, it created opportunities for snowballing in some of the cases, particularly in the online context, where direct nudging and messaging enabled participants to tell their friends to complete the survey. In this study, comparability to the demographic profiles of cities was not a priority, as an inductive approach was taken to define the key themes emerging. However, future, more detailed, studies should aim to adopt a quasi-representative or representative approach to sampling to better capture trends.

Assumptions and impact of COVID-19

It was hypothesised that COVID-19 would generate some impact on the perceptions and awareness of young people towards smart cities. Some assumptions might be the preference for social distancing, health and wellbeing being more prevalent and the awareness of tracking apps and the use of data in the urban environment. Therefore, a specific control question was added to the surveys conducted after the beginning of the pandemic (Birmingham, Manchester and Valencia), to allow for COVID 19 sentiment to be captured. However, it did not appear that COVID-19 significantly affected the data collection, and the analysis considered the context in which the data has been collected.

The sampling attracted more males in the in-person sample (Sofia) and more females in all the online samples. This aligns to trends in online methods where females are more likely to respond to online approaches (Ryan et al., 2019). No controls were added for this study, but future studies should endeavour to add secondary sampling to control for representativeness.

3.4.2. Recruitment

Participants were recruited amongst the specific demographic of young people aged between 15 and 19. It was expected that most of the demographic would be in full-time education – either secondary or higher education, in all three national contexts. Therefore, a recruitment process was originally designed which involved gatekeepers – teachers, lecturers, parents and organisers of extra-curricular activities, who were to allow access to participants. Direct recruitment of young people was originally designed to take place in "street interviews" where the researcher would be present across the cities and approach young people. The combination of targeted recruitment within educational institutions and random selection was designed to allow for diversity. This process was revised as the pandemic hit and explored in detail in the next sub-chapter.

Recruitment in Sofia followed the original recruitment design as it took place before the pandemic. It was conducted through Vox Tua[5] – an independent charitable organisation which runs English language lessons across schools in the city. Access was negotiated with the founders of the organisation, who had existing relationships with different secondary schools across Sofia. This enabled a much quicker access and process of recruitment, as it had been proving difficult to establish a direct relationship with headmasters and teachers. The researcher was invited to conduct the interviews in between extra-curricular activities or after the extra-curricular activities were undertaken. Attending students had been informed prior about the opportunity and given an option to take part. Overall, 32 interviews were conducted by the researcher, out of which 3 were not included in the final sample due to the student being under the age of 15. The schools in which the interviews took place were Sofia Mathematics High School, Professional School of Electrical Engineering and Automation and 32nd High School for Foreign Languages. The interviews took place in empty classrooms or in lobby places within the school, which allowed for privacy, however, the school environment still carried power dynamics. The researcher published a blog[6] on Vox Tua's website as agreed with the organisation.

In the other three contexts, the recruitment began using the existing network in Birmingham and Manchester and developing a network in Valencia through sending access letters and approaches to secondary schools and youth clubs. Final recruitment in Birmingham, Manchester and Valencia was conducted online and explored in detail in the next sub-chapter.

3.5. Materials

The emergence of the COVID19 pandemic and following burden on educational institutions, especially secondary education ones, necessitated for the research design to be revised and supplementary materials – physical and digital assets to be developed. The sub-chapter 3.7 dwells deeper into the ethical implications.

3.5.1. Adapting to Digital Research

The biggest adaptation was the shift from in-person interviews to an online survey format. The

[5] https://voxtua.org/en/home-page/

[6] https://voxtua.org/en/2020/02/24/youth-in-city-planning/

doctoral project timeline had fixed dates, therefore, the uncertainty around the length of the pandemic and future restrictions drove the method to change to the most efficient way of collecting data remotely. This was also precipitated by the breakdown in communications with teachers and other gatekeepers, as everyone was trying to establish the consequences of the pandemic. It was deemed that introducing a survey in Sofia would muddle the information already collected pre-pandemic, but that it would be key to retain and respect the data collected from participants already and not conduct another survey in the Bulgarian context.

The researcher followed Birmingham City University's guidelines for designing online surveys. The tool used for the online survey was a JiSC[7] online survey tool, chosen to be GDPR compliant and the university's preferred research method. This meant that the functionality of the survey design somewhat limited a more creative approach. The author's preferred method of Typeform, which allowed for dynamic and visual transitions, was not supported by the legal considerations of the university. This also points to the general lack of consideration or the high entry cost, design and availability of research-based platforms catering for teenagers and allowing for creative methods. Gamification of the survey was originally desired as the researcher had used previously within youth research conducted in such a method, however, a more traditional approach was taken based on the functionality of the platform. The design of the online survey still included visual elements where possible.

The survey landing page allowed for a video introduction summarising the main consent points. A link was provided for the full consent form should a person be interested in printing it off. Detailed consent procedures are explored later in this chapter. Survey duration online was measured between 15 to 25 minutes, depending on the level of information provided by the participant. Participants could save and able to download all their data at the end of the survey. The survey consent process follows guidance by the MRS (Market Research Society) Guidelines for Research with Children and Young People (2014). Surveys were unregulated, though access was naturally limited in access by the distribution approach and had a separate consent procedure for under 16s and over 16s. No regulated surveys, which were password restricted to a specific school or institution, were provided at the end as communications with those institutions originally recruited in 2019 broke down. The proposed sample size for the required total survey responses was between 30 and 50 people, in alignment with the sampling strategy.

Online distribution and social media

Recruitment in a saturated digital landscape was considered carefully. Social media played a key role in distributing the survey throughout the age group; however, it posed a challenge to the researcher as it was a medium which required a different approach to recruitment of participants. There was a clear disconnect between the number of people who click on a survey and the number of people who complete it fully. A social media and content strategy was put in place before the survey launches to attract participants.

Channels were set up in the summer of 2020 and populated with content to create familiarity and develop trust. A Twitter (as known at the time) and an Instagram account were both created under the @youthcityfuture. On Facebook, a separate business page named Youth City Futures was created, linked to the Instagram account. Additionally, a YouTube channel named Youth City Futures was set up. A LinkedIn page was considered, but it ultimately was decided that the young people

[7] www.onlinesurveys.ac.uk

would not be present on this platform to be directly approached.

The accounts were used to create communication streams for the project, as well as to recruit participants. Since they have also been one of the main feedback mechanisms where publications and outcomes of the research have been disseminated. The account links were provided, allowing ethical officers and supervisors to independently monitor the activity. All posts are publicly accessible. The accounts served as an aggregator of data related to the project on social media. The accounts will be archived once the PhD project is completed, and all stemming publications are complete.

Instagram was deemed to be the most popular platform, and it saw the quickest growth. An Instagram advertisement account was created, and specific posts were boosted across the three cities to grow the following and to advertise the survey directly to the demographic in question. Using the ad tools, audiences of 15–19-year-olds were created, which were the targets for post advertisements. Between June 2020 and March 2021, in total 8 posts were boosted using the ad account for a total of £112 spent by the researcher. The largest spent was in February to March 2021, targeting Valencian youth. It was observed in the weeks in which the advertisement ran, uptake of the survey increased.

Figure 3.3. Social Media posts

Figure 3.4. Social Media recruitment posts

Different strategies online were undertaken. (Figure 3.3. and 3.4) Materials were developed to engage and interest the target demographic in taking part in the project. Using the authors digital and illustration skills, the social media account was populated with posts which focused on communicating the purpose of the research and creating a visually appealing design. Physical postcards and posters were also produced and distributed locally, to both generate local interest and to produce online visual content to build trust with potential participants who can see the researcher was real.

Traditional invitations to take part, such as emails, were sent to organisations, such as schools, in the three cities, however, the conversion rate was not high enough. Physical postcards with an invitation to take part in the research were distributed across Birmingham and Manchester at random addresses. Direct nudging and messaging were undertaken – organisation and individuals operating within the targeted age range were approached on social media with an invitation to take part. Individuals who followed those organisations on Instagram were also directly messaged with an invitation, which proved to be the most efficient strategy. The ethical implications are discussed below. Consistent posting under a similar hashtag of the project - #YouthCityFutures, allowed for

easier congregation of relevant posts and a dedicated space on the researcher's website[8] provided permanent presence and opportunity to find out more about the research

3.5.2. Social Media Mediated Research

The amendment to the ethics included nudging and direct contacts were as a strategy, inviting organisations and people to complete the survey directly online. This strategy was included as the doctoral project lacked a dedicated budget for advertising and recruitment, and early in 2020, it became clear that relying on partner organisations to promote the research throughout the pandemic would be unreasonable as everyone was overwhelmed by the changes. This proved to be the most effective strategy, however, raised a lot of ethical questions around conducting research online with young people, but also generally with other populations.

Figure 3.5. Postcards used in COVID19 pandemic

Messaging strategy

The nudging strategy envisioned the project accounts to follow key youth organisations, clubs and centres in Birmingham, Manchester and Valencia. The organisations were approached, and the survey promoted. To encourage participation, open accounts (accounts set to be publicly visible and accepting messages) which followed or were followed by those key youth anchor organisations in each city were messaged with a standard invitation to take part in the research. No individual and non-organisational accounts were followed, and no private or locked accounts were engaged with. Direct nudging was only undertaken as a strategy in early 2021, after a few months of online posting and recruitment did not yield significant uptake and only after the other strategies were exhausted.

[8] https://shtebunaev.com/phd/

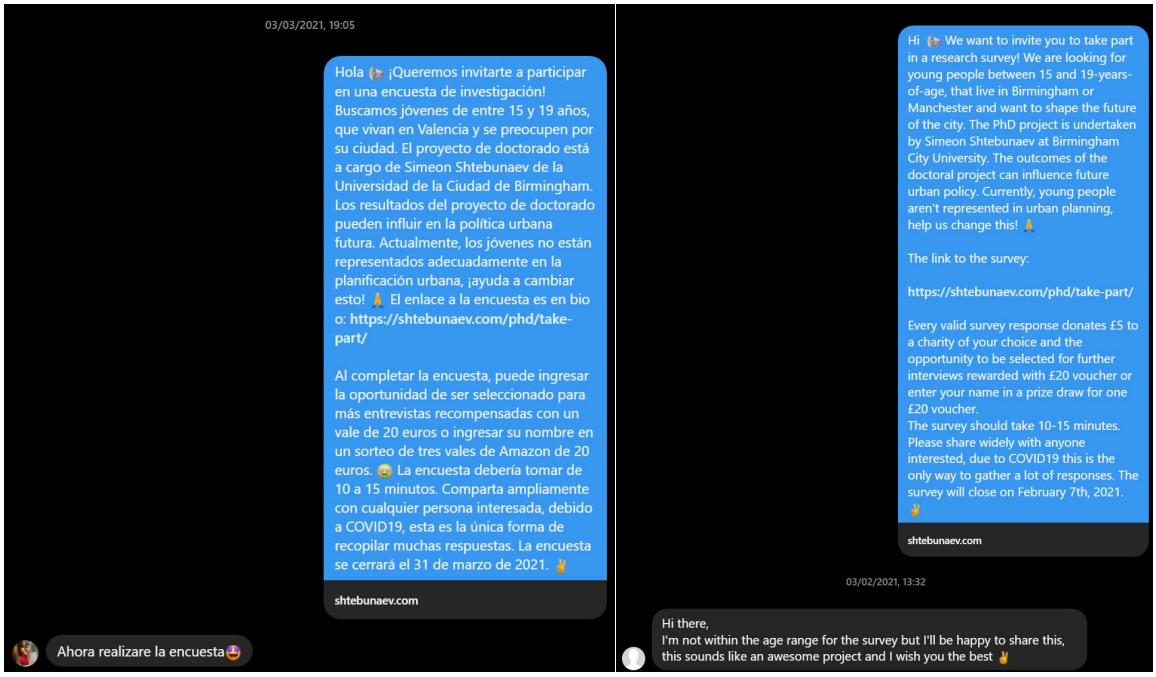

Figure 3.6. Examples of interaction with young people online

The responses to the approach were generally neutral (Figure 3.6), however, some accounts were interested in further information or to understand what the selection process was. A policy of transparency was adopted and accounts were re-directed to the formal doctoral research website where the full information about the research can be found.

Upfront cost of digital research with young people

Translating research methods online meant creating social media accounts (Figure 3.7) for the project, populating with relevant content and establishing a visual and content strategy in order to provide visibility, establish trust and build a following able to support the recruitment and dissemination. The time-cost and skill set required as upfront cost to develop a presence and social media assets before participant recruitment could take place were underestimated. In future studies, research design should reflect this stage and consider the required resources and expertise.

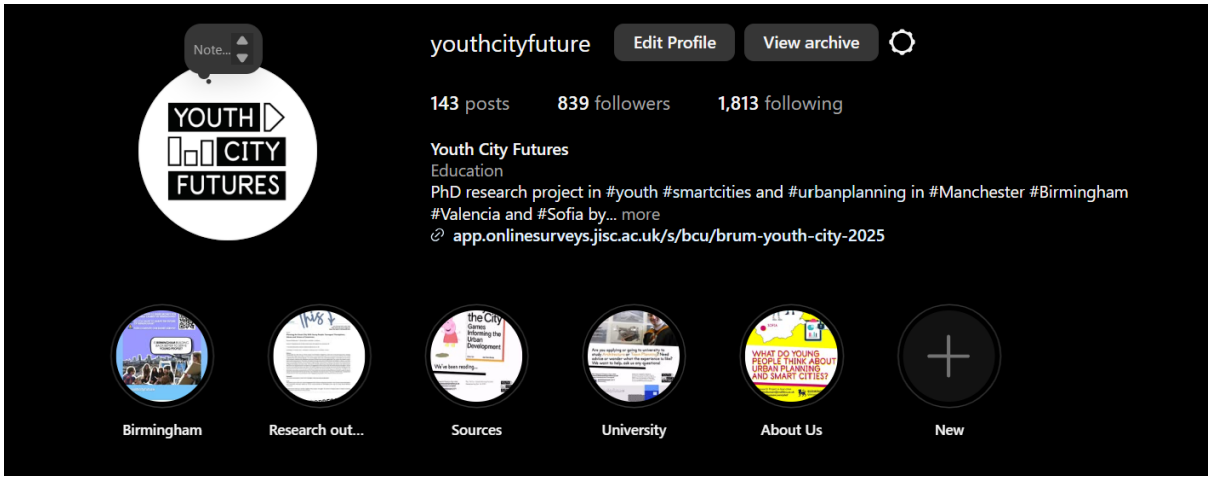

Figure 3.7. Instagram account

Conversion rate

Direct nudging as a recruitment campaign, paired with running advertisements on Instagram, proved to be the most effective way to recruit participants. However, the strategy was time-consuming and there is a question about its suitability and effectiveness in non-pandemic circumstances. As the researcher couldn't secure a closed audience – e.g. a school or an organisation distributing the survey with young people they already work with (as was the case in Sofia), the open nature of the recruitment process meant it was competing for attention online. The social media profiling strategy – e.g. messaging youth organisations, their followers and following audiences, meant that there was no guarantee invitations would be received by young people in the target demographic. The researcher's time put in direct messaging was significant, both with organisations and individuals. In each of the contexts on Instagram, more than 300 people on average were directly messaged, and at least 50 organisations were approached to support the distribution of the survey. However, a clear uptick was seen in survey completions after each of the direct nudging sessions. The Instagram advertisement, which directly promoted the survey in Valencia, attracted 19,820 views, of which 94 people tapped onto the website link for the survey.

Trust Online

Some accounts indicated that they were under or over the age range which the survey looked at, lived in different geographies or didn't fit the profile described. Those were thanked and not engaged with further. Some of the accounts approached indicated they were outside of the inclusion criteria; however, they shared the survey on their pages to enable a wider reach. Some people responded with suspicion, indicating a general scepticism of online approaches. Some people questioned if this was an automated bot sending messages and others questioned why they were being approached with this invitation (See Figure 3.8). In every case, a clear explanation was provided, and the person was redirected to the doctoral project website. All Instagram messages have been archived and downloaded onto BCU servers in html format using the Instagram app. Those will be retained as long as the account is operational – this is until the end of the project and until any other stemming publications or five years afterwards.

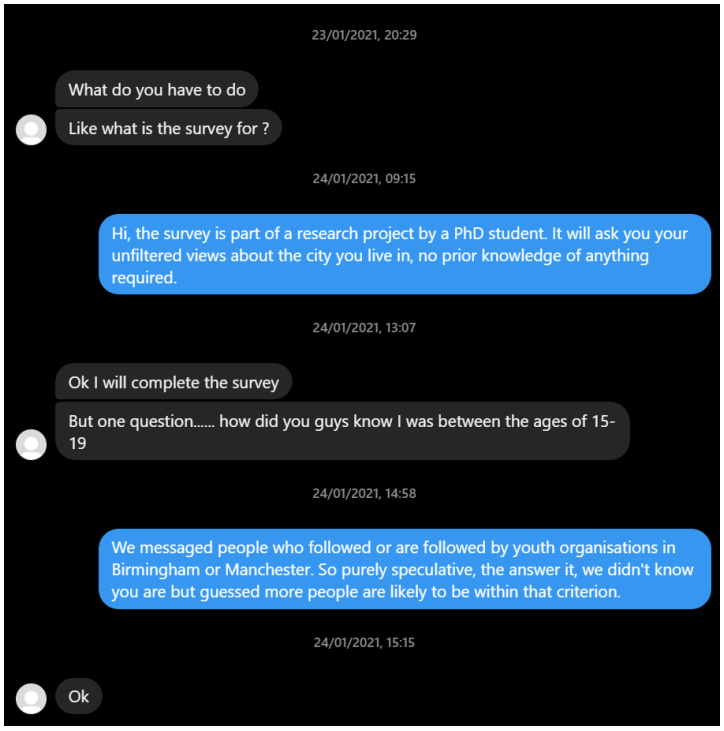

Figure 3.8. Ethical considerations and policy of transparency in communication

3.5.3. Reflection on COVID19 and Pandemic Adaptations

Implications for future research with young people

The shift to social media as a tool for recruitment demonstrated the different pathways to accessing teenagers and the diverse ethical and methodological challenges of being in person versus being online. The diagram (Figure 3.9) presents a comparison between the two methods of reaching teenagers. The steps of traditional recruitment, where ethical guidance and protocols for communication with gatekeepers are well defined and applied, are in stark contrast to the more porous approach online, where teenagers can be directly reached out to. For the researcher, this presents a series of challenges and ethical decisions which must be taken to ensure safeguarding and transparency of the methodology.

Emerging research in the literature points to teenager's presence on applications such as Instagram apps as potentially exposing them to unsafe approaches (Razi et al., 2023) and targeted advertising for products. Analysis of messages (Ali et al., 2022) presents a pattern where teenagers tend to disengage if they feel unsafe, however, as observed this also leads to heightened suspicion, regardless of the type of approach. As researchers there are clear methodological and ethical questions which need to be explored further regarding researching young people in the digital domain.

Cutting and Peacock (2021) call "slippages" those moments which depart from expectations but do not lead to a clear breach of ethical conduct. The mismatch between institutions' ethical frameworks and processes and the realities of conducting research with children and young people digitally leave researchers ill-equipped to deal with those moments. A more relational and non-binary (ethical or non-ethical) approach to digital methods needs to be developed.

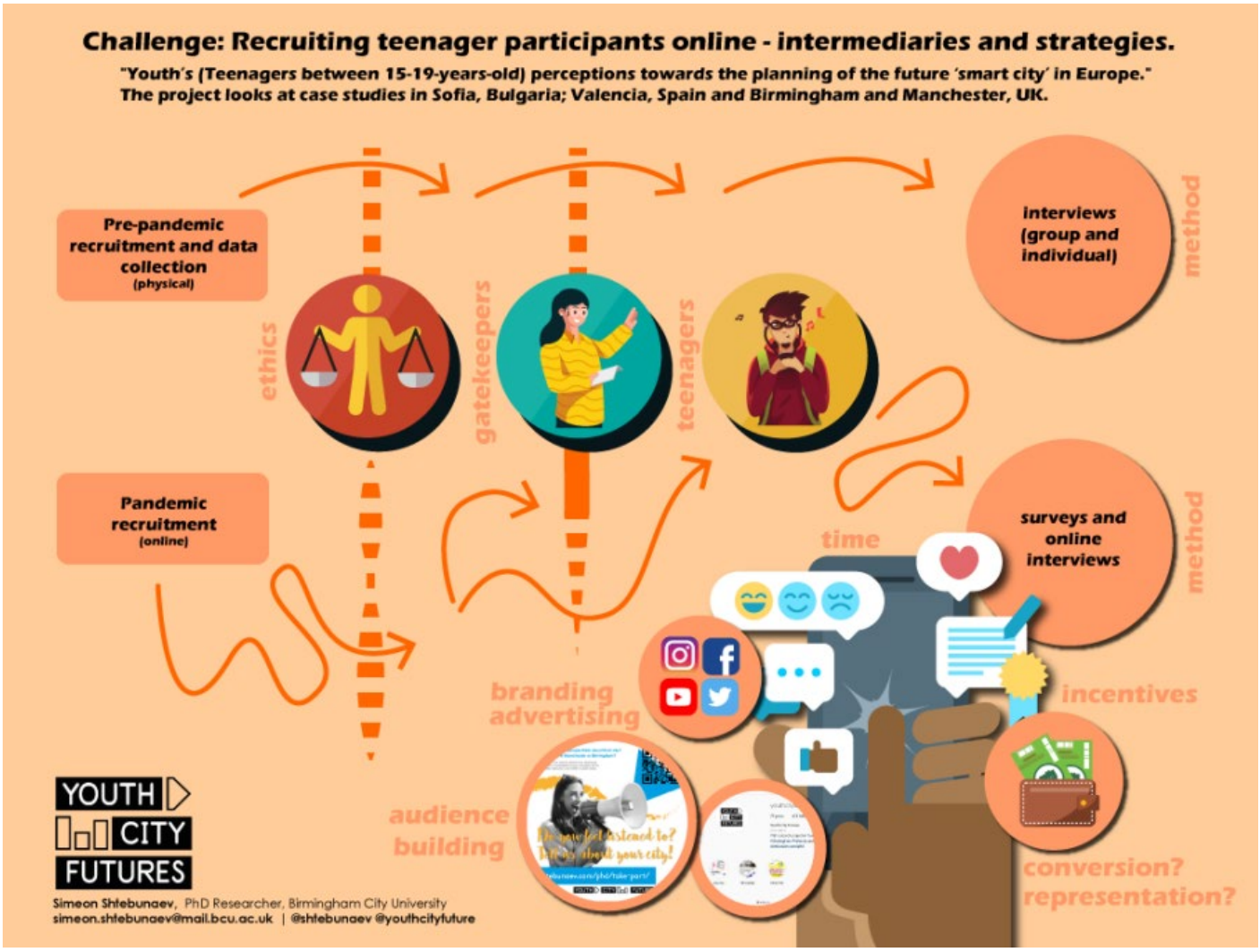

Figure 3.9. Pathways of recruitment

Strengths of the pandemic adaptations

The mixed methodology allowed for an interesting insight into the dual nature of young people's lives both in school settings and online. From a methodological point of view, this presented numerous learnings about what works to attract and retain attention from this age group. The researcher developed an ability to respond rapidly to a changing context and refine and adapt the approach.

Weaknesses of the pandemic adaptations

The pandemic inevitably led to a prolonged data collection phase which stalled the progress of the research. It also raised issues about the comparability between the Bulgarian and the rest of the samples as the need to be contextualised in time. The replicability of the research is discussed later in the chapter, but social media is a rapidly changing landscape, and teenager's behaviours have already shifted. The analysis phase was also prolonged due to the pandemic and teaching commitments which led to a loss of momentum, academic community and ability to report back intermediate results at conferences.

3.6. Methods of Analysis

3.6.1. Approach

The approach of screening cities regarding objective 1 and identifying engagement with youth and smart technologies employed a desktop systematic analysis. The document analysis took place through keyword search policy and content analysis. The aim was to derive an understanding and overview of current planning practices, how they allow for youth participation to take place, where they put value on young people's role in the planning of smart cities and how they form perceptions within young people towards the planning system. The coding process is further analysed in the following Chapter 4, which focuses on the process of selecting case studies.

The analysis of primary data applied approaches from grounded theory. There was no hypothesis tested but the themes emerge from the data and the research. To establish the condition of youth in smart city planning, the analysis started by focusing on the primary case study – Birmingham – then applied the same methods to the remaining three studies and finally compared the emergent themes and hypothesis across all the examined case studies. As such the qualitative data gathered was used to generate new understanding of the existence or lack thereof of such phenomena in smart city planning. Thematic data analysis accompanied the data collection process to induce emerging themes that could drive the research in identifying key thematic narratives. Therefore, the theory is "grounded' in the actual data. (Saldana, 2016). Ethnographical notes from interviews, online observations and processual data collection were collected and consulted to contextualise the themes which emerged. Coding only took place after all four data sets were collected. Using NVivo, open coding was undertaken for each set of case-study data generating a framework of codes. Recording of decision-making took place at every stage of analysis to provide robust justification for research paths taken and emerging hypothesis.

The multi-case study approach in an inductive fashioned aimed to generate themes and illuminate an under-researched phenomenon of youth perceptions towards planning and smart cities. As such the case study approach looked to intra-case study comparison after the thematic analysis was conducted for most of the questions to explore similarities and differences and raise future avenues of enquiry. In some cases, results were combined to provide a general European baseline for themes emerging. The approach was flexible and was led by the primary data as it was analysed – e.g. many youth's smart city priorities emerged as broadly similar which raises a wider research question as to why that is the case. The following sub-chapters explore the approach in detail.

3.6.2. Thematic Analysis

Adopting the approach by Miles and Huberman (1994) the data analysis was broken into three main parts - data reduction, data display and conclusion drawing.

1. Data reduction took place on an ongoing basis in an iterative process, especially in the shift between in-person to online data collection. Gibbs (2007) suggests developing coding definitions as a way of maintaining quality across the process, especially when open coding. In the data reduction phase, qualitative data was transcribed and collated using manual coding and software such as NVivo and Excel. Data was organised according to the interview design criteria and treating every participant as a separate case. Open coding was undertaken as new thematic categories emerged

throughout the study. Once open codes (Saldana, 2016) were generated those were systemised in a thematic framework and a second round of axial coding centred around the key themes took place, developing the final thematic narratives.

In cases of visual data, techniques such as content analysis of visual images and generating thematic codes from the analysis were used. Visual analysis was limited and broadly was used to illustrate or supplement existing themes which emerged in the process of thematic coding. Diagramming was used as a way of systemising patterns in the data and reflecting on the relationships between emerging themes and the theoretical and practical frameworks within planning.

2. Data displays at stages of the process aimed to undertake a detailed organisation of emerging codes and patterns and systemise findings. Questions of depth of understanding emerged, and the discussion chapter deals with contextualising those. Data to be collected in future studies was identified. Multi-case analysis is the prime methods of data display throughout the PhD, attempting to demonstrate thematic comparisons and contracts between different cases, mindful of the contextual differences. Intra-case analysis has also been undertaken in relation to certain phenomena largely driven by the data on gender and geographical location collected from participants. Chapter 5 aims to display the full range of emerging codes; however, the discussion chapter mostly focuses on the top 4 to 6 themes and key outliers illustrating the youth condition.

3. Conclusions were tested against the aims and objectives of the research to uncover the relationship between the demographic and an emerging agenda in the planning of cities. Tactics utilised included noting patterns and themes, clustering cases, making contrasts and comparisons, relating emerging ideas to their context. As an embedded in practice researcher, formal and informal sense-making discussions were held to check findings and understand what the practical implications behind some of the analysis outcomes might relate to.

Memoing took place throughout the data collection, analysis and interpretation process. Written memos were maintained in handwritten form often systemised chiefly by the date and location of where the memo was made. The memos drove the operational side of the data collection and analysis, but where most well used in the interpretation stage. A Miro (software) board was maintained where the most important conceptual jumps were collated and archived informing the discussion chapter.

3.6.3. Analysing Data across Languages

The choice of key countries examined was partially driven by the constraints of the PhD project's timeframe and the researcher's own linguistic skills. It was important to broaden the debate beyond the United Kingdom as the smart city debate in England is largely influenced by two main schools of practice and thought – the US-led and European Union-led ones. Since the European Commission's policy on smart cities was developed in 2013 before the UK's exit from the EU, it meant that there were legislative and political influences which persisted, so choosing cases in the European context allowed for broader comparison.

Looking at the target demographic of 15- to 19-year-olds also meant that it could not be expected that young people at that age will be bilingual or feel confident answering questions in English across all contexts in Europe. Furthermore, linguistic and cultural differences were key in understanding the

perceptions towards urban planning and smart cities – something which might have been hard to ascertain if the data was collected solely in English.

The research undertook a general strategy in conducting the data collection and transcription in the original language of the case study. Data analysis was then conducted entirely in English, with the researcher acting as the translator. The researcher is a native speaker of Bulgarian, has studied Spanish as third language in secondary school and has conducted research in Spain before. In the Spanish context, written research tools such as interviews, drawings, digital interviews and written questions were employed rather than verbal interviews, thus eliminating potential doubt which comes from recorded and transcribed interviews. Information sheets and consent forms were provided in Spanish (as part of the surveys) and Bulgarian (as part of the interviews), together with the originally approved text in English for the participant's own reference. Additionally, the personal website and PhD project's social media hosted posts in both languages, augmented by English.

For the Birmingham and Manchester studies the language of the online survey post-Covid, interviews and analysis were in English. The coding process took place in English as well. For the Valencia study, the language of the survey was Spanish, with an online service used to provide a translation in Valenciano for all questions to provide familiarity, a regional dialect close to Catalan used in Valencia. The final survey results were collected in both Spanish (Castellano) and Valenciano. The coding and analysis were then conducted in English, with the help of translation services and online searches for specific contextual words and phrases. For the Sofia study the language of the survey and interviews were in Bulgarian, conducted in person. The transcribed interviews in Bulgarian were coded then in English, and the thematic analysis was conducted in English. The final open codes were in English. There were specific codes which retained some of the original words from the surveys where those lacked a direct translation in English or referred to a specific contextual issue and it was deemed important to preserve their meaning in situ. It was also decided that quotes throughout the PhD will retain their original language with a translation in English provided.

Table 3.1. Key terminology employed in the project across languages. Source: Author

English	Spanish (*Valenciano)	Bulgarian
urban planning	urbanismo	градско планиране / градоустройство
urban environment	el etorno urbano	градска среда
young people	los jovenes	младежи
teenagers	adolescents (*adolescents)	тинейджър
child	un 'niño/a'	дете
digital technologies	tecnologías digitales	дигитални технологии
smart city	ciudad inteligente	умен град / интелигентен град / град на знанието

Table 3.1. above demonstrates the key terminologies which were present in the survey and their translation in each of the three languages. Inevitably, through the coding process the researcher has reduced some of the nuance which is brought through the original language. For example, in the English and Spanish contexts "smart city" as a terminology has more established connotations, whereas in the Bulgarian context there were at least three different terms which were being used interchangeably meaning smart, intelligent and knowledgeable cities. Some Bulgarian youth demonstrated nuanced perceptions depending on the term used – "умен" (meaning smart) elicited

associations with people rather than systems or concepts, which was reflected in some of the answers.

There are also different urban planning traditions which reflected young people's perceptions of the questions and their answers. In the Bulgarian context urban planning is still very much associated with architecture and the chief city architects who are in effect town planners. There is no word in Bulgarian which describes a "town planner", closest being "urbanist". The words used in this survey closely translate to the act of city-building or an English loanword meaning city planning – eliciting a much more engineering connotation when read out. Similarly, the "urbanismo" in Latin countries carries different connotations to the Anglo-Saxon "town planning" (Hebbert, 2006). "Urbanismo" presents a proactive, design driven approach developing in parallel to the English "planning" in the modern era and in the Spanish context very much influenced by the works of Ildefons Cerda who coined the term.

Similarly, the words for "young people", "teenagers" and "child" elicit different connotations, depending on the cultural context in which they are used. For example, in Bulgaria 1st of June is celebrated nationally as a day of the child, leading to rather positive associations with the word "child" across broad spectrum of ages.

Where these nuances in cultural and language traditions were key to the answers of teenagers and the author picked on them int eh coding process the resulting codes and data reduction reflected them as closely as possible. This means that the researcher's positionality and understanding of those nuances should be considered as a lens through which the coding of the samples relied on.

3.6.4. Analysing Pre- and Post-COVID-19 Data

The delays in the re-design of the research online and re-submission of ethics allowed for the data from Sofia to undergo the first round of open coding. The resulting refinement of the survey which was sent post-pandemic meant the introduction of a few new questions, which were analysed independently. A narrative therefore emerged on questions around the pandemic and self-determination as a child which was centred around the Western European response to the pandemic. This is reflected in Chapter 5 and 6.

3.6.5. Informed by practice

The original research design envisioned an embedded stay in each of the city contexts to allow for further ethnographic observations, however, this did not take place due to pandemic restrictions.

As the author was also a practising youth inclusion consultant and was regularly teaching in secondary schools across Birmingham, as well as, leading a summer school with teenagers in Bulgaria a sense making process was developed. Emerging open themes and interpretations were tested against the author's practice and thematic analysis, especially in organising themes, was influenced by the know-how and interpretation derived from practical experience.

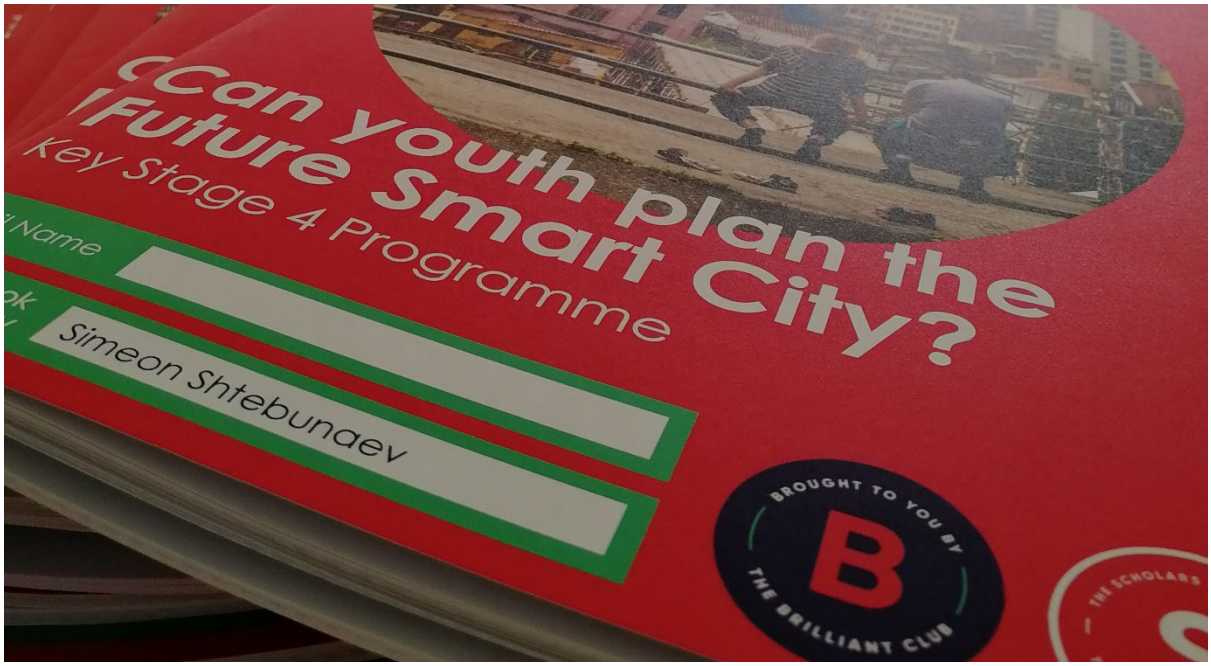

Figure 3.10. Brilliant Club teaching materials

The involvement with the Brilliant Club throughout 2019 and 2021, outcomes of which are explored in Chapter 5 and discussed in Chapter 6, was one such reflective process, the author developed a short course (Figure 3.10) on their PhD, which was delivered to young people across different schools the West Midlands. In effect, a cyclical feedback loop was established where, independently through the teaching and marking of young people's assessments on the same research question, the author was able to reflect and interpret some of the emerging observations. Chapter 5 summarises some of those findings.

In June of 2023, a roundtable of practitioners and academics was initiated and chaired by the author and organised by the Thornton Education Trust (TET is a charity interested in promoting youth inclusion in the built environment). TET collected consent and managed the attendees' list. The author designed a framework of questions for the session, informed by the emerging themes of the doctoral research. The roundtable aimed to establish policy and practical approaches as well as a community of practice around youth inclusion in the UK. Findings of the conference were also presented at the Engage Symposium in October 2023.

This process of sense-making is discussed further in the Discussion chapter but provided a direct practical framing for some of the emerging findings in the research and addressed Objective 6 of the research.

3.7 Who was interviewed and where

In Sofia, Bulgaria, the pre-pandemic context allowed for a more traditional process of recruitment through schools, enabling in-person data collection. In Birmingham, Manchester and Valencia participants were recruited post-pandemic, utilising online methods such as social media and the data was collected via online surveys.

3.7.1. Uptake of the interviews and surveys and demographic breakdown

"It's nice to be asked about the city as a young person, I don't think it happens often enough"
- 16-year-old Male from South Manchester

The final breakdown of participants is presented here. The sample size was broadly consistent across the different contexts. The gender split can be seen in Figure 3.11. Males were more willing to take part in Sofia in the in-person interviews, whereas females were the majority amongst the online survey respondents. This reflects trends in collecting data online, where females tend to be over-represented (Ryan et al., 2019). It also reflects the make-up of one of the schools in Sofia (Professional School of Electrical Engineering and Automation), which as a technical specialised school primarily attracts young males.

As demonstrated in Figure 3.12, there was a lower uptake of the online surveys by 15-year-olds across all samples. This trend can be explained with the requirement for additional parental consent to be obtained. Most of the interviewees and survey respondents were in full-time education across all contexts, with a particular exception in the Valencian sample, where a more diverse picture of respondents emerged. On the other hand, in the Bulgarian education system 19-year-olds have usually left secondary education, which is why they were under-represented in the sample.

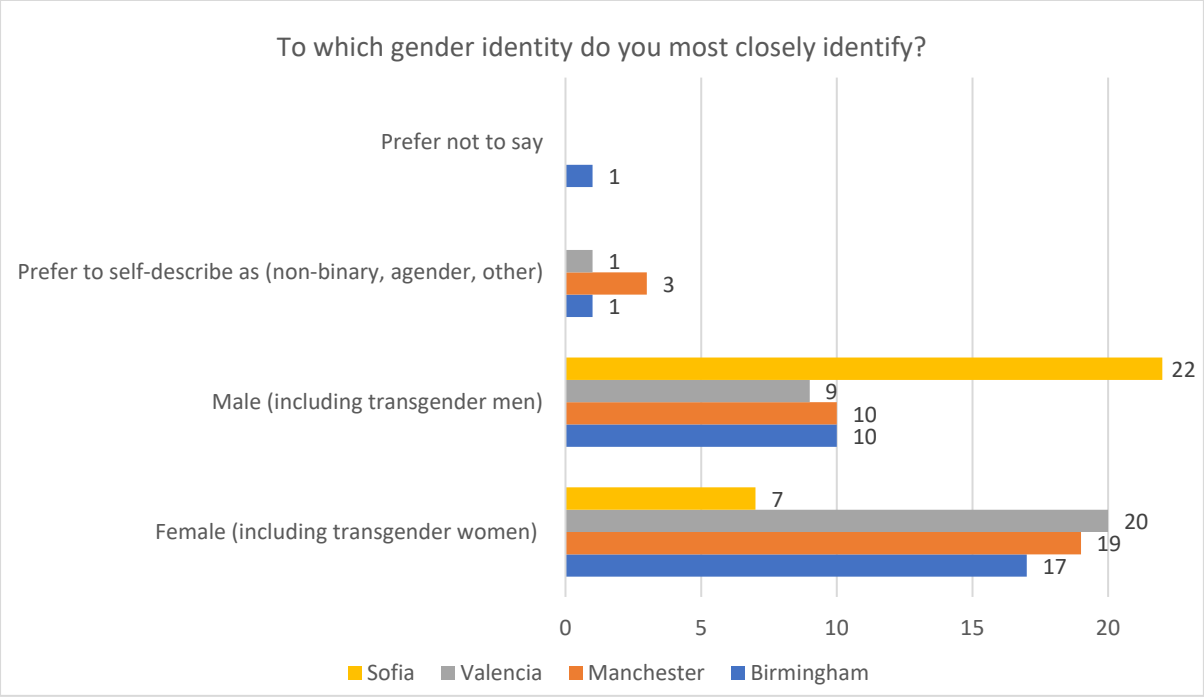

Figure 3.11. Gender Split

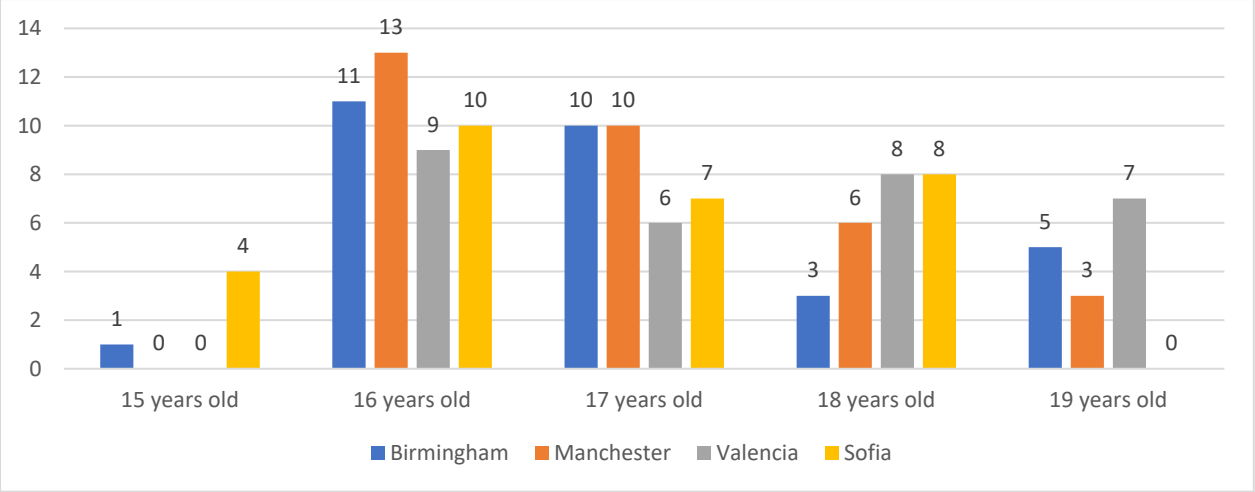

Figure 3.12. Age Split

Most participants in all four contexts were in formal full-time education (Figure 3.13), with some exceptions in the three samples collected online. The recruitment strategy for the in-person sample in Sofia meant that all the interviewees there were in full time education. A question was added to ascertain the geographies of participants in the online sample. Each of the cities was broadly split into five areas – City centre plus the four cardinal directions (Figure 3.14). This was a simplified attempt to monitor the spatial distribution of participants, largely ignoring the complexities of local authority boundaries (e.g. Manchester Council and Greater Manchester) in all four cities but rather focusing on the self-identification of young people that they live in their respective city. Across all case studies a geographic split of participants was achieved, the only under-represented part of a city was the East of Birmingham, where no participants completed the online survey, despite the efforts to distribute it through organisations locally. This potentially demonstrates a barrier to engagement or lack of interest in this particular area which warrant further investigation.

The access to young people in Sofia followed the in-person recruitment and ethical protocol and was conducted through schools, the distribution of which can be seen in Figure 3.15. The full data can be seen in the appendix.

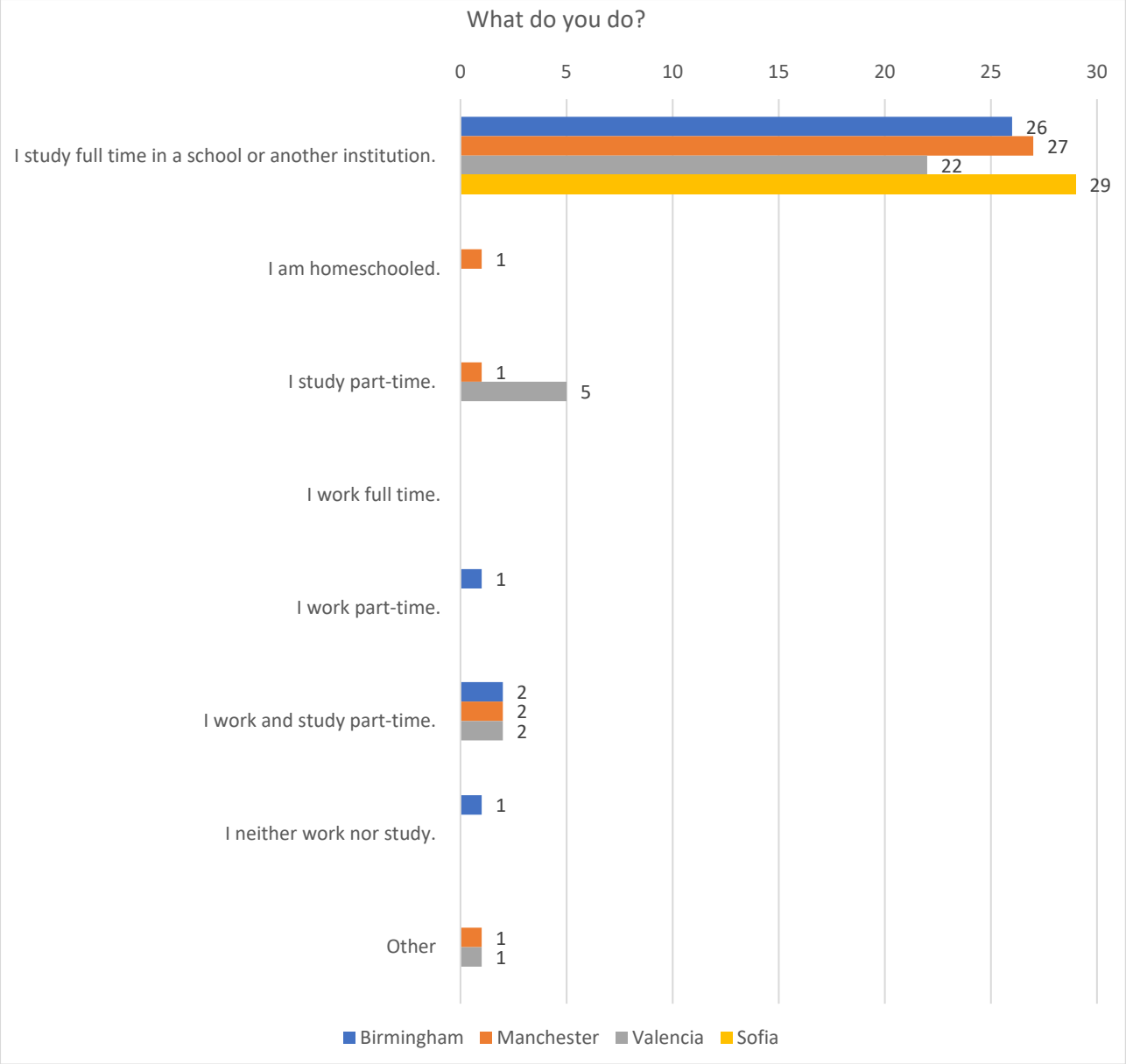

Figure 3.13. Education Status

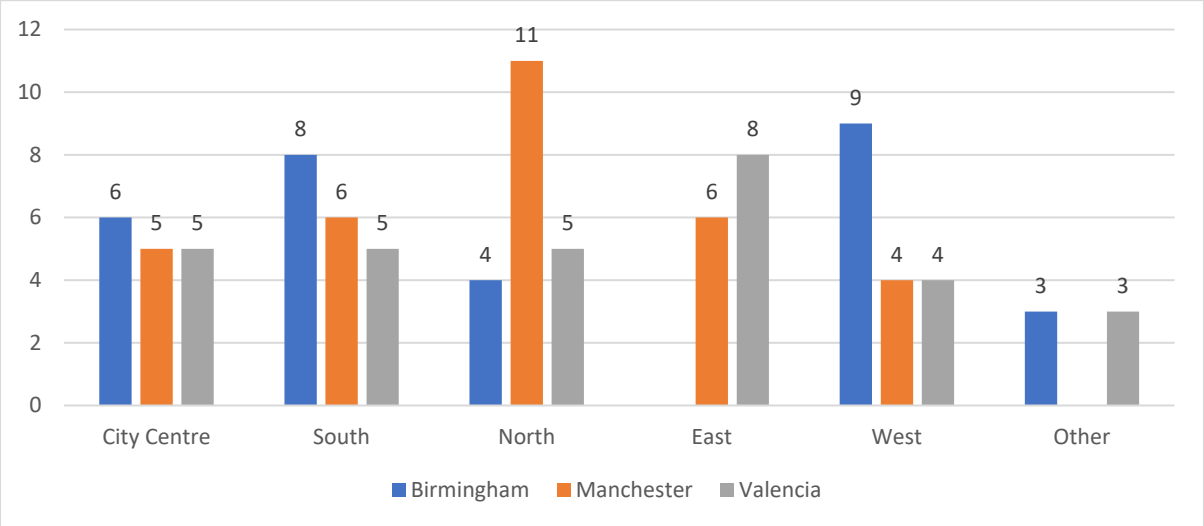

Figure 3.14. Geographical Split

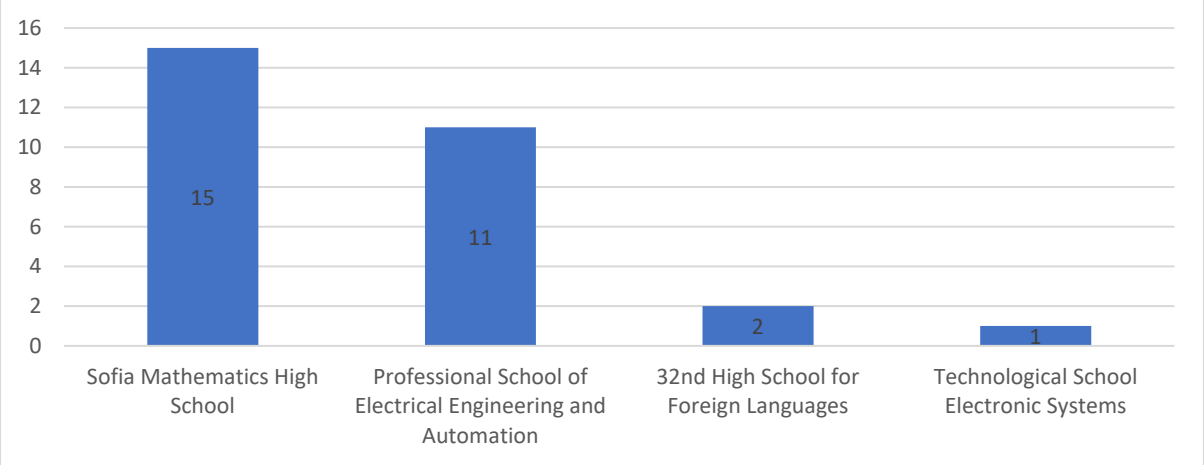

Figure 3.15. Sofia interviewees place of study

3.7.2. Contextual issues

Each contexts presented specific events or access routes that should be considered when analysing data. The details and limitations of methodology were discussed in detail in Chapter 3. In Sofia, interviews were conducted between October and December 2019. The timeframe coincided with the election period for the capital's mayor; therefore, young people did mention statements or news items as part of the political discourse of that election cycle. *In Birmingham, Manchester and Valencia* the survey was primarily distributed through the researcher's networks and Instagram, including the use of ads. This approach potentially skewed the sample towards inter-related accounts and specific online communities (e.g. climate change groups who re-shared the posts in Valencia or interest-based groups) as described previously.

3.8. Ethics

The researcher followed the Birmingham City University ethical requirements and procedures. In devising the ethical approach towards working with children under the age of 18, the researcher consulted guidance from the Market Research Society (MRS, 2012).

3.8.1. Ethical Approval and Process

The process of ethical approval followed Birmingham City University's procedure and underwent review with the Faculty Academic Ethics Committee. (Birmingham City University 2010a; 2010b)

The first ethics form was submitted in May 2019 (Shtebunaev /3049 /R(B) /2019 /May /CEBE FAEC) and a letter requesting clarifications and amendments concerning the work with teenagers, revisions and clarifications. Resubmission occurred in June 2019, and ethical approval was received in July 2019 after amendments to the application and the research process were made.

Following the pandemic an amendment was submitted, with a full re-design of the research (Shtebunaev /3049 /Am /2020 /Jun /CEBE FAEC). Approval was received in June 2020 with key

provisos, specifically requiring parental consent to be obtained in accordance with legislation in each of the countries.

3.8.2. Consent, Confidentiality and Legal Considerations when Researching Youth

Legal considerations
The research adopted the requirement for consent as per the legal framework for medical research with young people in each of the jurisdictions following the guidance from the European Union Agency for Fundamental Rights (FRA, 2020).

Bulgaria
According to the legislation and the non-binding Ethical Code for People Working with Children adopted in Bulgaria, it was assumed that the consent of the parent or guardian is always needed, and consent of the child is needed when the child is over 14. In the case of Bulgaria, it was decided that any child under the age of 18 must consent as well as the consent of their parents needs to be sought. This was done through the Vox Tua.

England
Young people over 16 who pass the Gillick test can consent by themselves, otherwise parental consent is also required. For the purposes of the research, in-person interviews collected parental consent for every participant. Online surveys assumed that a young person who has engaged through the consent and information parts of the survey will be one meeting the Gillick test, however, for under 16s parental consent was sought. This is in line with the Market Research Society (MRS, 2012) guidance for conducting research with young people online. This was the process adopted for the online survey. The legal framework governing consent to participate in research is based on the law governing a child's capacity to consent to medical treatment. (FRA, 2020)

Spain
In the case of Spain, no specific legal restrictions apply regarding seeking parental consent. Consent is not regulated by law, except general rules on personal data protection applying to all data subjects. All three countries have adopted GDPR in national laws, in Bulgaria and Spain the proposed age for digital consent is 14 and in the UK, it is 13. (BERA, 2018).

In-person protocol
Participants were presented with information and a consent sheet adapted for the age range (see Appendices). Interviews with children under 18 were conducted through a gatekeeper organisation. In Bulgaria Vox Tia was asked to facilitate the distribution of consent forms before the research for a conversation to happen in the child's home about signing the consent forms. In three cases, young people under the age of 15 had received consent forms from their parents and expressed the desire to take part. They were interviewed but were made aware as they do not fit the age range, their information will not be part of the main sample of data. The researcher conducted those interviews to prevent feelings or inequality and to respect the wishes of children who wanted to discuss urban planning.

Online protocol
The general consent protocol remained the same with slight adaptations to the online world. Following the guidance for the UK, the consent age was adjusted to 16 years of age, assuming that if

a young person between the ages of 16 and 18 has been able to navigate online to find the survey, read and consent, they pass the Gillick Competence Test and Fraser Guidelines (BERA, 2018). This followed Market Research Society guidelines (MRS, 2012). All of the consent forms were also made available on the doctoral project website[9].

Parental consent was still required for under 16s, and a request was made for parents to call or email the researcher back quoting the survey. Only one 15-year-old completed the survey online in Birmingham which required verification. Consent was obtained from the parent in a phone conversation, the number provided for the parental guardian in January 2021. Participants' initials were provided in the conversation, and they were provided in the survey as a way of verifying the identity of the participant for whom the guardian consented. No other 15-year-olds completed the survey, which might have been due to the extra step to request parental consent.

Data confidentiality
All consent forms were collected and stored securely. All interviews and survey data were coded, with participants receiving a code which will allow them to trace their personal information should they wish to withdraw it or use the online identifier generated. No names were collected; initials were collected where parental consent online was needed. No personal data apart from age and gender was collected. The lowest identifiable information per participant in Sofia was the school or organisation in which they take part. The reason for this is to be able to contextualise the socio-economic, geographical and educational background in which the school or organisation is located. All data was securely stored online on BCU servers and physical copies destroyed.

3.8.3. Risk Mitigation Strategy and Actions

A risk proforma was reviewed as part of the ethics approval application and maintained for record and review. Physiologically and psychologically, the research had very little potential to have adverse impacts on participants. The pandemic was one of the major risk factors, as well as health conditions that impacted the research progress.

Risk to participants
In view of the age range of some of the participants, measures were taken to ensure that there is suitable pastoral support (ideally a third party – teacher, lecturer, etc.) which can be consulted should the participants feel discomfort and wish to exit the research for the in-person interviews. In Sofia those were the school staff and Vox Tua staff.

The research posed minimal risk to participants, as the research questions are concerned with a system of policies which does not have a direct impact on the participants. Areas where risks might lie were within the conduct of the research, managing group dynamics between teenagers, managing expectations and making sure participants are well informed about their rights. No major risks to organisations and private individuals were envisioned or materialised. No incidents occurred.

Safeguarding
The researcher had an enhanced background check from the Disclosure and Barring Service (DBS) at the time of researching, as they were employed with the Brilliant Club and working in schools within

[9] https://shtebunaev.com/phd/resources/

the UK. However, throughout the research, there were no times when the researcher was alone with any participants and all safeguarding procedures of the host institutions were followed. Online safeguarding, as discussed previously, presented a challenge, but the researcher kept strict protocol and no incidents occurred.

Risks to the researcher
The researcher followed Birmingham City University's guidelines on field research and executed the approved protocol proposed in the ethics forms. No incidents occurred.

3.8.4. Access and Verification

Access and Working Abroad
All three countries in which the research took place were familiar contexts to the researcher. All three countries were safe to travel. Originally, there were no major health risks in the countries, but the COVID pandemic changed this and a research trip to Bulgaria on the 14th of March 2020 had to be cancelled. Overall, only two field trips were undertaken to Sofia in October 2019 and December 2019, ultimately resulting in identifying 29 young adults fitting the research sample criteria. Access to participants in the other three city contexts was achieved online as discussed previously.

Verification of participants
Verification of participants in Sofia took place within the school environment in a verbal manner, once the consent forms had been checked by the researcher. Online, verification of participants was assumed through the self-selection process. As discussed previously, the online survey distribution through youth networks and channels, as well as the direct nudging and social media profiling, supported the fact that participants completing the survey were in fact within the target demographic. However, it cannot be entirely dismissed that some participants have provided false information as online verification is hard to prove. As seen in the Figure 3.11 below, some participants provided self-verification proof of having completed the survey, which coupled with social media profiling, provided comfort that the sample was indeed being completed by young people within the target demographic.

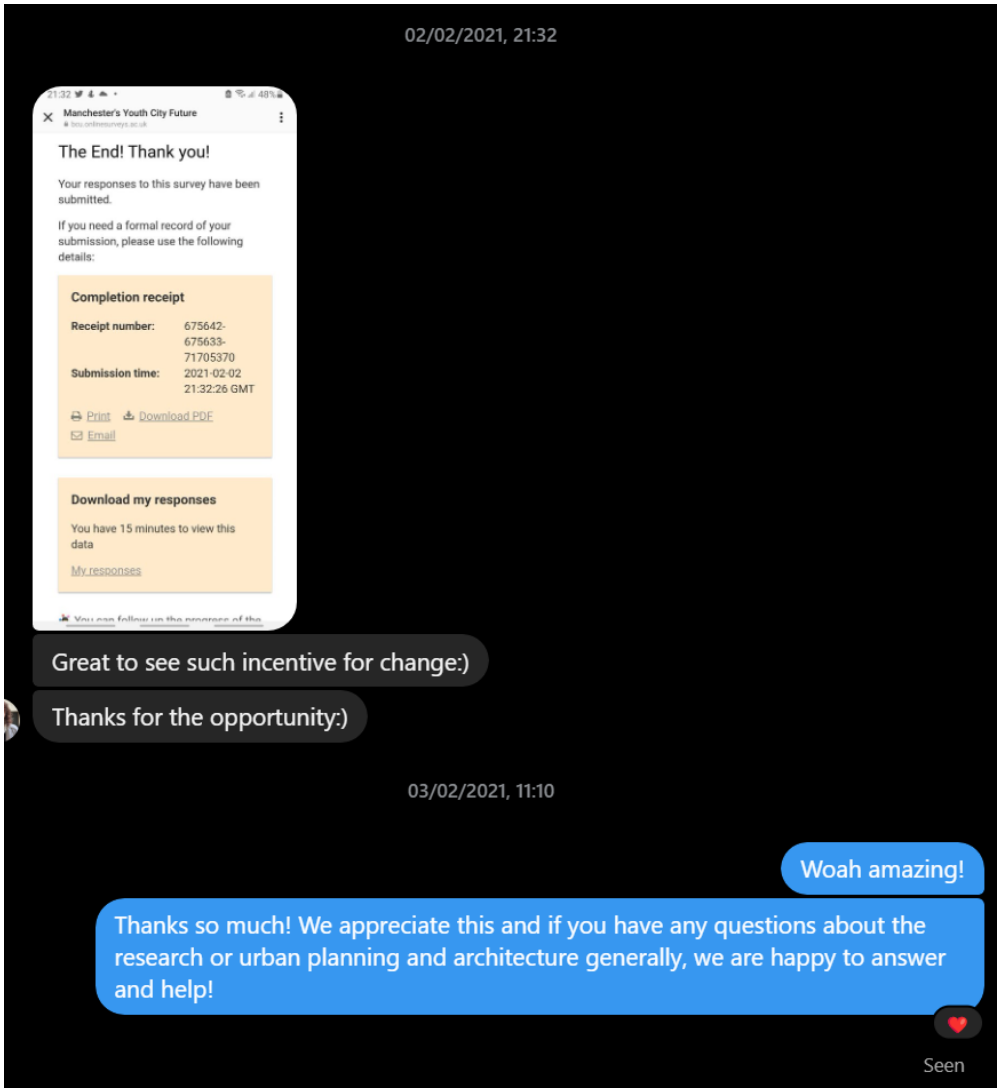

Figure 3.11. Self-confirmation of participants who completed the online survey

Ethical disambiguations

There were several ethical considerations which emerged from this method and which informed the overall research, especially in the context of digitalisation and future cities. Vulnerability of participants and vulnerability of the researcher online were highlighted. Being visible online meant that any account could send any message back – no such occurrences took place, however, it highlighted the unregulated environment online. To ensure transparency the public account of the doctoral project named the researcher and the institution, which meant that young people could understand who was conducting the research. However, this also potentially exposes the researcher to being harassed online. The anonymity of personal identities online complicates recruitment processes. It also enables young people to communicate through unregulated channels. Legislation and ethical process have not fully caught up with the digital lives of young people – in England and Spain any young person over the age of 13 is allowed to make an account and be on social media (FRA, 2020). The data collection complied with existing standards.

The direct access to young people meant that they could be invited to take part in the research and treated as individuals capable of making their own decision to take part in a survey. There were no

gatekeepers such as authorised individuals, who polices the space online. However, it also highlighted the contrast between a highly gated approached in environment such as schools and the loose legislative frame online. It also meant that any account could follow the doctoral project's account or, in fact, trace the researcher's own personal account, raising questions of safety.

Only one account responded in an inappropriate manner to the invitation to take part by stating that they are looking for "a girlfriend over 18". The response was ignored and the account was restricted so that they cannot see publications.

3.8.5. Incentives and Nature of Research

Extractive research and incentives
Research with participants often end up being extractive and didactive, failing to establish feedback loops and meaningful processes with participants. Research with young people can fall into this trap.

Personal incentive
The project's language and focus were concerned with youth voices and youth participation in urban planning. Therefore, the themes of empowerment, relevance, and the focus on the communities of young people provided a strong personal incentive for participation, and this was reflected in young people's reflections on the research.

In person
The original research design did not foresee a financial incentive for young people, primarily due to the lack of a dedicated project budget; however, it aimed to design educational opportunities. The project provided links to downloadable content and links to educational content on the researcher's website, as well as, providing opportunities for clarification and explanation of new terminologies. In the Sofia examples, as the research was facilitated by an organisation that provided extra-curricular learning for young people, the researcher stayed and supported some of the lessons, especially the English ones. Throughout the online survey, educational elements were retained, such as an explanation of what smart cities and urban planning are.

Online
When the method shifted online, it was considered that the educational and learning opportunities from a face-to-face interaction will be lost. The introduction of incentives was necessitated by several other main challenges – the transition to online data collection in a landscape of competing online distractions; the closure of schools; the lack of uptake from the February 2020 'Call for Participants' amongst schools; the quality of data that can be collected online; and the shortened timeframe to which the project was operating. The proposed size of the incentives was considered proportional for the time required to complete a survey or contribute to the one-on-one interviews. It was not envisioned that the incentives will change behaviour due to their modest size and charity focus but will stimulate uptake in recruitment. *Financial incentive through donations to charity*
Indirect financial incentive for participants were introduced. A proposed small amount of £5 per completed survey was dedicated to a charity of the participant's choice. It was considered that this low scale of incentive was not such that the participation, or the nature of the information provided, would be changed. Additionally, in each of the contexts a draw for a small voucher was introduced to ensure completion.

The donations were published on the researcher's website[10] and on social media accounts. Below is a description of those.

Proof of Donations
Between the 4/12/2020 and 07/02/2021 surveys ran in Birmingham and Manchester which attracted 30 and 32 valid responses respectively. To stimulate participation, every survey committed to donate £5 per valid response. One individual in each city were also selected randomly and sent a £20 voucher from Amazon via email provided.

The charity breakdown was as follows:
- St Basils, Birmingham – 15 people, total donation of £75, Transaction ID 4324-9467-9944-7813
- The Birmingham Children's Hospital – 11 people, total donation of £55, confirmation via email
- 42nd Street, Manchester – 13 people, Donation of £65, Receipt reference 216367901
- AKT, Manchester – 11 people, total donation of £55, confirmation via email
- UK Student Climate Network – Combined total of 12, total donation of £60, confirmation via email

In total, £310 were donated to charity in lieu of responses. Gift Aid was applied were option provided. We can provide receipts should you wish to verify our donations. All donations were made on the 07/02/2021.

Surveys were conducted in Valencia between December 24, 2020, and March 31, 2021, each obtaining 30 valid responses. To encourage participation, the survey pledged to donate €150 to UNICEF Valencia for each of the responses received. Individual in Valencia were also randomly selected and sent a €20 Amazon voucher via the email provided. UNICEF Spain – Total donation of €150, confirmed via email on March 3, 2021.

3.9. Reflection on Research Methods

This sub-chapter looks at a reflection of the suitability, validity and limitations of the methodology. It explores whether the data envisioned at the research design stage was collected and what was missed. It discusses the replicability of the approach in the context of the pandemic and proposes alternative research design approaches for future research on the topic of youth participation in future city-making. It also touches on some of the nuances and surprises that emerged about the method, such as the temporal nature of youth and reflections on participant bias and the researcher.

3.9.1. Suitability and Validity

Suitability
The overall approach to selecting a case study method was deemed suitable for the inductive nature of the research, and because there was little previous research done in the topic. However, the multi-case study approach had its limitations, especially in the lack of direct comparability between the different case studies. Chapter 4 goes into detail on the case study selection. The suitability of the approach was also driven by the ability of the researcher to undertake data collection within the

[10] https://shtebunaev.com/phd/take-part/

timeframe and budget for the project.

Alternative approaches which were explored included a single case study of Birmingham with more in-depth ethnographic exploration of the lives of young people. It was deemed, however, that the importance of comparing contexts in different stages of smart city development and the perceptions of young citizens to those will be of more relevance to the research question and a better understanding of emerging themes can be achieved in a multi-case study approach

A comparative approach was also considered in contrast to the exploratory multi-case study approach; however, the diversity of conceptual ideas which the research question tackles, the lack of unified smart city and youth inclusion approaches and theories and the lack of a hypothesis made this an unsuitable approach. Future research, however, should take a comparative case study approach, especially on the issues around youth awareness and participation in urban planning.

Quantitative approaches were dismissed early on, as there is little data collected around the participation of citizens in urban planning across, as demonstrated by the lack of SDG indicator 13 on public participation. (UN Habitat, 2024a) Comparable quantitative data on youth participation across different national context, or indeed, within national contexts does not exist.

Validity
Questions of validity emerge in the use of qualitative data. Consistent data approaches, multiple analyses and iterative testing of hypothesis which emerge aimed at making sure that the research is well documented and replicable, and able to withstand alternative explanations. (Braun and Clarke, 2022) In this case, the same questions were asked in each of the contexts, albeit the method changed. Utilising multiple sources of qualitative data, different types of evidence (not only verbal or written, but visual, digital and sensory as well) and data triangulations were continuous safeguards against false assumptions and bias.

3.9.2. Limitations and challenges

As exploratory case study research, there are obvious limitations to the generalisation of the data. Although some similar trends were observed in the answers across each of the contexts, the samples were not representative of the specific youth population in each of the cities, therefore, the data provides an opportunity to interrogate the perceptions of teenagers but mostly brings value in the specific trends rather than claiming generalisation. The level of representation of the 15-to-19-year-old group within the sample was a key limitation. Due to the convenience sampling techniques, the final sample was not representative of the cities, which suited the inductive nature of the research.

As the research was looking at three different national contexts, it was determined that collecting special category data beyond gender and age would be disproportionate for the level of analysis performed. This is a limitation to the research, and future research should aim to expand the demographic data collected and propose analysis approaches which can disaggregate trends. There was also difficulty in understanding the cultural context of ethnical data; however, this would clearly be an issue in more multi-cultural contexts.

Quantitative data background was non-existent for the specific issue of youth inclusion, however, the research design and specifically questionnaire design didn’t use standard questions from wider

surveys to serve as a benchmark. In future studies, it would be good to align questions in the survey with larger databases such as Eurostat or Understanding Society Survey in the UK, allowing in future research a baseline comparison between younger populations and overall population. However, built environment and planning questions are not usually included widely in such data.

The study provides a critique of participatory practice and smart city planning based on the views of teenagers interviewed, exploring general trends across the four case study cities – Birmingham, Sofia, Manchester and Valencia, however, does not take a representative sampling approach or comparative analysis. In-depth analysis across the four contexts can relate the findings back to individual cities policies. A larger scale study could validate if the trends explored here are observed throughout youth populations and are indicative of broader generational sentiments.

The study collected demographic data but did not set out to explore intersectional issues beyond the notion of age. This means that the experiences of teenagers might be influenced by their socio-economic, ethnic, educational or other backgrounds which are not fully understood within this project. Collecting and comparing this data in future studies can further interrogate the trends presented in Chapter 5. The research tried to conceptualise linkages between several fast-paced research fields, however current practice and literature is moving quickly. The link between smart city and planning was under-explored due to not being the focus, although Chapter 4 touches on that relationship. Future studies can address this limitation by designing research projects testing of the interplay between smart city visions and local planning strategies, evaluating their overlaps and spatial impacts. The study also focused on the smart city imaginary as presented in smart city visions but did not evaluate their effectiveness on the ground beyond young people's perceptions and priorities.

The shift in methodology from in-person to online methods provided a challenge to comparability, however, provided an insight about the validity of both in-person and online data collection. Future research design should look to hybrid models of interrogation, allowing for multiple data sources about teenagers' experiences of the city to be collected.

The researcher did not work with young people to interpret the findings due to the challenges around timing and resourcing; however, the data analysis and interpretation stage would have benefitted from youth participation in the process.

3.9.3. Replicability

The methodology is replicable insofar as a researcher can follow the same protocols and reach a similar number of young people across each of the contexts to solicit their views. Similarly, a review of the smart city visions across each of the three contexts and their attitude towards young people can be easily replicated.

Future studies should employ a hybrid approach in each of their case studies. As demonstrated, there were benefits from both the in-person approach in Sofia and the online shift in the pandemic, especially in a much fuller understanding of the ethical and practical challenges of working with

young people in person and online. However, a hybrid approach to youth engagement running simultaneously in each case study under normal conditions will allow a better understanding of young people's dual lives. It also allows for anonymous views to be collected, augmented the recruitment through gatekeepers and avoids the power dynamics of in-person interviews.

The contextual drivers of change also need to be considered. The examined phenomena are not static and have different cycles of change, some quicker than the ability of a researcher to design and execute a project, as seen by rapid shifts in future city development, public participation and urban planning processes are not static domains in each of the countries. We can see rapid development in each of the conceptual domains, in England, planning reform has been high on the agenda in the Labour government elected in 2024. Across Europe, child-led initiatives have been gathering attention, but teenagers are often overlooked. Similarly, global discussions around democracy, rule of law and public participation have shifted young people's perceptions. It is important therefore to note that whereas the method is replicable, most likely the outcomes present a specific snapshot of the development of youth participation and future smart city planning in Europe. Longitudinal studies employing similar questions would provide the best ability for comparison and trend detection.

3.9.4. The Temporal Nature of Young People

The majority of the young people interviewed in 2019, 2020 and 2021 would have moved outside of the 15- to 19-year-old age range by the time of the publication of this research. This doesn't mean that their views are not indicative of a broader generational perspective or reflective of the experiences of a human at a similar stage of development in the contexts described. However, major generational traumas such as the pandemic educational attainments could have shifted the new generation of 15- to 19-year-olds' views. In the English context (and to a large degree internationally), the post-pandemic crisis in housing provision and affordable rent is disproportionately hitting young people and there is a change in attitudes. (Cournède and Plouin, 2022) The heightened politicisation of housing and technological advancements will inevitably bring the topics of urban planning and future cities to the forefront of young people's minds either by personal experience or consumption of news and political narratives. It is important, therefore, to consider which nuances and answers tackle temporal issues which might shift due to changes in generation, ideas and immediate context and which tackle structural and societal issues which might impact following generation in a similar way. Chapter 6 discusses those by re-framing the Ladder of Participation theory.

The temporal nature of youth needs to be considered therefore when examining the data but also when making recommendations for young people. This doesn't take away from the need to look at that demographic at the first place as meaningful participants in the planning of future cities. A more cyclical and reflective process of both collection and analysis of youth perceptual data can strengthen outcomes, as different cohorts of young people experience different contextual pressures. It is hard to oversimplify generations such as the shorthand of Gen Z and Gen Alpha, when experiences might differ year on year. Young inclusion and participatory frameworks need to be contextualised, explored further in chapter 5 and 6.

3.9.5. Reflections from Participants

Young people were asked to reflect on their participation. There was an overwhelming sentiment that this is the first time that they have been asked questions about their built environment.

The survey was generally seen as an approachable and interesting one, focusing on a topic that some young people might have not considered or had opportunities to discuss:

"I found it to be a very interesting survey" [Me ha parecido una encuesta muy interesante]- 19-year-old Male from Valencia City Centre

"I like that you do this kind of thing because there are people who might be." [interested Me gusta que hagáis este tipo de cosas por qué hay gente que puede estar interesada]"- 16-year-old Female from East Valencia

"I think there is a lot of disregard around young people and I get the impression that quite a lot of adults are dismissive towards our views and actions. It would be really good to see adults listening to what we have to say and treating us as equals rather than children, especially as we are the ones who will take over running cities in the future. So, it's nice to have this survey to let us be heard :)" 17-year-old Female South Birmingham

On the structure of the survey, there were no major concerns and some reported enjoying having gone through the process:

"I think it was a well-constructed survey that hit the key points and didn't make it long and boring like many surveys online." - 19-year-old Male South Manchester

There were some specific additions to the questionnaire that teenagers specified, such as having a more creative approach and bringing forward themes:

"Maybe put more emphasis on inclusivity" - 17-year-old Female from North Manchester

There was a strong interest in following-up both in receiving feedback but also taking action. The importance of this project bringing tangible change to young people's lives was also stressed.:

"any other ways we can show our opinions and actually be heard and make a change." 17-year-old Female North Manchester

I hope this serves some real purpose and improves cities, making them more sustainable [Espero que esto sirva para algo de verdad y que mejoren las ciudades de verdad haciendo que sean más sostenibles] 17-year-old Female from Valencia

"I loved this survey and even more so that it expressed that I would like to see more sustainable ideas for the environment " [*Me encanto esta encuesta y aun mas que exprese que quisiera ver mas ideas sostenibles en el medio ambiente*]""- 19-year-old Female from North Valencia

3.10. Conclusion

To understand the role of young people in the planning of the future smart city, an exploratory multi case study approach was selected relying on collecting qualitative data, observation and building

thick descriptions, reflecting the philosophical positioning of the research in critical theory traditions. Informed by critical pragmatism in planning, the research also employed document analysis, exploring smart city strategies across England, Bulgaria and Spain, to understand how the top-down view of young people defines their role in policy. Adopting a critical perspective informed by the interplay between practice and research, the study acknowledges the role of the researcher and is informed by and benefits from engagements outside of academia within youth inclusion, planning and design practices. Throughout the research, the chapter demonstrated an engaged approach to sharing findings and learnings in a proactive approach.

The methodological approach towards collecting the primary data shifted from in-person semi-structured interviews in Sofia to online surveys in Manchester, Birmingham and Valencia, due to the advent of the COVID19 pandemic. This shift provided a valuable comparison between two different ways of engaging with young people research. It raised key ethical questions about the deregulated online landscape versus the heavily monitored school environment. There are key questions to be explored further about the role of the researcher in a digital environment, the different skill set required to recruit and attract teenagers' participation online and the validity of data collected online.

The data collected in three different national contexts also raised challenges of linguistic understanding of new terminologies such as smart cities and posed methodological challenges to analysing and systemising themes across different languages. Future studies could explore a collaborative approach to analysing the data with participants in their native context.

Chapter 4: Case Study Selection and City Context

Visions of Future Cities – Smartness and Youth in the European Context

4.1. Introduction

This chapter looks at the approach taken towards the selection of case studies. The chapter expands on the overview of the multi-case study approach described in the methodology Chapter 3. It defines the approaches and terminology adopted, and how this project understood the future city visions in practice specifically in relation to smart cities. This chapter presents an evolution of the selection of the countries and case study cities. It presents the understanding of youth-friendly policies which underpinned the project.

The chapter provides an overview of the different smart city policy contexts in Bulgaria, Spain and England. The case study selection process is presented in detail, including the process of screening the different cities across the three country contexts. It presents in detail the selection pools and the process of selection of the three cases in relation to Birmingham as the base case study. This chapter bridges the methodological approach but systemises the case study specific data and outcomes.

The chapter contains an analysis exploring how the smart city policies interplay within youth visions and smartness across three cities and presents an overview of the state of smart development 2019 in the pre-pandemic. It presents how young people are seen from the vantage point of smartness, describing the emerging themes.

4.2. The multi-case study approach - evolution of research

The project focused on European-led smart city initiatives. As demonstrated in the literature review, the visions of smartness worldwide were highly focused on Asian, American or European-led initiatives and cities. There is a valid critique about the focus on European contexts, especially in the literature on smart cities and the need for focus on empirical studies in the Global South as presented in Chapter 2. However, the researcher's knowledge and positionality were embedded within the European context, therefore it was decided to focus on studies of contexts which were familiar, to avoid ethical challenges. Europe was considered the primary area of focus for the research due to proximity, feasibility and familiarity with which the researcher had with that context.

Originally, proposed case studies were considered in four main locations – the United Kingdom (Birmingham, Manchester or London), Spain (Santander, Madrid, Bilbao, Valladolid, Malaga or Barcelona), Italy (Milan, Trento) and Belgium (Brussels). The reasoning was the strong national framework in each country driving digital and smart city initiatives or their proximity to policy making in the European context, thus allowing for the comparison of successful and unsuccessful initiatives which have had time to develop. The author had also conducted research in many of the cities in Spain mentioned above (Shtebunaev, 2017). Potential expansion of the study was considered within other European contexts. On one hand, comparisons with the Scandinavian context, where smart cities have developed in more proactive planning systems, were deemed to provide the opportunity to explore contexts where citizen engagement practices might be more

advanced. Conversely, cases in the Eastern European context, where initiatives were getting off the ground, were considered as an opportunity to provide a view from a less-researched perspective.

The project proposed that Birmingham be taken as a prime case study as it provides the best opportunity to engage with, and the findings are presented in a way that primarily informs the English planning system. Projects in the UK (Caprotti ,2015; 2018) had explored the distribution of cities in the UK (DBIS, 2013) and examined those against a set of criteria and identified Birmingham as a city with a smart city agenda based in urban governance. The issue of Brexit was present as a key consideration for the research, with challenges in urban governance.

However, due to feasibility and the duration of the research project, and the nature of a a lone researcher undertaking a doctoral project, it was considered that familiarity with the language and previous research would enable better decision making. Feasibility of conducting research with young people in their native language was important for the quality of the research. Research context in countries had to allow either communication with teenagers in English, which in most contexts could be achieved to a certain degree or in Bulgarian or partially Spanish, which the researcher possessed as languages. Ultimately, it was decided that the research will focus on Birmingham as a starting case study and explore one additional city in each of the three contexts of England, Spain and Bulgaria, providing an opportunity to explore trends internally in England and externally with two contexts of less and more advanced smart city adoption.

4.3. Selected Country Profiles

This chapter provides a broad overview of the directions of Smart City agendas and visions and youth as stakeholders in European Countries (England, Bulgaria, Spain), further to the theoretical context of the smart city presented in Chapter 2.

4.3.1. European context

In Europe, the European Commission (2025a) sponsors Smart Cities and Communities lighthouse projects. These projects are launched with the aim of encouraging collaboration and cooperation between the public sector, the private sectors, and civil society to seek solutions to practical challenges, such as energy and resource efficiency. The European Commission (2025b) also manages the Smart Cities Marketplace.

In the European context, smart city policies often involve multilevel governance, which increases support for smart city initiatives by providing policies and budgets at different government levels. Establishing a supporting framework that includes a shared vision statement and long-term goals is identified as a success factor for shaping responses at the urban level. This long-term vision helps set out where future city development should go and provides ways to relate responses to urban development aspirations. Integrating goals into a long-term strategic vision for urban development is a critical step in supporting the transition to smart cities.

European cities often receive funding from national or European reserves, which means that smart initiatives can be developed through competition between cities. Citizen engagement and participation are discussed in the context of European smart cities (Angelidou, 2016; Bosch et al., 2017). Action themes for smarter and inclusive city development in Europe incorporate challenges related to the physical environment (such as buildings and transport) and the social dimension of

urban life (such as inclusion and engagement). These aspects are considered crucial for people-centred city development.

Smart city public policymaking in cities around the world, including in Europe, often involves comparison and referencing of other smart city policies. For instance, Barcelona has referenced ideas and perspectives from other cities like London, Amsterdam, and Helsinki, including their work on the digital divide and AI technology for public services. This process is supported by "informational infrastructure", such as conferences like the Smart City Expo World Congress (hosted by Barcelona) and involvement in international networks like the Cities Coalition for Digital Rights. This infrastructure encourages and supports inter-urban comparisons and referencing.

The Europe 2020 strategy for smart, sustainable and inclusive growth adopted in 2010 largely set the stage for smart city adoption across the continent. The smart growth agenda included smart specialisation. (Russo et al., 2014) In 2020, a new proposed mission for smart and sustainable cities was established, a core mission as part of Horizon Europe. The Cities Mission adopted as one of the five core EU Missions, aims to involve local authorities, citizens, businesses, investors as well as regional and national authorities to deliver 100 climate-neutral and smart cities by 2030 and ensure that these cities act as experimentation and innovation hubs to enable all European cities to follow suit by 2050. Cities were able to bid to be part of the pilots. In 2023, the final list was announced. In Spain, the cities selected included Barcelona, Madrid, Seville, Valencia, Valladolid, Vitoria-Gasteiz, Zaragoza and inn Bulgaria those were Gabrovo and Sofia. As associate member in the UK only two cities were selected - Bristol and Glasgow. (European Commission, 2025c)

Two of the four case study cities examined in this project (Sofia and Valencia), therefore have committed to at least 2030 to ensure adoption of smart city policies. The final 112 selected cities were invited to develop Climate City Contracts, which include an overall plan for climate neutrality across all sectors such as energy, buildings, waste management and transport, together with related investment plans. Climate City Contracts are co-created with local stakeholders and citizens, including, in some cases, youth projects. In 2024, 53 cities received the label of having completed their Climate City Contracts, including Valencia in Spain. (European Commission, 2025c)

4.3.2. Spain

Out of the three examined national contexts, Spain had the most developed policies. The evolution of smart cities in Spain has been driven by national initiatives like the Smart Cities National Plan (SCNP) and the Smart Territories National Plan (STNP) (Orejon-Sanchez et al., 2022). The SCNP, launched in 2015, included funding programmes such as the First Convocation of Smart Cities (FCSC), Second Convocation of Smart Cities (SCSC), and Convocation of Smart Islands (CSI). These initiatives focused on ICTs, e-governance, and urban planning, marking the first generation of smart cities. The STNP, introduced in 2018, expanded the scope with programmes like the Convocation of Smart Tourist Destinations (CSTD) and Convocation of Smart Buildings (CSB), emphasising tourism, environmental sustainability, and human capital. Over time, Spanish cities have progressed from technology-centric initiatives to more holistic approaches, integrating social cohesion, international outreach, and environmental goals, aligning with the second and third generations of smart city paradigms (Orejon-Sanchez et al., 2022).

The Spanish Smart Cities Network – RECI[11]was created in 2011 to promote the development of smart cities in Spain and "exchanging experiences and working together to develop a sustainable management model and improve the quality of life of citizens, focusing on aspects such as energy saving, sustainable mobility, e-Government, attention to people and security". It is an open network in which more than 140 municipal councils participate and aims to promote the economic, social and business progress of cities through innovation and knowledge.

4.3.3. Bulgaria

Bulgaria's smart city strategies also broadly follow the European Union. The Innovation Strategy for Smart Specialisation of the Republic of Bulgaria (ISSS) (Bulgarian Government, 2019) is the strategic framework for sustainable development based on research and innovation, on the territorial capacities and ambitions of the regions and broad stakeholder participation. The ISSS examined in this project was the one covering 2014-2020, with an updated version for the period of 2021-2027 adopted. The strategic document includes policies, supporting both technological and non-technological innovation, and aims to stimulate the transformation of society and the economy based on data and knowledge and geared towards Industry 4.0, as well as supporting the green transition. (Bulgarian Government, 2025). Smart City Plans in the country are developed alongside the national strategy for intelligent specialisation.

4.3.4. England

In England, smart city plans were developed primarily because of inward investment on an ad hoc basis. The Department for Business Innovation and Skills 2013 produced a series of papers which popularised the notion across the UK. As part of Innovate UK, the UK's research service, in 2013, catapults were set up to promote specific topics and serve to coordinate and attract research funding. The Future Cities Catapult (Harris and Kearney, 2021), established and merged in 2019 to become Connected Places Catapult, is the agency which has pursued the topic of smart cities.

Political buy-in of the topic has been mixed. An All-Party Parliamentary Group on Smart Cities existed in the UK between 2015 and 2019 and has since disbanded. Funding for smart city initiatives also seems to be focused mainly on this period. The Technology Strategy Board (now Innovate UK) invested £34.5 m in demonstrating the potential benefits of smart city technologies. Feasibility studies in 30 UK cities each received £50,000. (Harris and Kearney, 2021)

4.4. Case Study Selection

This sub-chapter explores the selection process, the definitions and approaches taken, as well as the final outcomes and case studies selected.

4.4.1. Defining cities of interest

The three countries explored have different geographies and populations. The three countries straddled the East–West divide within Europe. Three cities, one in each national context were

[11] https://reddeciudadesinteligentes.es/en/

selected due to their comparability in population size with Birmingham, the host city of the research and the primary case study.

The process of screening and city selection was undertaken after examining all large urban settlements with over 100,000 population according to the Eurostat Functional Urban Areas in each of the countries and selecting the local or regional authorities which covered the population centre. The local authorities' boundaries not always aligned with the functional urban area; however, the largest local authorities were selected.

This approach led to the initial review of 17 FUAs in Bulgaria, 80 FUAs in Spain and 89 FUAs in the UK which finally looked at the policies of 18 local authorities in Bulgaria (Adding Gabrovo Municipality which was below the threshold but had smart city strategies in preparation), 58 in Spain and 114 in England.

4.4.2. Defining 'Smart City' Visions

The study took a loose approach to defining what a future 'smart city vision' is, considering the different approaches that local authorities across the national contexts had taken. Largely, the self-definition of the local authority had been used. In some cases, there were notions of the smart city vision embedded in other strategies, such as digital of comprehensive urban strategies (especially in the Spanish context) or in approaches to the Local Plan or planning documentation. Those have been considered, if they are indeed espousing a vision for a new spatial arrangement of the city. It was necessary that smart city 'goals' self-described in the document should exist, covering a significant part of the functional urban area for it to be considered. If 'smart city' was purely mentioned but held no relevance to the goals with the vision or strategy document (be that a stand-alone smart city strategy or a local plan) the city was not added in the eligibility pools.

Desktop study and secondary data analysis available on smart city metrics (Gil-Garcia et al., 2015) and municipalities' websites (Caragliu et al., 2011) are the main methods employed in analysing the cities in selected countries.

The shortlisting of "visions" took a systematic approach in the summer of 2019. The researcher conducted a screening process. Only publicly available documents on local or regional authorities were accessed using the integrated search bar within each of the local authorities. This approach was taken to ensure that the information gathered is also accessible to residents of their respective cities. Google Scholar and Google were used to supplement the search, including the name of the city and adding the terms searched in cases where the local authority's website did not have an operational in-built search function.

The terms searched were: in the English context: 'future city', 'smart city', 'smart cities', 'digital agenda'; in the Spanish context: 'smart city', ' smart cities', 'ciudades intelligentes' ' ciudad intelligente', 'agenda digital'; in the Bulgarian context: 'smart city', 'smart cities', 'умни градове','интелигентни градове', 'градове на знанието', 'дигитални градове'.

In all cases, a secondary search was undertaken at the end on summer 2019 using web-search engines, after reviewing the Local Authority's website to ensure that no new items or smart city strategies were resting in consortiums of which the LA is a part but not featuring on their website.

4.4.3. Exploring Youth Focus

The focus of the screening process was to identify and compile a list of key cities in the European context with smart city agendas identifying youth as key stakeholders, which have initiatives with direct impact on youth demographics, or which lack a defined smart city strategy but promote youth initiatives which utilise innovative technologies. This objective led to an analysis of the interplay between smart city agendas and youth participation in urban planning across the examined future city visions in the three examined countries. In each of the cities examined, once a smart city vision or strategy was identified it was screened for mentions and goals targeting young people. In England, leading to search within the documents for the words: 'youth', 'young people', 'young citizens', 'teenager', 'teenagers'; In Spanish documents the words 'juventud' or 'juventut' were searched, as well as 'jovenes','juvenil'; in Bulgaria the words searched were: младежи', 'младеж', млади хора' ,тийнейджъри'.

If a goal was not found within the strategy, a secondary search on the Local Authority's website was conducted to establish if there was a youth strategy or plan within the city. In those strategies a similar search was conducted, but looking for mentions of digital or smart city agendas.

4.4.4. Screening process and eligibility criteria

The Figure below demonstrates the approach which was undertaken for selection. Four major pools were developed in which cities were distributed.

In Pool A, the city had a smart city strategy or a vision with smart city goals at the time of searching, this pool was further broken down to consider the different nuances of the role of young people. The breakdown into three subsections of pool a, focused on the interplay with Youth Goals. Pool A1 is an LA in a FUA with a clear strategy or vision which incorporates clear Youth Goals, Pool A2 encompasses cities where there are youth projects but no clear strategic commitment to young people and pool A3 encompasses projects where there are a smart city vision and a separate youth strategy but no direct overlap.

A middle tier was established – Pool B for projects and areas which returned some reference to smart city visions in preparation or in discussion; however, no document was found. It is expected that in some of those cases, a strategy might have been implemented already. Pool C looked to the local authorities where no clear reference to either preparing or having a smart city vision. A final Pool D was established for project or local authorities which might not fit any of the previous descriptions, but which still have a project, imitative or consideration towards youth and smartness.

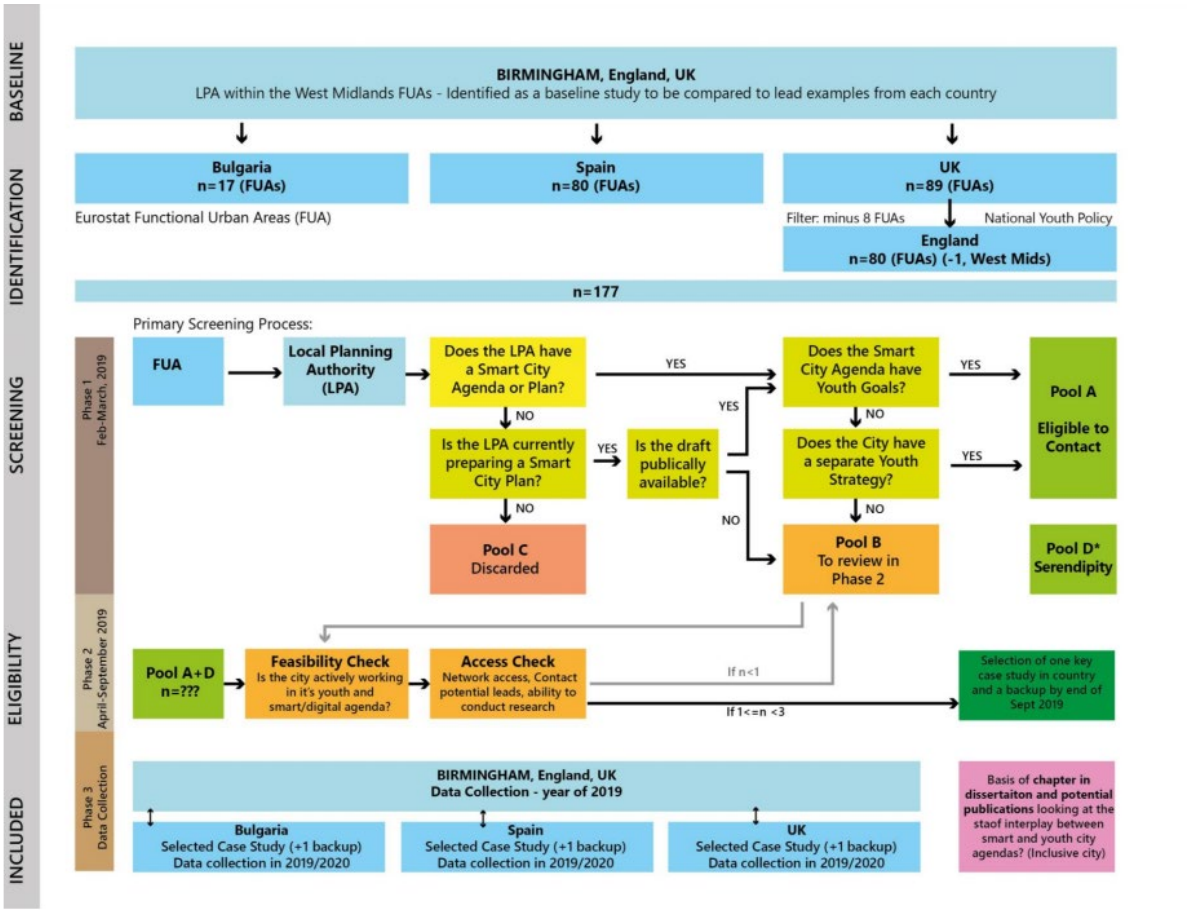

Figure 4.1. Selection processes

The period of screening and analysis was between March and December 2019. In a fast-moving field, it is important to note that the examined city strategies would have developed further, however, it is plausible to infer that their implementation from 2019-2021 would have had a chance to influence the young people which eventually were interviewed in each city. Below is the result of the eligible cities in each of the pools across all three contexts.

	Adopted Policy		Policy in prep / unclear		N/A or not ready		No		Individual Initiatives
Pool	Pool A1	Pool A2	Pool A3		Pool B		Pool C		Pool D
About	Smart city Strategy with clear Youth Goals	Has Smart City Strategy with Youth Projects	Has a Smart City Strategy and a Youth Strategy but no direct overlap found.		Strategy in preparation but not fully available or there is an incomplete Digital Strategy		Doesn't have a Smart City Strategy and it is not actively preparing one		Individual initiatives that target youth via smart technology
ENG	Birmingham*	Bristol	Basingstoke		Barnet	Medway	Ashford	Hounslow	Barking & Dagenham
	Brent	Croydon	Black Country LEP		Barnsley	Middlesborough	Bedford	Ipswich	Camden
	Ealing	Exeter	Bracknell Forest		Bath	Newham	Bexley	Kingston & Chelsea	
	Greater London Author	Leeds	Brighton and Hove		Blackburn	Norwich	Blackpool	Lambeth	
	Greater Manchester	Manchester*	Cambridge		Bradford	Portsmouth	Bournemouth	Mansfield	
	Greenwich	Milton Keynes	Colchester		Carlisle	Richmond upon Thame	Bromley	Merton	
	Islington	Peterborough	Coventry		Chester	Sheffield	Burnley	NE Lincolnshire	
	Kingston Upon Thames	Southwark	Doncaster		Enfield	Solihull	Cheltnham	Nothampton	
	Luton	York	Gloustershire		Harrow	Sutton	Chesterfield	Preston	
	Newcastle		Guildford		Lewisham	Swindon	City of London	Redbridge	
	Oxford		Kingston upon Hull		Lincoln	Teford and Wrekin	Crawley	Southampton	
	Plymouth		Kirklees		Liverpool	Tower Hamlets	Dacorum	Stoke on Trent	
	Reading		Leicester		London Legacy Corpora	Waltham Forest	Darlington	Thanet	
	Salford		Nottingham		Maidstone	Warwick	Derby	Torbay	
			Old Oak Dev Corp			Wycombe	East Staffordshire	Tunbridge Wells	
			Sunderland				Hackney	Wandsworth	
							Hammersmith and Full	Warrington	
							Haringey	Waveney	
							Hastings	Westminster	
							Havering	Worcester	
							Hillingdon	Worthing	
Pool	Pool A1	Pool A2	Pool A3		Pool B		Pool C		Pool D
ESP	A Coruna	Valencia*	Albacete	Logroño	Ciudad Real		Guadalajara*		
	Barcelona	Cadiz	Algeciras	Lorca	Gandia				
	Bilbao	Ferrol	Alicante	Lugo	Ibiza				
	Malaga	Tarragona	Almeria	Madrid	Jerez de la Frontera				
	Pamplona - Iruña	Valladolid	Aviles	Madrid*	Lleida				
	Zaragoza		Badajoz	Manresa	Ourense				
			Benidorm	Marbella	Oviedo				
			Burgos	Palma de Mallorca	Reus				
			Caceres	Pontevedra					
			Cartagena	Salamanca					
			Castellon de la Plana	San Sebastian					
			Cordoba	Santa Cruz de Tenerife					
			Cordoba	Santander					
			Elche	Satiago de Compostela					
			Gijon	Sevilla					
			Girona	Talavera de la Reina					
			Granada	Toledo					
			Huelva	Vigo					
			Jaen	Vitoria-Gasteiz					
			Leon						
Pool	Pool A1	Pool A2	Pool A3		Pool B		Pool C		Pool D
BGR	Sofia*		Plovdiv		Blagoevgrad		Dobrich	Sliven	Gabrovo
	Ruse				Burgas		Haskovo	Stara Zagora	
					Varna		Pazardzhik	Vidin	
					Veliko Turnovo		Pleven	Vratsa	
							Shumen	Yambol	

Figure 4.2. Allocated pools in 2019.

4.4.5. Selected case study cities

Figure 4.3. Image used in information sheets with young people

The final selection of case studies were Birmingham, Manchester, Valencia and Sofia (Figure 4.3 and Table 4.1). As Table 4.1. below shows their functional geographies varied. In the cases of Birmingham and Manchester, lower densities and Anglo-Saxon pattern of development meant that both cities in effect are deeply intertwined within their broader regional geographies – the West Midlands conurbation and the Greater Manchester one. In Valencia, the urban core and historic boundaries of the city are still the ones with highest densities, resulting in a much more compact city (Figure 4.4.). Sofia sits in between the two extremes with some well-defined low-density suburbs, but still a tightly packed core. It is also worth pointing out that the closer proximity to rural and peri-urban areas in the Spanish and Bulgaria examples emerged in the young people's perceptions of the city. The spatial distribution of development was one of the key contextual issues considered when analysing the data.

It is worth noting that the author has lived in Manchester in 2013, which allowed a more detailed understanding of the context. Conversely, although the author is Bulgarian, Sofia was a relatively unfamiliar city before the research began. Similarly, despite the author having undertaken previous research across Spain on a similar topic (Shtebunaev, 2016), Valencia was an unfamiliar context. This partially informed the decision to focus the initial data collection on Sofia and Valencia, to enable familiarisation with these cities.

The cities also carried similarities in that they are all within the European context of developed democracies, had largely aligned legislation (divergences have since occurred due to Brexit), and were all classified as beta cities by The Globalization and World Cities Research Network (2018) rankings. However, there are significant differences which have been contextualised in the analysis, such as the different political systems, relative affluence, planning systems, youth policies, level of engagement with "smart city" rhetoric, and cultural and demographic differences.

Table 4.1: Population on the 1st of January, 15-19 years in total. Source: Eurostat. Note: The Functional Urban Areas were taken for the data. Due to Brexit, Eurostat discontinued collecting data from the UK post 2018.

CITIES/TIME	2014	2015	2016	2017	2018
Sofia (FUA)	61,370	61,133	61,979	61,646	62,962
Valencia	73,449	78,688	80,383	82,133	84,149

West Midlands urban area	190,800	195,284	193,578	191,366	189,107
Greater Manchester	173,200	197,268	195,414	192,481	190,034

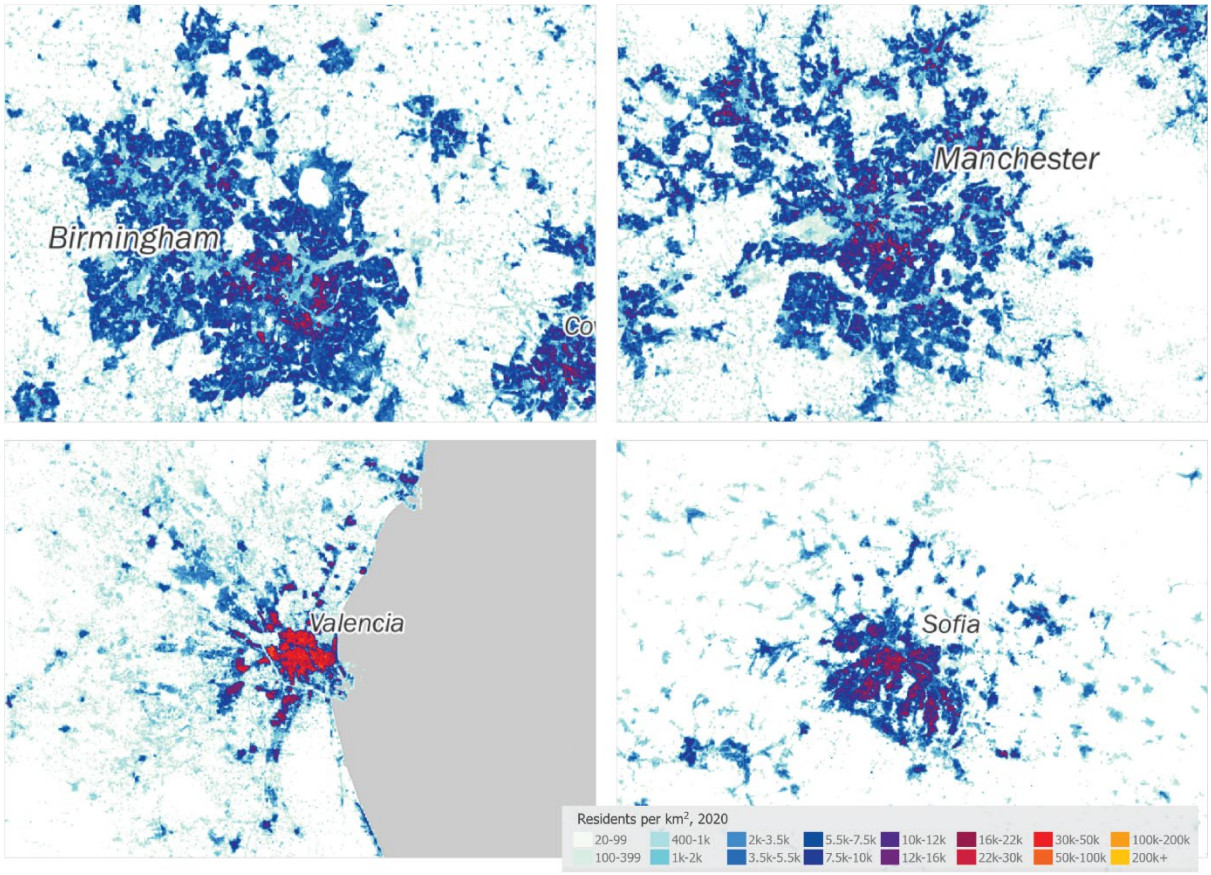

Figure 4.4: Spatial distribution of the four-city agglomeration contexts demonstrating difference in density between the four cities.

Source: https://luminocity3d.org/WorldPopDen/#3/20.00/10.00, Data: EC JRC & CIESIN and design by D A Smith CASA, UCL

Birmingham

The primary case study was Birmingham, which was in Pool A1. In 2021 Birmingham's total population was 1,144,916 and of which 86,439 were young people between the ages of 15-19 or 7.5% of the population.

The city had at the time of evaluation a local authority department - Digital Birmingham which had a clear smart city strategy developed in 2013 (BCC, 2019a, Figure 4.5) Within the document a dedicated goal to young people was focused on digital inclusion:

"*Closing the digital divide- We will work in partnership across the City to support, develop and implement a range of initiatives that engage citizens and businesses in producing digital content, building capacity and skills and increasing neighbourhood connectivity and e-participation. We will work closely through the Social Inclusion Process and frontline services to look at how collectively we address affordable connectivity. We will also work with the Youth Unemployment Commission to ensure young people are equipped with the digital and creativity skills needed for the jobs of the future."* (BCC, 2019a:9)

Figure 4.5: Birmingham's Smart City Vision

The city also had a digital transformation and ICT strategy (BBC, 2019b) and a developed children, young people and culture strategy (BBC, 2019c). The Digital Birmingham agency (BBC, 2019a) has been continuously active and has since the screening process added a Youth Engagement Platform (BBC, 2024a) to its list of projects, however, no implementation of the platform in action could be ascertained. The platform in 2023 stated:

"*The Youth Engagement Platform is an innovative digital space designed to empower children, teenagers aged 5 to 18 years old, and school classes. This platform allows them to submit project ideas, vote for their favourites, and secure funding for their initiatives. Whether through community crowdfunding, corporate donations, or grants, we aim to support the creativity and entrepreneurial spirit of Birmingham's youth. By providing them with the necessary resources and opportunities, we foster a culture of innovation and collaboration from a young age. Join us in nurturing the next generation of leaders, problem solvers, and changemakers through the Youth Engagement Platform.*"

Birmingham had also a track record of producing spatio-economic visions to attract investment, sitting outside the planning system such as the Big City Plan (BCC, 2010) and Our Future City Plan (BCC, 2024b). The Smart City vision analysed in this project appears to have transformed into the

Digital City strategy and action plan and within the economic visions of the city.

DIATOMIC (BCC, 2019a) is one of the projects continuing to be implemented - an initiative designed to accelerate innovation across the West Midlands. Led by Connected Places Catapult in partnership with Aston University, Birmingham Chambers of Commerce, Birmingham City Council, Birmingham City University, and the University of Birmingham, DIATOMIC is looking at creating a digital twin for the city.

Manchester

Manchester was allocated in Pool A2., Two key strategies were considered – Greater Manchester Combined Authority Digital Strategy (GMCA, 2019) and Manchester's Smarter City Programme and Case Studies (MCC,2019). In 2021 Manchester's total population was 551,943 and of which 42,418 were young people between the ages of 15-19 of 7.6% of the population. The Greater Manchester Digital Strategy stated an interest in inclusion of young people and upskilling them:

" *Inclusion, skills & talent. To become a world-leading digital city-region with a difference GM needs to grasp the opportunity to increase digital skills for the benefit of local economies and communities. This means ensuring that all residents have the basic level of digital skills needed for day-to-day life and to function productively in the modern workplace; as well as developing the advanced digital skills needed for specialist digital roles in both the tech industry and across the broader economy. There are a number of barriers to achieving a more highly skilled and inclusive digital economy:*

-Young people, parents and teachers lack awareness of the range of careers and opportunities available in digital/tech and pathways into the industry. There is enthusiasm for digital up to age 13/14 but this tends to dissipate over the next five years particularly amongst young women."

The political buy in for the transition of the city into a smart one was evident. It is worth pointing out that in Manchester, due to the local authority boundaries and geography, the Greater Manchester Combined Authority and Manchester City Council collaborated on smart city projects. The approach in Manchester appeared to be less strategic at local authority level, but on a case-by-case project basis with demonstrators.

"I don't want Greater Manchester to be just a smart city – I want it to be the smartest city." - Andy Burnham, Mayor of Greater Manchester (The Greater Manchester Digital Strategy 2018-2020:3)

Two projects within the case studies on the Council's website were explored – CityVerve and Triangulum (MCC, 2019).

CityVerve was a £10m investment from The Department for Culture, Media and Sport (DCMS) to demonstrate the Internet of Things in Manchester City Region. The CityVerve Project aims to test better services using the Internet of Things (IoT) technology. Future Everything, a local organisation delivered some of the engagement with young people as part of the City Verve project

Triangulum was a €25 million Horizon 2020 project funded by The European Commission to demonstrate cutting-edge smart city technologies and roll them out across the world. The Triangulum consortium combines the expertise of 22 partners from six countries: Norway, the Netherlands, the United Kingdom, Germany, the Czech Republic and Spain.

Sofia

Sofia is the capital city of Bulgaria and has in recent years engaged with the smart city debate. The city has an Intelligent Specialization Strategy (Sofia Municipality, 2018) and hosts a Smart City Cluster of URBACT initiative. In Sofia the population on the 31st of December of 15-19 years was 50 971 (2019) and 51 106 (2020) (NSI, 2025) This is respectively 4.1% of the total population in 2019 - 1 242 568 and 4,2% of the total population in 2020 - 1 221 785.

In 2019, the municipality embarked on the creation of 'Sofia Vision 2050' (Vizia Sofia, 2025), itself employing new and experimental consultation techniques. 'Vision for Sofia'" aimed to create a shared and long-term strategy for the development of the capital and suburban areas until 2050. The project had the ambition to analyse the current state of Sofia and propose specific steps, measures and goals for future sustainable development of the city. Achieving this task is possible only with the combined efforts of citizens, business, science, NGOs and administration. The vision was adopted by the Municipality in 2020 after a long-term consultation period. Vision for Sofia's age structure and consultation struggled the most to engage the 15-19 age group. 6% out of 1250 interviewees – 75 young people in total took part in the process. (Figure 4.6)

The 'Strategy for intelligent specialisation' is the primary document that links directly with the European Commission's Smart City agenda. Smart city is accompanied by 'intelligent city' and 'knowledge city' terms in the Bulgarian context.

Figure 4.6: Consultation in Sofia on the Vision for Sofia 2050 the researcher took part in.

Smartness is underpinning many of the long-term goals of the visions, which is supposed to act as a

guiding map for the development of Local Plans and strategies across the municipality's activities.

The Sofia Knowledge City is the cluster actively pursuing the development of smart city adoption. In 2020 the Digital Transformation for Sofia strategy, part of the second tranche of smart specialisation strategies was adopted and implementation is supported by the Innovative Sofia[12] body.

Valencia

Valencia, similarly, to the rest of the Spanish cities examined had a developed Smart City Strategy which was being worked on in 2019. In Valencia in 2022 there were 39,680 young people aged 15 to 19 or 5% of the total municipality's population of 790,797. In 2021 it was 4.9% of the total population 788,842 or 38,913. (INE, 2025). There was an office for smart cities within the local government - Oficina de Valencia Ciudad Inteligente (Smart City Valencia, 2025) and a dashboard monitoring the progress of the city[13].

The city's smart city strategy has been developed since 2013 when the first Valencia VLCi contract and projects began, influenced by work from 2013 developed by Deloitte (2013) and a further one in 2015 by Telefonica (2015). It was on those plans and the available projects and strategies on the Valencia website that the analysis was undertaken in 2019. The city also had a developed "City Strategy for Youth 2019 to 2023" (Valencia Municipality, 2019), which does touch on ICT issues and could be examined against the Smart City Plan. (Figure 4.6)

"Estrategia VLCi Estrategia València Ciudad Inteligente Diciembre 2022" (Valenica Municipality, 2022) has since been adopted, demonstrating a strong commitment to implementing the smart city vision. Valencia has since been consistently ranked as one of the smartest cities in Europe (Orejon-Sanchez, R., 2022).

[12] https://knowledgesofia.eu/en/

[13] http://smartcity.valencia.es/vlci/vlci-platform/

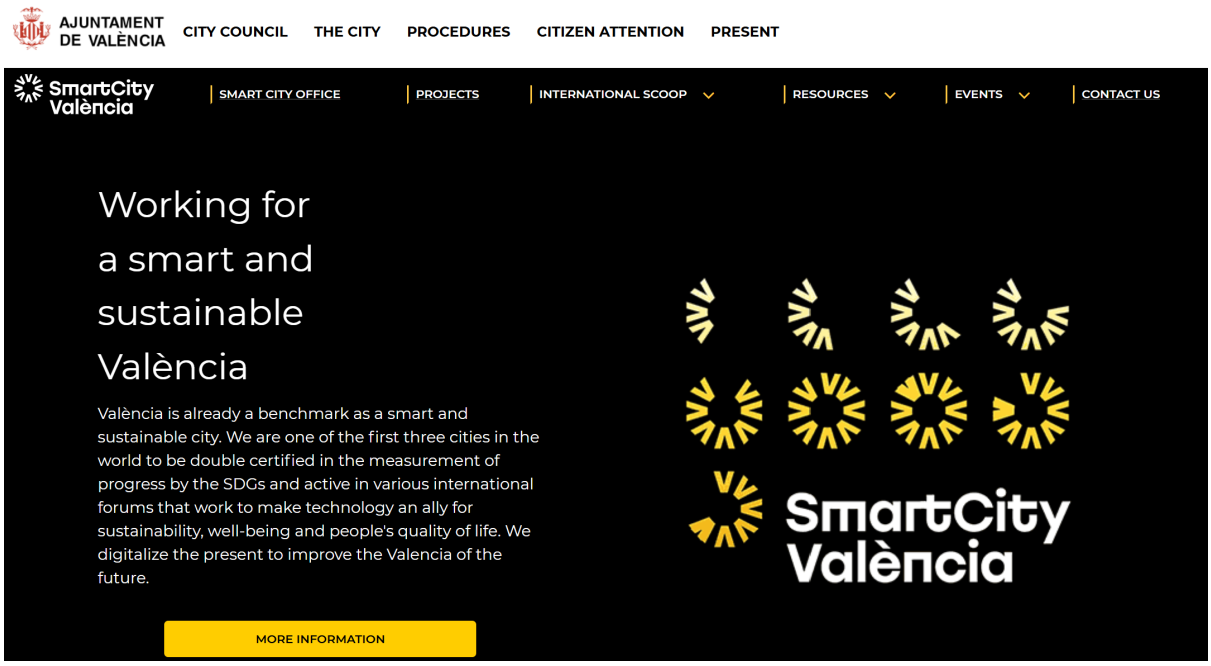

Figure 4.7: Valencia Smart City platform opening page.

4.5. Smart City Policies and Developments as Visions of the Future City

4.5.1. What is a Smart City Vision in the context of selected countries

Evaluated smart city visions, strategies, plans, or other initiatives vary across the different cities reviewed in the UK, Spain, and Bulgaria. The terms used to describe the 'smart city' vision are diverse, ranging from formal strategies and plans to less defined agendas, programmes, projects or simply mentions within broader documents. Many cities also indicated in 2019 that their smart city approach is in development and strategies have since been adopted. Where available drafts of those strategies were reviewed.

An important point emerged regarding the integration and interplay with spatial and urban planning practices in the city . In Spain, driven by the national agenda, the 'smart city' departments had been set up within local municipalities. In England and Bulgaria, the examined visions often sat in economic or digital departments. In all three contexts however, the planning systems of the respective countries were not the primary host of smart city agenda, and the spatial impacts of smart city strategies seem to be ad hoc and on case-by-case basis.

Smart City Strategies and Plans

There was a cohort of cities with explicit 'Smart City' strategies or plans generally in Pool A. In England, local authorities such as Greenwich's Smart City Strategy (Digital Greenwich, 2019), Birmingham's Smart City Plan and Nottingham's Smart Nottingham Future City Strategy (Nottingham Insight, 2018) all had a dedicated vision for the future of their city driven by technological advances.

In Spain, driven by the national smart city program, majority of cities either had adopted a smart city strategy or were preparing one. Notably, Barcelona, often one of the most studied cases on smart cities (Barcelona Municipality, 2016) had a strategy "Pla Ciutat Digital" – Barcelona Digital City. Zaragoza's Ciudad Inteligente (Zaragoza Municipality 2011), Vitoria-Gasteiz's plan for a green smart city by 2024 in its Plan estratégico de gobierno Vitoria-Gasteiz (Vitoria-Gasteiz Municipality, 2015) and Santander's Smart City Plan (Smart Santander, 2019), all were examples of the permeation of the topic across different sizes and geographies of cities in Spain. In fact, in some contexts, the 'smart city' was discussed in the context of 'smart regions' such as Logroño's smart city plan (La Rioja Region, 2019) part of the regional La Rioja's vision. Valencia was in preparation of its smart city strategy with the final strategy published in 2022 was developed by Deloitte (Valencia Municipality, 2022).

In Bulgaria, the National Strategy for Intelligent Specialisation (Bulgarian Government, 2019) was the driving force for authorities to create a vision for the future city centred around technology. Sofia, as the capital (Sofia Municipality, 2018) had a Strategy for Intelligent specialisation and was creating a "Vision for Sofia" (Vizia Sofia, 2025) a forward-looking document integrating different dimensions, including smartness. Plovdiv and Ruse also had strategies, with Gabrovo preparing one as part of the national plan.

Digital or ICT Strategies

In many English cases a Digital or ICT strategy of the local authority was the one mentioning a smart city vision, not always having an explicit spatial element. In cases such as Middlesborough's Digital City Strategy (Teeside University, 2019) and Digital Salford Agenda (Salford Council, 2019) focusing on MediaCityUK, there were explicit spatial implications. In others, such as Brent Digital Strategy (Brent Council, 2017), smart cities were mentioned as a prerequisite for attracting inward investment.

Smart City Initiatives or Projects

In some cases, there were no evidence of local authorities developing a full plan but being involved with individual initiatives or projects which has a smart city focus. In England, Barking and Dagenham were part of initiatives such as Participatory City[14] and Camden Council (2019) had the Digital Camden initiative. Sharing Cities[15] project funded by EU URBACT was one such initiative. The demonstration districts in 'lighthouse' cities of which the Royal Borough of Greenwich in London retrofit buildings, introduce shared electric mobility services, and install energy management systems, smart lamp posts and an urban sharing platform through engaging with citizens. 'Fellow' cities Burgas in Bulgaria co-develop, validate, or implement these solutions and models.

Across the three contexts smart city initiatives are described using various terms, reflecting different stages of development and levels of formalisation. While strategies and plans were common, especially in Spain, many cities in the UK and Bulgaria described their efforts through "agendas," "programmes," or lists of "initiatives". Many cities are also currently developing their smart city

[14] http://www.participatorycity.org/

[15] https://sharingcities.eu/

approaches, and for some, no specific smart city initiative was found or readily available at the time of screening.

4.5.2. The uptake of smartness

Uptake of visions of smartness varied across each of the contexts. In the Spanish context in 2019, majority of examined local authorities had some form of smart city vision available on their website. Within the Spanish context the most cities examined had a smart city policy or were preparing one with only 17% not indicating working on one. In Bulgaria this percentage was 55% and in England – 38% (Table 4.2).

Since the original screening the Bulgarian and Spanish context have continued to align with the European policy drive, with the smart city agenda merging within the wider New Green Deal agenda and push towards sustainability and efficiency within the European Union (European Commission, 2024). Conversely, within the UK context, smart city projects have remained largely driven by opportunities for investment and on a case-by-case basis.

Table 4.2: Count of examined LA's and policies.

	Smart City Vision with Clear Youth Goals	Smart City Vision and Individual Youth Projects	Smart City Vision with no Youth Goals or Project	In preparation or draft	No Smart City Vision available on LA website	Number of Local Authorities examined (covering FUAs)
Bulgaria	**2**	**0**	**1**	**4**	**10**	**18**
England	**14**	**9**	**16**	**29**	**44**	**114**
Spain	**6**	**5**	**37**	**8**	**10**	**58**

4.6. Youth as seen from the vantage point of Smartness.

This subchapter focused on a deeper analysis of the way that young people are viewed within future city visions. It further examines the different interplays between youth policy and smart city visions. The quality and specificity of youth as seen by the various future city visions varied considerably across the local authorities.

1. Clear and Specific Mentions
Local authorities in Pool A1 generally had a clear integration of youth goals within their smart city strategies. Examples include London's digital training program with age ranges and specific links to skills strategies, Brent's coding clubs and hackathons, Greenwich's focus on ICT apprenticeships, Islington's plans for school curriculum and Tech City apprenticeships, Barcelona's detailed digital education and STEAM focus, Zaragoza's "Ideation Kids", Málaga's Youth Employment Plan, Pamplona - Iruña's youth roundtables, Bilbao's support for youth training and entrepreneur exchanges, Sofia's focus on youth entrepreneurship and digital incubators in its smart specialisation strategy, and Ruse's clear strategic priority for youth education. These demonstrated a higher level of consideration for young people within the smart city vision.

2. Less Specific but Present Mentions
Local authorities in Pool A2 often had individual youth projects or more general mentions within their smart city strategies. Examples include Manchester's Triangulum project engaging under-19s, Salford's FACT hackathons for youth, Bristol's consideration of youth mental health in the One City Plan, Milton Keynes' Education 2050 project, Valencia's City Strategy for Youth aligning with smart city ICT, Cádiz's free tech training including youth and A Coruña's heritage project with young people. While youth are considered, the integration within the overarching smart city vision might be less explicit or goal-oriented in the primary smart city documentation itself.

3. General or Indirect Mentions
Authorities in Pool A3 and Pool D might have very general mentions of youth as part of broader digital inclusion or citizen engagement goals, or their youth policies might exist separately without a clear linkage to the smart city strategy within the reviewed documents. Kingston upon Thames' (2016) general mention of all residents young and old is an example. In these cases, there might not be clear implications for young people within the smart city agenda and further investigation to understand the practical implications is needed.

4.6.1. Overall Themes emerging

Within each of the contexts a thematic analysis was undertaken of the mentions of young people within Pool A1 and 2 (See Figure 4.7). A state of youth in smart city visions in 2019 across Bulgaria, Spain and England emerged.

In all contexts the focus on young people as 'future citizens' who are to be educated, upskilled and prepared to assume responsibility as adults was prominent. (Table 4.3) The most common view of young people was that of an economic resource, closely followed by educational focus. English and Spanish cities focused on citizenship, usually to mean preparing young people to be future 'smart citizens' by upskilling them digitally and involving them in the creation of strategies. Young people seen as entrepreneurs and innovators was another theme that emerges across all three contexts. This theme acknowledged the agency young people have as current citizens and was observed in all

three contexts. Generally, in each of the countries examined the economic and educational lens were the most dominant themes, however, themed such as cultural focus (involving youth in digital arts and culture projects), spatial (involving young people in the planning of their city or infrastructure design and delivery), health, sustainability and international connections also emerged.

When considered in the Smart City Wheel model, the lens through which young people were seen in the three contexts largely were situated in the broader dimensions of Smart Economy, Smart People and Smart Living. Issues of Smart Environment such a green energy, buildings and urban planning were much less discussed in the smart city visions and strategies, partially due to their positioning outside the planning system, but also potentially due to the historic under-representation of young people in those issues. Smart Government and Smart Mobility were not represented at all in the way that young people were included in visions of the future.

The omission of young people relevant goals within governance indicators raised questions as to why young people are not seen as part of future governance structures or decision-making processes in the future smart city. Similarly, the omission of mobility specific indicators within smart city visions which cater to youth was notable, since in a lot of city contexts transport specific integration of smart city visions was the most advanced aspect – young people's freedom often is most dependent of public transport and multi-modal access. When looking at the more detailed indicator level, the focus on safety within smart living was also lacking and generally safety was not discussed. Creativity and Inclusivity as indicators of smartness were also not explicitly targeted towards young people.

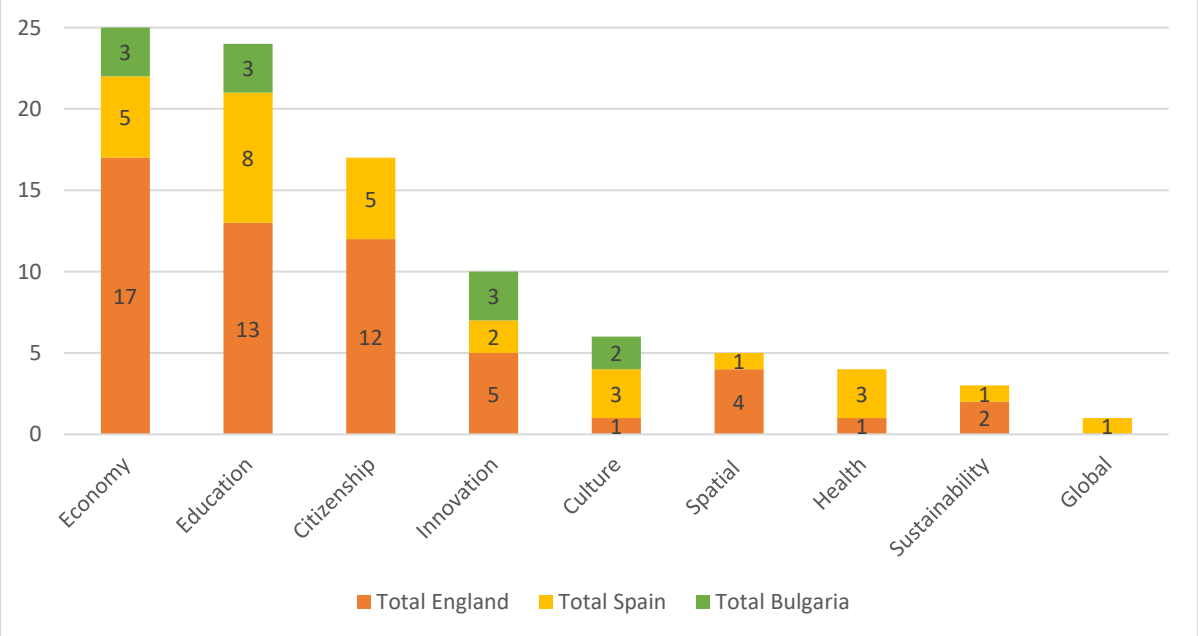

Figure 4.7: Overall themes across cities and national contexts in Pools A1 and A2.

In the English context, overall, 23 local authorities were included in Pool A1 and 2, in contrast to two in Bulgaria and 11 in Spain. It should be acknowledged that local authorities in Spain and Bulgaria had much more extensive and stand-alone youth strategies for their cities mandated by their respective national strategies for young people, something which was inconsistent across the English authorities. Pool A3 was not explored in as much detail, as it included no clear overlap between future city vision and youth goals.

Table 4.3: Detailed overview of the different sub-themes and the local authorities examined in Pool A. Source Author.

Overall Theme	Detailed Theme	Total			Total
		England	Spain	Bulgaria	
Economy	Youth are seen as a future workforce and career development, access the job market	Brent, Ealing, GLA, Greater Manchester, Greenwich, Plymouth, Reading, Salford, Bristol, Croydon	Malaga, Ferrol	Sofia, Ruse	14
Education	STE(A)M focus and teaching in secondary and higher education	Islington, Newcastle, Oxford, Plymouth, Reading, Milton Keynes	A Coruña, Barcelona, Málaga, Valencia, Valladolid	Sofia, Ruse	13
Economy	Youth seen through a talent pipeline, creation, growth and retention	Brent, Ealing, GLA, Greenwich, Bristol, Leeds, Peterborough	Barcelona, Bilbao, Malaga	Sofia	11
Education	Focus on upskilling and training, further education and employability	GLA, Greenwich, Islington, Croydon, Peterborough, York	Barcelona, Malaga, Cadiz	Sofia	9
Citizenship	Digital and social inclusion, addressing the digital divide	Ealing, Newcastle, Birmingham, Bristol, Milton Keynes, Southwark, York	Barcelona		8
Innovation	Entrepreneurship through digital incubators	Brent, Salford, Milton Keynes	Bilbao	Sofia, Ruse	6
Citizenship	Participatory focus, democratic and representation	Newcastle, Exeter	Barcelona, Pamplona-Irina		4
Culture	Focus on role of youth in art and culture and creative industries	Manchester	Zaragoza	Sofia, Ruse	4
Innovation	Focus on local innovation and solution development	Salford, Peterborough	Zaragoza		2
Spatial	Place-based focus	Islington, Luton			2
Citizenship	Developing digital skills for civic life	Islington, Luton			2
Health	Focus on sport and activities		Malaga, Valencia		2
Citizenship	Commitment for general representation of youth across smart city vision development	Kingston upon Thames	Malaga		2
Spatial	Inclusion of young people in local plan or planning development	Reading, Bristol			2
Health	Mental health and wellbeing focus	Bristol	Tarragona		2
Sustainability	Focus on climate emergency, environmental and net zero	Exeter	Valladolid		2
Sustainability	Youth focus on green and sustainable technology	Reading			1
Innovation	Research focus			Ruse	1
Culture	Heritage focus		A Coruña		1
Global	International exchange		Bilbao		1
Citizenship	Youth as mediators and collaboration with other citizens		Pamplona - Iruña		1
Spatial	Creating physical infrastructure for young people		Valencia		1
Culture	Tourism focus		Ferrol		1

4.6.2. Country-specific nuances

4.6.2.1. English context

In England the economy was the primary focus of youth-friendly goals. Young people were seen as a future workforce and the smart city vision focused on their future career development.

Economy and Education
The Greater London Authority (London) in the Smarter London Together (GLA, 2018) included goals for digital training for young people (14-24) linked to the 'Skills for London Strategy'. The Digital Talent Programme aims to develop a digitally skilled future workforce, similarly to the Birmingham Smart City Plan (BCC, 2019a) which had a specific action point focused on digital inclusion and young people. The focus on digital skills and education targeting an age-group of older teenagers and younger adults was present in many of the case studies examined.

In Greenwich, The Greenwich Smart City Strategy (Digital Greenwich, 2019) highlights training young people to seize the opportunities of the digital age and aims to improve links between digital companies and education to encourage ICT apprenticeships. It sees young people as a vital resource for the future digital economy. Similarly, the Digital Islington (Islington Council, 2014) strategy prioritises equipping residents and businesses with the digital skills and technology they need to enhance their lives, explicitly mentioning children and young people in schools and aims to build upon the computing curriculum and broker apprenticeships in Tech City. The vision focuses on preparing youth for the future job market within the smart city context.

The Greater Manchester Digital Strategy (GMCA, 2019) mentions better-connected insights on children's development and transformative career opportunities for young people. It links the smart city vision with improved outcomes and prospects for youth. The Triangulum project (MCC, 2019) directly works with the university area and students. Under its vision as a 'Green Tech City' (Reading Council, 2019), Reading emphasises green technology and the 'internet of things' becoming central to education and training, preparing young people for future business needs and innovation. It links the smart city vision with future green technology skills which young people would have to develop further. Oxford's Smart City initiative (Oxford Council, 2015) included a focus on education, with plans for formal partnerships with schools and colleges to address younger people.

The Coventry's Digital Strategy (Coventry City Council, 2019) highlighted the importance of "*operating effectively in a digital age as a key skill for young people leaving school*" and mentions improving educational outcomes through digital tools. Although in Pool A3, this vision implies that resources will be dedicated to young people. In Sunderland's Software City[16] project a focus on skills and training was emphasised. It suggests an alignment between the city's digital development and the preparation of its young people.

Inclusion
A focus on addressing the social inclusion by bridging in the digital divide and developing active citizenship was another key aspect of the English local authorities.

[16] https://www.sunderlandsoftwarecity.com/

The Brent Digital Strategy (Brent Council, 2017) aims to enable the creation of an agile, highly skilled, and digitally included future workforce and specifically mentioned "increased engagement with young people through coding clubs and community hackathons". Similarly in Ealing (Ealing Council 2017) tackling exclusion, including digital exclusion among children and young people, is a key driver mentioned in the context of their digital strategy. Both authorities focused on ensuring that young people are not left behind in the digital transformation envisioned by the smart city agenda.

In Luton, one of the key targets of the Digital Place (Luton Borough Council, 2019) initiative is to equip young people with digital skills, recognising the larger than national average proportion of young people in the community. It directly linked the digital aspects of the city's future with the skills of its youth, given the demographic context. The mention is specific to digital skills and considers the local demographics. Islington Council (2014) strategy similarly mentioned equipping young residents with digital skills to enhance their lives.

Within strategies, individual projects focused on developing youth citizenship. The Newcastle City Futures[17] a project supported by the local authority but driven by Newcastle University, a "Young People's Plan" was developed, which considers young people a key strand in their long-term collaboration project. The MKSmart[18] project mentioned digital inclusion and specifically an education-led project targeting young people. In York, "Connecting Kids" (Digital York, 2019) is one of the main agenda points under Digital York. The interplay clearly focuses on youth within the city's digital and smart city aspirations. Peterborough's "Future Peterborough"[19] initiative includes projects focused on youth, such as Smart Supper and Smart Leadership. The interplay directly engages young people within their smart city framework through specific projects. Finally, The Southwark Digital Strategy (Southwark Council, 2019) specifically mentions social inclusion and promoting the digital offer to all staff working with young people and parents with SEND. It aims to ensure access to digital opportunities for potentially vulnerable young people.

Innovation

Young people were also seen as active shapers of the future smart city through entrepreneurship initiatives. Although economically focused, innovation focuses acknowledged young people's agency.

The Digital Salford (Salford Council, 2019) agenda included the FACT (Fuelling Ambitions Creatively Together) project, which inspires young people through hackathons with businesses, fostering innovation and entrepreneurial skills relevant to a smart city. It directly links youth engagement with businesses to develop innovative solutions. Similarly, MK Futures included a focus on young entrepreneurs linked to a technology university. Milton Keynes aims to foster youth entrepreneurship within the technology sector in the context of smart city development.

Engagement

A limited focus on participatory and engagement projects with young people, explored the democratic role of young people. In Exeter, Initiative Exeter 2025 (Exeter City Futures, 2019) includes a Minecraft Challenge. While not explicitly about representation of young people, it is a form of engagement that could inform future city visions. Connected Plymouth (2019) was developing a

[17] http://www.newcastlecityfutures.org/

[18] http://www.mksmart.org/

[19] http://www.futurepeterborough.com/

specific young people's strategy at the time.

Culture
Focus on the art and culture and creative industries in England was observed in the Greater Manchester Digital Strategy (GMCA, 2019) promoting links to creative industries as part of digital opportunities. In Reading (Reading Council, 2019) broadening education to ensure support for young people's wider mental health and wellbeing is mentioned under the City of Culture aspect.

Spatial
In some cases the smart city plan or vision directly referenced the English planning system. The Bristol One City Plan[20] has aspects related to the mental health and wellbeing of young people. It indicates an inclusion of youth considerations within the broader city vision, which includes smart city elements. Similarly, Reading 2050 (Reading Council, 2019) aimed to involve young people.

Unlike in the Spanish or Bulgarian examples, some emerging sub-themes did not appear in the English context, specifically cultural, sport, social infrastructure for youth and global links.

4.6.2.2. Spanish context

In the Spanish context, similar themes emerged, though there were different focuses.

Economy and Education
Youth were seen as a future workforce; however, a more EU-centred approach was observed in the visions. Youth mobility and upskilling were not seen purely from a digital lens.

The Barcelona Digital City (Barcelona Municipality, 2016) project had a sub-axis focused on digital education and training (talent factory) to foster STEAM vocations and train young people in digital skills. Similarly, in Valencia the introduction of STE(A)M fields into teaching and schools is a focus within their broader strategies supported by the City Strategy for Youth (Valencia Municipality, 2019) suggested a focus on preparing youth for future opportunities.

Málaga Smart[21] had a plan to 2021, with a section on Youth and Sport under Citizen Services. Additionally, there was a Youth Employment Plan in Cádiz (Cadiz municipality, 2019) offering free training courses in new technologies aimed at various groups, including young people, as part of its Smart City Strategy and EDUSI. It directly links the smart city agenda with providing digital skills to the youth population by providing free training.

Bilbao (eSmartCities, 2017) supports the participation of young people in training programmes, practical experiences, and international exchanges as part of its “Smart Strategy” philosophy. It also supports the participation of young entrepreneurs in European exchange programmes. The city aims to integrate youth development and global perspectives into the city's smart approach, particularly for future careers. Algeciras references the EU's “Youth on the Move” initiative within its Smart City Plan (Algeciras Municipality,2017), aiming to improve education and facilitate young people's access

[20] https://www.bristolonecity.com/

[21] http://malagasmart.malaga.eu/

to the labour market. It links the smart city vision with EU-wide efforts to support youth employment and education.

Citizenship
A much more pronounced participatory and democratic representation focus was seen in the Spanish context compared with England and Bulgaria.

In Zaragoza (Zaragoza Municipality, 2011) citizens' hackathons include an "Ideation Kids" specifically involving young people. The focus directly engages youth in the innovation processes within the smart city framework. In Pamplona – Iruña's smart city strategy (Pamplona Municipality, 2018) identifies youth roundtables to consult citizens. The Youth House has responsibilities for youth participation. The initiative highlights the inclusion of youth voice in shaping the smart city vision through participatory mechanisms.

Health
A more pronounced focus on health and sport was observed in the Spanish context. In Málaga Youth and Sport are under Citizen Service, linking the smart city agenda with youth engagement in sports. In Valencia, the City Strategy for Youth incorporates digital, and ICT issues and has implications for sports through digital tools.

Culture
The focus on heritage was seen in Spain. A Coruña has a specific project within its Smart City platform[22] looked at heritage with young people. It connects the smart city agenda with youth engagement in cultural preservation through technology.

In the Spanish context, themes which did not appear as strongly included incorporating the smart city approach into the spatial dimension, as well as themes of innovation and digital skills.

4.6.2.3. Bulgarian context

The Bulgarian context appeared to be the least developed from the perspective of smart city visions. In Bulgaria only two local authorities – Sofia and Ruse, were examined. local authorities with both a smart city vision/strategy and a youth mention show a slightly different pattern:

Economy
The economic and educational focus again were interplayed and youth's role as future workforce drove the two agendas.

In Sofia's Strategy for Intelligent Specialisation (Sofia Municipality, 2018) a goal to support youth and focuses on youth as the future workforce and talent development, including a focus on youth entrepreneurship and digital incubators. In Ruse's strategy for intelligent specialisation (2016-2025) (Ruse Municipality, 2016) a clear priority concerning youth and their education under Strategic Aim 2 can be seen. Both prioritise youth education within its smart specialisation framework.

Culture
In Ruse (Ruse Municipality, 2016) an interesting project involving children and an art competition

[22] http://www.coruna.gal/smartcoruna

related to a “Smart City” theme was part of their strategy. The city aims to engage young people creatively with the concept of smart cities.

Digital Skills
In both Sofia and Ruse there was focus on digital skills development can contribute to civic life.

4.6.3. Case study specific views of youth

The wider trends were observed in the four case study cities selected as well. A summary of the four case studies is presented in Table 4.4, demonstrating the narrow prism through which young people are considered within respective smart city strategies, predominantly as a future workforce to be developed and placated.

Table 4.4: A summary of youth goals occurring in the case studies’ smart city visions: Digital Birmingham Strategy (2019), Manchester Smart City Programme (Manchester City Council, 2019), Valencia Smart City (2019), and Sofia Strategy for Smart Specialization (Sofia Municipality, 2019).

Theme	Youth Focus	City
Economy	Focus on career development and young people seen as future workforce	Manchester and Sofia
Economy	Focus on youth as talent development, supporting economic growth, and retention of young people	Sofia
Education	Focus on introduction of STE(A)M fields into teaching and schools to foster digital skills	Valencia and Sofia
Education	Focus on digital upskilling and training through further education	Sofia
Citizenship	Focus on overcoming the digital divide and social exclusion	Birmingham
Innovation	Focus on youth entrepreneurship and digital incubators	Sofia
Culture	Focus on creative industries as potential youth employment opportunities	Manchester and Sofia
Health	Focus on sports and activities provision for youth	Valencia
Spatial	Focus on physical infrastructure delivery for youth	Valencia

Notes: All information was retrieved in March 2019; the analysis of the cities’ smart visions was undertaken in Spring 2019; STE(A)M stands for science, technology, engineering, art (including architecture), and mathematics.

The smart city strategies of Birmingham, Manchester, Valencia, and Sofia view youth through a “narrow prism”. The goals related to youth in these strategies predominantly focus on considering young people as a future workforce to be developed and placated. As observed previously, when the Smart City wheel (Cohen, 2018) is considered as a framework for smart city development, the four cities’ priorities for young people are largely clustered in Smart Economy and Smart People. Especially when youth participation is considered, no admission of youth as active citizens can be observed.

The description of goals focused on skills, employment, and inclusion defined and implemented within adult-led strategies aligns more with the lower levels of genuine participation (assigned or consulted) on the Ladder of Children’s Participation (Hart, 1992). The “narrow prism” description

implies that youth may be informed or consulted on predetermined topics, or assigned roles within initiatives designed by adults, rather than having significant power to initiate or co-create the smart city agenda or projects. Chapter 6 explores further how participatory models such as the ladder need to address how policy documents see teenagers.

4.7. Conclusion

4.7.1. Future of smartness

The findings presented in this chapter are reflective of the specific culmination of the pre-pandemic drive towards smart cities. Since, the topic has evolved and a much more nuanced way. The future of the smart city as a visionary exercise is splintering.

The political drive for smartness in the European Union has largely remained strong but gathered a much more prominent sustainability focus. Participatory approaches and human-centred smart cities have become the norm. Mistrust in technologies and top-down visions of the city have proliferated. The 15-minute cities debate enmeshing conspiracy theories of smartness (Caprotti et al., 2024) across the world demonstrates how urban based concepts which are misconstrued in the digital realm present a challenge for public decision-making.

The substance of smartness is also shifting. Whereas in 2016-2019 the discussions focused on the harnessing of big data, creating central smart city departments and integrating services (Batty, 2019), the pandemic shifted attention to a more digital world with the idea of creating Digital Twins, digital engagement and a completely virtual world in the form of the metaverse (Deren et al., 2021). From its inception, smart cities, like many imaginaries of the future, were driven by private actors for investment purposes – therefore the post-pandemic turn of technological focus has been rapid.

Cities everywhere are pursuing digital transformations of their services, however, a whereas before this was largely taken to mean developing digital version of analogue operations, with the advent of large-scale language models and an increase drive to Artificial Intelligence in the 2020s, this might mean replacing services or creating new ones altogether. The ever-closer overlap of political actors and technological entrepreneurs has led to concerns about the emergency of new systems of governance across national and international contexts led by a technocratic oligarchy. (Sadowski, 2025)

In all those debates, the role of citizens, and specifically young people, as digital citizens is ever more marginalised. Without a robust framework which considers how democratic systems at local level, such as imagining and planning our cities, interplay with the digital world, we risk marginalising different communities.

4.7.2. Reflections and Limitations

This chapter focused on the top-down view of the future as presented by local authorities' visions of smartness and the role it relegates to young people. The next chapter will look at the views from the bottom-up and present the opinions and experiences of teenagers in the four contexts in relation to the smart city vision of the future. Young people exemplify how smart city visions see marginalised

or under-represented communities and serve as a test demographic to the robustness and inclusivity of such imaginaries. This project focused on imaginaries where the drivers of change are digitalisation and advanced computing power, however, similar exercises of youth-friendliness can be undertaken in other future city imaginaries, not least Local Plans and Development Strategies.

There are some limitations to the analysis in this chapter. The presented multi case study analysis only illustrates the broad trends. A more detailed comparative case studies using discourse analysis could provide a deeper understanding of the way smart city and other future city visions treat young people. Similarly, this analysis only focused on the publicly available strategies which had already been adopted or projects which were being implemented, a further study could explore the way that those visions are prepared or employ longitudinal approaches to follow-up the process of development. This can illustrate more fully what role specific groups might play even if they are not reflected in the final output.

Finally, for the purposes of the project the smart city visions were treated as imaginaries of a future condition of the cities which have adopted them, but the exact link between such imaginaries and their physical manifestation in planning systems needs to be better explored. In each of the cities, the interplay between smartness and their respective planning departments is contextually driven.

Chapter 5: Young People's Perspectives on Urban Planning and Smart Cities

"Because it is necessary for the future generations to have a place and participate in where they live " [Porque es necesario que la generación futura tenga un lugar y una participación en donde viven]
18-year-old Female from East Valencia

This chapter presents the results from the primary data collection completed across the four city contexts. It explores the perceptions and awareness of urban planning and smart city initiatives amongst teenagers between the ages of 15 and 19 in four city contexts in Europe. The chapter identifies the overarching themes emerging from the data, which are explored in more detail in Chapter 6, discussing the findings.

The chapter aims to answer the key question, "What are the bottom-up teenagers' views on their role in the planning of the smart city?", specifically focusing on youth perceptions and awareness. As demonstrated in Chapter 2, there is a lack of primary research in the views of young people towards urban planning and future city visions such as smart cities.

5.1. Are teenagers children?

"I think that the more forward-thinking young people engage in the future of the city, the more we will come to appreciate it when we are older, and all these things make a significant difference to our well-being and life in general." - 15-year-old Female living in Birmingham City Centre

The United Nations Convention on the Rights of the Child is recognised as the main international agreement from which the rights-based approach stems, as discussed in Chapter 2. Although ratified by all three countries examined, including England, the convention's articles and their applications are largely absent within the English planning system, with studies in the intersection between the UNCRC and planning being rare (Wood et al., 2019). The Convention defines children as anyone under the age of 18, which positions teenagers between the ages of 15 and 19, straddling the boundary between childhood and adulthood.

While conducting the in-person interviews with Bulgarian participants, a notable trend emerged: some participants would refer to themselves solely as young adults, reject the categorisation of children and would often question the child-led approach and examples of planning projects. As accessible language and building trust are a key component of community buy-in in participation processes (Inch et al. 2029), a further question was added to the online surveys conducted in the English and Spanish context aiming to appraise teenagers' perceptions of themselves as a child and to test the anecdotal reports observed in the Bulgarian context. Figure 5.1. demonstrates the trend of teenagers to reject the notion of being a child or to have a more nuanced views of their roles in society. As children and young people are often grouped under child-friendly initiatives, it is key to remember that for many teenagers, such language might be perceived as exclusionary.

Interestingly, the age split of such assessment followed no clear pattern, with one 19-year-old in Manchester indicating that they are a "child". In fact, in all the responses a clear mix of the ages represented in the survey was observed (Figure 5.2), suggesting that language and policy concerning teenagers should allow for self-determination. Examining the responses by gender, Figure 5.3 demonstrates a slight preference of females to identify themselves fully or partially as a "child" in all contexts. This trend is most pronounced in Manchester where only 36% of females indicated self-

perception as an adult compared to 70% of males. No clear conclusions can be derived from the sample of participants indicating other gender identities.

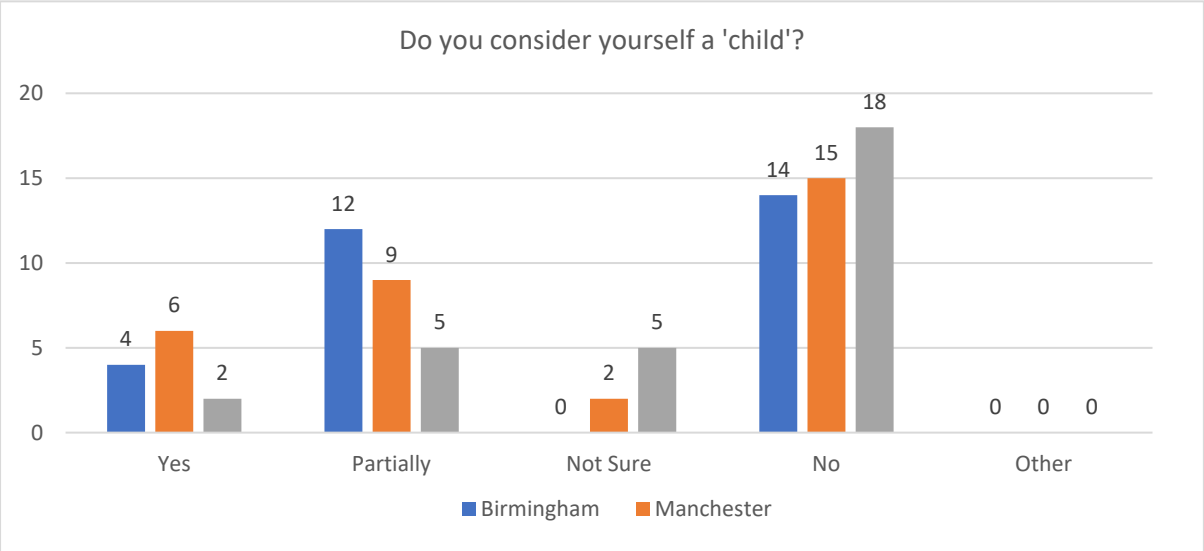

Figure 5.1: Self-assessment of teenagers as a child, additional question added post-pandemic based on observations in Sofia, Bulgaria.

There is a clear downward trend of 'partially' and 'yes' answers as age bands increase (Figure 5.7) whereas the 'no' is relatively consistent. The data indicates that young people as early as 16-year-olds might refuse to access participatory processes which are framed exclusively in a child-friendly manner. Gender does not appear to have a significant effect on the answers in the sample.

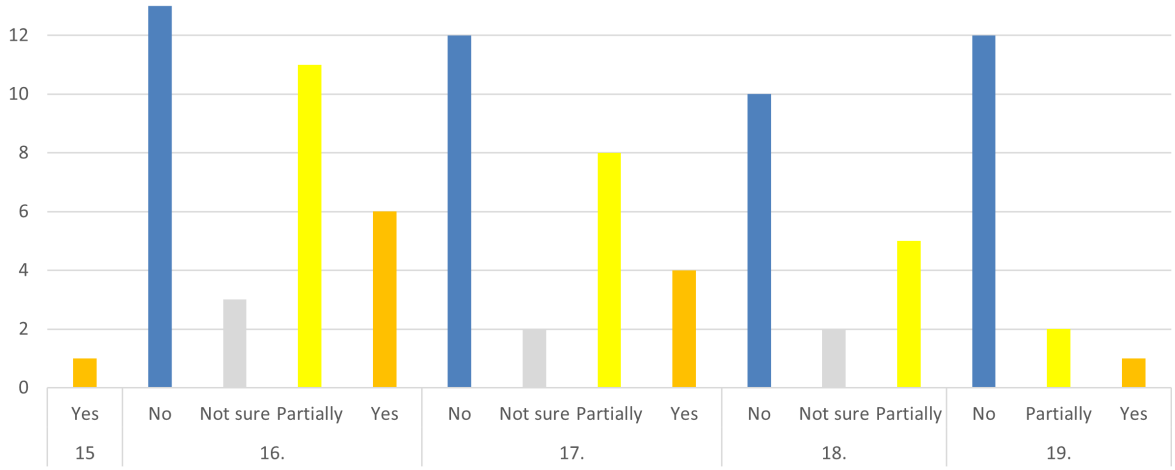

Figure 5.2: Self-assessment of teenagers as a child broken by age (n=92).

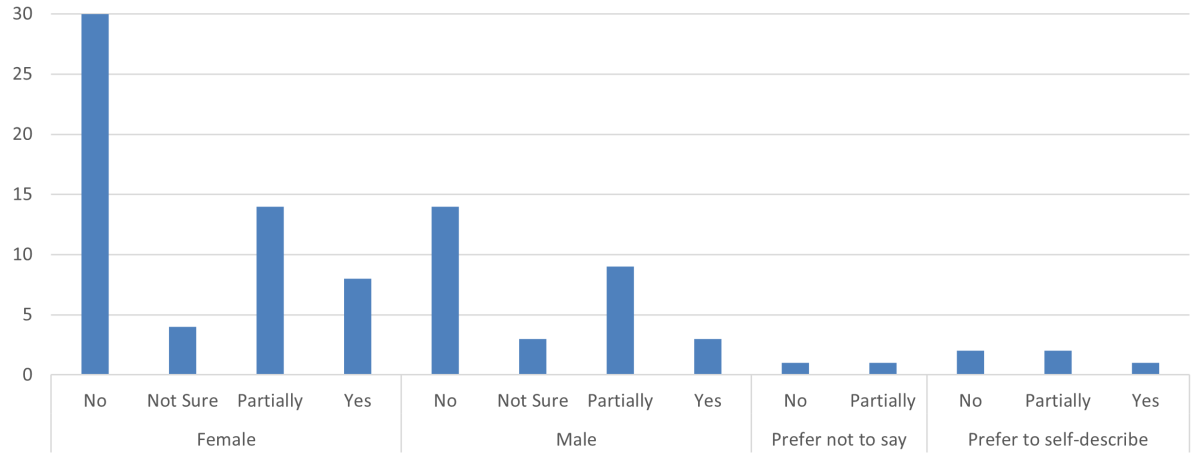

Figure 5.3: Self-assessment of teenagers as children analysed by gender (n=92).

5.2. Teenagers' every day in the city.

To better contextualise young people's imaginations of the future, it is important to understand their current experience within the city. This sub-chapter also addresses issues around social infrastructure, presenting a picture of the distribution of the sample interviewees across the case study cities.

5.2.1. Living in the city

Table 5.1: Where do teenagers hang out in their cities? Showing answers with more than one person.

Category	Birmingham	Manchester	Valencia	Sofia
Homes	At Home (12)	At Home (13); Student Accommodation (2).	At Home (5).	At Home (7);
Public Buildings	At School or University (6); Library (4); Sports Centres (3);	At School or University (6); Library (2)	At School or University (5);	At School or University (10); Sports centres (3);
Entertainment and Retail	Shopping centres (15); Shops (6); Cafes (4)	Shopping centres (9); Shops (8); Cafes (6); Clubs, Pubs or Bars (2)	Shopping centres (6); Clubs, Pubs and Bars (3); Cafés (2)	Cafes (4); Shopping Centres (3); Clubs, Pubs and Bars (2)
Blue and Green Infrastructure	Parks (15);	Parks (12);	Parks (19); Beach (7); River (3)	Parks (20).
Urban Realm	City Centre (8); Outdoor spaces (2).	City Centre (5); Outdoor spaces (4);	City Centre (11); Pedestrian zones (5); Public Squares (4); Skate Parks (3); Cultural Complex (2); Neighbourhood areas (2).	City Centre (11); Public Squares (9); Outdoor spaces (4); Streets (2); Neighbourhood areas (2).
Regional	--	--	Neighbouring towns and villages (3).	At my village (1).
Transport	Public Transport (2);	Transport stations and stops (3);	--	Public Transport (8);

Teenagers reported a diverse mix of areas which they inhabit in their cities (Table 5.1). Young people in all contexts indicated that most of their time was spent in the public realm. Indoor entertainment and retail locations are still an important part of a teenager's life, especially shopping malls, however, a 17-year-old Female from South Birmingham elaborates: *"Be good to see more indoor spaces that don't involve having to spend lots of money to be inside".*

Outdoor settings predictably were deemed important: *"Personally I believe Manchester should have more benches and green spaces."* – 17-year-old Female from North Manchester. *"There aren't many cool outdoor areas in the city centre (not that I'm aware of)"* – 19-year-old Male from Manchester City Centre. *"I spend my time out in nature as I like playing guitar in the woods or out where no one can hear me"* – 17-year-old Male from North Manchester. *"да, честно казано, има доста паркове, доста градинки. В нашия квартал особено има много растителност, междублокови пространства."* ["yes, to be honest, there are many parks, many gardens. Our neighbourhood especially has a lot of vegetation, inter-block spaces."] 16-year-old Female from Sofia High School.

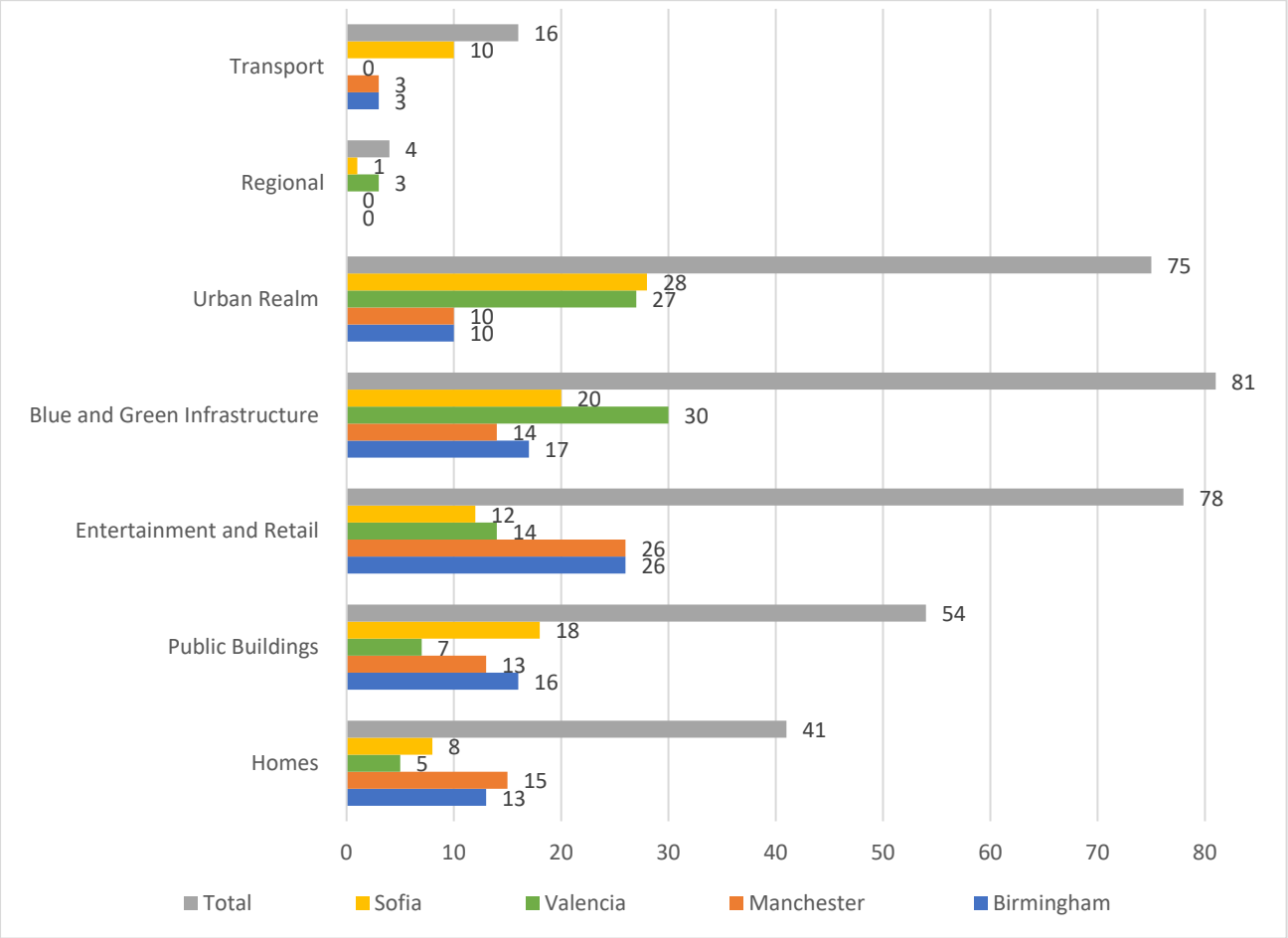

Figure 5.4: Location thematic preferences by city.

Transport hubs emerged as an important part of young people's lives in Manchester, Birmingham and Sofia both in traditional sense of mobility but also as social infrastructure (e.g., stations, stops, hubs). In Valencia, as a dense and rather well-connected city, transport hubs were not noted by young people as a space where young people spend much time. Young people in Valencia and Sofia were more likely to indicate greater freedom outdoors (Figure 5.4) and more opportunities to move beyond the boundaries of their city, spending time in the wider city region. In all contexts the need

for more social and non-transactional spaces such as park benches was mentioned by participants and some drew a link between defensive architecture and planning and pushing away young people from their cities.

A clear distinction in cultural approach to life was seen as in the Bulgarian and Spanish examples, being outside the home (spending time outdoors in both urban and natural settings) was the norm in those contexts, whereas in England young people indicated home living as an essential part of their experience of youthhood. (See Figure 5.4)

The surveys in Spain and the UK were conducted at the height of the pandemic lockdowns and young people generally commented on it: *"a lot of the time, even when there isn't a global pandemic, I spend a lot of time at home."* 17-year-old gender fluid person from West Manchester; *"I usually spend time (pre COVID-19) at home"*17-year-old non-binary person from West Birmingham. The above quotes raise questions about the inclusive nature of cities, especially for teenagers whose gender identities might still be evolving, although the point was also elaborated by all genders.

5.2.2. Teenagers' social infrastructure in the city

Throughout the answers, young people named specific spaces and places, which constitute the networks of social infrastructure in each of the case study cities (Figures 5.5,5.6,5.7 and 5.8).

Among indoor spaces, shopping malls and libraries were the most commonly mentioned with these being prevalent in Manchester and Birmingham. For outdoor spaces, parks, green spaces and shopping districts emerged as the top categories. Sofia and Valencia stood out as the cities where predominantly outdoor spaces were quoted, reasserting the cultural and climatic differences discussed earlier.

In Birmingham: Bullring(8) shopping centre; City Centre (8); Grand Central/New Street rail station(4); Star City shopping centre(2); New Square retail centre (1); Red Point climbing centre (1); Birmingham Library (1); Sutton Park (1); Pigeon Park (1);

Manchester: Manchester Arndale shopping centre (7); City Centre (3); Northern Quarter (2); Urbis / Cathedral Gardens park (2); Picadilly Gardens (2); Deansgate street (2); Trafford Shopping Centre (1); Afflecks retail (1); ODEON Great Northern cinema (1); VUE Printworks cinema (1); Castlefields park (1); St Peter square (1); Market Street (1); Manchester Victoria rail station (1)

Valencia: La Universidad (3); el Ayuntamiento (3); Colón (2); Ciudad de las Artes y las Ciencias (2); rio Turia de Valencia (2); Blasco Ibanez (1); Parque de Cabecera (1); la playa de la malvarrosa (1); Parc Natural de l'Albufera, València (1); La plaza de la reina (1); Xativa (1); la zona de Aragón (1); Cardenal Benlloch (1); Plaza de la Virgen (1); Plaza de Toros (1); Palacio de congresos (1); L'horta nord (1); localidad de Godella (1); Calicanto (1);

In Sofia I interviewed people in schools all which have a city-wide catchment area in terms of student recruitment, reflecting the spread of place names mentioned.

Sofia: Palace of Culture (10); Vitoshka street (4); Borisova Gradina (3); Iujen Park (3); National Theatre park (3); Sofia University park (2); Soviet Park (1); Parк Zaimov (1); Grafa Street (1); Aleksandar Nevski square (1); Slivnica Village (1)

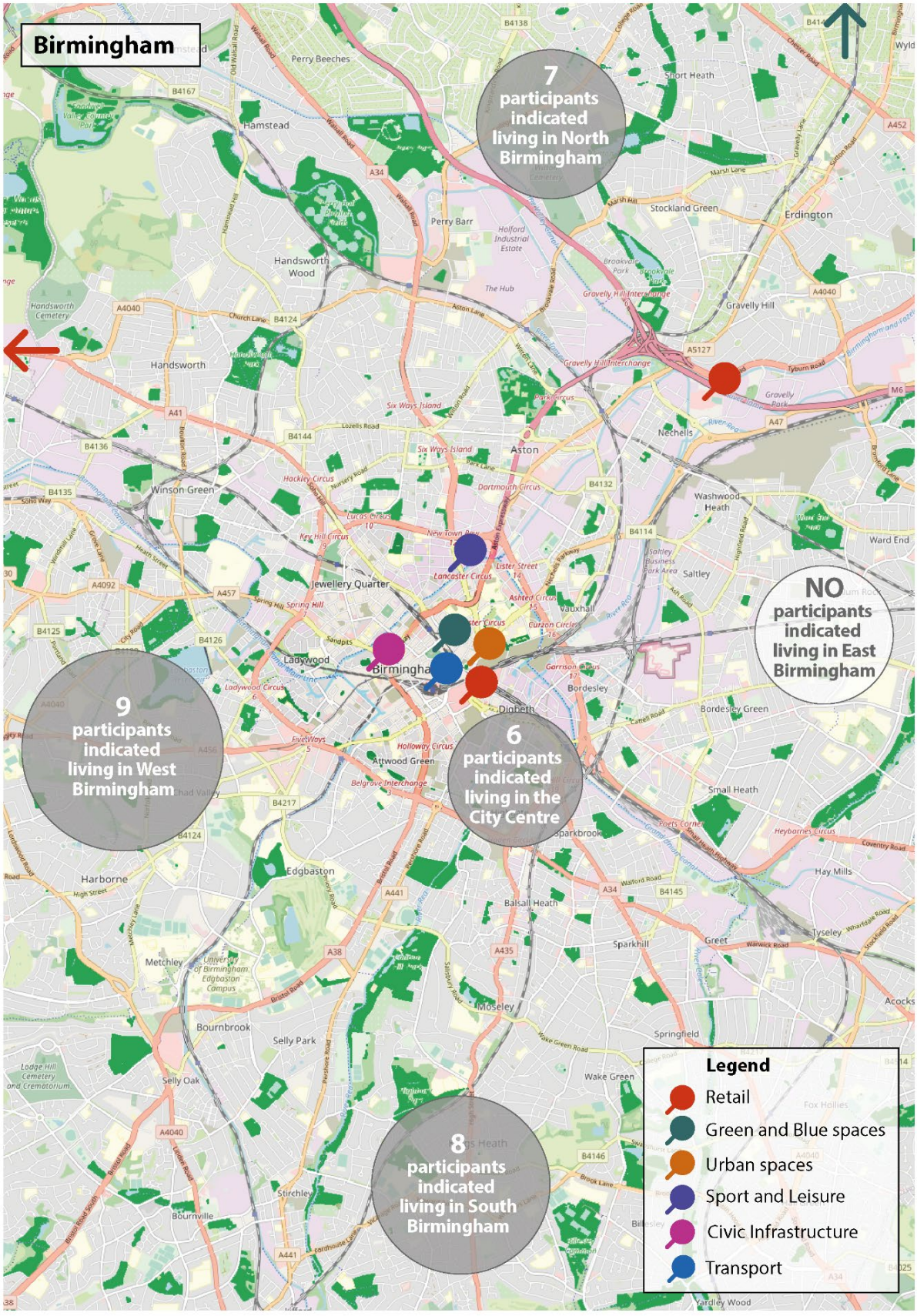

Figure 5.5: Map of Birmingham indicating named locations and geographical split of participants, base map sourced from Open Street Maps

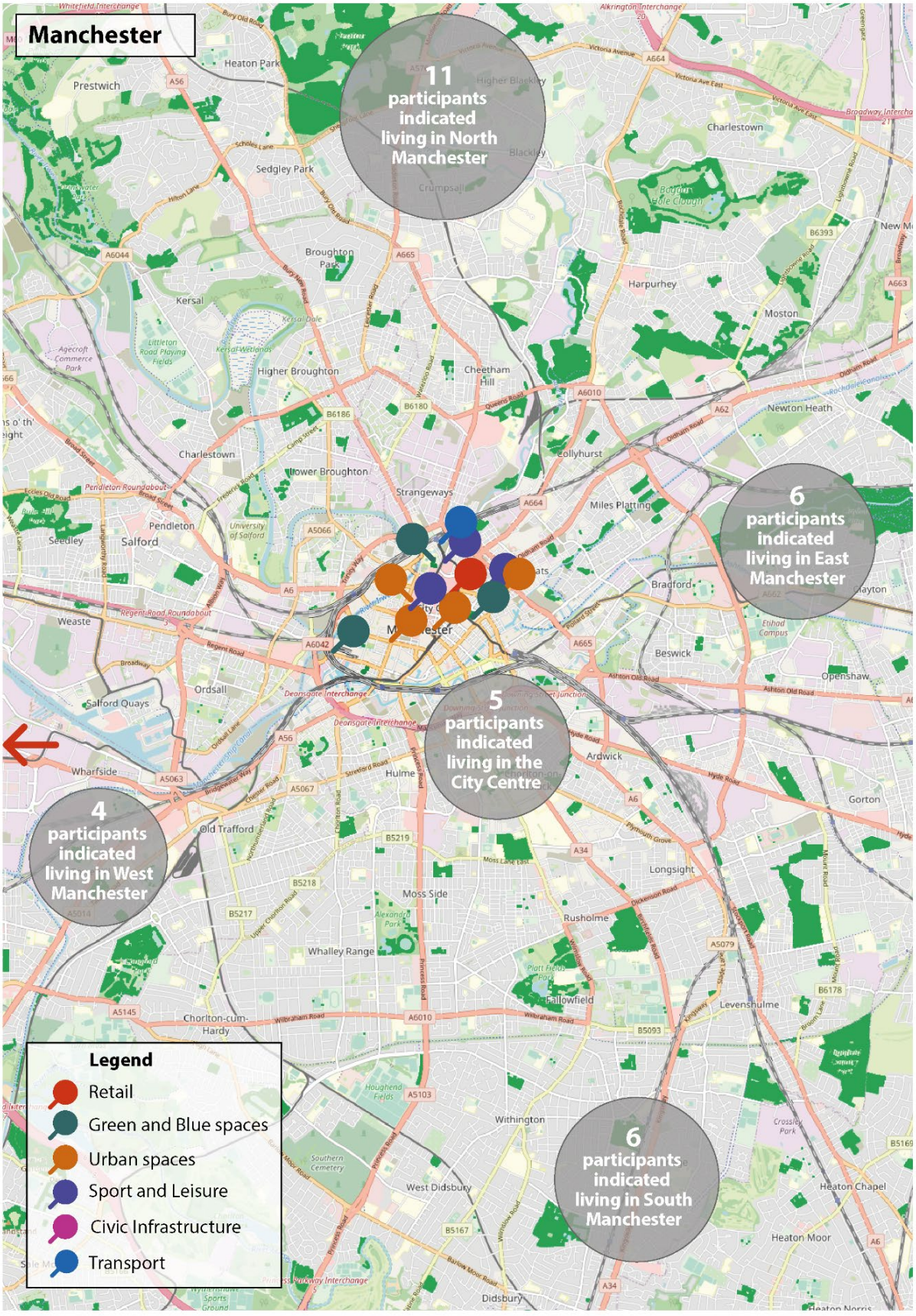

Figure 5.6: Map of Manchester indicating named locations and geographical split of participants, base map sourced from Open Street Maps

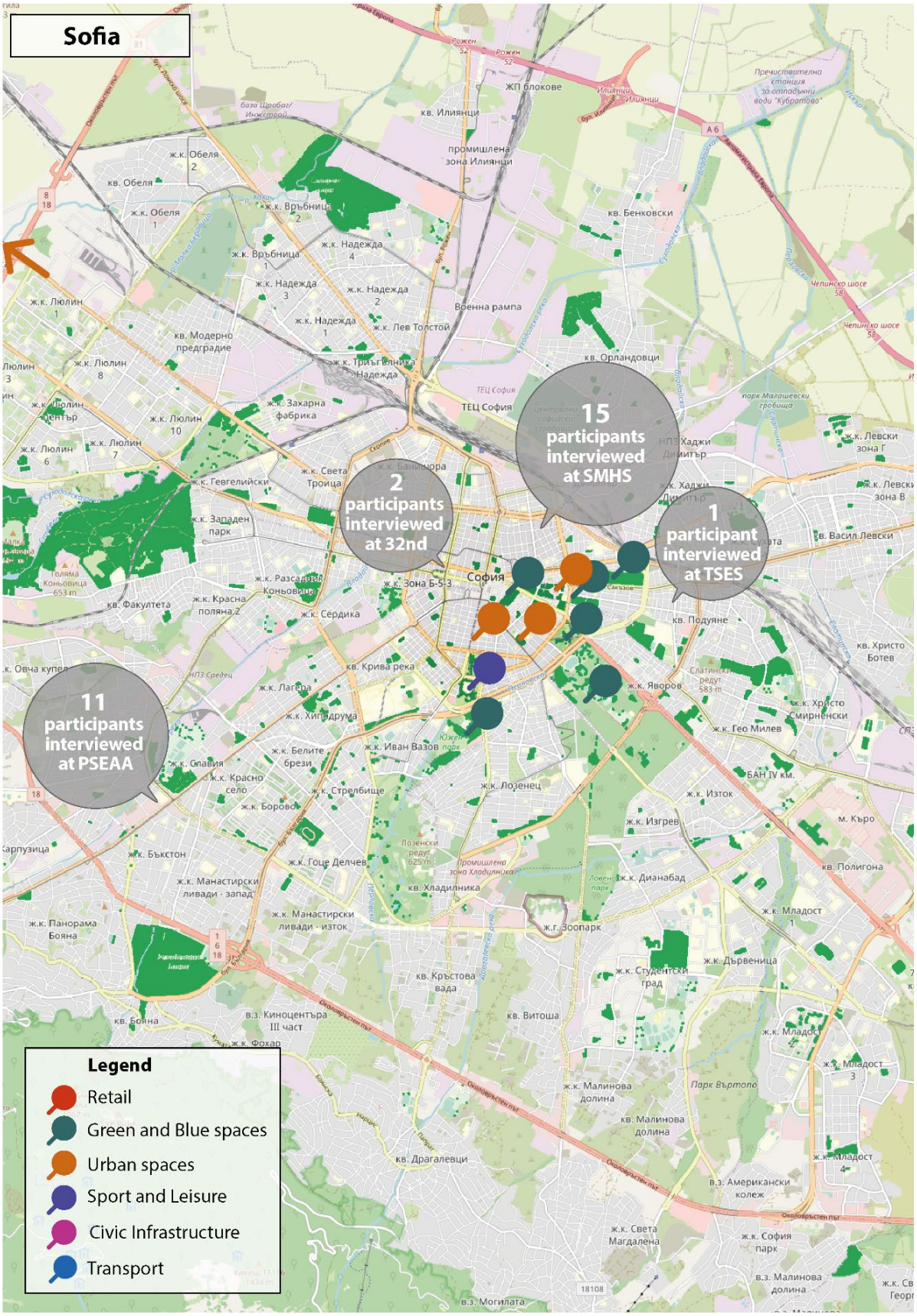

Figure 5.7: Map of Sofia indicating named locations and geographical split of participants, base map sourced from Open Street Maps

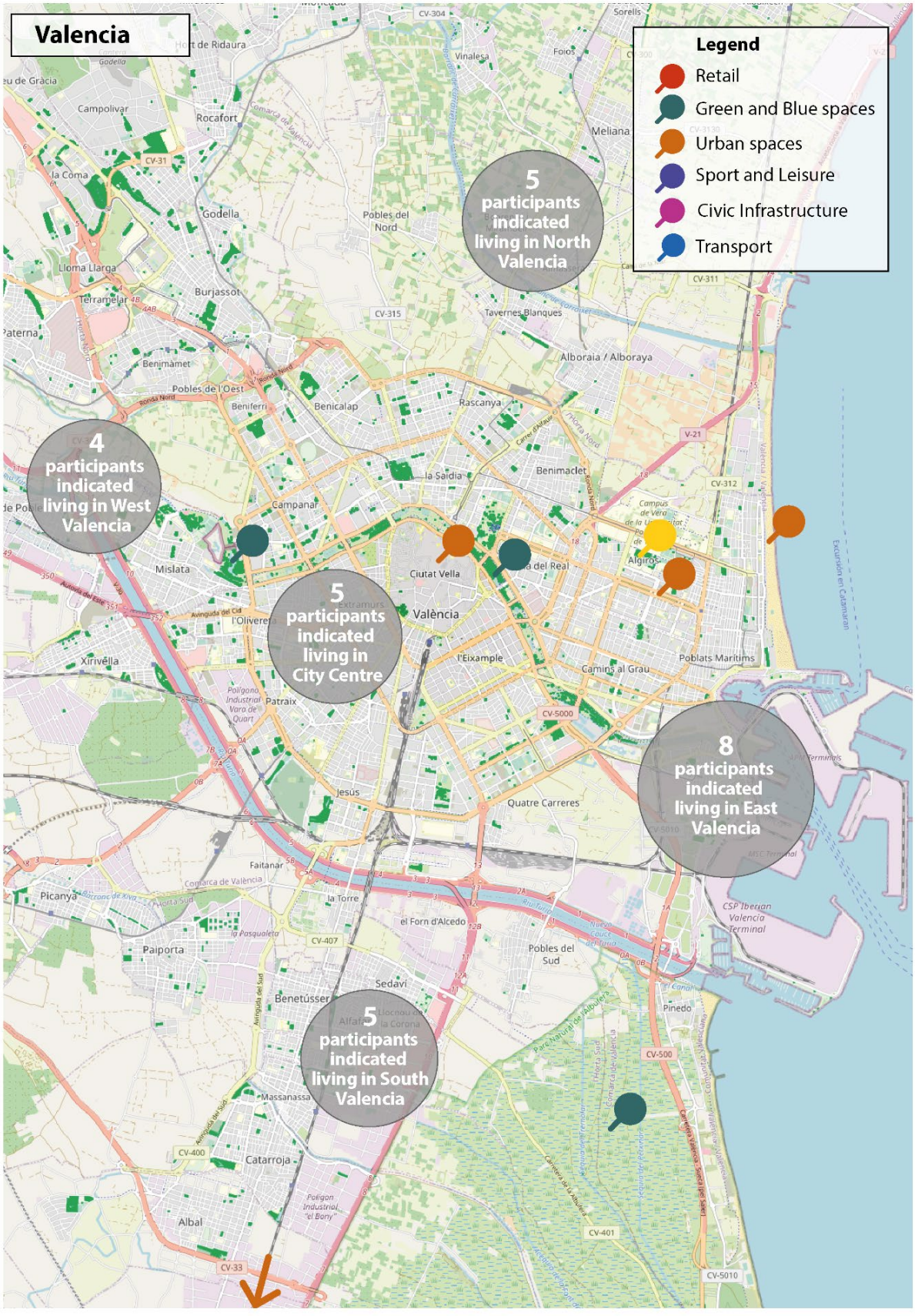

Figure 5.8: Map of Valencia indicating named locations and geographical split of participants, base map sourced from Open Street Maps

5.3. Awareness and perceptions of Urban Planning

"The dissemination of information about urban planning and design should be greater so that it reaches all of us, young people." [La difusión de la información sobre el urbanismo debería ser mayor para que llegue a todos nosotros, a los jóvenes]– 18-year-old, Female, North Valencia

Questions were asked about young people's willingness to change their cities, including in which areas they would like to transform and how they would prefer to be involved in that process, should they wish to do so. The questions aimed to connect young people's understanding of the spaces they use in their cities, the types of change they would like to see and identify the overlaps with the planning system.

5.3.1. Teenagers' awareness of Urban Planning

In the contexts examined, understanding and learning about urban planning is largely intermixed within personal experiences, interests and school curricula on citizenship, geography and politics, unless teenagers are enrolled in a specific vocational programme focused on this area (such as T-levels in England or specialised secondary schools in architecture in Bulgaria).

When questioned about their familiarity with the process of urban planning in their cities, a mixed picture was presented (Figure 5.9). Young people in Sofia were most likely to indicate a complete lack of awareness as to how their city is planned. In all contexts and scales, teenagers were clearly uncertain about their level of awareness, demonstrated by the low amount of youth indicating familiarity with the process of urban planning in all contexts. The picture was more complex when some awareness was considered: in Birmingham, potentially due to Big City Plan marketing strategy in early 2010s, young people were more likely to have an idea of what planning is. In Valencia, a much denser city compared to the other three, young people appear to be better aware of what urban planning might entail. Youth in Manchester and Sofia, living in cities undergoing a construction boom in recent years similar to the Birmingham case, seem to lack the same level of awareness of planning.

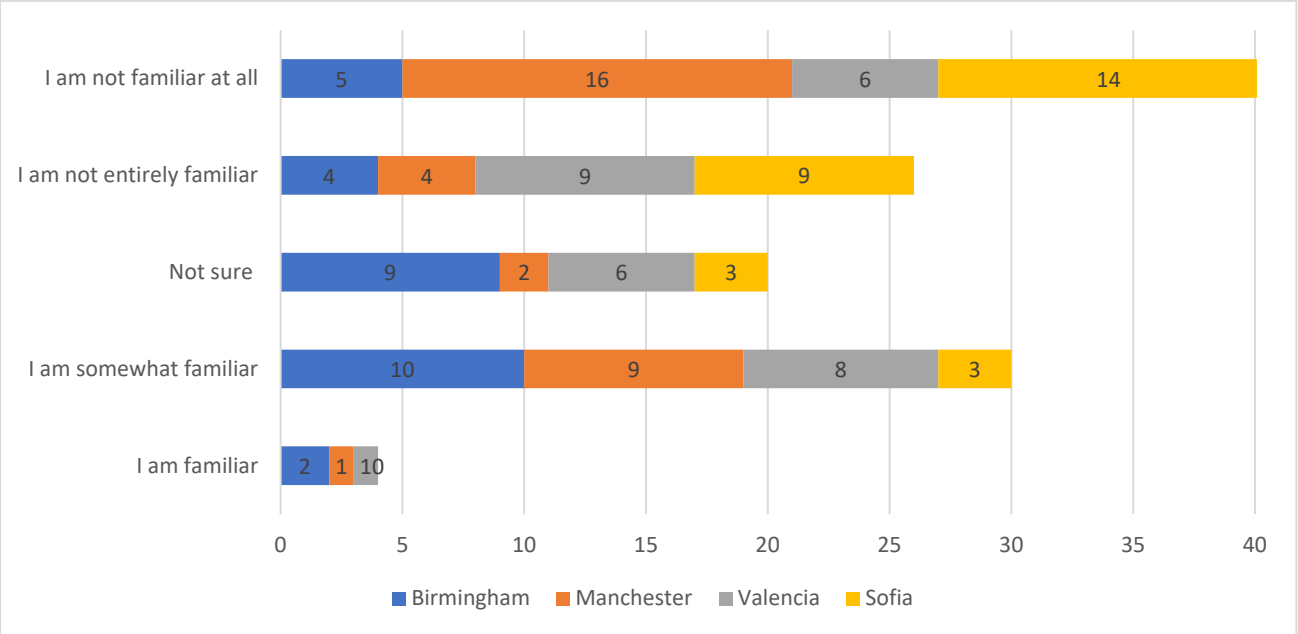

Figure 5.9: Are you familiar with the process of urban planning in your city?

To fully assess the level of understanding in full and to counterbalance for any implicit bias when considering young people's abilities to self-reflect and knowledge, a further question was asked. This question aimed to evaluate the level of awareness that their peers (people the same age as them) might have of their city's development. As seen on Figure 5.10 a more definite trend emerged, pointing to a wider perception of a lack of awareness and understanding of urban planning amongst the teenager population. Whereas in the previous results there were clear outliers, here we can see a general trend towards the lack of awareness. This observation is backed up by comments some of the interviewees had regarding the lack of discussion about planning with peers:

"We haven't been told about urban planning at all; this is new information to me and I'm most certain my peers too." 16-year-old Male from North Birmingham

"Well ... I don't know, I just didn't discuss these topics with my classmates." [Емии.. не знам, просто със съучениците ми не сме обсъждали тези теми] 15-year-old Female from Sofia

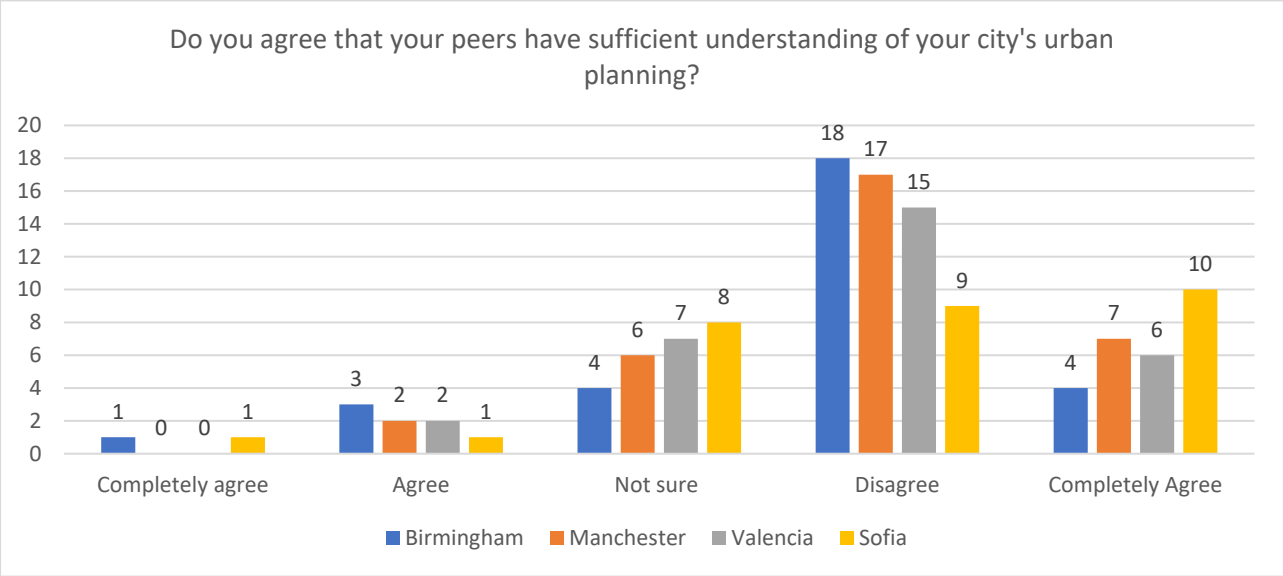

Figure 5.10. Teenagers' assessment of their peer's knowledge about urban planning.

5.3.2. Who plans the city in the eyes of teenagers

Urban planning is a wider socio-political process delivered principally by local governments and political actors in all three national contexts. Therefore, it was key to understand to what degree young people were aware of those mechanisms. In some of the responses, it was clear that this age group is keenly aware of political developments in their city.

The same multiple-choice question was given in all four contexts, asking them to identify two key actors of urban planning delivery. There were six answers broadly consistent with the role of local and central government in the respective planning systems and some options designed to understand the level of uncertainty about the role of planning. As seen in Figure 5.11, in general teenagers were aware of the role of local government in delivering planning services. In the highly centralised system of England and with the status of Sofia as a capital, central government was rightly identified as key player – something not seen in Valencia which is a regional capital. There was no clear indication why this might be the case.

A minority of teenagers, however, seemed to see the planning system as a political rather than technical one, indicating that political parties, prime ministers or presidents were primarily perceived as responsible for the planning of their city. The question was asked before any context of smart city ideas were presented, yet some teenagers indicated technology companies as the drivers of planning services in their cities, potentially raising a question about visibility and day-to-day interactions between residents and planning facilitated by technology.

Reflecting on the previous questions, teenagers were asked to indicate why they answered as they did and what are the key challenges to understanding the planning systems in their own contexts. A summary of the responses is presented in Table 5.2. detailing the diversity and scope of suggestions, aggregated by the key areas that emerged.

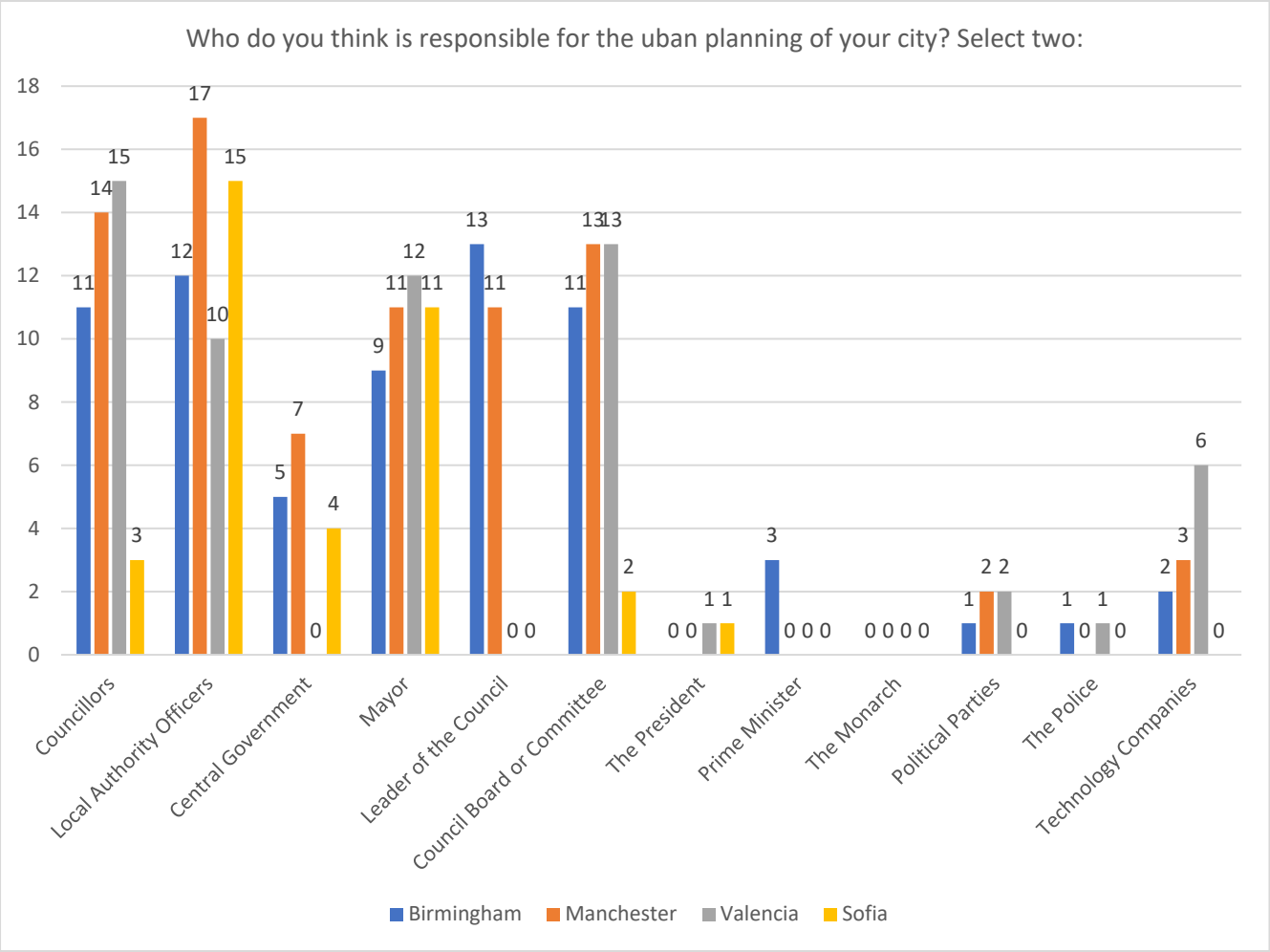

Figure 5.11: Teenagers' awareness of political actors in planning.

When asked, most young people knew little about urban planning and conflated politicians with professionals. This pattern was observed across all cultural aspects. It is an important consideration for any future engagement: education about the subject must come first.

Table 5.2: Teenagers' reporting on the current challenges to learning about urban planning. Numbers in brackets indicate the number of instances this theme was mentioned, only themes reported by more than 2 people included.

Area	Birmingham	Manchester	Valencia	Sofia
Access to Information	Lack of awareness of the topic (9); No public discussions (8); Lack of resources (7); Lack of suitable social media dissemination (4).	Insufficient advertising and promotion of the topic (8); Information is inaccessible to lay persons (5); Lack of resources (3); Algorithms on social media do not target youth (2); Lack of awareness (2); No social media dissemination (2).	Information is inaccessible to lay persons (5); No public discussions (3).	Lack of awareness of the topic (6); No public discussions with peers (4); Information is inaccessible to lay persons (2).
Formal Education	Lack of education about the topic of urban planning (14).	Lack of education about the topic of urban planning (5); No talks in schools or colleges by planners (4).	Lack of education about the topic of urban planning (6).	Lack of education about the topic of urban planning (5).
Challenges concerning the individual	The topic is not of interest to young people (6);	Youth don't know what urban planning is (4); Young people don't have research skills to find out (3); Lack of interest (2); Lack of time (2)	The topic is not of interest to young people (5); Young people don't take the initiative to learn about their cities (4);	The topic is not of interest to young people (6); I don't know what urban planning is (6); Youth are focused on school and career (5); Some young people are really interested (4); It is not relevant to young people (3); Youth aren't interested in politics (3); It is not a priority for young people (3); Young people in Bulgaria are narrow minded and not exposed to different cultures (3); Desire to emigrate influences interest (2); Connected to personal identity (2);
Empower-ment	Young people have no influence on decision-making (2); There are no opportunities to apply knowledge (2);	No opportunities or platforms for young people's voices to be heard (4);	There is mistrust in politics and politicians (3);	Youth have valuable opinions and ideas but not heard (5);
Challenges concerning society	Young people are patronized by older generations (4); Lack of proactive approaches by planners (2).	Young people are patronized by older generations (5);	Planners are not interested in young people being aware (3);	

Teenagers presented a nuanced picture of the challenges they face when learning about urban planning. Education was consistently presented as a key barrier, as exemplified by a 19-year-old Male from Birmingham City Centre: *"It's not something on a lot of young people's mind. The education system does a bad job at making us even aware of what planning is.".* Education was often linked with the fact that urban planning is not felt to be a relevant topic of discussion for this demographic: *"It's not spoken about in colleges and schools or seen much on social media"* reports a 16-year-old Female from Northeast Birmingham. Lack of spending power was another element

which in the eyes of some teenagers put them lower on the priority list to be informed: *"obviously they're* [planners] *concerned with consulting people who have money or who will benefit the planning financially, which I guess we don't directly right now"* - 17-year-old Female from South Birmingham. Intergenerational tensions were exemplified by a 17-year-old gender fluid person from West Manchester: *"I think there is a lot of stigma surrounding young people and naivety. A lot of adults tend to stereotype us as less informed and less intelligent, thinking they know best and that their way of thinking is the only valid way. this invalidation of young people can have severe impacts on their mental health and make them feel as though they are less than anyone else in society (from experience)."*

Awareness of urban planning was closely linked with interest and communication strategies for planning issues. *"I know that many people are not targeted with ads related to urban planning as their advertisement profiles are not suited."* Reported a 17-year-old Female from North Manchester. The lack of advertisement on social media, compounded with the lack of watching TV, were represented as key barriers to sources of information. Lack of interest therefore was reported across all four cities*: "Most young people do not know about urban planning because they are not interested"[La mayoría de los jóvenes no conocen la planificación urbana porque no les interesa]* - 18-year-old Woman from East Valencia. Teenagers at that age reported being under competing pressures for their attention: *"It's just that at my age, there are more things that have to do with university, with things like that that are more pressing. What degree to pursue, commitments to friends [Просто на моя възраст има повече неща, които са свързани с университет, с такива неща, които са по-належащи. Каква специалност да се насочи човек, ангажираност с приятелски кръг.]* – 16-year-old Female from Sofia Maths High School.

Lack of both first-hand experience and good examples of urban planning were given as a reason for the lack of awareness in Bulgaria: "they have been to other countries, they can see how it is set up there, maybe from the public spaces, and they can make a comparison." *[били са в други държави, могат да видят как там е устроено, може би от обществените пространства и могат да направят сравнение.]* explains a 15-year-old Male from Sofia Maths High School. Finally, political disillusionments were another key trend emerging: *"In large part due to sheer ignorance and mistrust created by the current lack of political commitment." [En gran parte por la pura ignorancia y desconfianza creada por la falta de compromiso político actual.]*18-year-old Male from Rocafort, Valencia.

Overall, the interview results painted a diverse picture of teenagers' views on themselves and their role in the planning of their future city. Participants demonstrated long-term and political considerations, demonstrating the ability to think in a layered and nuanced way. However, there were also many noticeable gaps in awareness, some of which were expected due to lack of experience or knowledge of young people.

5.4. Participation in urban planning

This section deals with the perception of young people about participating in urban planning. It summarises the responses dealing with key questions: Do young people feel that they can participate? What are the main challenges to this participation? Are they given opportunity? Would they like to take part in changing their city?

5.4.1. Participation in Urban Planning

David & Buchanan (2019) point to the need for researching young people's views if their participation in urban planning is to be institutionalised, especially in terms of whether and how they would like to be involved in the process.

Participants were asked to evaluate peer participation in urban planning, as seen in Figure 5.12. In the English context, young people were unanimously negative in their perceptions. Bulgarian youth presented a more nuanced picture; however, they still tended to disagree. Valencian youth emerged as outliers: opportunities for youth participation were deemed to be accessible. Valencia has a rather active network of youth clubs, represented by a youth council and strong regional and local government, which could explain some elements of the perceptions of young people. Across gender split, female respondents were generally more likely to indicate that their peers have opportunities to engage than male ones in the English context. No significant difference was observed in the other cities.

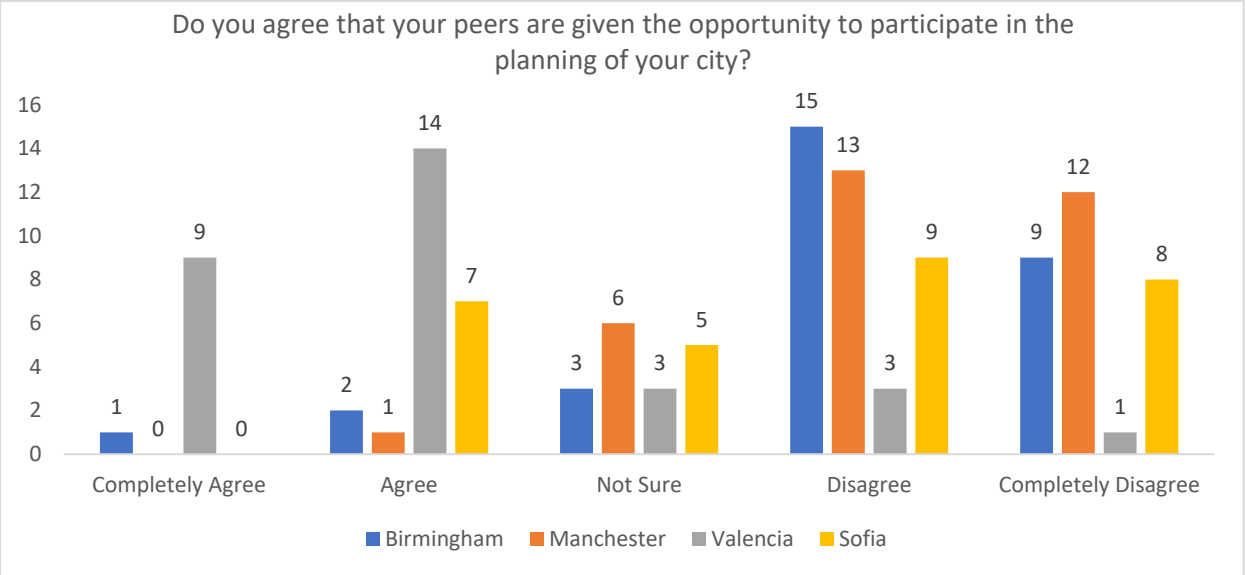

Figure 5.12: Perceptions on opportunities to participate in urban planning.

A more uniform picture emerged when the question was asked about past individual participation in urban planning (Figure 5.13). Whereas the perception of participation in the previous questions showed only Valencian youth to be engaged, individual experiences point to a much more similar role of youth in urban planning across all contexts. The trends in all four cities were generally similar, demonstrating generally that most young people have not had a chance to participate either due to lack of knowledge or awareness how to, but indicated interest in doing so. Most participants in all contexts responded that they have not participated in the past but would like to do so.

In the Western European examples, youth were more likely to indicate past participation, suggesting that the Bulgarian planning system has yet to develop sufficient opportunities for youth engagement. No significant difference in responses was observed when responses were disaggregated by gender.

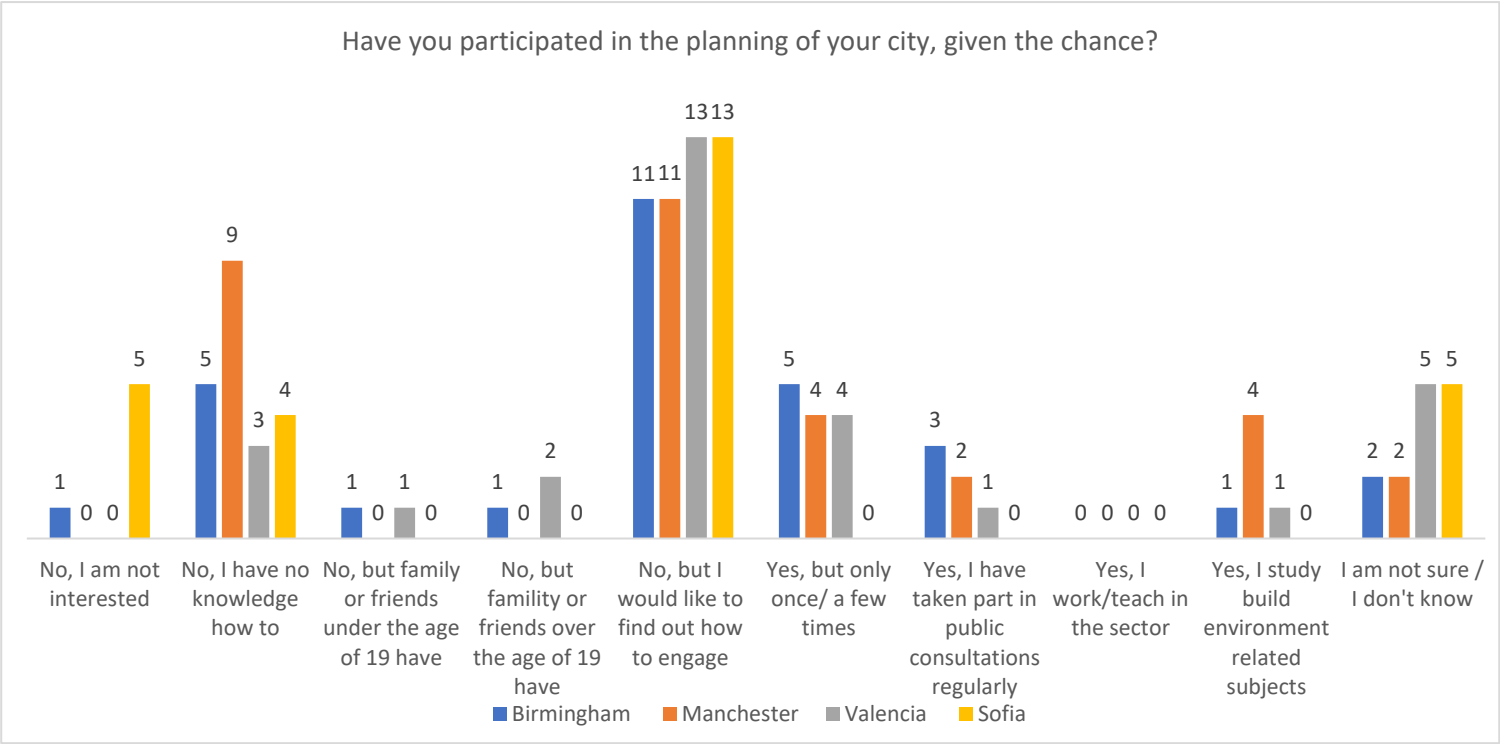

Figure 5.13: Opportunities and interest in participation in urban planning.

Young people are often thought of as "the future citizens", yet it is important to note that their experience of climate collapse and importantly social media reporting of it is shaping the way they engage in societal systems. The young people interviewed often implied shorter future horizons in their thinking. To talk about future visions of cities it is important that we first understand and contextualise their views of the "future" as a whole. Young people are living through a climate and ecological poly- crisis and this is reflected in the way they conceptualise their futures:

"Yes, in the sense of a more ecological life, because now more and more, and posts on Instagram, left and right; everything leads to 'The planet dies in 5 years, 2 months and 3 days!', for example. […] well in the sense that most people with this mindset, well we will all be dead by 40, so it doesn't really matter. Most people have already given up…" [Да, в смисъл за по-екологичен живот, защото сега все повече и повече, и постове в Инстаграм, наляво-надясно; всичко води към 'Планетата умира след 5 години, 2 месеца и 3 дни!', примерно. […] ами в смисъл повечето хора с това мислене, ами ние до 40 ще сме измрели всички, така че няма много голямо значение. Повечето хора вече са се отказали] [] - 15-year-old Female from Sofia

Sentiments espousing a short-term or alarmist way of viewing the future emerged throughout the study, however, they were in the minority. No explicit questions were asked designed specifically to test how young people conceptualise their future lives or prospects, the study primarily focusing on the built environment, planning and the smart city.

5.4.2. Enablers and Barriers to Participation

To further examine the reasoning behind those answers, participants were asked to elaborate why they indicated as they did to the previous questions. Answers were coded and sorted in several categories as seen in Table 5.3 (Barriers) and Table 5.4 (Enablers): Access to Information; Education

and Learning; Individual Challenges; Engagement; Motivation; Inter-generational challenges and Cultural Challenges. A further distinction was derived, distinguishing young people's reasonings into barriers to their participation that need to be overcome by all stakeholders and enablers which can be leveraged to overcome those barriers.

Table 5.3: Young people's comments and perceptions of key barriers(B) to their participation in urban planning.

	Birmingham	**Manchester**	**Valencia**	**Sofia**
Access to Information	--	Lack of information on how to get involved (2); Hard to find out what's happening in the city (1).	Youth don't know how to take part (8); I have never heard about urban planning (2);	Youth don't know how to take part (4); Lack of information about urban planning (3); Lack of advertising of opportunities to take part (2);
Education and Learning	*N*o knowledge or expertise to take part (3); Schools don't teach urban planning (1).	Young people are not educated about urban planning (4); Young people don't know what urban planning is (4).		Young people are not educated about urban planning (3).
Individual challenges	I don't think I will be good (1); I am not confident (1); I am planning to leave the city (1); It requires too much time (1).	I lack confidence (2); I don't know how or what I can contribute (2); I lack the tools to take part (1).	I don't think I remember all (2); I am not sure my ideas are accurate (1); I don't think I have enough research skills (1); I don' have much time (1); I don't know what I can do (1).	Young people might not want the responsibility (2); Young people need time (2); Commitment to the city is needed (2); Young people might be shy (1); Young people might not feel qualified (1); Young people might be disempowered (1); Participation requires interest in the subject (1); Young people might want to emigrate (1); Young people might not want to be associated with bad decisions (1); It is not a priority (1).
Engagement	No opportunities to participate in urban planning (7);	No opportunities to participate in urban planning (4); There is no proactive engagement towards young people (3).	No opportunities to participate in urban planning (1);	No role models (3); Only really interested youth will get involved (1); No organisations to engage youth (1); No peers are engaged (1).
Motivation				Initiatives need to motivate youth (3); It depends on how interesting the initiatives are (2);
Inter-generational Challenges	Planners don't care (2); Adults patronize us (1).	Adults patronize us (2); There is a stigma around youth (2); Planners and politicians don't think long-term and live with the decisions (1).	The responsibility should rest with experts (1); Adults patronize us (1).	Adults ignore our views (2); Under 18s can't vote, so no outlet (2); Young people might not be mature (1); No proactive initiatives to involve youth (1); It can cause conflict between personal and collective priorities (1).
Cultural Challenges	Birmingham council doesn't design for all (1).	Decision-makers often don't live in Manchester (2).	--	Bulgarian youth need to be more open minded (2).

Several key points arise from the responses. A sizeable proportion of all participants expressed motivation to take part but lack of awareness of opportunities to take part: *"I would like to get involved as I'm passionate about building community and social projects, but no idea how I would start"* stated a 17-year-old Female from South Birmingham. A sentiment often reported: *"This is the first thing close to involvement in the planning of the city I have participated in, though I would love to get involved if given the opportunity."* – 19-year-old Female from South Birmingham. Giving back to their place and community were prime motivators: *"I'd like to help work on the place that I call home"* – 16-year-old Male from South Manchester. Collaboration with wider communities and society was another strand youth reported on: *"Because whenever we can collaborate for the improvement of our city and our environment, it is beneficial for us as citizens. " [Perquè sempre que es puga colaborar per la millora de la nostra ciutat i del nostre entorn, és beneficiós per a nosaltres com a ciutadans.]* [– 18-year-old Male from South Valencia.

Table 5.4: Young people's comments and perceptions of key enablers (E) to their participation in urban planning.

	Birmingham	**Manchester**	**Valencia**	**Sofia**
Access to Information	--		I would like to find out more (5).	
Education and Learning	Youth want to learn in a formal environment (2).		I study this subject in specialized school (1): I would like to know about urban planning as it is essential for the future (1).	Young people can learn if engaged in discussions with peers (1).
Engagement	Participation can help us become smarter (1).	Participation in planning is linked to activism and protest (2).	I would like to take part (3); We all need to build our cities together (2); Future generations need a stake in their home cities (1); Participation is a good experience (1).	Youth need to see participation leads to action and change (3); New and innovative initiatives (1); Activism and protest is linked to planning (1).
Motivation	Participation in urban planning interests me (8); Urban Planning affects my future, and I care (3); I am passionate about my community (2); I want to be part of a change (1).	I would like to get to know and help my city (6); Participation in urban planning interests me (5); Young people should have a say on the future of their city (4); I would be a great extracurricular (1); I believe it will be fun (1).	I want to make my city better (3); I want to help however I can (2); Urban Planning is interesting (2); I want to change things (1);	Urban Planning affects my future and I care (2); I care about the environment and I am motivated (2); I want to better my neighbourhood (1); Projects such as this motivate me (1); I care where tall buildings go (1).
Inter-generational Challenges	Young people can contribute with a different perspective (3).	Young people can contribute with a different perspective (5); Intergenerational understanding can be achieved (1).	Young people are the future citizens (1); Young people can contribute with a different perspective (1).	Young people can contribute with a different perspective (3); Young people should be listened to and supported by experts (1).

Another key theme emerged in the form of intergenerational tensions. Some young people expressed perceptions that planners and politicians don't think long-term and as such overlook the potential contributions of teenagers: *"Because planners don't care"* – 17-year old non-binary person from West Birmingham; *"a lot of the people that are making decisions in the planning of Manchester will not experience as much of the impact it'll have as we will."* – 17-yeard old Female from North Manchester. Young people felt that they are not proactively involved in the processes of decision making: *"I don't think there is much targeted towards people in my age group (or the public in general) about the urban planning of the city"* – 17-year-old male from East Manchester. There were also comments which questioned the positionality and closeness of planners to the demographics and geographies for whom they plan.

However, there were clear suggestions to combat this perception. Establishing modes of active participation on a long-term basis was suggested in contrast to one-off consultations: *"It's voicing an opinion, but it's not really participating in building something." [Това е изказване на мнение, но това не е наистина да участваш в построяването на нещо.]* [– 16-year-old female from Sofia Maths High School. Establishing what good participation looks like was another suggestion, young people identified the lack of peer role models: *"I suppose an example of role models, yes, and.. to have taken up and..." [Предполагам че пример от role models, да, и.. да се е заел и…]* - 16-year-old Female from Sofia's 32 Secondary School with the Study of Foreign Languages, as well as the lack of visibility of participatory processes that lead to action and change: *"Well.. I think a good motivator is that they can see real results of what they want." [Ами.. мисля че добър мотиватор е това, че могат да видят реални резултати от това, което искат.]* – 18-year-old Male from Sofia's Professional High School of Electrical Engineering and Automation. Activism was also picked up as an activity to which young people are exposed and could be a motivator for further participation in other citizenship processes, such as participation in urban planning: *"i have participated in a climate change protest & many petitions wanting a greener future and equality for our country but would like to participate more"* – 16-year-old Female from North Manchester.

Finally, young people picked up on issues which planners working with them should address, such as knowledge, expertise and confidence in themselves: *"I doubt that my ideas are always the most accurate."[Dudo que mis ideas sean siempre las más acertadas.]*– 16-year-old - Male from East Valencia. Young people are not isolated from wider societal perceptions of themselves purely because they are members of that age group: *"although the priority must fall on the experts and not on the ignorant people."[aunque la prioridad debe recaer en los expertos y no en el pueblo ignorante.]*– 18-year-old Male from Valencia. Cultural context needs to be considered, as seen in Table 3. In certain responses, negative or positive perceptions of the population or institutions filtered down to teenagers.

5.5. Can technology facilitate participation?

5.5.1. Permeation of technology in the urban realm

The permeation of digital technologies in the urban realm also proved hard to assess for teenagers. Overwhelmingly, the interviewees had difficulties naming urban tech examples beyond technologies that were close to their everyday lives (Table 5.4). The three predominant examples in every city were

broadly consistent with the comment of a 17-year-old female from South Birmingham: *"Phones, computers, smartwatches."*

Table 5.4: Urban technologies: Youth's top five choices across the four case studies in order of number of responses.

Birmingham	Manchester	Sofia	Valencia
Smart Phones (17)	Smartphones (21)	Digital screens (17)	Smartphones (16)
Laptop (13)	Laptop (14)	Smartphones (6)	Transport tech (6)
Personal computer (10)	Tablet (11)	Metro barriers (6)	Tablets (6)
Social media (7)	Personal computers (7)	Traffic lights (5)	Personal computers (5)
Wearable tech (6)	Digital billboards (5)	e-Scooters (5)	"I don't know any" (5)

There were detailed attempts at unpeeling the urban environment, and a 17-year-old male in Sofia exemplified the thought process observed in most responses: *"The stop signs, uh, I don't know if it's with the traffic lights, where it's pressed to turn green, if it's for something like that. I guess some cameras, the traffic police, something like that."* This indicates a lack of critical engagement with technology in the urban realm, apart from awareness of some transport-based urban technologies, which scored higher in the mainland European context.

5.5.2. Digital skills preparedness

When asked if they possess the necessary digital skills to be better equipped in the future, responses were unequivocally negative, as seen in Figure 5.14. Young people do not yet believe that they have the necessary digital skills to be equipped for the future. There was a significant confusion between their self-reported knowledge, desire to take part in planning, and understanding of available opportunities. A 17-year-old male in Sofia responded: "*I'm not qualified for that, and I think there are people who would do it much better than me.*" Another 16-year-old male in Sofia responded: *"Maybe again, we're not mature enough for that* [participating in urban planning]." [note, these two interviews were conducted entirely in English with Bulgarian teens on the request of the young people]. As Himmel et al. (2014) suggest, urban challenges connected with planning and future city visions need to be incorporated into school-level education to provide a deeper understanding of systems thinking and causal links.

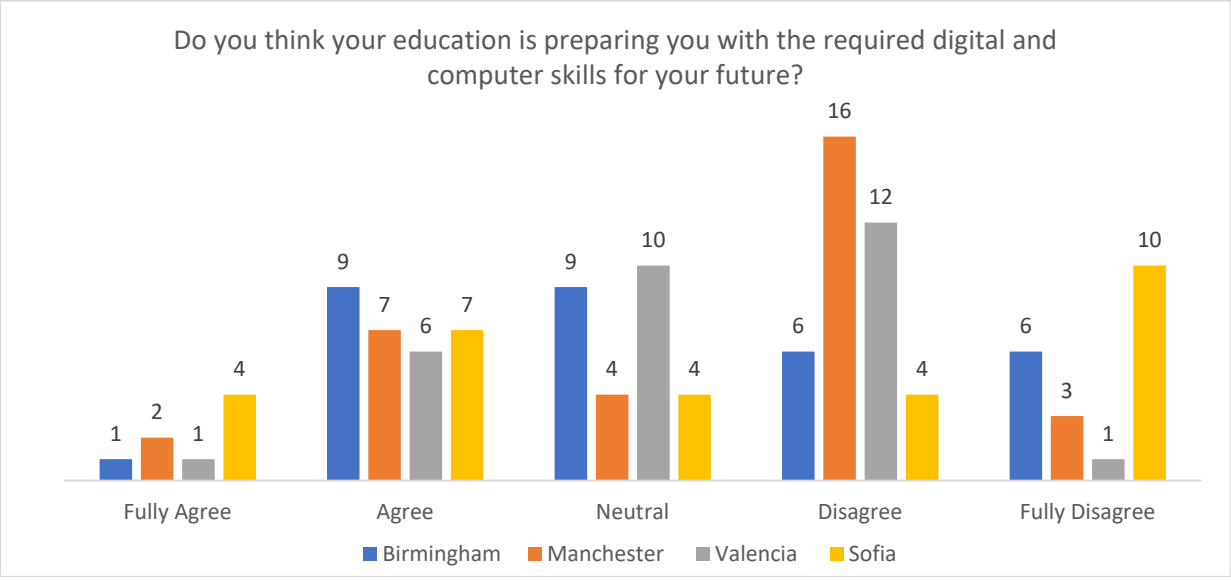

Figure 5. 14. Self-assessment of digital and computer skills education.

5.5.3. How can technology promote youth participation

Difficulties were encountered when asked how digital technologies can better engage young people in urban planning. Young people in all four contexts, particularly in Bulgaria, struggled to provide suggestions (Table 5.5)

Table 5.5: How do you think digital technologies can help young people participate in urban planning? Reporting only more than 1 answer. Source: Author

	Birmingham n=30	**Manchester n=32**	**Valencia n=30**	**Sofia n= 15**
Promoting awareness	Young people can stay informed (3); Workshops and Events (2); Increased interest (2); Advertising (2); Social media use (2)	Social media use (5); Finding information (3); Advertising (3); Understanding (3); Communication via video (2); Boosting engagement (2);	Social media use (5); Learn about new ways of living (2); Attractive and interesting content (2);	Social media use (4);
Platforms and apps	Digital Twins and Games (2); Planning applications (2);	Platform to get young people's voices heard (4);		-
Accessibility	Increased accessibility and use (11);	Makes planning more accessible (2); Sharing planning information online (2).	-	-
Inclusion	-	Support with social anxiety (2).	-	-
Education	-	-	-	School environment (2).
Power and Democracy	-	-	Giving youth a way to vote in city development (2);	-
Digital Natives	Technology is popular and young people are already adapted (3).	-	Main way to interact with young people (2); Technology is easier for us to use (2).	-
More Research	More surveys of young people (5).	Surveying young people (6).	Online methods to collect youth views (3);-	-

Technology was primarily seen as an information facilitator and, as such, playing a role of mediator between young people and their cities. In Valencia, solutions related to the right to the city were raised quoting the city's smart city projects which hosts applications and platforms for citizens to engage with. Young people suggested that this can be expanded to provide digital apps to vote on issues in the city that concern them. This approach gives them a voice beyond potentially outdated democratic structures and provides them with an opportunity to voice their opinions, which otherwise they will not be able to until they are of voting age.

It is important to equally note the desire for non-digital and hybrid solutions expressed by young people. Teenagers in Sofia were much more likely to be critical of fully digitalised solutions, stressing

the importance of integrating technology with existing face to face processes. In all contexts, young people do not see technology removed from their daily lives but rather as an extension of it.

Common themes emerged which were considered priorities: increased accessibility and use of municipalities' websites, better digital advertising to inform about future developments, improved use of social media by stakeholders, involvement of youth in digital simulations and games to communicate changes in cities, and facilitation of online workshops, events, and surveys. Young people were cautious of digitalisation emphasising that it should allow meaningful engagement and for their voices to be heard. A lack of access to information and awareness of what is happening in the city was also widely reported, and digital technologies were seen as a potential solution if equitable engagement platforms were established.

5.6. Teenagers' future city visions

Before presenting them with a smart city vision or a model, participants were asked an open-ended question about what changes they would like to see in their city. A diverse range of responses emerged, which were coded and categorised into broad themes, as shown in Table 5.6 and figure 5.15 and discussed in Chapter 3. Overall, their interests centred on transforming their cities into more sustainable and liveable environments.

Table 5.6: What areas are young people most interested in changing in their cities. **Overall theme** (occurrences) and *key codes.* Source: Author

Birmingham	Manchester	Valencia	Sofia
Society and Culture (9) *Safety; Empowering young people; Collective Action; Community Spirit; Access to information; Entertainment and Leisure*	**Sustainability and Green City** (17) *Green infrastructure; Wildlife habitat; Ecological Services*	**Sustainability and Green City** (15) *More greenery; Sustainability integration; Awareness of campaigns; Different vegetation; Deculverting the river; Protect agricultural land; Fauna considered.*	**Design and the Built Environment** (13) *Equitable spatial development; Retrofit and renovation; Better public facilities – e.g. toilets; Better and more accessible urban realm; Design of public infrastructure; Less residential developments; More public space*
Sustainability and Green City (4)	**Society and Culture** (14) *Safer City; Friendly and Inclusive; Homely; Colourful; Opportunities and activities for youth; Improved culture; Care for homeless*	**Design and the Built Environment** (15) *Youth infrastructure; Weatherproof spaces; Quiet Spaces; Charming City; Retrofit; Reconnect with Heritage and Culture; Street Lighting*	**Health and Wellbeing** (13) *Cleanliness; Better Air Quality*
Health and Wellbeing (4) *Cleanliness*	**Health and Wellbeing** (9) *Cleanliness; Less air pollution; Smell nicer; Mental Health provisions*	**Society and Culture** (5) *More art and festival provision; Teaching planning; Accept Change*	**Transport** (11) Better quality of cars; Active transport; Better connected neighbourhoods; Less scooters; Cheaper transport; Better cycle infrastructure
Smartness (2) *Technological infrastructure; Increased digitalisation*	**Design and the Built Environment** (5) *Youth infrastructure*	**Health and Wellbeing** (5) *Cleanliness; Less pollution; Less drugs; Better lighting*	**Society and Culture** (7) *Introduce new planning concepts such as 15-minute city; Diverse places for entertainment; Less*

			protests; More freedom to hang out; More police for safety; Less corruption
Future Visions (2) *Modernisation*	**Transport** (3) *Public and Active Transport*	**Transport** (4) *Sustainable, active and clean transport; Less cars* **Accessibility** (3) *Non-transactional spaces; Accessible opening times*	**Sustainability and Green City** (6) *Green spaces*
Economy (1) *Tourism*	--	**Smartness** (2) *Digitilise; More technology* **Future Visions** (1) *Modernise the city*	**Economy** (3) *Diversify retail; More spatially equitable investment*

In Birmingham, the majority of young people strongly indicated preferred changes related to society such as increased safety, empowering young people and better access to information, supporting community spirit and collective action, as well as higher priority given to environmental sustainability and achieving a cleaner city. A 15-year-old female from Birmingham City Centre explained her desire: *"Probably to modernise the architecture and community of Birmingham, incorporating various technology into the city planning to make the city more sustainable, modern and efficient".*

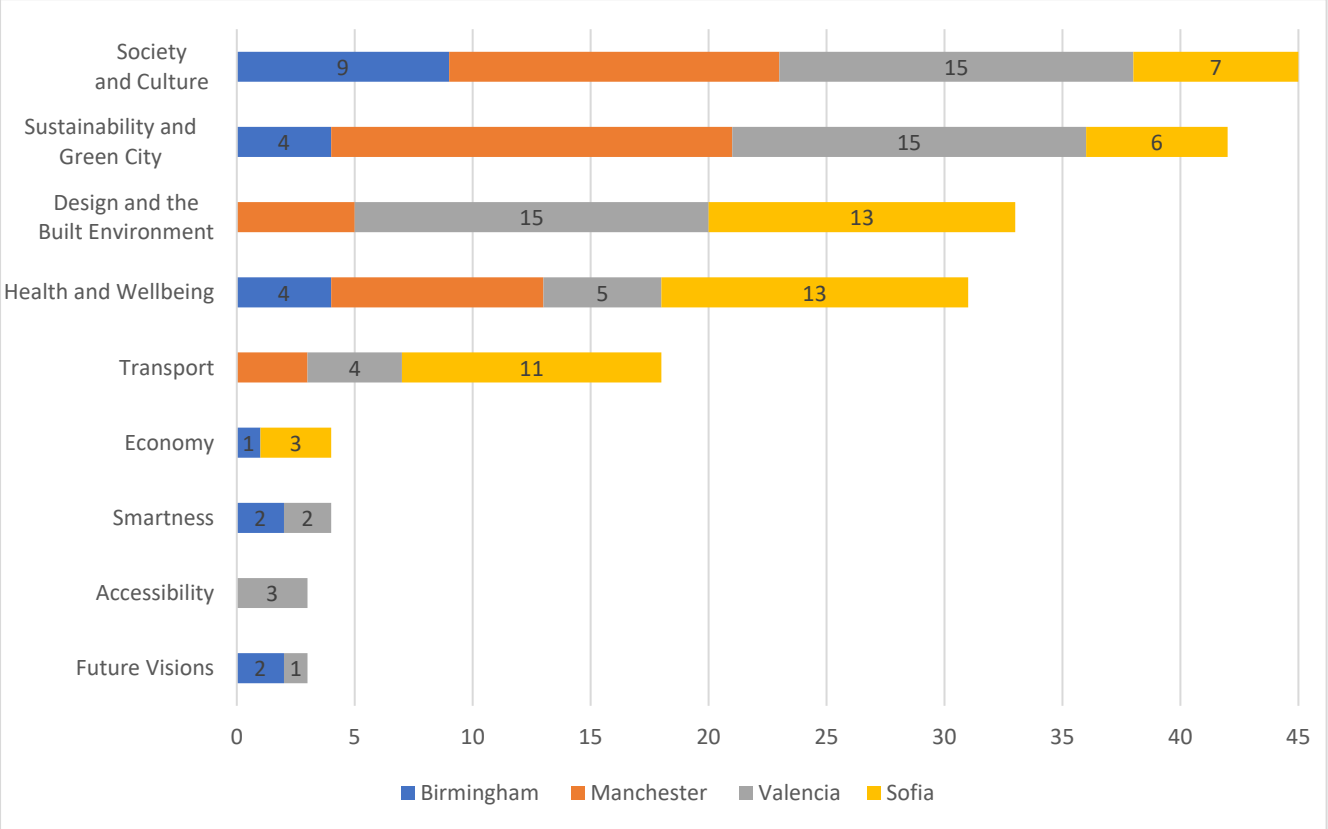

Figure 5.15: Thematic priorities Source: Author

Mancunian respondents indicated desires for better green and wildlife infrastructure, integrated sustainability and ecological services as top priorities, closely followed by societal issues such as safer city, more friendly, homely and colourful city, more opportunities for youth and youth inclusion, better provision for cultural venues and more inclusive city of vulnerable populations such as homeless. *"More places for younger people to spend time as I feel a lot of young people are out on the streets being a nuisance and sometimes even doing illegal stuff, I know I get nervous when going through places like subways or alleys as there's almost always groups of teens who I know mug and rob people because they have nowhere to go"* 17-year-old Male from North Manchester.

In Valencia, the majority of young people interviewed were concerned with sustainability and the built environment. Youth reported desire to make the city greener and more sustainable, de-culverting the river and promoting local vegetation and fauna, protecting the agricultural land around the city and establishing better awareness campaigns. In the built environment, issues emerged such as designing better places for young people to hang out and skate, more weather resistant and quiet places, as well as redeveloping and reconnecting with the city's heritage. *"Perhaps more spaces, not necessarily for CONSUMPTION for young people, but meeting spaces, perhaps covered for winter, since in summer I think there are enough" [Quizá más espacios no necesariamente de CONSUMO para los jovenes sino espacios de reunión quizá cubiertos para invierno ya que en verano creo que hay suficientes]* – 18-year-old Female from East Valencia.

Youth in Sofia overwhelmingly indicated cleaner city, less garbage and air quality as priorities. Issues connected with the built environment were strongly represented: young people wanted a more geographically equal development across the city, renovation of dilapidated buildings, better and more accessible urban realm and introduction of public facilities, and better design of public spaces. *"For example, in the suburbs, because I live in a suburb. Some streets have no sidewalks, no lights, and I don't like that very much." [Примерно в крайните квартали, понеже аз живея в краен квартал. Има улици, които са без тротоари, без осветление, и това не ми харесва особено много.]* commented an 18-year-old Female from Sofia High School

Interestingly, smartness emerged as a topic within Birmingham and Valencia, capturing desires for smart and digitalised cities. Desire to make the city more "modern" were also reported in Birmingham and Valencia. In Manchester, better mental health provisions were a topic not widely touched upon in the other contexts. Youth in Sofia reported desire for more equal investment and better transport links away from the city centre into the suburbs, reporting regional inequalities.

5.7. Awareness and understanding of the smart city

Teenagers were asked about their awareness of the term smart city, what they think it is, how well they respond to a definition of a smart city vision and how attractive it is to them.

5.7.1. Smart City awareness

When asked if they have heard the term "smart city", a clear divide emerged between young people in Western European cities and young people in Sofia. (Figure 5.16) In 2019, Bulgarian teenagers interviewed were least likely to know what the term meant, whereas Valencia youth were the most likely to have heard or understood the term.

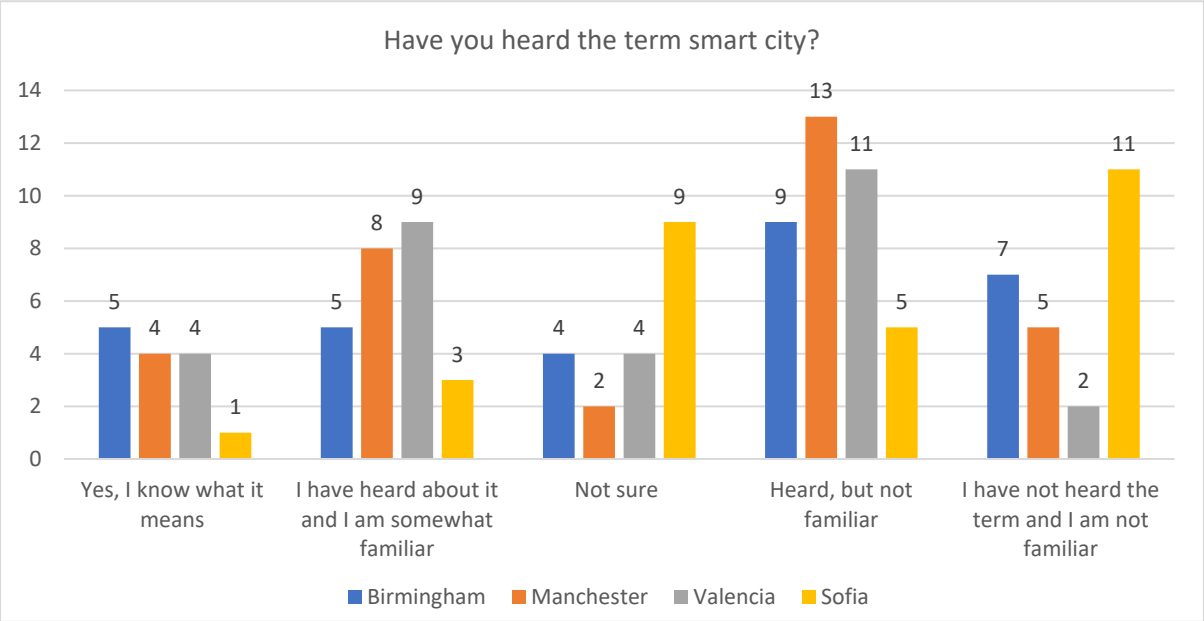

Figure 5.16: Have young people heard the term smart city. Source: Author

It is important to note that in the Spanish context the terms asked were both “smart city” and “ciudad inteligente” as both have been used. In the Bulgarian context, the terms used were “умен град”and “интелигентен град”, language variations of the words smart or intelligent. This is a key distinction as in the discourse on smart city methodology implying different levels of data use and application. This is further discussed in Chapter 6.

5.7.2. Awareness of local visions of smartness

Young people were also asked if they have heard about local visions of the future which operated or were related with the terminology of a smart city. In Sofia this was Vision for Sofia. In Valencia this was SmartCity Valencia. In Birmingham this was Digital Birmingham and in Manchester this was the CityVerve project.

In all four locations, the majority of young people had not heard of, and were not familiar with, their local vision of smartness. (Figure 5.17) Strong familiarity was only indicated in Sofia and Valencia, the latter having promoted their Smart City strategy widely in the city (Valencia Municipality, 202). The results indicate that, on a local level, there are also communication difficulties when initiatives are implemented.

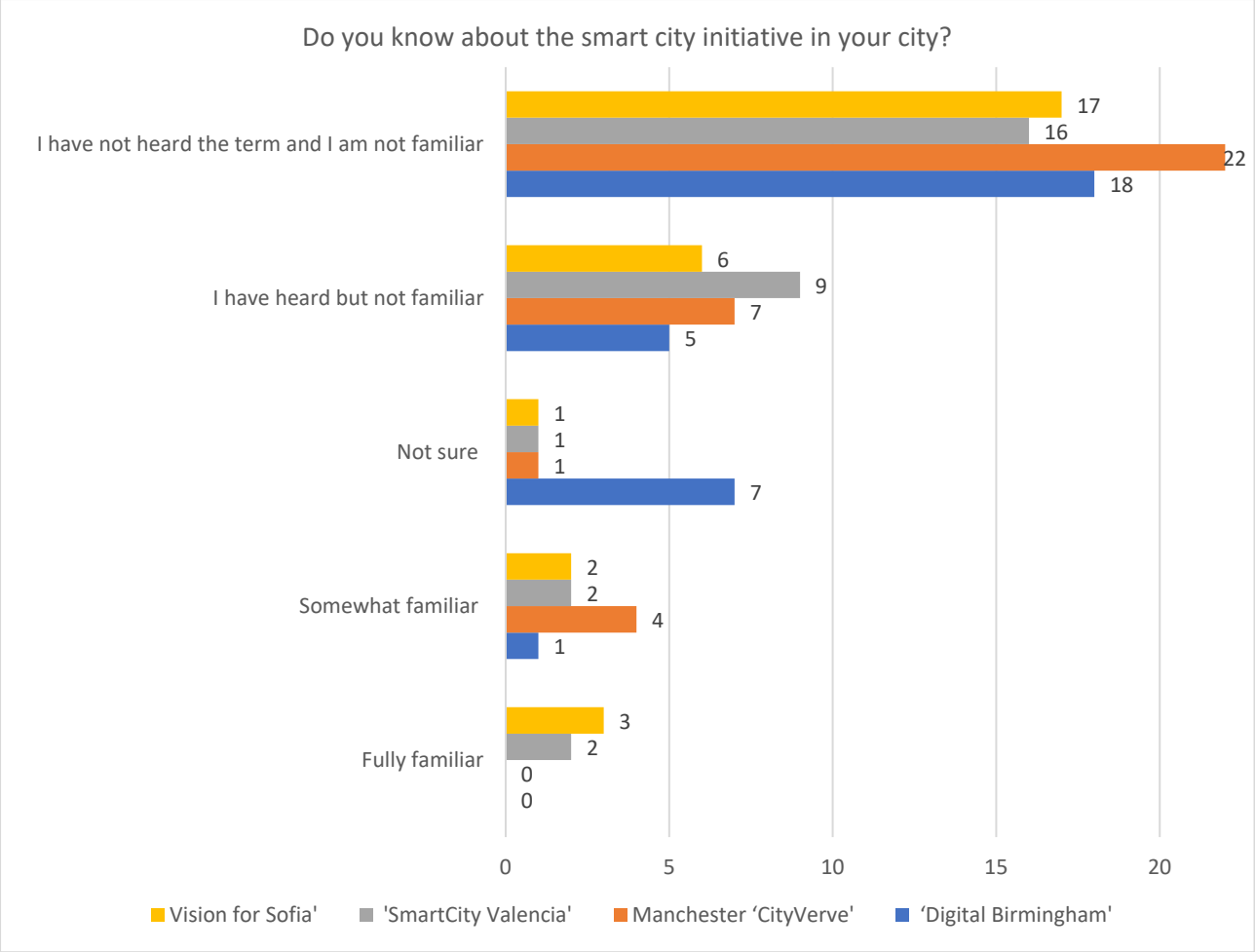

Figure 5.17: Have young people heard the term smart city? Source: Author

5.7.3. What is a smart city?

Teenagers were asked to imagine what a smart city is. Overall, most of the young people interviewed in the Western European context imagined the smart city as a city largely relying on technology to ease the lives of residents. (Table 5.7) In Eastern European context, on the other hand, young people struggled to guess what a smart city might be, with a much lower response rate.

Table 5.7: What do young people imagine a smart city to be – theme(occurrence) *(Don't knows and no answer removed)* Source: Author

Birmingham	Manchester	Valencia	Sofia
Technologically advanced City (18)	Technologically advanced City (17)	Technologically advanced City (13)	Interactive City (2)
Sustainable City (4)	Efficient City (3)	Digital City (7)	Information Accessible City (2)
Modern City (4)	Sustainable City (4)	Sustainable City (4)	Technologically rich city (2)
City with a free Internet (2)	Improved Quality of Life (2)	Modern City (2)	Smart Homes (1)
Accessible and Inclusive (2)	New Built City (3)	Efficient City (2)	Technologically advanced City (1)
Innovative City (2)	Electrical City (3)	Improved Quality of Life (2)	Active and Vibrant City (1)

Convenient City (1)	Data-led City (2)	Internet-of-things city (1)	Government Feedback city (1)
Virtual city (1)	Interconnected City (2)	Self-Sufficient City (1)	Intelligent people (1)
Safe City (1)	Economically developed (2)	Nature-caring city (1)	Centrally connected City (1)
Adaptable City (1)	Friendly City (1)	Energy Efficient City (1)	City where you control your phone (1)
Developed City (1)	Citizen-led City (1)	Innovation City (1)	
Platform City (1)	Information Accessible (1)		
Civic Services (1)	Internet City (1)	A Utopian City (1)	
Efficient City (1)	Spatially Developed (1)	Everything is easy (1)	
Contextual City (1)	Modern City (1)	Centrally Controlled City (1)	
Instant City (1)	Management Organisation (1)		
Navigable City (1)	Pandemic City (1)		

In Birmingham, a *"Technologically advanced city"* was interpreted by young people as "*A city where full capabilities of technology are unleashed."* 16-year-old male from North Birmingham. In Manchester "*A place with a use of technology in every aspect to ease human lives"* 17-year-old female from Manchester City Centre, whereas in Valencia: *"Use technology to improve the lives of inhabitants " [Utiliza la tecnología para mejorar la vida de los habitants]* -18-year-old female from East Valencia.

In Birmingham, *"a modern city"*, a concept that emerged in other responses as well was seen to mean *"A city that is up to date with society*" 18-year-old Female from West Birmingham with "modern buildings" 16-year-old male from North Birmingham. The idea of a smart city being a sustainable one also ranked high: "*where there is plenty of cycling lanes and trees with electric cars and very modern buildings"*. A 16-year-old male from North Birmingham, *"using technology to solve problems to make the environment better for all.*" 19-year-old male from south Manchester and *"Una ciudad más sostenible"* [A more sustainable city] 18-year-old female from West Valencia.

In Manchester, the idea of the smart city being a newly built one emerged: *"A city built with technology in mind "*a 16-year-old male from South Manchester. Ideas of technology driving development were touched upon: *"I think a smart city is a city that utilises technology and the internet to develop the area"* 18-year-old female from East Manchester There were also more collectivist ideas of what a smart city is with citizen-led governance and friendliness emerging as themes.

In Valencia, digitalisation, efficiency and internet of things were touched upon. *"A city totally dependent on the internet." [Una ciudad totalmente dependiente de internet.][*- 19-year-old male from South Valencia. In Valencia a more critical perception also emerged with one young person dismissing the idea of a smart city as utopia.

In Sofia, the young people interviewed struggled to imagine how a smart city would function. It was also the location where the least amount of young people had heard or had any awareness of the term "smart city". Themes that emerged were related with interactive applications: *"It is much easier for them ... to interact with the city. That is, when there is a problem, for example, it takes a picture of a pothole ..." [Много по-лесно мога да … ъм взаимодействат с града. Тоест, когато има някакъв проблем, примерно снима някаква дупка и това се..]* [- 18-year-old male from Sofia.

In all the responses, there were general themes emerging of technologically driven progress, digitalisation, sustainability, improved quality of life for citizens and agency in the city.

5.8.4. Smart City definitions

Young people were presented with a definition of the smart city adopted by the European Commission (2022b):

"A smart city is a place where traditional networks and services are made more efficient with the use of digital and telecommunication technologies for the benefit of its inhabitants and business. A smart city goes beyond the use of information and communication technologies (ICT) for better resource use and less emissions. It means smarter urban transport networks, upgraded water supply and waste disposal facilities and more efficient ways to light and heat buildings. It also means a more interactive and responsive city administration and safer public spaces." (EU Smart Cities Marketplace, 2018)

Teenagers had mixed responses to this definition when asked what they thought about it. (Table 5.8) More than 70% of youth interviewed in each case study indicated that they would very much like to live in such a city, indicating an openness to the concept as a vision of the future. However, critical evaluations emerged, especially centred around the need for smart city visions to acknowledge human interactions, tackle inequality, and address sustainability in a holistic way. When asked to reflect on the survey and consider if their city was a smart one, the Bulgarian youth were most negatively predisposed, followed by the Spanish. In England, young people were more likely to indicate that they are not sure whether their city was a smart one. This could reflect attitudes across the population in terms of their future roles and opportunities in their cities or reflect the politico-economic distinction between the three countries or the adoption of technology in day-to-day life.

Across all contexts, the highest rated theme was complete agreement with the definition. In Valencia half of the participants indicated so. The rest of the data is disaggregated to demonstrate the detail and specificity of themes which teenagers identified.

In Birmingham, positive feedback focused on themes of sustainability, safety, services and infrastructure. As one 17-year-old Female from South Birmingham noted, "I like the mention of fewer emissions, as sustainability should be a priority as well as the consideration of the longer terms effects of such changes to a city.". However, teenagers also pointed out themes they felt missing such as community, affordability, equality and accessibility. A different 17-year-old Female from South Birmingham commented, *"Maybe add more features specifically aimed to help the homeless, as this is a prominent issue and the updating of the city should maybe also help them too." "Using so much technology I enjoy the human interaction"*- 16-year-old Female from Birmingham.

In Manchester, young people identified positives such as the reduction of waste and emissions, efficiency and technology-driven city. A 17-year-old Female from North Manchester expressed, *"I agree with needing more technology as the world's changing constantly."* However, there was a wide spectrum of identified shortcomings, primarily in issues such as commitment to sustainability, standards, accountability and security, affordability, equality, wellbeing and planning. As highlighted by a 16-year-old Female from North Manchester, *"Boundaries on how far one can take the concept, especially concerning privacy and the environment."*

Table 5.8: What do young people think is a positive or a missing trait from the definition of a smart city – **theme** (occurrence) *(Don't knows and no answer removed)* Source: Author

Birmingham	Manchester	Valencia	Sofia
		Agree with / Positives	
I agree with all (10)	I agree with all (7)	I agree with all (15)	I agree with all (9)
Reducing Emissions (5)	Less emissions (3)	Sustainability (3)	Improves the economy (2)
Safety (3)	Tech-led (2)	Security (2)	Participation (2)
Improve services (3)	Reducing waste (2)	Improving transport (2)	Link between Government and citizens (1)
Sustainable City (3)	Efficiency (2)	Improving people's lives (1)	Focus on wellbeing (2)
Incremental Change (2)	Safety (1)	Interactive city (1)	Digital finance (1)
Easy of life (1)	Energy Saving (1)		Upskilling people (1)
Efficiency (1)	Interactive City (1)		Optimisation aspect (1)
Infrastructure (1)			
		Disagree with / Missing	
Sense of Community (3)	Unclear on sustainability (3)	Promotion of sustainability (2)	Citizen-focus (3)
Cost of Living (3)	Public data standards (2)	Age-friendly (1)	Transparency (4)
Better Energy Sources (3)	Online security and data protection (2)	Acknowledgement of ecosystems (1)	Internet of things (2)
Better Transport (2)	Water supply (1)	Self-sufficient city (1)	Establishing value (2)
Sustainability (1)	Green (1)	Application of tech for non-profit (1)	Robotisation (1)
Who will benefit (1)	Urban Planning (2)	Affordability (1)	Citizen's desires (1)
Opportunities for Youth (1)	Transparency (1)	It's a utopia (1)	Data and Privacy (1)
Accessibility (1)	Affordability (1)	Unemployment (1)	Regulating digitalisation (1)
Aging Society (1)	Discrimination (1)	Renewable energy (1)	Scalability (1)
	Education (1)	Who collects data (1)	Influencing opinions (1)
	Economic and Environmental Impact (1)	Elderly people and digital exclusion (1)	Integration with current governance structures (1)
	Mental Health (1)	Nature (1)	Long-term appeal (1)
	Safer Spaces (1)	Lighting (1)	Urban Planning not represented (1)

In Valencia, the positives identified were mainly around sustainability and security. *"I agree with the environmental awareness " [Estoy de acuerdo con la consciencia en cuanto al medio ambiente que está tiene]* – 18-year-old Male from Valencia. "It seems perfect to me, and anyone would love to live in one." [Me parece perfecta y a cualquiera le encantaría vivir en una][- 18-year-old Male from Valencia. Teenagers in Spain identified a mix of shortcomings, primarily in themes of intergenerational issues, accessibility, nature-focus, affordability, data ownership and design:

"On the other hand, I have a feeling that since everything is connected to the Internet there will be many vulnerabilities that people with a lot of computer and programming knowledge will take advantage of. Therefore, citizens, including myself, will be extremely exposed. My question is, to you who are reading me. FOR WHAT PURPOSE WILL YOU USE OUR DATA AND FOR WHAT?" [Por otra parte, presiento que al estar todo conectado a internet habrá muchas vulnerabilidades que personas con muchos conocimientos de informática y programación aprovechará. Por lo que, los ciudadanos y me incluyo yo, estaremos extremadamente expuestos. Mi pregunta, es, a ti que me estas leyendo. ¿CON QUE FIN UTILIZAREIS NUESTROS DATOS Y PARA QUE ?]
[- 19-year-old Male from South Valencia.

"I agree but it seems utopian in some ways." [Estoy de acuerdo pero me parece en algunos sentidos algo utópico] [- 18-year-old Female from East Valencia

In Sofia, the positives focused around themes of participation, optimisation and economic wellbeing: *"I like the ideas of listening to society and using technology and their data to improve it." [Идеите за изслушването на обществото и използването на технологиите и данните от тях за подобряването му ми харесват]* – 17-year-old Male from Sofia.

"Yes, I like the idea of this relationship between the rulers and the citizens." [Да, харесва ми представата за тази връзка между управляващите и гражданите.]– 15-year-old Female from Sofia

Teenagers in Bulgaria identified issues around the role of citizens, transparency, regulating digitalisation and spatial planning. Trust emerged as a key underlying theme:

"For example - technologies to increase operational efficiency; because, for example, we are young people, and we must necessarily understand technology. However, the people who are older... because they already understand each other a lot, but there is also a very large percentage of society - 70% of the old people, they do not understand much about technology.] " [Ами това например - технологии за увеличаване на оперативната ефективност; щото то примерно ние сме младите хора и ние трябва да разбираме от технологии задължително. Обаче пък хората, които са по-възрастни.. щото вече и те си разбират доста, обаче има и много голям процент от обществото - 70% от старите хора, те много не разбират от технологии.] [- 18-year-old Male from Sofia.

As any vision of future cities is incomplete, it is vital to understand what alternative imaginaries can shape their development.

5.7.5. Appeal of the smart city vision

After considering the definition and exploring what they liked or didn't like about it, the young people were asked if they would live in such a city. The results (Figure 5. 18,) indicate a strong preference of young people to live in a smart city with almost no young person indicating negative sentiment.

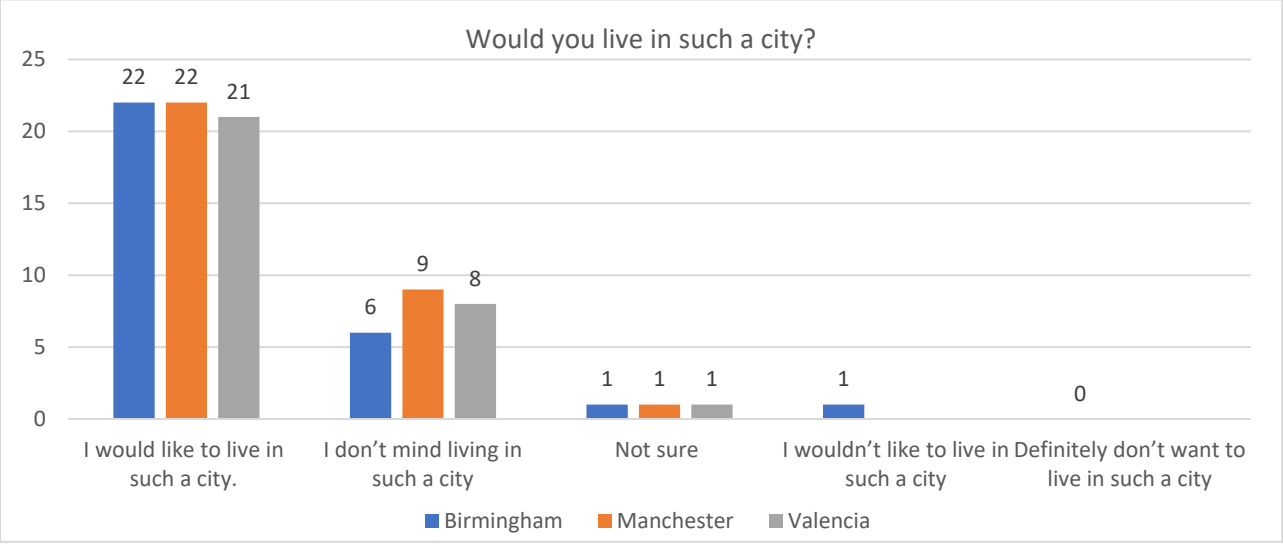

Figure 5. 18: Would young people live in a smart city as per the definition presented. Source: Author

5.8. Exploring teenagers' priorities in the future smart city

5.8.1. General trends of smart city domains

A preferential analysis of the smart city wheel (discussed in Chapter 3) was undertaken where young people were asked to rank the aspects of the model that they value most. Figure 5.19. resents the comparison in priorities. There were clear overarching preferences in all four contexts, where young people generally prioritised the themes in the model as smart people and smart living first, followed by smart environment as the top three overarching themes to which they would like resources to be allocated. Contextual factors then drove the prevalence of economy, governance, and transport; however, in all cities, they were superseded by human-centred themes. In Sofia, economy and governance were strongly represented themes, demonstrating the awareness of young people of ongoing national debates as a country with turbulent politics and a smaller economy.

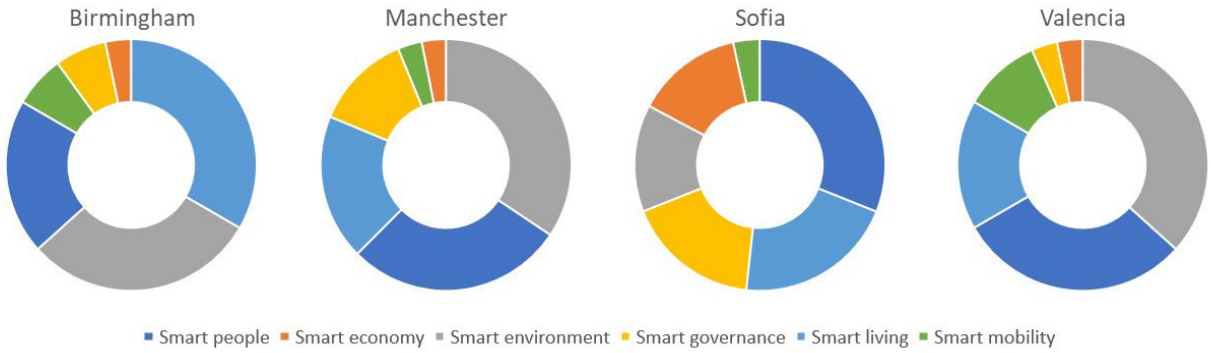

Figure 5.19: Areas of the smart city where technological improvements should be a priority according to young people. Source: Author

5.8.2. Granular analysis of preferences of smart city

When granular preferences of the indicators (the outer circle of the smart city wheel, see Chapter 3.) were analysed, the four cities become more diverse in their priorities (Table 5.9). In Birmingham, the dominant themes were safety, culture, creativity, happiness, well-being, and education. In Manchester, while similar themes were present, there was a much stronger emphasis on areas of green energy and clean transport. In Sofia, health stood out more than in the other three cities, with drivers such as education, safety, creativity, and culture still represented. Like Manchester, green energy and clean transport were also strongly preferred. Valencia emerged as the most people-centred city among young people. Issues of education and inclusivity dominated the debate. Economic issues were also strongly represented, as well as issues of sustainability and green planning.

Table 5.9. Smart city indicators: Youth's top five priorities across the four case studies.

Birmingham	Manchester	Sofia	Valencia
Safe city	Education	Healthy city	Education
Education	Safe city	Safe city	Inclusive city

Inclusive city	Green energy	Education	Safe city
Creative city	Inclusive city	Green energy	Green energy
Green planning	Clean transport	Creative city	Entrepreneurial city

There were clear cross-cutting trends, mainly in priorities such as education and safety, that appeared in the top five preferences across all four cities. Issues of liveability and people-centric smart cities were at the top of the agenda in all of the case studies. (Figure 5.20)

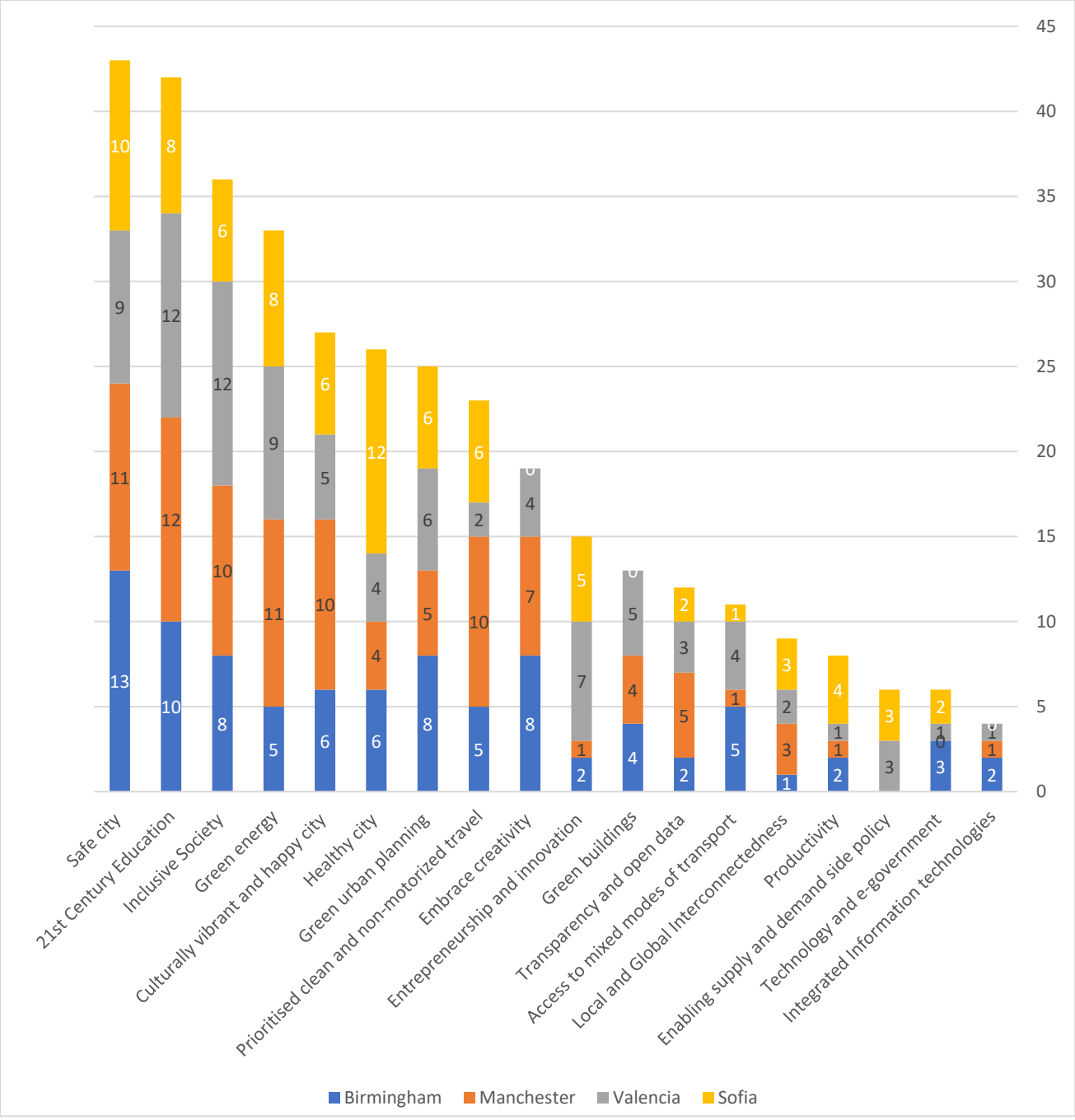

Figure 5.20: Smart city indicators ordered by priority as stated by young people.

In Birmingham, the desire for a safe and green city was one of the main justifications for how young people selected their preferences. A 16-year-old female from North Birmingham stated, *"Future urban development needs to be green and innovative to fight the growing threat of climate change and global warming, and in doing this it will help public health, the economy, and transport."* In Manchester, awareness and concern for inclusivity, tolerance, and multiculturalism emerged as strong themes in the justification of responses. A 16-year-old female from West Manchester elaborated, *"I picked the three from the outer circle because we are facing significant divisions in the population. As much as technological advancement is good, we cannot forget and leave behind core human principles and needs."* In Valencia, the main reason quoted for the selection of priorities was a preoccupation with climate change. There was also a strong indication of a more proactive approach, with young people indicating that these were priorities they were actively working on or wanted to change in their city. A 17-year-old non-binary person from North Valencia explained, *"I feel that not enough measures are being taken to combat climate change."*

In Sofia, young people were highly aware of the economic reality of the proposed smart city visions and how they might affect them. A 17-year-old male from South Sofia responded: "Everyone's economic capabilities are different, so the definition of a smart city changes depending on the people." There was also awareness of the political campaigns—part of the Sofia mayoral election—that were in progress during late 2019 when some of the data was collected. In the Eastern-European context, teenagers' long-term visions for their city were related significantly to their plans to stay in the city they grew up in. Majority of the participants reported societal or parental pressures to emigrate to study and live abroad dictating their choices, uncertain whether they could take part in the planning of the future city. Such trend did not emerge strongly in the three Western-European cities, even if individuals indicated that they will be moving out of their home city for higher education purposes.

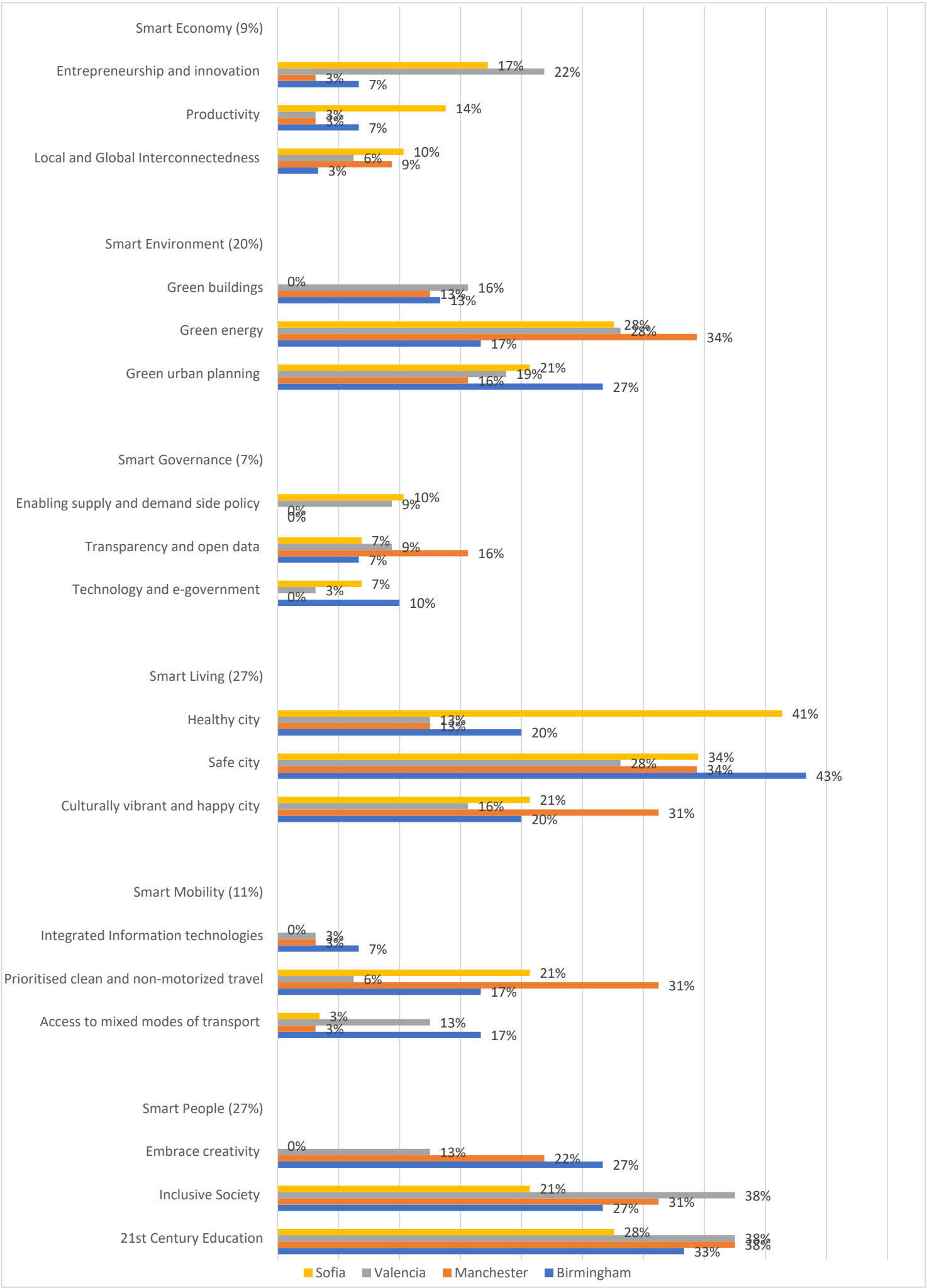

Figure 5.21: Smart city indicators ordered by priority broken by city.

5.8.3. What's missing in the future smart city?

Once priorities of the existing model were uncovered, participants were asked to point to aspects from their life which are not represented in the smart city wheel. A broken-up model was presented as a visual prompt (Figure 5.22).

Figure 5.22: The Smart City Wheel Model is broken down. Adapted from Cohen, 2018.

Most participants struggled to identify dimensions that were missing in their city. In Sofia, students, when interviewed in school settings, had difficulty naming areas which were missing; this was not as pronounced in the other three case studies, where online surveys seemed to provide a better opportunity for reflection. Despite this, across all contexts, a rich list of topics emerged. Cultural change and personal and political will to implement innovative projects were identified as key to the success of smart cities. Additionally, a post-anthropocentric understanding emerged, with some young people naming animal welfare and the wellbeing of non-human species as important considerations missing from the model.

Some young people struggled with the lack of concrete definitions of the "smart city" scope and themes and therefore suggested that those were open to misuse. An interesting contrast was observed. Whereas a post-capitalist sentiment emerged in most responses, emphasising issues such as togetherness, community, political activism, affordability, and care for vulnerable populations as key to any future visions, an alternative narrative of consumerism also emerged in some answers. Ideas such as smart shopping are presented. Cultural activities, art, and creativity were also clearly identified as essential to the future city and the desire for even stronger integration across all themes of the smart city model was exposed. Equality, equity, diversity, and inclusivity were all issues which were felt to be missing from the smart city model, reflecting the fear of young people that institutional biases will be replicated in the digital domain. Sport and active populations were other issues which were felt to be not strongly represented in the model. Table 5.10 shows the key themes identified in each city.

Table 5.10: Youth identified aspects which are missing within the smart city model.

Area	Birmingham	Manchester	Sofia	Valencia
Community	Smart socialisation	Sense of community	Citizens' motivation	Intercultural city
	Vulnerable people	Vulnerable people	Ethics and morals	Ageing population
	Youth empowerment	Smart communities	Religion	Right to the city
	Homelessness	Youth spaces		Social exclusion
	Smart community	Social action		Political inclusion
Culture	Enriched arts	Art and creativity		Language and culture
Education	Access to education		Life-long education	
	Smart knowledge			
Affordability	Affordable housing	Affordability		
	Affordability	Lower living costs		
Economy	Independent businesses	Independent business		Modern infrastructure
	Unemployment	Labour relations		
Consumerism	Smart consumerism			Smart consumerism
	Smart shopping			
Health	Sport and fitness	Mental health		Clean city
Services	Smart public facilities			Security
Sustainability			Animal welfare	Circular economy
			Non-human focus	Ecological Focus
Governance			Implementation plan	Progress monitoring
			Concrete definitions	Implementation
			Cross-theme integration	
Regional			Regional disparities	Smart regions
Politics		Tackling racism	Political will	

Note: Each theme represents one individual's opinion.

The answers of young people broadly point to a desire for the collective imagining of alternative visions of the future which are not constrained to the techno-politico-economic origin of the smart city wheel. As observed in the Youth 4 Climate Strike actions (Gorman, 2021), young people are acutely aware of the challenges humanity faces and are willing to contest our collective acceptance of visions and strategies based on a faulty system, which ultimately has caused our precarious situation.

5.8.4. Reflections on visions of smartness

Table 5.11: What do young people think works well in their city. Source: Author

Birmingham	Manchester	Valencia	Sofia
Smart Mobility (9)	Multimodal transport (18)	Nothing, all needs improvement (5)	Multimodal transport (6)
Nothing, all needs improvement (8)	Smart People (3)	Smart Environment (4)	Waste and recycling (2)
Smart People (4)	Digital tech (2)	Smart Mobility (4)	Green urban planning (1)
Smart Economy (3)	Creativity (2)	Smart Government (2)	Smart economy(1)
Smart Government (1)	21st century education (2)	Transport (2)	Local and Global Connectivity (1)
Tech (1)	Smart environment (2)	Safe City (1)	Online government (1)
Food delivery (1)	Culturally vibrant (2)	Education (1)	21st century education (1)
Inclusivity (1)	Smart economy (2)	Smart Living (1)	Culture (1)
	Clean city (1)	Smart Economy(1)	Creativity (1)
	Smart Living (1)	Culture (1)	Green spaces (1)
	Inclusivity (1)	Digital economy (1)	Innovation (1)
	Smart thinking (1)	Green Spaces (1)	
		Immigration policies (1	
		Emergency aid (1)	
		Communication (2)	

Young people were asked to consider the information so far and reflect on what works well in their city in relations to the smart city. (Table 5.11) A reflective question was added at the end of the survey: "Do you live in a smart city?" This was designed to test young people's perceptions and evaluations of their own city.

The majority of respondents indicated disagreement with the statement, however, almost a third of overall respondents across all cities indicated agreement. Surprisingly, teenagers in Sofia were the only ones to indicate that their city is smart in their view:

"I think I'm starting to live in a smart city, that it's coming. At some point in the future, that definition will probably come true, but right now it's more like 40% certain, I think." [Мисля че започвам да живея в умен град, че предстои му. В някой момент в бъдещето сигурно ще стигне тази дефиниция, но в момента е по-скоро на 40% сигурно, според мене.]
[- 18-year-old Female from Sofia

Some respondents exposed a cultural view, where the "smart city" terminology was entangled with the meaning of the word "intelligent" in Bulgarian, potentially skewing teenager's reflections, overlapping understanding between the term and a wider application of the word:

"Well, some of them, in a sense, try to green the city and plan the best possible things for the city, and the schools try to make intelligent people, but it depends entirely on the person." [Ами някои от тях, в смисъл стараят се за озеленяване и да планират възможно най-хубавото за града и училищата се стараят да правят интелигентни хора, но то си зависи изцяло от човека.]-
16-year-old Female from Sofia

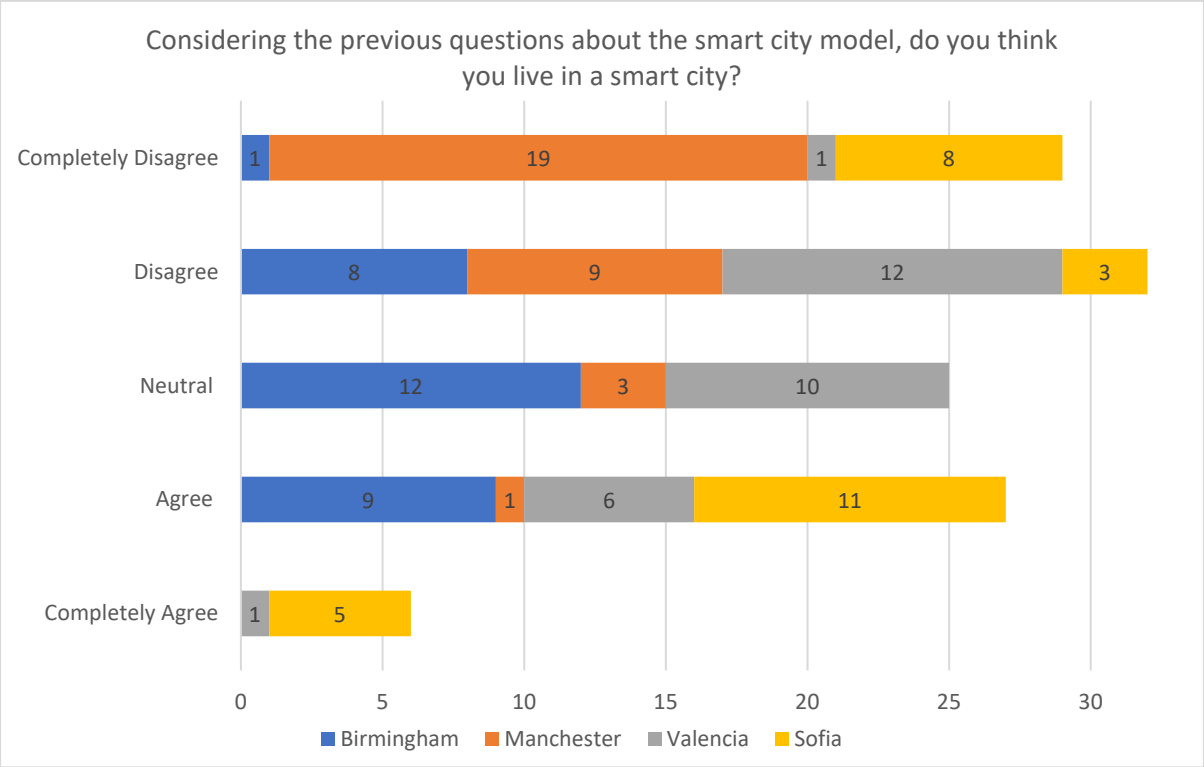

Figure 5.23: Do you live in a smart city?

5.8.5. Teenager's understanding of terminology

Teenagers were asked to note if there were any specific terms in the survey that they didn't understand.

Table 5.12: Terminology young people do not understand (frequency). Source: Author

Birmingham	Manchester	Valencia	Sofia
Local and global interconnectedness (3)	Integrated technology (1)	Mixed transport (2)	Green building (3)
ICT (2)	Local and global interconnectedness (1)	Vibrant culture (1)	ICT (2)
Entrepreneurship (1)	Supply and demand (1)	21st century education (1)	Difference between smart and intelligent (1)
Green building (1)	ICT (1)	Local and global interconnectedness (1)	Green energy (1)
E-government (1)			Inclusive society (1)
Transparency and open data (1)			
21st century education (1)			
Smart government (1)			

The majority of those terms were linked to the smart city wheel model, pointing out to the value of testing assumptions of understanding when communicating future visions to residents and creating accessible ways to communicate with teenagers.

5.8.6. Educating young people in secondary schools

This section also reflects on the researcher's experience of a research-led courses based on urban planning and architecture, designed as part of the Brilliant Club programme, and delivered in secondary schools across the West Midlands by the doctoral researcher. In total, more than fifty students took part in six different interactions of the course entitles 'Can youth plan the Future 'Smart City'?' with three submissions by secondary school students published in the Brilliant Club Journal (Aksu, 2019; Alkatheri, 2019 and Maan, 2020, Figure 6.8 and 6.9). Pupils explored what is the role of urban-led research in secondary education and the challenges, trade-offs, and opportunities it presents to participants on all sides, reflecting together on some of the primary data collected in this project. Throughout the process similar themes emerged to those discussed previously in this chapter – issues of safety, wellbeing and community are the most important ones for young people, who see technology as a tool for bettering the city not necessarily an aim on its own.

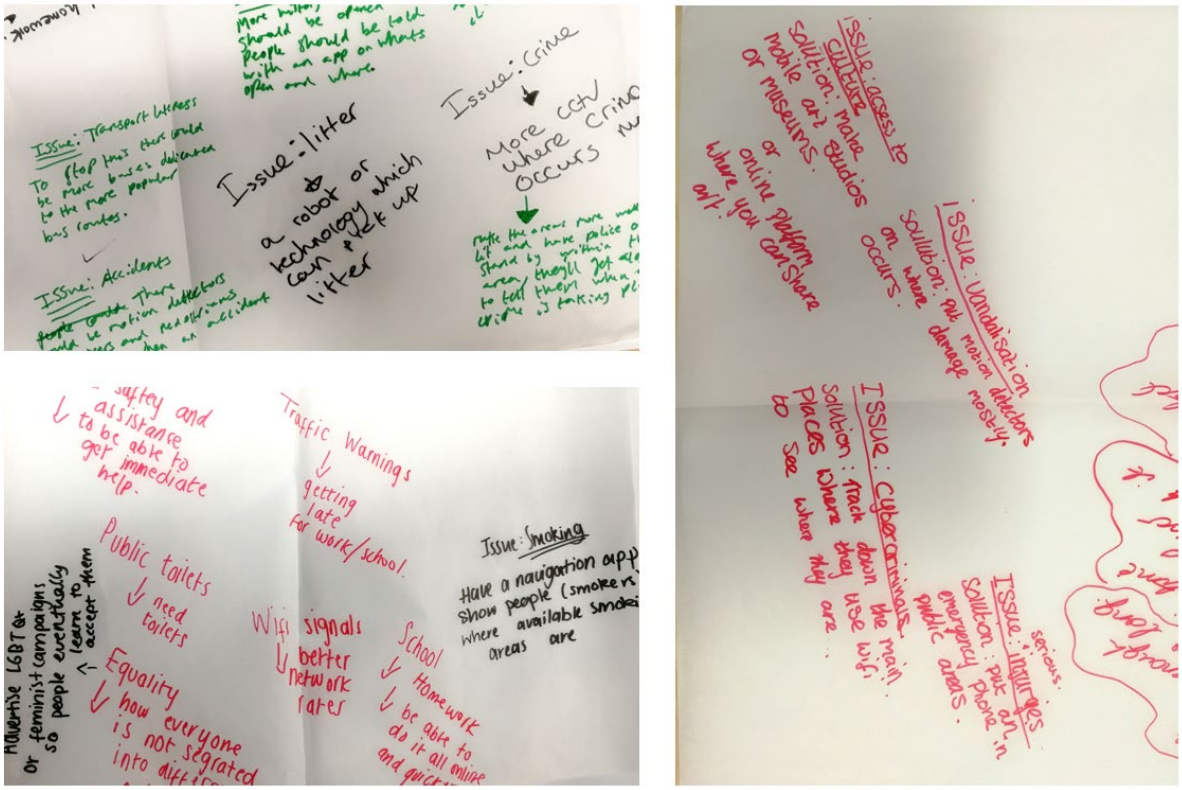

Figure 5.24: Mapping issues in the smart city with pupils across six secondary schools in the West Midlands between 2019 and 2021

One of the students' analyses of primary data collection amongst her peers corroborated the findings from the teenagers in the four case study cities.

"From the results obtained, a discussion of findings can be conducted. There was a broad view of opinions in the results for some of the questions asked, showing that despite having a variety of ideas and understandings, young people do in fact want change and/or to contribute to the planning of their local cities." (Maan, 2020:71)

Figure 5.25: Publications stemming from the Brilliant Club

5.9. Visions of the future during COVID19

As the methodology of the project shifted throughout the pandemic (Chapter 3.), teenagers in Birmingham, Manchester and Valencia were asked an additional question in late 2020 and early 2021: "How do you think the COVID-19 pandemic will change our cities?". It was not deemed feasible to go back and ask the same participants interviewed in Sofia this question, due to the fact that facilitation was conducted through a third party and no contact data was collected. The responses shed light on the underlying sentiment informing the wider answers provided by the young people interviewed provided. they also help contextualise some of the hopes and fears of this generation throughout the COVID pandemic. (Table 5.13)

Table 5.13: Young people's perceptions of the COVID19 pandemic.

	Birmingham n=30	**Manchester n=27**	**Valencia n=25**
Positives	Societal reflection and collaboration (7); General positive change (3); Cleaner City (2); Increased Safety (1); Connectivity (1); Creativity (1); Reduction in Pollution (1).	Better sanitary and health awareness (6); Cleaner cities and less pollution (5); Greater care for people (2); Will enact change (1); Gamification leading to efficiency (1); Better retail (1).	Cleaner cities (4); More open and green spaces (3); Wider sidewalks (1); Better security and safety (1); Greater consciousness of our actions (1); Bigger housing (1).
	Total (16)	*Total (16)*	*Total (11)*
Neutral	Digitalisation (3); Affecting transport (2); Increased work from home (2); Awareness of health issues (2); Increased space use (1);	Affecting transport (3); Digitalisation of life (2); Work from home (1); Fashion influence (1); No change (1).	Not much change (4); Don't know (3); Digitalisation of life (2); More skateparks (1); Less density (1); Economic change (1); Things will change (1).
	Total (10)	*Total (8)*	*Total (13)*
Negatives	Employment and economic activity will reduce (6); Social cohesion reduced and social anxiety (4); Less services for communities (2); Deurbanisation (2); Increased pollution (2); Reduced educational attainment (1); Progress slowed (1)	Employment and economic activity will reduce (7); Social distancing and isolation (3); Entertainment industry affected (2); Slowing of progress (2); Less education opportunities (1); Less places to hang out (1); More violence (1); Further lack of communication of with planners (1).	Social distancing and isolation (5); Negative sentiment (1); Increased surveillance (1); Depopulation (1).
	Total (18)	*Total (18)*	*Total (8)*

A split sentiment trending towards negative was observed in the English and a more positive views in the Spanish context. As the pandemic did not impact the collection of data in Bulgaria, there were no comparable data to draw on.

There were some genuinely positive views of the pandemic experience in late 2020 and early 2021. Teenagers focused on improved sanitation and collaboration between communities, as well as ideas of increased societal reflection and desire to innovate:

"I think we will consider how the flow of public traffic in the city is directed and how to minimise contact with others in urban shopping areas." 19-year-olds Male from Birmingham City Centre

"I hope it makes them cleaner and more sustainable with the will to change. Especially Manchester oxford roads air quality issue" 17-year-old Female from North Manchester

"I think it will help to have more hygienic cities." [Creo que ayudará a tener unas ciudades más higiénicas.]- 18-year-old Female from North Valencia

A more neutral stance was taken by roughly a third of all interviewees. Interestingly, issues of increased digitalisation, reduced need for transportation and working from home were not seen either as positives or negatives but as necessary adaptations, which will only be able to be evaluated in hindsight:

"People will work at home more as they will be used to it, maybe making offices less crowded and the number of people commuting less" 17-year-old Female from South Birmingham

"There may be more ways of communicating digitally; for instance, since friends could not meet this app called Houseparty took over and became a trend, in which individuals played games and communicated with each other. " - 16-year-old Female from South Manchester

"I sincerely believe that nothing will change, sadly, I believe that people will continue with their lives exactly as before." [Sinceramente creo q no va a cambiar nada tristemente, creo que la gente va a seguir con su vida exactamente como antes]- 17-year-old Female from Valencia

A predominant sentiment in Birmingham and Manchester were the negative impacts of the pandemic. Worsening economic condition, breakage in social cohesion and reorganisation of spatial distribution and access were all mentioned:

"I think less people will want to spend time in our cities" 18-year-old person from South Birmingham

"How the city has already changed is affecting many small businesses and a lot of the places have been closed down - this is bad for a lot of young people stuck at home with nowhere interactive to go" 17-year-old Female from Manchester City Centre

"Places that were normally used to hosting crowds will have to get used to not having them " [Sitios que normalmente estaban acostumbrados a acoger aglomeraciones deberán acostumbrarse a no tenerlas…] - 16 year-old Female from East Valencia

This additional lens provides a unique opportunity to test teenagers' perceptions towards future visions in times of uncertainty. Chapter 6 discusses how the presented sentiments have fared in time and what that might mean in terms of engaging teenagers in future city-making.

Chapter 6: Discussions of Findings

Well, in my opinion, young people should also be asked, since we have a somewhat more current vision. We have some imagination and an idea of how it could be better. So, you can get an idea. It doesn't have to be done, because we can't consider engineering, and how the architecture would have to be, how it might affect congestion, for example, pollution, etc. But still, a good idea can come up and be used. [Ами според мен, трябва да се питат и младите, тъй като ние имаме някакси по-модерно виждане. Имаме някакси въображение и представа как може да е по-хубаво. Така че, може да се вземе идея. Не е задължително да се направи, понеже ние не можем да съобразим инженерни работи, и как ще трябва да стане архитектурата, как може да повлияе на задръствания, например, на замърсяване и т.н. Но все пак може и да хрумне и добра идея, която да се използва] - 16-year-old Male from Sofia

6.1. Outcomes

This project set out to explore how teenagers, defined as those aged 15-19, perceive and understand urban planning and future smart city concepts. Focusing on Birmingham, Manchester, Valencia, and Sofia—cities within England, Spain, and Bulgaria—it examined young people's awareness and engagement with these issues across European democracies. The research aimed to uncover how teenagers can be more actively involved in shaping the cities of tomorrow, particularly in the context of rapid technological change. Driving questions centred on whether citizens, and especially young people, have opportunities to influence city planning in an era of innovation. The study also sought to fill gaps in existing literature by investigating young people's perspectives on urban futures, smart city policies, and their involvement in planning processes.

Across all four cities, young people express curiosity and enthusiasm about living in technologically advanced urban environments. Overwhelming, majority of all participants indicated desire to live in a smart city as discussed in Chapter 5. Nonetheless, teenagers are able to critically evaluate the concept of the smart city within broader social, economic, and political contexts: “It shouldn’t be a smart city so driven by technology to the point we’re face to face contact and human interactions are rare“ – 17-year-old Female from West Birmingham

While the majority of teenagers do not describe their own city as ‘smart’, they consistently highlight smart mobility as a prominent feature present in each location. Smartness was interpreted in nuanced ways, with young people linking technology and sustainability, but also putting forward notions of community, security and fairness as essential. (see sub-chapter 5.7.3.)

There are clear, overarching patterns in what teenagers prioritise for their cities, with a strong emphasis on people-focused, environmentally conscious urban living. When discussing smart city development, young people want resources to be directed towards projects that foster community, ecological sustainability, and societal well-being. Safety, education, and inclusivity emerge as the most important smart city indicators for teenagers in every city studied.

However, local priorities also surface - creativity in Birmingham, active travel in Manchester, healthy living in Sofia, and entrepreneurial spirit in Valencia. Overall, teenagers demonstrated a communal, ecological, and socially responsible approach, highlighting justice, fairness, and post-anthropocentric perspectives in their vision for future cities.

Securing the trust of young people in shaping future cities depends heavily on political will and effective leadership: “I don’t think there is much targeted towards people in my age group (or the public in general) about the urban planning of the city“ – 17-year-old Male from East Manchester. To achieve this, city visions must better reflect the needs of young people by actively involving them in decision-making, expanding educational opportunities, providing positive role models, and fostering intergenerational collaboration.

6.2. Future City Visions and the Smart City Debate

Chapter 4 explored the view from the top-down and the role that young people were relegated to in the visions of the future smart city. In each of the national contexts, the economic lens of young people as future workforce and a talent pipeline, as well as the educational focus on upskilling and training young people, were the primary themes in policy documents. Across the four case study cities, similar sentiment was present, although the focused varied on: a citizenship focus on Birmingham, a cultural focus in Manchester, entrepreneurial focus in Sofia and a spatial and health-focused approach in Valencia. The strong focus on the economy across top-down visions contrasted with the views of teenagers on the ground.

Across all four cities, when presented with the smart city concept, young people prioritised Smart People, Smart Living, and Smart Environment as the top three overarching domains of the smart city important for them and largely pointed to a missing one of “Community”. Education was the main theme which aligned across smart city visions from the top-down and the views expressed by teenagers, although the top-down visions focused on education as a way of upskilling a digitally savvy future workforce, whereas teenagers interviewed expressed the need for better access to education, diversity of approaches and life-long learning. Despite the focus on digital skills in smart city visions, teenagers interviewed across all four contexts did not feel that their education was equipping them with the relevant computer skills for the future. There is a clear misalignment between the top-down view of youth in the smart city and their perceptions.

6.2.1. Young people’s future imaginaries

There was a strong alignment between what young people wanted to see in the future of their city when asked before the topic of the smart city was introduced, and what priorities they identified from the themes and indicators of the smart city. Across all case study cities, the future of the city was seen as a sustainable and liveable environment, incorporating strong community cohesion. This points to the fact that there are clear thematic areas which are important to teenagers interviewed, regardless of the city they inhabit. There were nuances across cities as to how teenagers imagined their own city. In Birmingham, a focus on safety and sustainability and green energy was a key theme both in the priorities of young people for their city and within their smart city indicator priorities. Empowering young people through education and creativity was also highly represented. In Manchester, environmental sustainability and health (specifically mental health) provisions aligned across both questions. In Valencia, similarly to Manchester, environmental sustainability

with a focus on planning was a key priority and, in Sofia, health and wellbeing linked to cleaner environment and better planning were present strongly in teenagers' future priorities for their city and smart city preferences.

The smart city is an appealing imaginary to children and young people. Ghafoor-Zadeh (2023) examines the everyday experiences of children and young people in a smart city district in Vienna, findings that children and young people encounter smart city transformations and are interested in technology, environmental protection, and social inclusion. Alaou et al. (2025) investigate young Moroccans' perceptions of the smart city concept in Agadir. Their findings suggest that young people hold positive perceptions of the smart city, and their understanding of the concept is associated with factors such as their age, level of education, and digital technology knowledge. Similarly, teenagers interviewed in this study in Birmingham, Manchester and Valencia were overwhelmingly positive about the opportunity to live in a smart city (this specific question was not asked in Sofia, see Chapter 5). When asked to imagine a smart city, they often envisioned a city that uses technology to make life easier, is technologically advanced, sustainable, and modern. Across all four cities, a majority of teenagers agreed with the European Commission's definition of the smart city, which emphasises efficiency, reduced emissions, improved services, and responsive administration for the benefit of inhabitants and businesses and were intrigued by the opportunity of a future city which is safer.

Castilla and Müller (2023) explore children and young people's participation in smart city policies in Stavanger, Norway, arguing that they can bring beneficial outcomes to the design process. However, they also highlight significant limitations in perceiving children as capable political subjects and a lack of suitable methodological tools for their engagement across all planning phases. This sentiment was observed in reverse within the primary data, by the perceptions of political and institutional mistrust that some teenagers espoused:

"I don't feel the council designs Birmingham as smartly as it could. It doesn't always try and meet the users' needs just a small sector of the population that suits them." – 17-year-old Female in South Birmingham

The majority of teenagers, however, expressed the desire to be engaged with the planning of their city, and a minority reported that they have already been engaged with activism and politics, skills that can contribute to participation within planning processes.

"Being active with such things [..] makes me feel confident that I have done my best to represent my generation." – 17-year-old Female North Manchester

Powell (2021) stresses the point that under the promise of increased citizen integration in the smart city lies the danger of control. Optimisation within cities potentially limits citizens' ability to express themselves and bring diverse knowledges, eventually restricting civic decision-making to narrow interests. Powell (2021) makes a strong argument for the need to critically question the data collected and processed in smart cities through processes of civic participation and accountability.

"The tensions in datafication show that power and agency are always at work in influencing who can speak, be heard, or act in relation to things that matter in the places they live." (Powell, 2021:163)

Echoing Powell (2021), teenagers interviewed were critical of the smart city's governance and ability to express their views, more so in Sofia and Valencia. In Sofia, teenagers questioned how a definition of the smart city could potentially serve individual interests, exclude non-human actors and

potentially sideline religious and moral views. In Valencia, social and political exclusion, the importance of minority languages and identity were highlighted. In both contexts, the importance of transparent monitoring and implementation plans for smart city interventions were brought up by young people.

Van der Graaf (2020) argues that current rights-based approaches are often abstract and adult-centric, potentially increasing children and young people's social and spatial exclusion. Van der Graaf notes that data collection in smart cities might even be used to claim representation for children's voices, potentially sidelining direct participation. Although there were critical views across all four case studies, the predominant sentiment was one of a positive attitude towards the concept when presented to them. The survey tested young people's previous awareness of the smart city concept, and a majority across all four cities were not familiar with it. Whether sentiment would shift once teenagers have been educated better about the concept needs to be tested in the future: however, it is important to frame the positive sentiment towards the smart city in this context of general lack of awareness.

6.2.2. Reimagining the Smart City Wheel from a Youth perspective

This PhD research used the Smart City Wheel (Cohen, 2018) model of the smart city, which has six areas and 18 indicators (See Figure 6.1), to engage young people on the topic of smart cities. Participants were asked to identify their top priorities from the indicators and one area of focus from the six main areas where they would like to see technological advances being integrated within their cities. They were also asked to consider what elements might be missing from the model. Young people in the project demonstrated a mixed awareness of urban planning and smart city initiatives in their cities. While a minority had heard the term "smart city", most were unfamiliar with local smart city initiatives. However, their engagement with the Smart City Wheel revealed specific priorities and highlighted perceived shortcomings of the model.

When presented with the Smart City Wheel, young people across all four contexts generally prioritised areas related to people and living, followed by the environment. Looking at the specific indicators (the outer circle of the wheel), clear cross-cutting trends emerged. The themes most frequently appearing in the top priorities across the four cities were: education, safety, inclusivity, culture, sustainability and creativity. Urban planning and active travel also appeared in the top priority indicators.

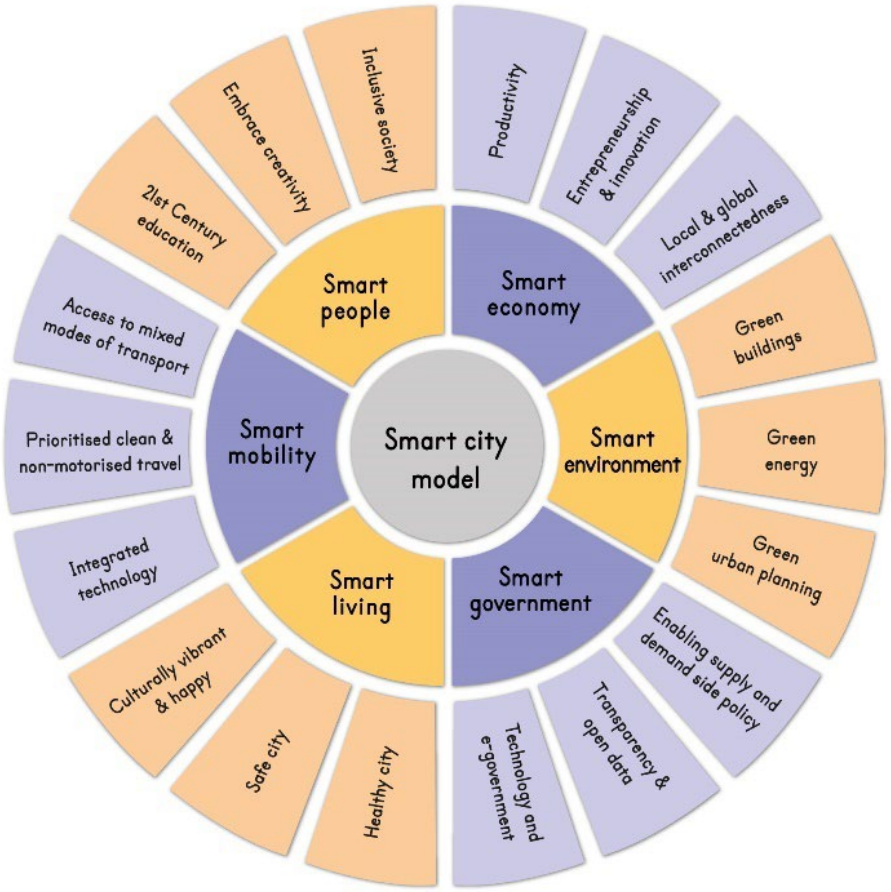

Figure 6.1: Smart city wheel as presented to the youth. Source: Adapted from Cohen (2018).

Teenagers' priorities reflect a strong focus on human-centred themes and sustainability. Young people desire cities that are safe, healthy, inclusive, culturally rich, and environmentally conscious, alongside being technologically advanced. Beyond the existing categories, teenagers identified several crucial aspects missing from the standard Smart City Wheel and the definition provided. Their suggestions point towards a desire for a more holistic, equitable, and participatory vision of the future city. Key themes presented a vision of moving beyond a purely techno-politico-economic origin of the smart city to encompass ideas of togetherness, community, political activism, affordability, and care for vulnerable populations, and included:

- Community cohesion and the importance of supporting vulnerable populations. Addressing inequality and ensuring smart city benefits are for all, including vulnerable populations like the homeless and addressing mental health issues.
- A post-anthropocentric understanding, including animal welfare and ecological wellbeing.
- A need to address affordability and cost of living.
- Equality, equity, diversity and inclusivity, with some young people expressing fear that institutional biases might be replicated digitally.
- Trust and transparency: concerns were raised about data privacy and collection.

- Youth empowerment, opportunities for youth engagement and ensuring their voices are heard. Political will and cultural change were needed for successful implementation to benefits teenagers. Addressing intergenerational issues and the feeling that older generations patronise or ignore young people's views.
- Better inclusion of social and sport infrastructure. Cultural activities, art and creativity were seen as essential, suggesting a need for even stronger integration.

Based on their views and perceptions of the Smart City Wheel, a re-imagining of the model is presented below (Figure 6.2). The wheel through a teenager's lens is not a perfectly bound and symmetrical model but rather allows a better contextualisation both within ecological and political limits. The wheel is also punctured by the process of participation, making sure that it is not a static framework but an evolving co-produced imaginary of the future smart city. The wheel is weighted towards the four major themes that teenagers prioritise – community, people, living and the environment. Those are the entry points to engaging young people with the smart city, and they include reframed indicators that place more importance on community cohesion, social infrastructure and non-human inhabitants of the city.

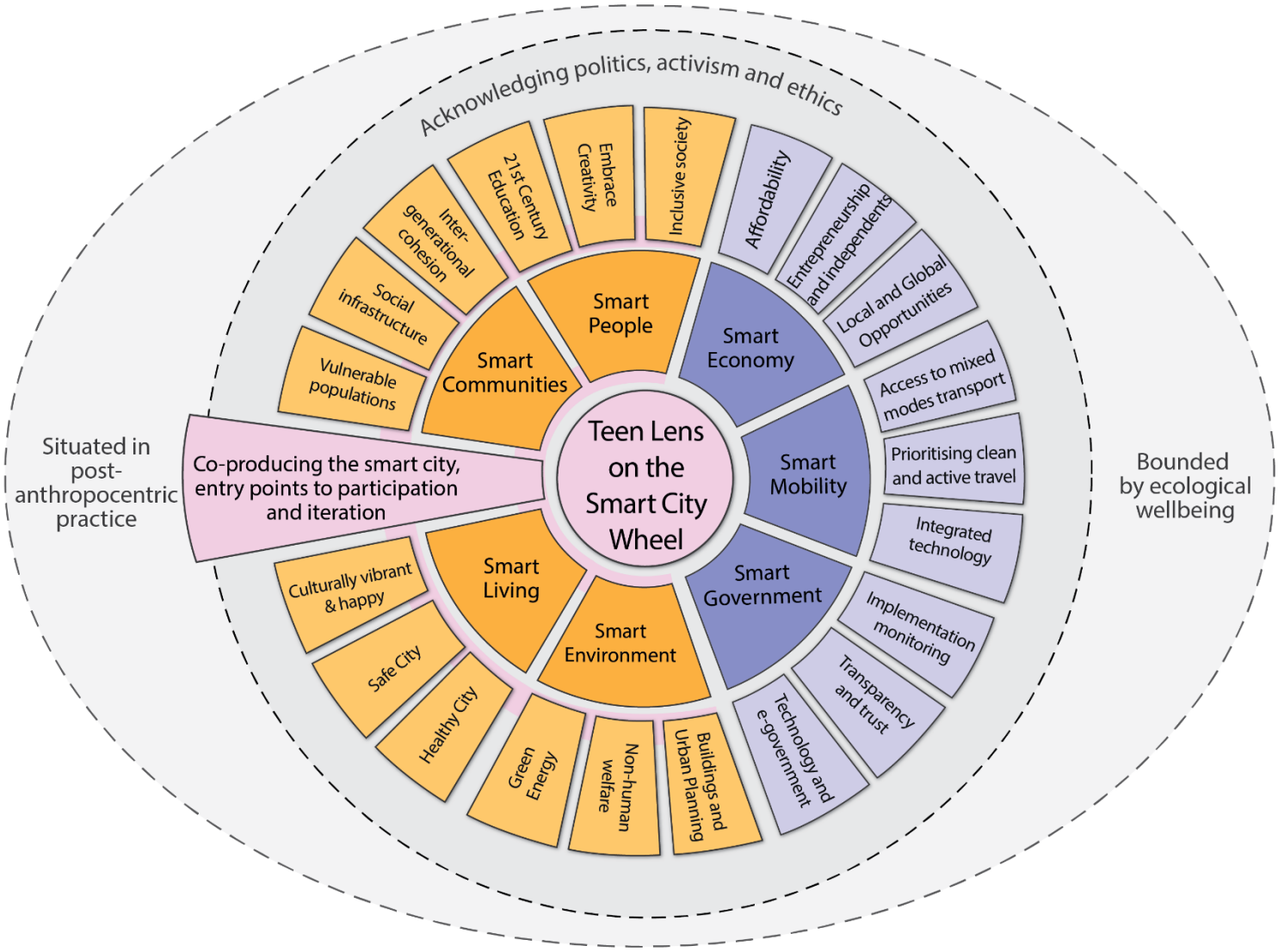

Figure 6.2: The Smart City Wheel broken up from a teenager's perspective as reported in the data.

On the right of the model, economy, government and mobility are still topics which young people found important, however, they might be incorporated into a longitudinal process of engagement, once teenagers are engaged in the left side of the wheel. From a teenager's perspective, it is important that when the economic benefits of the smart city are evaluated, they are seen through the lens of affordability, not productivity. Similarly, smart government practices should evaluate trust as well as transparency.

The reimagined wheel (fig. 6.5) should be used as a tool to question smart city practices from the viewpoint of teenagers. Picon (2015) questions the positivist ideals at the core of the technocratic model of the smart city, focusing on the myriads of troubling realities that the smart city faces in the real world. Picon (2015) echoes Graham and Marvin (2002) in questioning the political and social ideals to which proponents of the smart city subscribe; highlighting how technology is exacerbating inequalities and ruptures in society. Picon (2015) argues that smart cities' policies and agendas need to embrace the diversity of their respective populations, lean on local ingenuity and respect the need to be contextual. It is in this vein that models of the smart city, such as the smart city wheel, obscure the complexities of democratic and engagement processes. Evaluation or design frameworks should be contextualised and operationalised as tools and continuously contested and reimagined.

Mora and Deakin (2019) argue that to move beyond a technocentric urban utopia, smart cities must be untangled and developed as innovation systems enabling technology-driven urban sustainability. This necessitates separating the hype from reality and focusing on the social shaping of smart cities. Mora and Deakin propose that designing smart cities requires collective action, combining faith in technological advancement with the knowledge, skills and interests of a quadruple-helix collaborative environment (the quadruple-helix model of innovation includes collaboration between four key stakeholders – government, academia, civil society and industry). This ensures that technological innovation is guided by the public interest and a holistic vision, rather than purely market-driven or technocentric logic. However, teenagers often lack the opportunity to be engaged within those four key domains, either due to a lack of political voice, a lack of financial power or being the receivers of education and civic initiatives and not their drivers.

In democratising the Smart City, Calzada (2021) proposed rethinking the multistakeholder frameworks used. The Penta helix multi-stakeholders' policy framework from social innovation perspective is introduced, which positions social innovators, activists and brokers as key intermediaries between the quadruple helix model actors of public sector, academia, civic society and private sector. This sentiment was reflected throughout the data with teenagers and is incorporated as a framing of the smart city wheel seen through a teen lens. Teenagers and advocates of teenager inclusion can occupy this intermediary role, supporting social innovation in the smart city development.

Teenagers' perspectives suggest a critical view of purely technological or efficiency-driven smart city models. They are acutely aware of societal challenges like inequality, lack of political engagement, climate change, and intergenerational tensions. Therefore, their ideal smart city wheel would not just measure technological advancement but also its impact on social equity, environmental sustainability and the genuine inclusion and wellbeing of all citizens, including themselves, in the planning process. For teenagers, a smart city is one in which their voices are heard and valued and where planning initiatives lead to visible, positive changes in their everyday lives.

6.3. Participatory planning and teenagers' realities

This section explores how the primary data collected with teenagers' challenges models of participation and specifically the Ladder of Children's Participation (Hart, 1992). This section explores the themes emerging across all 121 interviewees; however, it does not necessarily generalise those findings but instead uses the dominant themes as a way of questioning the ladder of participation from a teenager's perspective. Youth engagement in urban planning across the four studied cities largely resides within the lower rungs of the ladder, primarily in the realms of non-participation and tokenism.

Unlike adults who are traditionally viewed as competent, autonomous citizens, young people are often marginalised as "citizens in the making" (Carroll et al., 2019) whose capabilities are frequently underestimated by adult decision-makers (Thomas, 2007). While adults typically engage through formal institutional structures such as voting, young people often gravitate towards informal, issue-oriented, or digitally mediated forms of activism like social media campaigns and grassroots organising (Boulianne et al.,2020). Because adults hold the reins of power, young people often require supportive adult "allies" or facilitators to translate their unique lived experiences into a language that formal planning systems can acknowledge and act upon (Botchwey et al. - 2019). Young people are considered experts in their own lives, offering realistic and innovative insights into their environments that differ from adult priorities, yet they are more susceptible to tokenistic or manipulative treatment in adult-led processes (Mullahey et al., 1999).

The consistently low levels of awareness about urban planning processes and local smart city visions among teenagers in all four cities suggest that they are often operating at the non-participation levels of the ladder or just entering the informing stage (which is the lowest rung of tokenism). While a majority of participants expressed an interest in participating in urban planning, most have not had the opportunity to do so. This suggests that even if some consultation processes might be occurring, they are not widespread or impactful enough to reflect significant teenage involvement. The numerous barriers identified by young people, such as lack of information, lack of education about urban planning, feeling unqualified, and a perception that their voices are not heard or valued by adults and planners, suggest that even when opportunities are presented, they may fall into the realm of tokenism if such barriers are not acknowledged and remedied. Consultation without genuine consideration of youth perspectives or placation through superficial engagement and one-off activities, would lead to feelings of disempowerment. As a 16-year-old female from Sofia notes: "*It's voicing an opinion, but it's not really participating in building something".*

In Birmingham and Manchester, young people were unanimously negative in their perceptions of peer participation. While youth in Sofia presented a more nuanced view, they still tended to disagree that opportunities were accessible. Only Valencian youth showed a more positive perception, potentially linked to more active youth organisations, although reported individual experiences of past participation were limited. Young people across the four cities are largely positioned on the lower rungs of Hart's (1992) Ladder. There is a significant lack of awareness and limited experience of genuine participation, leading to feelings of disengagement. However, there is also a clear interest and motivation among young people to be more involved, suggesting a potential to move towards greater levels of participation if barriers are addressed and meaningful opportunities for engagement are created.

6.3.1. Critique of the Ladders(s) of Participation

Though Hart (2008) relegates the ladder to the shed, having served its purposes, its influence has been such that it is still used as a proxy to locate youth inclusion processes, as seen by Botchwey et al. (2019). Whereas both Arnstein (1969) and Hart (1992) see the ladder as a thought exercise to structure participatory processes, rather than an instructive and sequential way of achieving participation, it should be noted that the wide adoption of the concept has often ignored this framing (Hart, 2008).

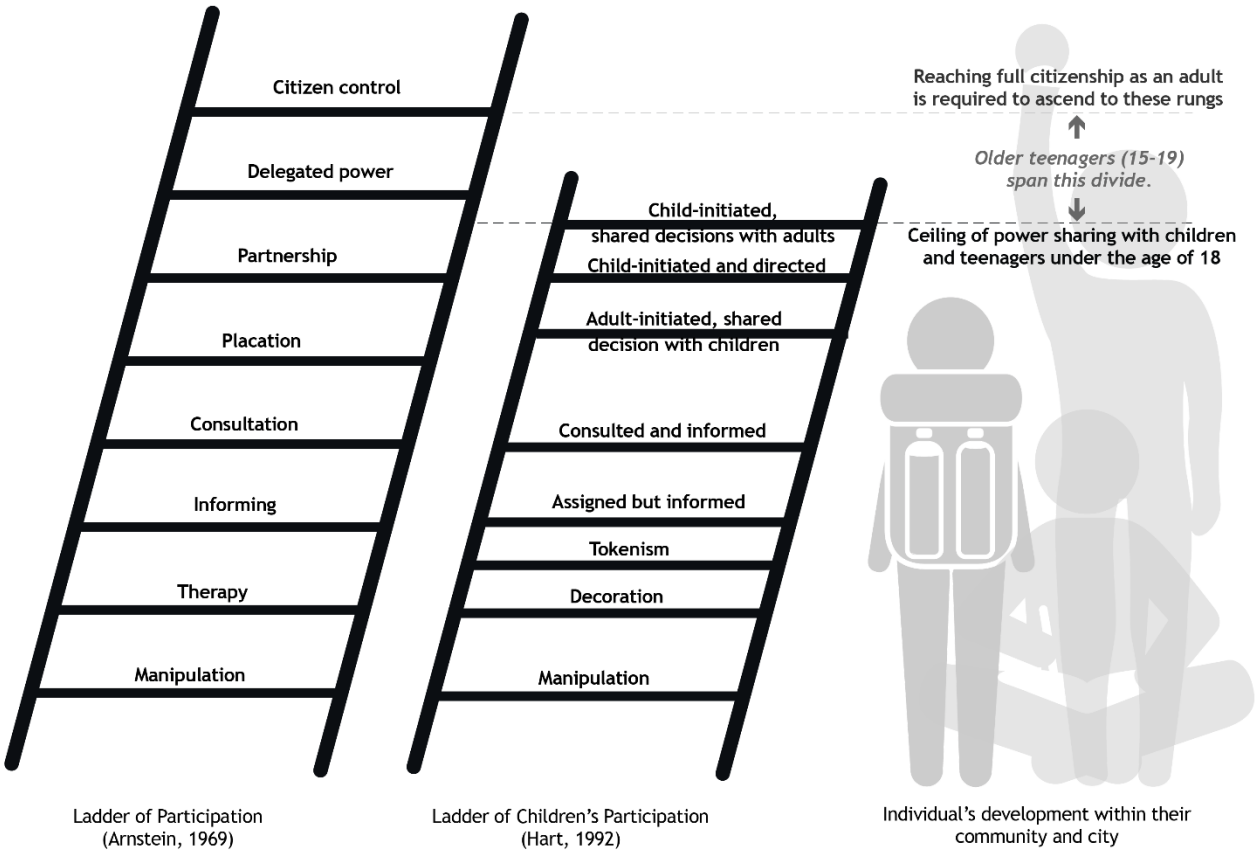

Figure 6.3: Reconciling Hart (1992) and Arnstein (1969), alignment of ladders adapted from Botchwey et al. (2019). Graphic material used from the Noun Project, credit to Clare Jones.

Botchwey et al. (2019) make an important contribution, aligning the ladder of participation as conceptualised by Arnstein (1969) based on renewal processes in the United States and Hart (1992) based on international development work with children and young people (see Figure 6.3.). A ceiling to children's participation can be established, where Hart's ladder fails to ever achieve the true citizen control espoused in processes of delegated power or citizen control, because of the societal limitations of entrusting underage teenagers with financial, legal and other responsibilities. The conceptualisation of teenagers and its impact on legal frameworks based on age is rooted in psychological understanding of human development and adolescence by authors such as Hall (1904), Erikson (1968) and Piaget (1972). Whether and how the biological processes, such as brain development, justify such boundaries are starting to be explored by authors such as Blakemore (2018) and the literature is evolving. Here we look at the practical implications of participatory model which imply the existence of such age-based societal framework but don't necessarily reconcile them with the experiences of teenagers.

Teenagers at the ages of 15 to 19 straddle the divide between children and adults, therefore their transitional nature should be considered and adapted by the models of participation. Hart's ladder finishes lower than the one proposed by Arnstein as suggested by Botchwey, to reflect the fact that power shift to children is currently not possible under the legal systems which see anyone under the age of 18 as a child (UNCRC, 1989). If power shift is the ultimate goal of Arnstein's model of participation, we should consider the implications of working with a demographic crossing the border of coming of age and how participatory processes can facilitate this transition to enable a more longitudinal approach to capacity building within participatory processes. Teenagers inhabit the city differently to children and older adults, therefore their vantage point on the ladder would be different.

Drawing on the teenager's perceptions and opinions presented in Chapter 5, participatory models need to consider several key points:

- A fundamental prerequisite for meaningful participation is a basic awareness and understanding of urban planning processes. Without this foundational knowledge, even well-intentioned attempts at participation might fall into tokenism simply due to a lack of understanding.

- There is a disconnect between teenager's expressed interest in planning and actual opportunities to do so. Bertram (2019) similarly finds that whereas majority of adolescents (11-16) interviewed in Plymouth, England have neutral or positive interest in planning, but opportunities to take part are not always easily accessible. Manouchehri and Burns (2021) show that, in the Iranian context, children express significant enthusiasm to take part and when provided with the opportunity, they have competency to suggest integration of their ideas into planning processes.

- Intergenerational power dynamics and adult centric views can act as barriers within a participatory process, hindering advancement up the ladder. Heffez and Bornstein's (2016) work found that adults' perceptions of young people's needs for improving their local environment differed significantly from the priorities young people themselves expressed.

- The plurality of values, motivations and capacities of teenagers needs to be considered and differentiated approaches to participation devised. Derr and Kovacs (2015) highlight that children and young people's consistently express desire to participate in urban planning and be respected in their communities. Himmel et al. (2014)'s work with young adults between the ages of 17-24 find that they possess innovative ideas, however, at times having a uniformed or naïve understanding of the subject matter, which requires further support. Malone (1999) reports findings from the Growing Up in Cities project which indicate differences in children's concerns between high-income cities and low-income cities, the former focusing on outdoor environment and safety and the latter on poverty and environmental degradation.

- Innovations in participation tools such as technological tools can reach young people directly: however, this raises further questions around ethics, sustainability, digital literacy and trust. Kahila-Tani et al. (2019) finds that teenagers value the use of digital technologies as a tool when asked about their perceptions of public spaces, but they need to consider local conditions.

6.3.2. Contextualising the Ladder of Participation

The ladder of participation has seen different critiques proposed across the years. Driskell et al. (2002) rework the ladder to a dimensional framework, where the vertical progression in power dynamics in decision-making is supplemented by a horizontal axis of progressively increasing community collaboration. This interpretation picks up on the realities of children and teenagers who are interdependent on their local communities, reflected in the data collected in this project. Hurlbert and Gupta (2015) propose a split ladder of participation which addresses the conditions under which participation is likely to work and its potential to achieve an increase in trust. The split ladder proposes four quadrants (on axes of management and governance in participation and problem solving, and trust) and is conceptualised as both a diagnostic and evaluation tool.

Botchwey et al. (2019) specifically aim to tackle the challenge of incorporating youth into the ladder by placing three additional rungs of consent, advocacy and incorporation, positioned between placation and partnership and aiming to incorporate the power-dynamics young people face in either seeking or being granted opportunities to participate. Botchwey et al. based their reformed ladder on the evaluation of youth engagement initiatives in the USA, but did not collect primary data on young people's own views or reflections on the process.

The perceptions presented in Chapter 5 show teenagers interviewed consider effective participation to require tackling underlying issues related to individual preparedness (awareness, confidence, relevance), the quality and accessibility of institutional support (opportunities, methods, follow-through), and the foundational socio-political context within which the participatory process takes place (trust, intergenerational dynamics, transparency, external factors). These three dimensions of the individual, the support and foundations are explored further below (See Figure 6.4).

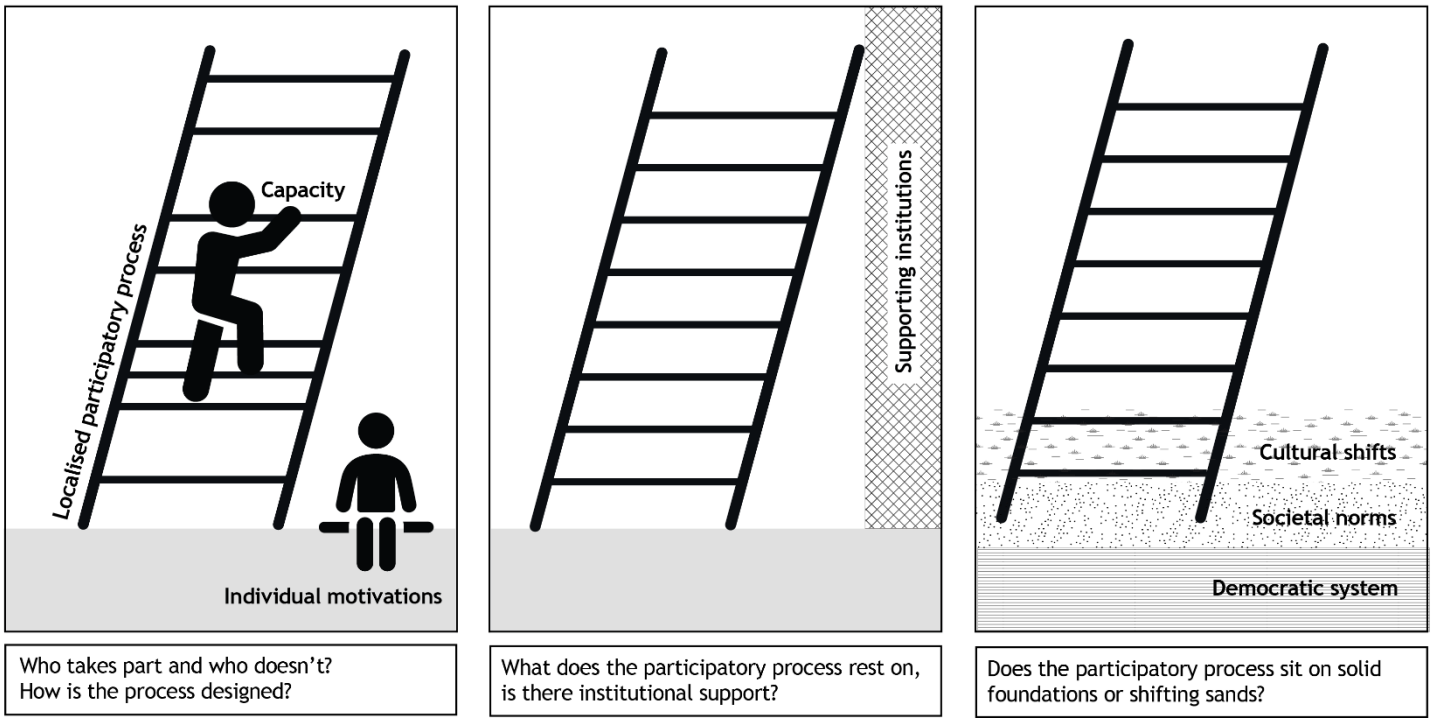

Figure 6.4: Reframing the ladder, based on three key dimensions on the individual, the support and foundations. Source: Author, graphics used from Noun Project, credit to Adrien Logret.

The individual and their context

Mullahey et al. (1999) reflect that although the goal is often to achieve the higher rungs of participation, the actual level varies based on the young person's capacity and interest. Depending on the type of young people engaged in the participatory process and its design (logistics, language and accessibility), the participatory process can either empower or disempower meaningful participation. For some young people, it is much harder to overcome barriers between the different rungs, or they may lack the confidence to take part and decide to sit out the process entirely. Participation ladders often assume that individuals are ready and able to participate if given the chance; however, across the four city contexts, teenagers interviewed highlighted personal and perceived limitations affecting their engagement.

The majority of young people reported little to no formal education on urban planning and lacked basic awareness of the topic, including who is responsible for planning their city. This fundamental lack of understanding makes it difficult to engage meaningfully and should be considered when evaluating, designing or undertaking participatory processes. Botchwey et al.'s (2019) notion of incorporating informed consent into the ladder reflects this aspect.

There were concerns expressed by teenagers who perceived that they did not have the necessary knowledge, expertise, or confidence to contribute effectively. Some teenagers felt they might not be "good" or qualified, doubting if their ideas were accurate or if they had the research skills needed to support decision making. This phenomenon can be potentially linked to the stage of brain development where self-confidence is still being constructed (Blakemore, 2018) or be a symptom of the adult centric systems of governance and power which instil doubt in young people's ideas. A 17-year-old male in Sofia reported: "I'm not qualified for that, and I think there are people who would do it much better than me". Understanding levels of confidence and the presence of support or mentorship initiatives should be included when participatory processes are designed.

Some teenagers reported that, for them, urban planning is not a priority or a topic of interest. The competing pressures of focusing on education, applying to universities, career paths and social lives take precedence. This challenges assumptions that young people would be inherently motivated to participate in civic processes and suggests that participation with teenagers needs to take a proactive approach. When asked, most teenagers expressed a desire to take part, however, they lacked the knowledge of how to do so. Perceived lack of interest might be a consequence of poor information dissemination and inaccessible planning processes of consultation and engagement, rather than an inherent trait of the individual.

Teenagers interviewed also spoke frequently of the importance of being embedded in community settings and having different ideas to adults. By introducing the individuals within the Ladder of Participation, challenges such as capacity buildings, inclusion and community-based approaches can be better considered. Failing to acknowledge the experiences, knowledge and perceptions of those taking part sets a participatory process on a rocky path.

The ladder's support

Participatory models are often abstracted outside of the context in which they take place. Inch et al. (2019) critique the dependence of the ladder on government-centric initiatives and its failure to capture the complexities of power in multi-institutional planning contexts. Innes and Booher (2004) also critique the ladder's tendency to present a dichotomy between citizens and government, instead arguing that a more collaborative approach involving multiple institutions. Young people are often engaged within third-party organisations – educational, sport, leisure, peer-led, etc.

necessitating that participatory planning must lean on these institutions for support if youth inclusion is to be achieved. Teenagers interviewed critiqued the availability and accessibility of the support structures for participation, largely dependent on the wider institutional context in which participation takes place.

Teenagers felt that planners and institutions were not proactively engaging with them, and a significant barrier identified was the simple lack of opportunities presented to them. The reported lack of public discussion around planning in public and domestic discourse defined it as a topic outside of their interest. Insufficient targeted advertisement or promotion of opportunities on social media platforms teenagers use were also given as examples: *"I don't think any medium of relaying that sort of information particularly panders to our age group."(* 15-year-old Female from Birmingham City Centre). This creates a perception that participatory structures are non-existent or hidden: *"Adults don't give the youth a way to learn because they think we won't understand. But they haven't even given us a chance*" (16-year-old Female from West Birmingham). Information about urban planning and opportunities is often inaccessible to young people.

Interviewees also expressed a desire for participation that goes beyond one-off consultations, seeking opportunities to help change their cities: "it [participation] allows young people to help shape the place they're growing up in" – 19-year-old Male from South Manchester. Young people want to see their input led to real action and change. Teenagers' critiques suggest a need for sustained impactful engagement structures which need to be embedded in local institutions to allow continuity. This is challenging current planning practice, which often conducts engagements and consultations on a short-term, case-by-case basis.

The project has demonstrated that digital engagement can bypass traditional gatekeepers and institutions (See Chapter 3) and solicit views from teenagers: however, the long-term sustainability of such methods will depend on institutional support systems. Technology was seen by teenagers as a potential tool to increase accessibility, disseminate information, and facilitate awareness, however, teenagers were also cautious, raising concerns whether digital tools would genuinely allow their voices to be heard and pointing to issues of transparency, data privacy, and who benefits from technology adoption overall. Teenagers' views add a layer of complexity to digital participation and how participatory planning platforms engage with young people.

By conceptualising the support structures and institutions on which a participatory process rests, practitioners can better integrate engagement within teenagers' lives, identify institutional gaps and work towards a more collaborative approach to participation.

The foundations

Participatory processes take part within wider societal, cultural, economic and environmental ones. Specifically, participation relies on a solid foundation of a democratic system to be meaningful and transformative. If the underlying system of planning is taking place in a flawed democratic system, the validity of the outcomes of a participatory process can be questioned. However, the structural integrity of a system of governance or laws can be obscured by layers of overarching societal norms (e.g. adultcentrism) or cultural and political trends (e.g. chasing smart city imaginaries). Teenagers' views pointed to foundational issues that affect the legitimacy and effectiveness of participation processes:

Teenagers can feel patronised and stereotyped by older generations and planners. There is a perception that adults think they know best and invalidate youth perspectives, which can negatively impact young people's mental health and sense of value in society. Professionals can be sometimes

seen as not thinking long-term or not caring about youth's future. This suggests power dynamics inherent in society, especially between age groups, influence the willingness and ability of youth to engage, regardless of the formal level of participation offered.

Some participants expressed significant mistrust in politics and politicians, noting a lack of political commitment and felt that decision-makers might not live in the cities they plan for or represent the demographics they plan for. The perceptions that young people have "*no influence on decision-making"* or that planners are primarily concerned with those who have financial influence undermine the foundations of democratic participation that ladders often implicitly rely upon.

Teenagers were concerned about transparency in decision-making. The opaqueness of the system makes it harder for young people to understand and trust the process; is they are missing the relevant educational inputs. This lack of transparency or perceived lack thereof due to inability to access knowledge, lack of experience or guidance can erode the foundational trust needed for any level of participation to be meaningful.

Broader issues like economic conditions, parental pressures to emigrate, cultural approaches to public space use and even election cycles influence young people's perspectives and willingness to invest in their cities' futures. The experience of the COVID-19 pandemic also shaped teenagers' views on future city changes, highlighting concerns about reduced social cohesion, economic impact, and less public space use. These external factors, not explicitly accounted for in the Ladder models, heavily influence the context within which participation occurs and can disproportionately impact children and young people who are undergoing rapid developmental changes.

Temporal dimension of participation

Teenhood is a transitional period of a young person's live and one that often sees rapid changes in life circumstances. By focusing on teenagers, the temporal dimension of participation becomes highlighted. It is not uncommon for development or regeneration projects to take place over the span of multiple years, with different rounds of consultation and engagement. It is therefore important to understand not only the different methods of engagement that different ages require, but also the capacity potential of a young person to grow and develop agency, to be able to eventually share power with decision-makers.

Participation models with teenagers should also note that some are not the "future citizens" of their home city: *"Because I am going to leave Birmingham soon, so I won't be able to do much before I go*" – 17-year-old Male from Birmingham City Centre. The latter years of adolescence and transition to adulthood see many young people leave their hometowns to go to university or relocate for job prospects. Participatory processes with teenagers should monitor and understand such trajectories better, especially in cities where youth populations are diminishing.

Knowledge and negotiating power

Throughout all the conversations with young people, the power dynamics of coming from a lower knowledge base were exemplified and young people demonstrated desire to learn more about participation in urban planning (See sub-chapters 5.3 and 5.4):

"This survey is the only information I have come across regarding this topic" – 18-year-old Male from North Manchester

According to Botchwey et al (2019) successful participation creates a 'community of practice' where both adults and youth learn to see the environment in new ways and act accordingly. This 'co-

learning' is essential because it helps adults correct misguided assumptions about youth needs and teaches young people how to navigate complex bureaucratic systems (Ataol et al. 2019). Hanssen (2019) describes participation as a 'school in democracy', where young people acquire the confidence and skills required for active citizenship through practice rather than abstract teaching

Participation is often seen a model that is imposed onto a planning process without establishing the philosophical groundings for its existence. From the literature and primary data analysed, it becomes apparent that successful participation processes create or rely on learning processes to be able to negotiate the power-transfer and ascent participants up the rungs of the ladder.

6.3.3. Situated participation

The Ladder of Children's Participation in its main iteration (Hart, 1992) has become a fundamental concept in youth participation and practice, the simplicity of the diagram obscuring the context in which participation is taking place, as recognised by Hart (2008) himself.

A rethought version of the Ladder of Participation, particularly from the viewpoint of youth, needs to incorporate the foundations of knowledge and skills, the support mechanisms required for genuine involvement, and a deep consideration of the person – the individual needs, agency, and empowerment of young people – at every stage. It is not simply about moving upwards but about creating a sympathetic and enabling environment where young people can meaningfully contribute to shaping their communities. It necessitates a supportive ecosystem, commitment through time and recognition of the individual's needs, motivations and capacities. It necessitates that the ladder is 'situated' into the context within it takes place and participation is enabled by learning processes established to negotiate the ascension up the rungs.

Situating participation

In their book 'Situated learning: legitimate peripheral participation', Lave and Wenger (1999) establish professional learning processes as a social practice negotiated through the legitimate peripheral participation that an individual takes part in, leading to their full participation in the community of practice of their chosen profession. For the authors the focus on the relationship between learning and the social situation within it takes place enable to establish the social processes that facilitate its success.

Public participation in planning is rarely examined on its own merit, always seen as a part of achieving a wider planning goal. As such, it can be seen that it marginalises groups such as young people as the statutory levels to require it to take place are non-existent. If examined through a power-transfer lens and leaning onto the theory of situated learning, participation in planning can be seen as a process of emancipating populations facilitated through knowledge transfer and learning. As learning requires 'legitimate peripheral participation', public participation requires 'minimum necessary learning to take place. This omission of learning and participation as two sides of the same coin can explain away why many participatory processes fail, they do not engage in establishing what the 'minimum necessary learning' is that needs to happen for the participatory process to be successful and sustainable in the long term.

Here, 'minimum necessary learning' is seen in the same lense as Lave and Wagner (1999) discuss 'legitimate peripheral participation' – it is an unalienable term, not the sum of the individual terms – there is no maximum knowledge that can be imparted, but there needs to be a learning process in existence for participation to be legitimate. There is no unnecessary level of information as participation takes many forms, yet there are key pieces of information that are necessary for the

successful power-transfer towards communities, which if not present will scupper the process. And similarly, learning needs to happen – knowledge needs to be transferred in a process of learning as participation progresses. This term can be explored further in future publications, however, it is seen that it is this minimum necessary learning that facilitates the jump between the different rungs of the ladder and is the processes that communities, decision makers and planners need to undergo to advance their participatory practice.

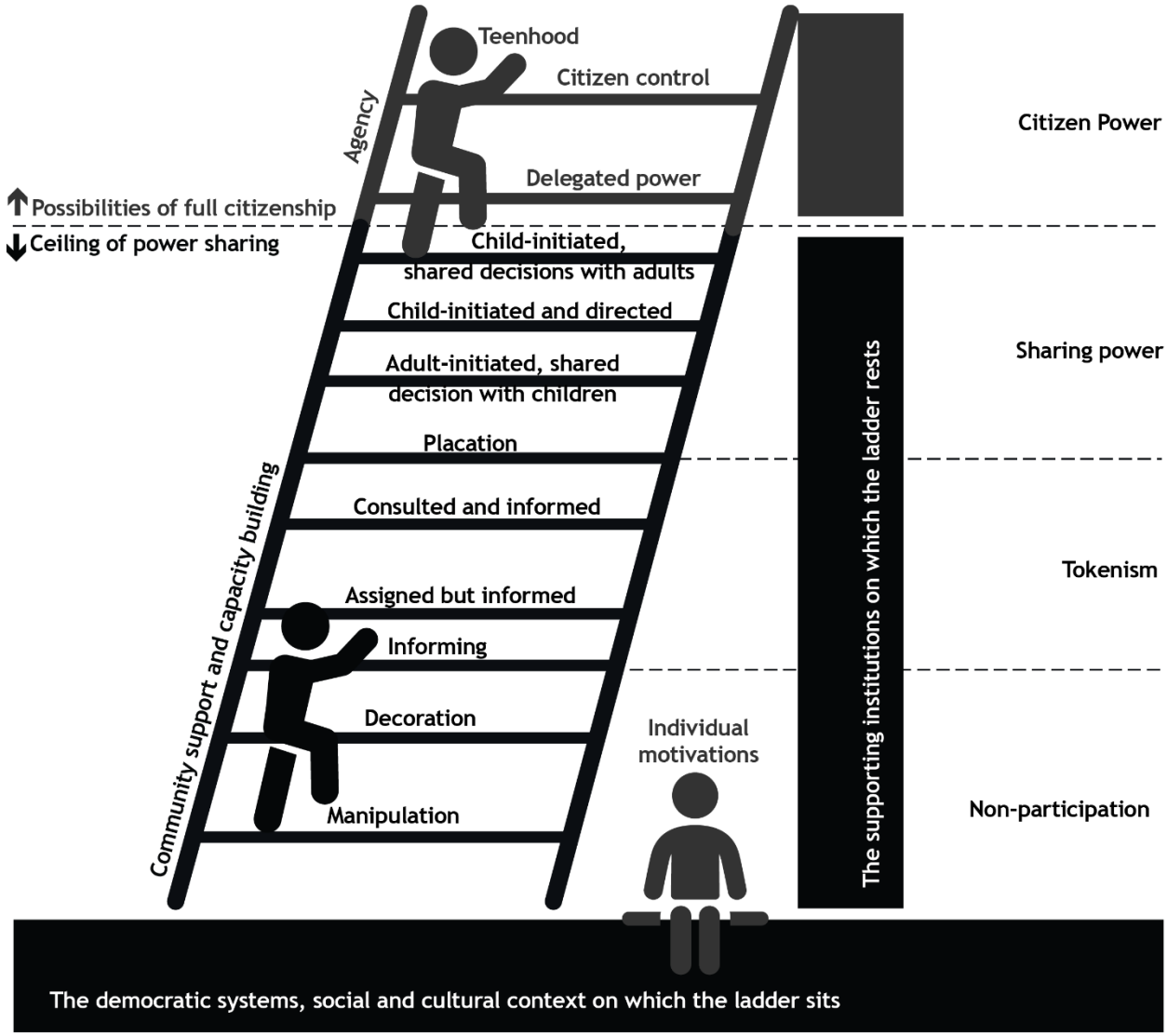

Figure 6.5: Composite ladder of situated participation. Source: Author, graphics used from Noun Project, credit to Adrien Logret.

Two main aspects of the ladder are often missing from participatory models but were reported by the teenagers widely – the community and temporal dimensions. From the vantage point of older adolescents (15–19-year-olds), there is a natural pathway between Hart's (1992) ladder and Arnstein's (1969) if participation is contextualised, locally rooted and conceptualised as a continuous process. Engaging with children at the lower rungs of the ladder in their early years can lead to a

gradual progression up the ladder, allowing individuals to build capacity and reach a level of agency which allows them to obtain citizen power. By keeping the long view of participation (that is to transfer power to communities) and situating their process designs, even in short-term engagement, the contextualised ladder can prompt practitioners to design participatory processes with a view centred on the community within which they are taking place and enable teenager inclusion in the process. Figure 6.5. attempts a composite diagram which aims to present a contextualised view of the combined ladder. Figure 6.6. looks at the potential of the ladder to be adapted to practical use in a teen-friendly manner. The ladder of situated participation needs to be tested in practice and future developments undertaken.

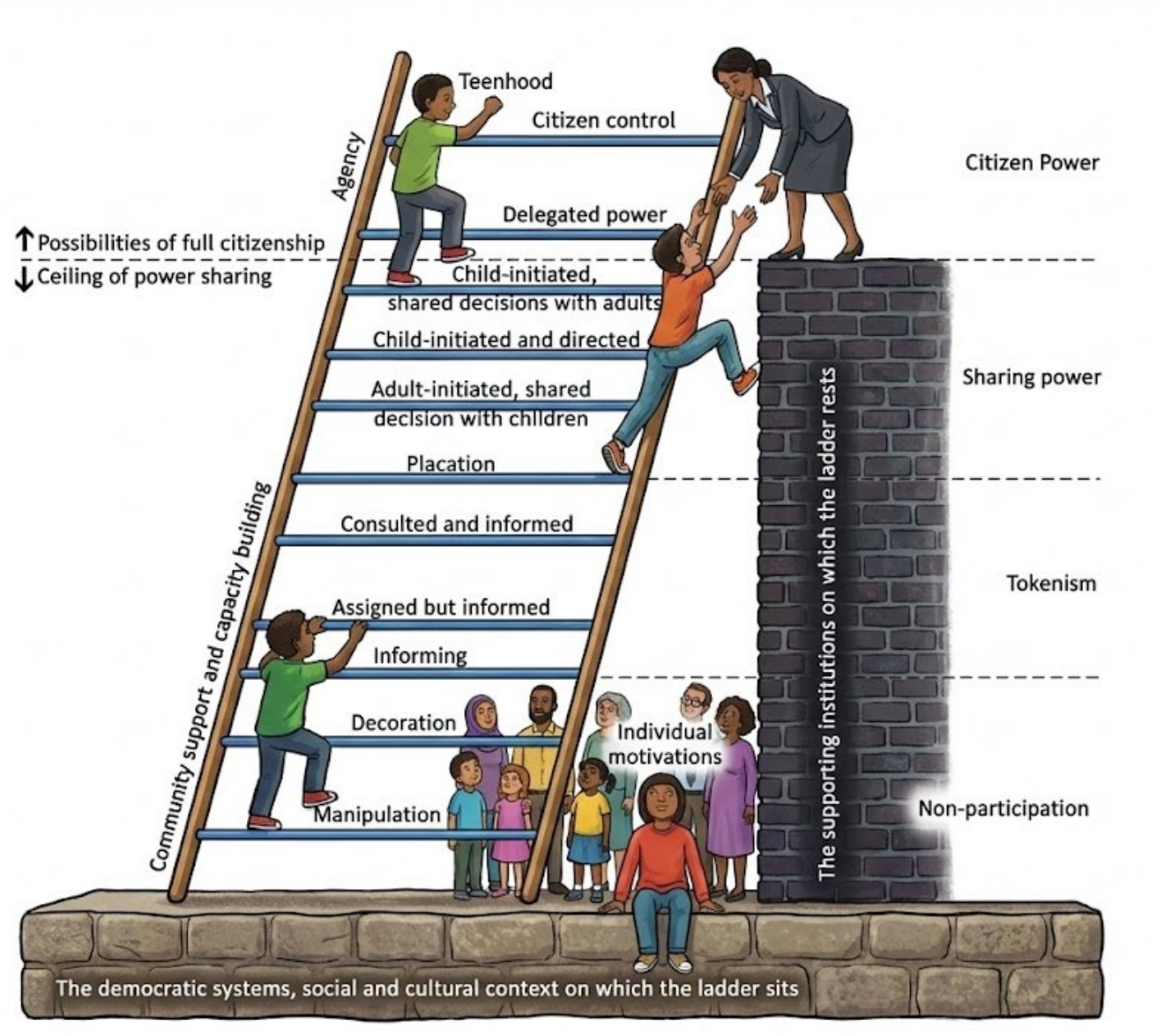

Figure 6.6: Ladder of situated participation, teen-friendly version.
Source: Author graphics used as a base image and Gemini (Google AI) used to illustrate a more friendlier and adaptable version of an intergenerational ladder

6.3.4. Digital Participation

"Digital technologies would make it more convenient for young people to participate in urban planning as they can express their opinion through social media and surveys" – 19-year-old Male from Birmingham City Centre

Green (2019) argues that effective urban technology deployment requires prioritising human-centred policy goals and embedding technology thoughtfully within existing non-technical structures and practices. The pursuit of efficiency, while appearing neutral, can generate unexpected and unjust impacts, potentially reducing civic engagement to transactional requests and exacerbating inequality.

Throughout the interviews, young people were generally positive about digital participation, seeing technologies as a way of promoting awareness, developing city specific platforms, improving accessibility and inclusion, promoting education about urban planning. Technology was primarily seen as a tool for "information source" and a "mediator" between young people and their cities:

"digital technologies are our comfort zone. [W]e know what we're doing there, so having us participate in urban planning through a digital platform will not only make us feel more included in society, but confident that we can actually do something we understand." – 17-year-old gender fluid person from West Manchester.

The majority of responses focused on using social media for information dissemination and advertising, highlighting the lack of urban planning debate online. Lack of awareness and access to information about city developments was a widely reported barrier, and digital technologies were seen as a potential solution if "equitable engagement platforms" were established. Providing innovative approaches such as digital twins and games, planning applications/apps, and dedicated platforms for young people's voices to be heard were quoted as ways to make urban planning more accessible and interesting to young people.

Some saw digital technologies as a way to improve democratic structures and allow young people to vote in decision-making processes without having the right to vote in political ones:

"giving us the right to vote on urban issues" [dandonos derecho a voto en cuestiones de carácter urbano - 16-year-old Female from East Valencia

Teenagers interviewed expressed some of the concerns raised by Green (2019), however, with some expressing concerns that it might impact negatively democratic structures or perpetuate existing biases towards young people. Teenagers reported lack of sufficient preparation through their education equipping them with the suitable digital skills for the future. A few young people in Sofia explicitly stated that they didn't feel "qualified" or "mature enough" to participate. Concerns were raised about aspects missing from the smart city model, including data privacy and online security, transparency, who benefits from data collection, and the need for regulating digitalisation. One teenager in Valencia expressed concerns about potential vulnerabilities when everything is connected to the internet and questioned the purpose of collecting their data. Issues of digital exclusion, particularly for older generations, were also mentioned, highlighting that a purely digital approach might not be inclusive and supporting the community-minded approach teenagers reported throughout the data.

Teenagers found it difficult to assess the permeation of digital technologies in the urban realm. Overwhelmingly, they had difficulties naming specific urban technology examples beyond technologies commonly used in their everyday lives. Specific examples mentioned were limited, primarily revolving around transport-related technologies like digital screens, metro barriers, traffic lights, and e-scooters or personal devices such as smart phones and laptops. This indicates a lack of critical engagement with digital technologies. Hodson et al. (2020) discuss the shift towards 'urban platforms' – digital structures often parasitic on urban infrastructures or novel infrastructures, which are transforming the relationship with the city. Teenagers are subject to those transformations but might lack the critical skills to understand how it is affecting them and their daily lives in the city.

The role of technology and digital tools in facilitating youth participation is more complex than it might at first appear. While not explicitly addressed by Hart's (1992) original framework, the potential of technology to enable participation has grown, and technology could enable greater access to information and ability to coordinate youth-led initiatives. However, the views from teenagers also reveal a digital skills gap and concerns about equitable access and the quality of online engagement. Simply providing digital platforms might not automatically lead to genuine participation if these underlying issues are not addressed, potentially leaving some youth stuck in lower rungs of digital tokenism.

Further research is needed to understand how participatory platforms are enabling or indeed disabling young people's participation in urban planning. How situated participation and digital participation interact needs to be further explored.

6.4. Planning practice engaging young people

"It's similar to, I think, Sartre's philosophy or Kant's, I'm not really sure which one, but think about - if I make a decision, would I want others to do the same? Because that takes a lot of commitment. And when you make big decisions, you have to be able to commit to that thing, really, really seriously." [Това е подобно на, мисля че на Сартр философията или на Кант, не съм много сигурна кой от двамата, но да мислиш че - аз ако взема едно решение, дали би искал други да постъпят по същия начин. Защото това си иска много ангажираност. И когато се взимат големи решения, човек трябва да може да се ангажира с това нещо, наистина много сериозно.] [– 16-year-old Female from Sofia

Young people throughout the project demonstrated capacity and ability to contextualise complex concepts, critique them and reflect on their personal limitations. Engaging teenagers in planning practice, therefore, needs to divorce itself from parochial child-friendly approaches and provide opportunities for young people willing to participate to express themselves as the young adults they are while supporting those which are yet to fully develop their understanding of the world.

"Overall, we need a 'teen friendly', inclusive approach to designing housing and external spaces, one that meets the needs of all children and young people. (Bornat, 2025:65)

6.4.1. Barriers and enablers to participation

Majority of teenagers interviewed were not aware about the planning system in their cities and perceive their peers to also be less informed. This means that any engagement needs to first make

sure that levels of awareness and education of young participants if they are to be able to make informed decisions. Planners engaging with teenagers should make sure to address such gaps in knowledge, especially in managing the process and explaining the scope of involvement in any consultation or projects.

There is a clear message emerging from the teenagers' responses of a desire for more proactive dissemination of planning information via public relations, communication, and asocial media. On a practical level, planners should consider engaging in a proactive manner and being creative – if budgets are not allowing for such engagement, then partnering up with volunteer or community organisations which monitor such developments can be beneficial. On a strategic level, consideration of communications and marketing in planning budgets should be given.

A practical recommendation suggested by teenagers interviewed is that effective role models are important: the visibility of the planning profession amongst teenagers depends on the outcomes and peer-led ambassadors who can advocate for the value of engaging in planning. Once youth-led initiatives deliver successful outcomes it brings confidence to young people that their opinions will be taken seriously (Derr and Kovasc, 2015). Planners should aim to adapt the sociopolitical context (Frank 2006) in which planning is taking part and understand the trends and behaviours that define teenager's experiences and acknowledge them in the design of participatory processes.

There are key barriers to participation as reported by young people, which planning practitioners need to be mindful of and remedy:

- Teenagers reported a significant lack of information on how to get involved and found it hard to find out what's happening in the city. Information is often perceived as inaccessible to lay persons, this might include simplifying technical language or translating planning engagement materials to relevant languages.

- Built environment professionals, such as planners, are not effectively using channels like social media for dissemination or advertising opportunities. There's a perceived lack of proactive updates by local authorities and a sense that youth are not targeted with ads related to urban planning. Teenagers widely reported that there are no opportunities to participate in urban planning and no platforms for young people's voices to be heard. There is perceived to be no proactive engagement towards young people.

- A key and consistently reported barrier across all four cities was the lack of education about urban planning in schools and colleges. Teenagers feel that schools don't teach urban planning and there are no talks in schools or colleges by planners.

- Competing priorities like school and career mean that urban planning is not a priority for many teenagers, and they feel it requires too much time, or they don't have much time. Incentives and inclusive processes of engagement can address that.

- Young people feel patronised by older generations and that adults ignore their views or stereotype them as less informed. They perceive that planners and politicians don't account for youth when planning or don't think long-term about the impact on their generation. There is a perception that their participation might not lead to real action or change, described as merely "voicing an opinion" rather than "really participating in building something". This reported lack of visible outcomes impacts teenagers' perceptions. Participants also noted a lack of peer role models and that no peers are engaged, which can

make individual participation feel isolating or less appealing.

Teenagers interviewed identified several practical factors that could enable and encourage their participation:

- Many young people expressed motivation to take part. They stated that participation interests them, that urban planning affects their future and they care, and they are passionate about their community and want to be part of a change and make their city better. Projects like the research project itself were seen as motivating. A key motivator identified was the ability to see real results from their input. Participation that leads to action and change is seen as crucial.

- Providing education about urban planning, ideally within schools, or through talks by planners, is seen as a way to build understanding and willingness to participate.

- Establishing equitable engagement platforms and using digital technologies to make council websites more accessible, employing better digital advertising, and better use of social media by stakeholders were seen as ways to address the information gap. Teenagers recognised that technology is popular with their demographic, and they are already adapted to it. They felt that technology could be easier for them to use, making participation more accessible. Using online surveys and online methods to collect youth views were suggested as practical ways to gather their opinions. Implementing new and innovative initiatives like planning apps, digital simulations and games, online workshops, events, and surveys, and dedicated platforms to get young people's voices heard were suggested as ways to provide concrete avenues for participation. Some also suggested youth boards or recruiting young people into processes. There was a desire for regular engagement rather than one-off consultations.

- In some contexts, particularly Sofia, there was a recognition of the value of urban rooms and in-person youth clubs as activators, indicating that purely digital solutions may not be sufficient or preferred by all.

- While intergenerational issues are a barrier, teenagers also saw their ability to contribute a different perspective as a potential enabler, suggesting that intergenerational understanding can be achieved if they are listened to and supported by experts.

6.4.2. Supporting teen-friendly policies and practices

Planners and built environment professionals interested in working with teenagers need to challenge the hard-to-reach myth in participation, be proactive and respond to their desires. There is evidence in young people's views that being proactive itself might challenge perceptions teenagers hold of planners. When planners engage with teenagers there needs to be consideration given to the fact that many teenagers would not like to be treated like children. This might provide challenges in any practical engagement and discussions where rights of teenagers are derived from child-friendly policies of legislation. Allowing space for self-identification would be good practice. There is a perceived issues of self-identification of teenagers – when working with them respect to their identities should be observed. Planning and design of space and place should be considering this intermediate space between child and adult and developing youth-friendly policies and approaches, specifically designed to link the child-friendly approaches to wider community-based activities. As has been seen, patronising by adults exists and it is largely picked up by teenagers. There are also issues of planners potentially not having the skills to approach the community or

might themselves perceive teenagers as hard to talk to. On a practical level, built environment professionals should look towards the literature of youth and inter-departmental work with youth departments and youth workers - there is no need to reinvent the wheel.

Young people need to be consulted on the planning of the spaces they are there inhabiting (See Figure 6.6), both physical and spatial. In all contexts the home was important place of inhabitation, especially in the English context. It is important therefore to consider in space standards and design guides reflect the needs of teenagers in the home. Conversely, teenagers also report a wide area of outdoor spaces inhabited – especially in the mainland European context. There is a value in exploring international case studies when commissioning and working on outdoor spaces, allowing for alternative modes of inhabitation to be introduced. In Valencia, a dense city with a good transport network and walkability, transport did not feature in young people's responses as a space of inhabitation – conversely in all other contexts it was a considered a separate typology. When planning active and public transport policies, care should be given to transport choices and availability of those to teenagers.

To be successful, young people's engagement can benefit from a mediator, be that a charity or youth workers, somebody who is able to speak to and respect youth's views, while convincing other adults of the value of young people until that relationship and trust is strong enough on its own. Potential reimagination of advocacy planning (Davidoff, 1965) and reinterpreting it to the current context would suit teenagers' positionalities and future research can situate youth inclusion models within theories of advocacy planning.

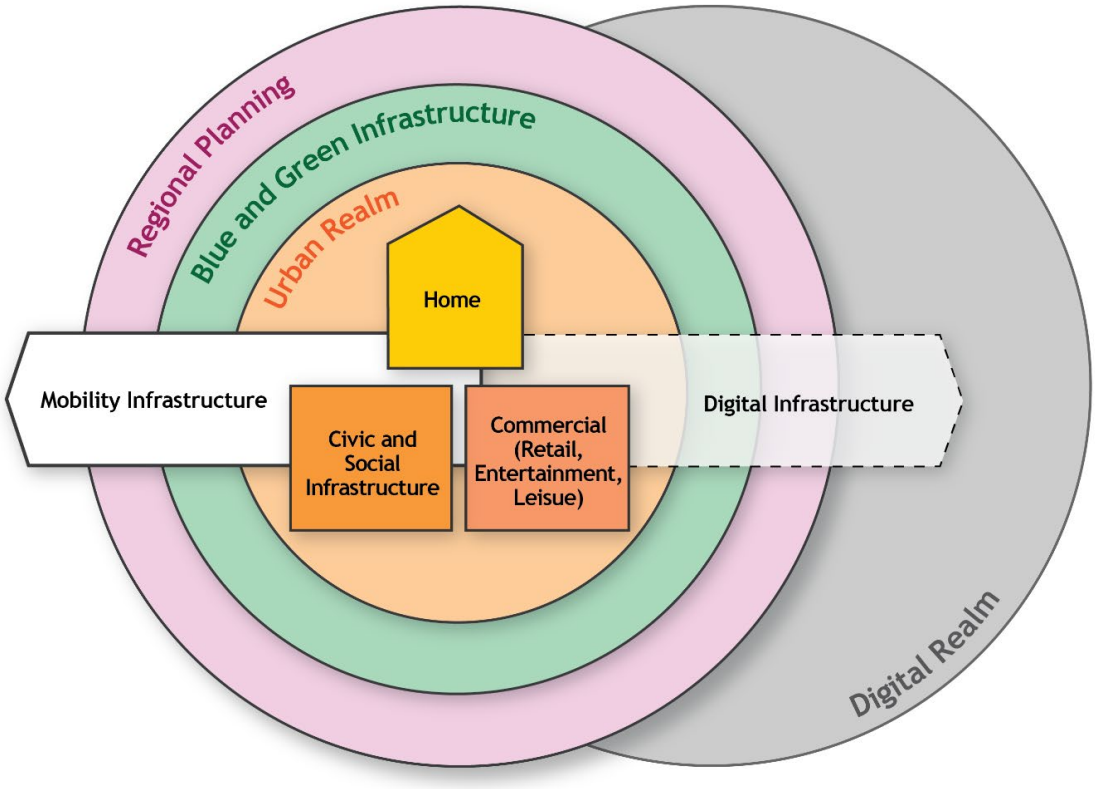

Figure 6.7: Policy and spatial domains relevant to teenagers' experiences in the city as reported within the collected data. At the core of the diagram are the three main clusters of places young people consistently report occupying – home, public and commercial buildings, linked by the urban realm as key youth infrastructure. Mobility links connect with outer rings towards wider blue and

green infrastructure and regional areas which young people increasingly occupy in their transition to adulthood. The right side demonstrates the digital realm, which emerged as a key shadow layer over physical domains. Policy makers need to take into account young people as a key demographic and direct users when planning for each of the named domains.

6.5. Equipping planning practitioners with arguments for the inclusion of young people in urban planning

Justifying involvement by young people can be a challenge in relation to the cultural perceptions which see development projects through an adult-centred world view. Young people as a demographic can be easily dismissed or placated, specifically teenagers in disadvantaged positions, such as being under the age of eighteen, lacking financial independence or because of their intersectional experiences (the interplay between different social categorizations such as race and class). Shifting the perceptions of adults towards young people and specifically teenagers is a key step towards inclusive participatory processes. There are practical implications for planning professionals emerging from the research. Professionals should decide carefully why and how they can involve young people in their work. Teenagers demonstrate the ability to understand political contexts and appear to have awareness of political developments. This can be beneficial for planning professionals, as it means that competing pressures can be explained and explored with this demographic but can also mean there is an added an unexpected layer of complexity.

Engaging a transient group which is mobile and in a process of constant flux requires understanding of their needs when planning the long-term community engagement processes and outcomes. The cost to benefit ratio of engaging youth can be worthwhile since, if done appropriately, it can spark change which had been unforeseen, promote long-term management of place and empower young people to contribute further to the wider neighbourhood in which they live. Designers, planners, commissioners, investors, and developers need to recognise the value of young people in the development process and break some of the barriers that stop it from fulfilling its potential. We need to place greater weight on the methods of engagement we use, in order to test, spark and foster those relationships with the youth communities in the places on which we work.

In 2020, as key contribution to practical knowledge based on the literature review of the doctoral project, an essay “10 reasons” was published for Grosvenor, a property developer and landowner in the UK and Ireland, to supplement the Voice, Opportunity, Power - a youth engagement toolkit produced in partnership with ZCD Architects, Sport England and Town and Country Planning Association[23] the use of which in practice is reflected upon by Bornat (2025). The arguments are presented here, developed further and incorporating the teenagers’ perspectives discussed in Chapter 5. The simple arguments can strengthen the case for effective consideration to youth participation in the planning, regeneration, and ongoing management of places:

1. The statutory argument.
Young people have the right to be involved as the literature of right approaches demonstrated in Chapter 2. This human right of young people under the age of 18 is often ignored in design and planning processes (Wood et al. 2019). Teenagers interviewed perceive a lack of recognition of their right to be heard, feeling that their opinions are ignored or that they lack influence on decision-

[23] www.voiceopportunitypower.com

making. Article 7 of the Aarhus Convention on access to information (1998) requires public participation concerning plans, programmes and policies relating to the environment, strengthening the UNCRC's Article 12. The New Urban Agenda, endorsed by UN Member States in 2016, places particular emphasis on 'youth' as one of the key demographics with which international, national, and local actors need to work in the context of urban development. Young people have also been identified as key demographic for the successful delivery of the Sustainable Development Goals, part of the leading UN 2030 Agenda for Sustainable Development, through the 'Young leaders for the SDGs' programme. (UN, 2020).

2. The democratic argument.

Young people have the agency to change their communities. The primary data presented in Chapter 5 reflects a strong interest among teenagers to participate in planning, in processes that lead to visible action and change, indicating a desire to exercise their agency beyond just voicing opinions. Teenagers over the age of eighteen have the right to vote in all three national contexts explored but may often lack key information to be able to meaningfully exercise their rights. There is a perception that planners and politicians "don't care"- or that decisions are influenced by financial considerations rather than the needs of young people. Concerns raised about data privacy and transparency in the context of smart cities further underscore the importance of building a trusting relationship with authorities.

This sentiment resonates with the findings of Beatfreeks in Birmingham, England where young people feel short-changed by existing power structures (Beatfreeks, 2019) and would like to be involved in all stages of development of a built project. Furthermore, youth can challenge existing power relations (Nordström and Wales, 2019) by transforming existing adult-to-adult exchanges, altering the status quo, and delivering new solutions. By actively seeking youth involvement, a private organisation or a public body can ensure a more transparent and democratic process of development, as well as tap into the underestimated potential and enthusiasm of a neglected demographic.

3. The sustainability and stewardship argument.

Young people will inherit the places where they live, so they should be able to exercise a say and take some degree of ownership over them (Derr et al., 2018). Concern for environmental sustainability, climate change, and clean cities is a top priority for teenagers across all Birmingham, Manchester, Sofia and Valencia, explicitly linking future urban development to environmental issues, greener cities, better air quality, and less pollution and waste. The climate and ecological crisis were reflected in the priorities of young people for the future smart city. To secure a long-term sustainable development and management of place, communities must be able to reproduce themselves by retaining and engaging with future generations. Involving young people can also highlight and promote long-term societal issues to the top of the agenda, such as climate change, as the 'Student Strike 4 Climate' (Thomas et al., 2019) movement achieved with the declarations of climate emergencies cities such as Birmingham committed to in 2019. Examples of successful integration can be seen in a project in Dapto, Australia (Malon, 2013) where children's involvement and advocating of environmental issues has resulted in a long-term relationship with the property developer, recognising young people as social agents and implementing better-informed designs. Young people can also be actively involved in the management of place. In the United States context, the creation of Youth Masterplans Flanders (Cushing, 2015) demonstrates the value of young people involved in the long-term management of place, when this governance participation is driven by clear visions and goals.

4. The embodied knowledge argument.
Young people can provide new perspectives on the environment which they occupy and its key features. (Nordström and Wales, 2019) Often children and young people, in particular teenagers, know a neighbourhood most intimately and can contribute insights which would otherwise be inaccessible or overlooked by users outside that demographic. Teenagers interviewed identified specific needs like the desire for more non-transactional indoor spaces, sufficient benches in outdoor areas, and highlighted how they use spaces for activities like playing guitar in the woods. They also noted that planners or decision-makers may not live in the cities they plan for, reinforcing the need for local, lived experience perspectives, which youth possess.

5. The personal development argument.
Young people can benefit from engagement and develop themselves. Teenagers interviewed are aware of their lack of formal knowledge about urban planning and some express a lack of confidence or feeling unqualified. They see engagement as a way to "become smarter" and express a desire to learn about urban planning, potentially in a formal environment like school. Providing opportunities allows them to gain valuable skills and confidence, potentially overcoming feelings of inadequacy. If young people are involved in the planning and design process, they can develop planning and development skills; develop increased self-confidence; learn how to create community change; learn about the local community and environment; develop enthusiasm for planning and community participation (Frank, 2006), thus building youth capacity for future local action and further professional development. Advancing the capacities of young people can further benefit operations of an organisation within the area or context they are active in.

6. The social cohesion argument.
Young people can be agents of change and in their communities. Involving young people in the development of places can foster social integration (Driskell et al.,2002) where young people feel valued and have a sense of belonging, stimulate better intergenerational relations, and develop networks of similarly minded young people. Teenagers interviewed specifically mentioned care for vulnerable populations, such as the homeless, as missing aspects in city visions. Concerns about social cohesion were also evident in their reflections on the pandemic's impact. In particularly challenging contexts, such as post-disaster re-development or places where youth violence is high, involving young people in the planning process can improve their health and safety, emotional security, stability, and mental development (Bartlett and Iltus, 2006). Giving young people responsibility and a voice can shape their identities, allow for social growth, and tackle issues of inequalities and inclusion in the city (Derr et al., 2013).

7. The cultural argument.
Young people have a significant input in the culture of a place. The cultural and economic production of young people relies on spatial provisions. Hanging out gives rise to youth cultures which, in turn, can generate outputs, trends and cultural developments used by and defining society at large. Youth clubs' musical programmes across the UK are an example of a network of spaces training future musical professionals, directly linked to musical genres such as grime and providing the base for an industry worth £5.2 bn. (Warren, 2020) Teenagers interviewed explicitly stated a desire for more cultural activities, art, and creativity in their cities. They value a "culturally vibrant and happy city" and named specific cultural venues as places they frequent. Providing the space and opportunity for young people to be expressive can stimulate cultural advances and benefit the local area. The creative and cultural industries are one of the fastest expanding sectors in the UK.

8. The economic argument.
Young people's activities and presence can benefit the economy of a place. Attractive places with an active intergenerational population can attract investment, increased footfall and interest, thus sustaining business based there. Teenagers interviewed expressed concerns about affordability and the cost of living and desired more spatially equitable investment. Economic benefits can be observed in the streamlining of the planning and development process by effectively engaging communities. In their report 'Cities Alive: Designing for Urban Childhoods', Arup (2017) identify retention of families, vibrant destinations, attractive developments and space saving as some of the key economic drivers a child-friendly city can provide. Employing innovative financial tools such as crowdfunding can enable localised activities to take root and enhance local areas, creating jobs in the process. The initiative 'Crowdfund London' has also provided spaces for young people to be delivered, as is the case of the Tottenham Fast Food – a restaurant aimed at providing healthier alternatives for young people. On a strategic level, the Portuguese government tested a youth participatory budgeting initiative in 2017 (Bernadino and Freitas, 2020), which had demonstrated the creative ability of young people to generate project proposals and resulted in the successful funding of seven proposals across the country.

9. The betterment and appropriation argument.
Young people can physically alter the built environment in the areas where they live for the benefit of the whole community. Teenagers interviewed were interested in improving the physical environment, focusing on aspects like the quality and accessibility of the urban realm, the provision of public facilities (benches, toilets), and the renovation or design of buildings and transport infrastructure. They articulated specific needs based on their daily lives, such as the need for weatherproof spaces, contributing concrete ideas for physical improvements.

Young people can identify problems, develop solutions, pitch for and secure funding from public and private bodies and physically construct interventions if given the freedom and support to take on such initiatives. Young people use space differently, giving rise to new ways of designing places. Teenagers often use urban and rural environments in ways contrary to adult expectations (Pacione,2009), which might give rise to new ways of developing, regenerating, or maintaining places.

10. The innovation in planning and design practice argument.
Young people can drive innovation. Teenagers interviewed are open to using technology for engagement, suggesting practical digital tools like better websites, social media campaigns, and online workshops or surveys. They also proposed innovative approaches like using digital simulations and games to understand city changes and even suggested the idea of using digital apps to vote on city development. Teenagers are not naive about technology, raising important critical perspectives on data privacy, who collects data, and the potential for digital systems to replicate existing biases. Their unique perspectives, including advocating for inclusivity, diversity, and social equity, push beyond purely technological or economic notions of 'smartness', offering a broader vision for urban innovation.

The involvement of youth in the planning and design process can be an opportunity to innovate and change organisational practices and policies. By having to design with children and young people due to their presence at the decision-making table, planning and design practitioners have to alter their approach to create more inclusive places. The emergence of the UNICEF Child-Friendly Cities Initiative in 1996 is a great example of an expanding network of practitioners innovating in planning practice. Young people tend to be more digitally savvy and to respond more positively to new and

innovative methods of engagement. (Commonplace, 2019) Young people can serve as a link to other generations and an agent of change when digital advances are considered. In the case of the local plan consultation in Brisbane (Brisbane City Council, 2019), Australia, the introduction of a digital game testing development density had resulted in increased participation from young people which, in turn, has provided the city with much more comprehensive data on which to base a policy decision.

The ten arguments presented above begin to shape the case for engagement with young people in the planning, design and management of places. However, there is a distinct lack of structured and systematic evidence being collected by governments, local authorities, professionals and research institutions about the value that young people can bring to the placemaking process which is stifling their inclusion in the process. Longitudinal surveys in England such as the Community Life Survey and Understanding Society Survey lack questions on built environment, planning and cities. In a fast-changing world, driven by long-term trends such as digitalisation, health and wellbeing and green economic transformation, the inclusion of young people in the design process can be key to unlocking new potential opportunities.

6.6. Educating active citizens

"Adolescence is a distinct period of development for the human species with behaviours linked to changes in the brain that are beyond our control. In many ways, teenagers are effective portrayers of the paradox of childhood. They test our fears but equally represent our own nostalgia for freedom and growing independence." (Bornat, 2025:92)

Visions of the future city, such as smart city strategies or local plans, could sometimes be designed with the timescale of 20 to 30 years in the future, thus ideas about how a city will be often set long before today's teenagers were born. If teenagers are to be meaningfully engaged in the process of designing, planning and stewarding cities, their engagement needs to be designed in when a vision is set, including in the long-term goals and strategies of the vision.

Formal education is an area to which teenagers consistently pointed as needing reform and is one that can prepare the foundations for youth participation by enabling understanding of planning and their cities. Figure 6.7 maps the complex landscape and interplay of policy, education and employment within the three national contexts of Bulgaria, Spain and England. If active citizenship amongst teenagers is to be achieved, then teenagers' experiences and knowledge need to be better understood and aligned in relation to urban planning and citizenship studies.

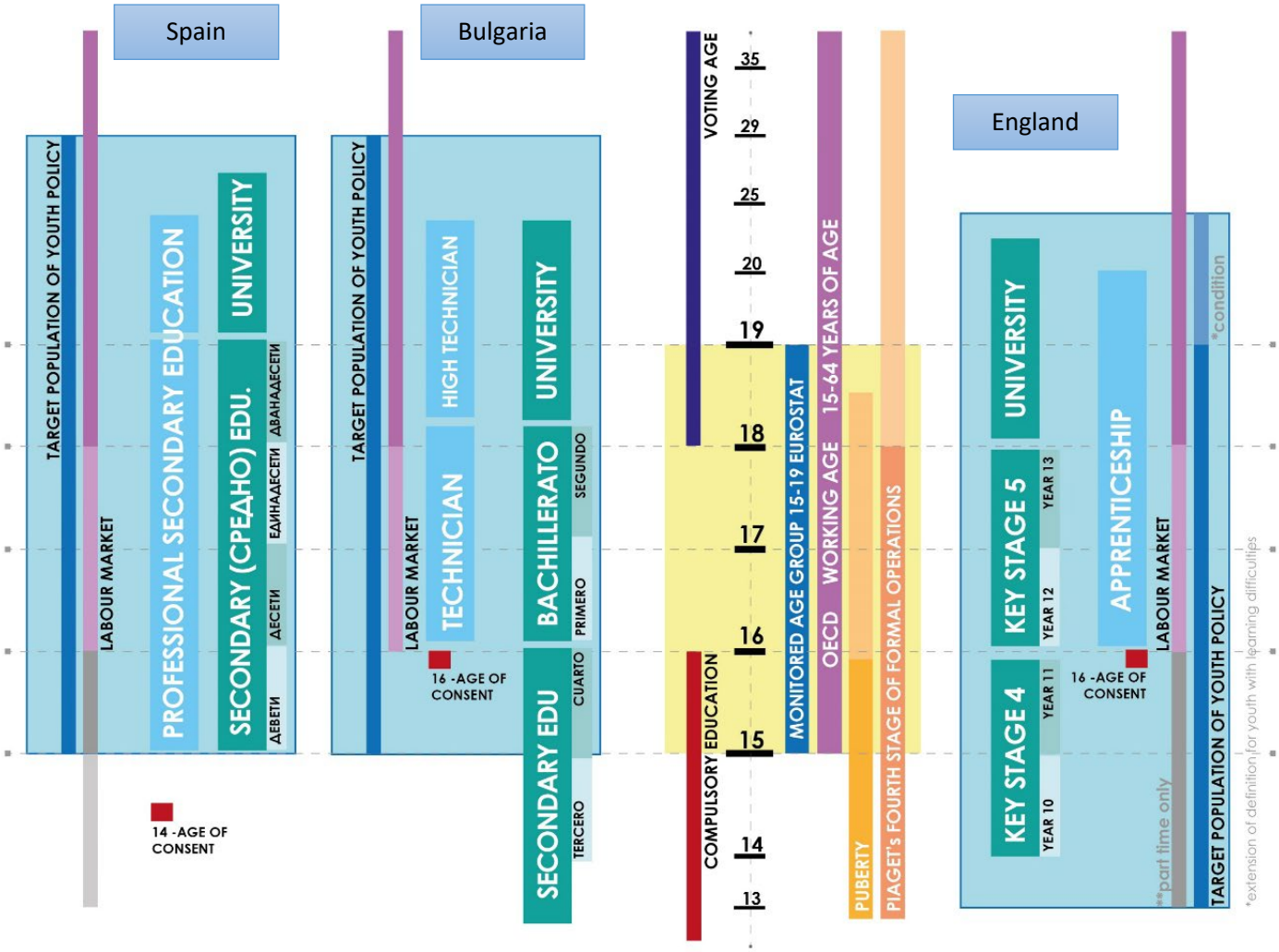

Figure 6.7: Mapping the rights, professional and formal educational systems and policy definitions of youth in Bulgaria, Spain and England. The central age-meter also includes main concepts and definitions such as the Eurostat statistical age bracket of 15-19.

There is a need for professional bodies such as the Royal Urban planning Institute and representatives to lobby for educational reform and better inclusion of planning in existing curriculum in subjects such as geography, citizenship and economy. On the local level, partnering with schools and expanding ambassador networks might help. There are clear questions as to where planning education fits within an already busy National Curriculum (within the English educational system) to familiarise future citizens with the key processes shaping their built and natural environments. Further ideas of future cities, digitalisation and smartness have a clear challenge ahead to justify its presence in a Curriculum and rectify the non-existent awareness of current planning and democratic processes.

Himmel et al. (2014) investigate the attitudes of young people (ages 17-24) towards urban challenges like mobility, energy, and city climate in a future smart city context. They found that while the youth participating in their workshop had innovative ideas, their understanding of the complex situation was often uninformed and naive, suggesting a need to integrate urban challenges related to smart cities into school education to better prepare them.

Citizenship as a module is introduced in the English school system within the secondary school context, however, it largely fails to capture spatial and emerging digital dimensions of citizenship or reflect the built environment. The Raynsford Review of Planning in England (TCPA, 2018) identifies planning education in secondary schools as one of the key factors for a better understanding of architecture and planning by the public and achieving active citizenship.

Reflecting on the experience of researching and teaching in schools (see Chapter 5), better understanding is needed and more studies undertaken to define the need for planning education in the secondary curriculum through analysis of educational systems and literature, identifying linkages with existing curriculum to reflect the emerging understanding the conceptual and knowledge gap between students' awareness of planning processes, city governance and smartness. Further research in the four cities can also better illuminate the reasoning behind some of the cultural and contextual trends relating to the educational system.

Young people are intrigued and interested by the prospect of living in a tech-savvy city; however, they can critically examine that concept against a socio-economic and political landscape. Future citizenship education needs to address deeper structural issues in society, address those through educational means and explore how education provision can empower young people to feel confident to take part in the creation of future city visions.

Planners can contribute to this by delivering short-term engagements or courses in schools. Clarinval et al. (2023) reported on workshops aimed at educating children aged 12-14 about the smart city and engaging them in participatory dynamics. Their study concluded that a hands-on workshop successfully improved children's understanding of the smart city concept, particularly regarding governance. Examples such as this address the lack of tailored opportunities for children and young people's involvement, showing that such methods can enable them to become active participants in smart city initiatives.

Similarly, Peacock et al. (2020) found significant value in actively engaging children with smart city tools to generate ideas for changes in their neighbourhoods and develop critical thinking skills related to data and sensors. They propose strategies for including children, such as valuing their contextual knowledge and designing tangible educational activities around smart technologies.

6.7. Towards embedding teenagers in the planning of future cities

The chapter demonstrates that a better translation of young people's needs must be incorporated into future city visions. Reaching teenagers in smart city planning needs to be a proactive process and involve them in the priority phase in a holistic manner—both in person and digitally. As demonstrated, digital participation raised new issues in terms of ethics and accessibility. The transition towards human-centred smart cities needs to be accompanied by a transformational process in policymaking and vision setting. Including diverse voices in this process is the key to reflecting wider values within society. In the case of teenagers, we need to acknowledge that there are barriers to education, participation, information, and critical skills that need to be overcome to achieve meaningful inclusion. Young people can help broaden the horizons of what the future city can be and allow alternative conversations to take place within the policy realm.

Future city visions, whether a smart city strategy or a local plan, need to be examined in relation to their long-term sustainability if they are to capture the imagination of young people. There is a

general lack of knowledge of the terminology and processes of policymaking and planning; however, there is a good overall level of awareness of key problems in their cities. There are overarching trends in the prioritisation of smart city indicators. Young people want to see most resources in areas connected with urban living, people-centric, and environmentally smart cities. Young people hold values which are community and society-driven, identifying areas within the smart city model that are concerned with the wider environment, a sense of justice and fairness, and post-anthropocentric views. The omission of such issues in current models reflects the underlying ideology of "smart city" projects, which needs to be challenged. Political will and leadership are key to securing the trust of young people. Planners can rely on this demographic to present competing visions of the future and challenge policymakers.

Youth engagement in urban planning and smart city visioning is largely an under-researched area worth exploring further. Comparison with the post-pandemic condition in the city will be necessary to understand whether the pandemic has not only changed young people's priorities but also their confidence in their ability to make contributions to their city. The political landscape has also changed in each of the case studies, which might influence young people's attitudes. Further qualitative research in the four cities is needed to fully understand the reasoning behind some of the cultural and contextual trends. The online methodology can be easily adapted by local governments considering the development of future visions and a wider sample of teenagers engaged. In the smart city domain, understanding what models and processes of developing the smart city can incorporate the priorities and the areas identified by young people can prove transformational in envisioning a post-anthropocentric vision for the future city.

Better understanding of the general population and specifically young people's perceptions but also levels of knowledge of urban planning is needed to inform any future design of communication, engagement and participations strategies. There should be better examination of the opportunity of currently policy tools such as Equality Impact Assessment and Statements of Community Involvement as tools for the institutionalisation of young people in English planning processes.

There is a clear distinction between the life of teenagers in the UK – more home and commercial spaces focused and the life in Bulgaria and Valencia – higher rates of outdoors, regional and nature engagement. It is worth exploring further teenager geographies and their interplay with planning policy. Shopping centres emerged as a key space of occupation in all contexts, but especially the English one. Future research in the role of the high street and indoor commercial areas should consider the services they provide to teenagers. Future case studies would benefit from a comparative approach as well as expanding the sample of cities explored. More empirical studies are needed, as teenagers' experience in the city should be reflected from their own perspective.

Understanding the structural barriers to participation by young people should be better theorised in the respective national planning practice contexts. Future research should examine how policy can integrate models of participation in a more targeted manner and explore further how teenagers can be an active agent in reframing power-dynamics in participatory processes. The reframed Ladder of Participation presented in this chapter can be operationalised and tested. Participation tools are useful as far as they are put into practice. There should be future studies in the role of legislation such as the Equality Act 2010 in the English context and their interplay with planning policy, especially in developing guidance for the application of Equality Impact Assessments.

Chapter 7: Conclusions and Future Directions

"I think that the more forward-thinking young people engage in the future of the city, the more we will come to appreciate it when we are older, and all these things make a significant difference to our well-being and life in general" – 15-year-old Female from Birmingham City Centre

7.1. Young people's perceptions of planning the smart city

The study posed two central research questions:

1. What are young people's (teenagers transitioning between childhood and adulthood 15-19) perceptions and awareness of urban planning and future smart city visions in the planning of four cities (Birmingham, Manchester, Valencia and Sofia) within European democracies (England, Spain and Bulgaria)?

2. How can teenagers (15-19) be enabled towards wider participation and co-production in the planning of future cities within the European context?

By appraising the perceptions of young citizens= towards urban planning and 'smart city' developments in four cities in Europe the study reveals a general lack of awareness of urban planning processes, smart city strategies and digital technology in the urban realm. It demonstrates that teenagers, although interested in taking part and generally excited by the possibilities of future technologies, are not included widely in participatory practices. Whereas majority of them have a positive view of the smart city imaginary, they are critical of the lack of definitions and models to engage humanistic values, recognise politics and imagine future cities in a post-anthropocentric world. The Smart City Wheel model revised through the lens of young people and proposed in Chapter 6 aims to challenge the inherent desire of a complete and efficient smart city and instead situate it in the dynamic processes of co-production, activism and climate uncertainties.

"The Smart city uses technology to improve the lives of residents" [utiliza la tecnología para mejorar la vida de los habitantes][reported an 18-year-old Female from East Valencia. Young people's imaginaries of the future are community centred and driven by practical considerations – helping the homeless, taking care of the animals in the city and keeping the streets clean and safe. Young people's daily experiences can be invaluable in grounding future city imaginaries.

Teenagers lack awareness of urban planning but show motivation and interest to be involved. Key barriers to their participation and involvement in the planning process point to the societal structure, local context and personal circumstances which define their ability to take part. Employing this lens, the study has critiqued the ladder of participation, providing a contextualised model which can serve practitioners and academics to acknowledge the context within which participation takes place. Adultcentrism, mistrust and concerns about major world events such as the COVID19 pandemic and climate crisis influence young people's motivation and desire to take part in planning. Teenagers ask for role models, better education, communication and information provision about urban planning, more inclusive and proactive planning practices to enable them to take part.

"*Due to being younger, we may be overlooked by the council/government and out opinions may not be taken as seriously as someone older.*" – 16-year-old South Manchester

7.2. Importance of youth participation in the planning and envisioning of smart cities

"perhaps the opinion of these 15–19-year-olds is quite objective about the city itself, because these people are deciding whether to stay in the city or leave, and it is important that they genuinely like the current state of the city." [може би мнението на тези 15-19 годишни е доста обективно за самия град, защото тези хора решават дали ще останат в града или ще си тръгнат, и важно е наистина да им харесва положението.]- 17-year-old Male from Sofia

One of the main contributions of the project is the youth voice of teenagers reflecting their own experiences, perceptions and ideas about urban planning and the future smart city. This addressed gaps in citizen's perspective on the smart city and planning participation by providing a first-hand description of the perceptions and priorities. It contributes to the literature by presenting multiple case studies and empirical knowledge.

The project provides a critique of the smart city from a youth perspective, helping to move forward the definition of the smart city by contributing with the views of a demographic usually not asked. Re-framing the Smart City Wheel from a teenager perspective promotes a different view of the smart city and addresses some of the gaps in literature around effectiveness of the smart city concept. This study establishes some of the gaps in linkages between planning systems and the smart city's spatial manifestation and the confusion that young people might face conflating the two terms. It contributes to the smart city visioning process by exploring the desired outcomes of young people in the future city.

"Nevertheless, I believe that information regarding urban planning should be provided to young people." [Sin embargo, creo que se debería facilitar información respecto al urbanismo a los jóvenes.]- 18-year-old Female from North Valencia

The study critiques and reframes theories of youth participation such as the ladder of participation (Arnstein, 1969; Hart, 1992) and provides justifications for the involvement of young people in planning. It maps attitudes of teenagers towards urban planning and establishes gaps in awareness. The study suggests potential solutions relevant to digital planning and addresses the fact that digital skills and technologies are yet to permeate to young people widely. It also demonstrates the contrast between the top-down view of youth as economic and educational resources and the bottom-up priorities that teenagers have for themselves and their cities.

The study also raises important methodological questions as seen in Chapter 3, around the ethics of conducting research with young people and the positionality of researchers interested to work online with teenagers.

7.3. Recommendations to key audiences

The study addressed two main audiences.

Planning and smart city academics
The study points out that participatory processes need to be contextualised and consider the individual, the community, and the context within which they take place. Teenagers, spanning the boundaries between children and adults, can stitch up processes of participation. Youth engagement

processes cannot be truly transformative until the ceiling to power-transfer is defined on age-basis. The study provides future avenues for research in planning participation and smart cities discourse. The study provides lessons and reflections on researching young people, raising methodological and ethical questions, which can be of interest to future academics.

"I think that people doing the planning should be reaching out to us, but I don't know why they don't. I think obviously they're concerned with consulting people who have money or who will benefit the planning financially, which I guess we don't directly right now." – 17-year-old Female from South Birmingham

Planners, developers and smart city practitioners

The study provides practical critique of frameworks of participation and smart city models which could be operationalised and tested in practice. The study systemises the barriers and enablers to teenager participation in planning, providing practitioners with a checklist of considerations when engaging with the demographic. By systemising the literature, it provides ten practical arguments for the inclusion of young people in planning, equipping practitioners with practical tools. It provides an overview of the spatial dimensions that teenagers inhabit in their cities and reflects on the needs for better educational practices with young people.

7.4. The path forward

"Because we are the future. The older generation are building a world for us to live in, and we should have an input in it as we're going to be here longer, we're going to have to live and deal with it."-17-year-old Female from West Birmingham

Situating teenagers in participatory practice is a field which requires significant further theorisation, grounded in the experiences of young people and the measurable impacts that current planning and design practice has on their lives. Bibliometric studies of the overlap between youth inclusion and participation should be conducted to map a fast-growing domain of literature. Further case studies focusing on ethnographical and empirical approaches are needed to understand how young people interact with the planning system across the three national context. Multiple case studies across city and national contexts should aim to employ a comparative approach to be able to systematically confirm the trends observed in this study. Future research could explore whether teenagers' priorities for the future city aligned across all four cities are a manifestation of a wider trends which cut across cultural and national contexts to inform planning processes with teenagers. Future studies could also take a representative sampling approach to be able to draw general claims and allow comparability across cities and demographic characteristics.

Teenagers' inclusion in the smart city needs to be better explored and models and manifestations of the smart city should be further tested against the values and priorities of young people. The proposed teen lens to the Smart City Wheel in Chapter 6 can be tested further. Understanding the role young people are relegated within policies, visions and strategies is important to be able to map gaps. Future desktop studies can review local planning documents and smart city visions through a teenager lens, similarly to the approach taken in Chapter 4, building a picture of the state of youth

inclusion in visions of the future. Conducting future studies utilising discourse analysis of planning policies, especially Local Plans and supplementary planning policies to understand how young people are perceived can illuminate better power dynamics inherent in the language used. In the English context, there is a need to better understand what policy and participatory tools are best suited to promote teenager participation in planning. Future research can develop further the recontextualization of the Ladder of Participation explored in Chapter 6 and refine, test and evaluate its practical applications in youth engagement and planning participatory practices. Future research can also focus on understanding the willingness and capacity of young people to engage with digital planning technologies and test them in real-world conditions.

Anthropological and sociological studies are needed to understand the nuances between different age groups in adolescence and how they see themselves in the city. Further research could aim to establish how teenagers see themselves both within the child and adult-centric approaches and in their understanding of citizenship, as well as how legal and policy frameworks around citizenship restrict or enable their participation in planning practice. More research needs to be done in urban planning to connect human development stages, especially in children and young people to the relevant capacities and neurological approaches suited to their relevant age.

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9. Appendices

Appendix 1 – Ethical Approval for in-person interviews - 02/Jul/2019

Appendix 2 – Ethical Approval after COVID19 Pandemic redesign - 18/Jun/2020

Appendix 3 – Interview Guide for Bulgarian interviews [Sample]

Appendix 4 – Research questionnaire as appeared online [Example of Manchester Survey]

Appendix 5 – Graphic participation Sheet [English language Sample]

Appendix 6 – Consent Form [English language Sample]

Appendix 7 – Access Letter [English language Sample]

Appendix 8 – Online Presence [Instagram and Google Maps]

Appendix 9 – Published paper [Shtebunaev, S., Gullino, S. and Larkham, P.J. (2023) Planning the smart city with young people: Understanding and addressing teenagers' perceptions, values and visions of smartness., Urban Planning (ISSN: 2183-7635), Volume 8, Issue 2, https://doi.org/10.17645/up.v8i2.6411]

Appendix 10 – Published essay [Shtebunaev, S. (2020) '10 Reasons: Giving young adults voice & power over what gets built. Advocating for youth participation in planning, regeneration, and neighbourhood management.', desktop research project commissioned by Grosvenor Britain & Ireland, in Youth Engagement Toolkit: Voice Opportunity Power. Accessible at: https://www.grosvenor.com/Grosvenor/files/c5/c5487204-eae2-4a54-9cf8-13445d2bc6a5.pdf]