

Index

- Agenda 2030, 88–89
- Algorithmic bias, 131–132
- Algorithms, 155–156
- Artificial intelligence (AI), 29–30, 58, 83–84, 119, 137–138
- Automation, 23

- Batteries, 93
- Big data, 18
 - analytics, 58, 83–84, 119
- Blockchain, 58, 137–138
- Bottom-up approach, 67–68, 70, 72, 139
- Businesses, 101, 129
 - creation, 105–107
 - environment, 99–100

- Cameras, 58–59
- CCTV cameras, 80–81
- Challenges, 137–138
- “Cinturon Verde” (Green Belt) initiative, 86
- Citizen expectations, 119
- Citizen resilience, 140
- Citizen-centric smart city projects, 56–58
- Citizens, 7, 70, 125, 127, 139, 144
- Citizens’ engagement, 73, 85, 87
- City Brain initiative, 58–59
- City/cities, 1, 3, 5, 7–8, 10, 26–27, 37, 101, 118
 - attractiveness, 124–131
 - as hub for innovation and business creation, 102–104
- Cloud storage, 28
- Collaborative partnerships, 49–51
- Community organizations, 70
- Companies, 128–129

- Competitive urbanism, limits of, 131–133
- Compliance, 29
- COVID-19 pandemic, 140
- Cross-sector collaboration, 147–148
- Cultural differences, 59–61
- Cultural drivers, 59–61
- Culture, 56
- Cybersecurity, 137–138
 - measures, 29

- Data acquisition, 18
- Data analysis, 18–19, 90
- Data analytics, 23, 58–59, 80, 92–93
- Data curation, 19
- Data ecosystem, 6, 8, 16–17
 - local and national, 26–28
- Data governance, 29
- Data management in city, 21–22
- Data privacy, 137–138, 148–149
- Data security, 131–132, 148–149
- Data sharing, 51–54
- Data storage, 19–20
 - security, and challenges, 28–30
- Data utilization, 20
- Data value chain, 17–20
- Data-driven decision-making, 73–74
- Decision-making processes, 56, 59
- Digital art installations, 131
- Digital divide, 87, 132, 154
- Digital implementation, 16–17
 - data management in city, 21–22
 - data storage, security, and challenges, 28–30
 - data value chain, 17–20
 - local and national data ecosystem, 26–28
 - in smart cities, 22–26
- Digital inclusion, 120

- Digital infrastructure, 73
- Digital outcomes in urban environment, 79–87
- Digital services, 24
- Digital technologies, 2–3, 83, 118–119, 122, 124
 - and services, 22
- Digital tools, 23
- Digitalization, 23–24
- Dimensions of smart cities, 31, 33, 45

- Eco-Management and Audit Scheme (EMAS), 108–109
- Economic competitiveness, 118–119
- Economic ecosystem, 113
- Economic environment, 101–102, 105
- Economic growth, 60–61
- Ecosystem, 15–16
- Effective communication, 145–146
- Efficiency, 4, 80, 118
- Electric vehicles (EVs), 48–49
- Electronic platforms, 35
- Engagement technologies, 85–86
- Entrepreneurial ecosystems boost smart city projects, 111–112
- Entrepreneurial vision of smart city, 152–154
- Entrepreneurs, 101
- Entrepreneurship, 100
- Environmental outcomes of smart city, 87–96
- Environmental sustainability, 118
- Ethical considerations, 29, 131–132
- European Innovation Partnership on Smart Cities and Communities (EIP-SCC), 78
- European Union, 78, 89
- Experimentation, 149–150

- Female entrepreneurs, 109–111
- Female entrepreneurship, 103–104
- Final remarks, 157–159
- Firewalls, 29

- Gamification, 43–44
- Gardens, 94–95

- Gender entrepreneurship, 109–111
- General Data Protection Regulation (GDPR), 29
- Geographic patterns, 73
 - cultural and socioeconomic drivers, 59–61
 - East and South Asia, 65–66
 - Europe and North America, 63–64
 - geographical distribution and internal drivers of smart city projects, 63–66
 - geographical influence on smart city management, 61–63
 - government approach in smart city projects, 66–72
 - implications, perspectives, and urban trajectories, 73–74
 - Latin America, 64–65
 - smart city implementation, 55–59
- Global competition, 118
- Globalization, 119
- Governance, 34, 36
 - bodies, 7
- Government approach in smart city projects, 66–72
 - bottom-up approach, 70–72
 - top-down approach, 68–70
- Green companies, 108–109
- Green spaces, 94–95
- Guidelines, 139

- Hofstede’s cultural dimensions theory, 56
- Horizon 2020 program, 78
- Human-centric approach, 32–33

- Inclusivity, 73
- Individualism–collectivism, 56
- Indulgence–restraint, 56
- Information and Communication Technologies (ICTs), 5–6, 32, 103, 120–121
 - in government organizations, 35
- Innovation, 100, 149–150
 - ecosystems, 15–16
- Innovative companies, 108

- Innovative entrepreneurial ecosystem, 111
- Institutions, 7
- Integration, 44
- Intelligent transportation systems, 80
- International initiatives, 120–121
- Internationalization in smart city development, 120–122
- Internet of Things (IoT), 21, 58, 83–84, 92–93, 103, 119, 137–138
- Interoperability, 51–54
- Intrusion detection systems, 29

- Life quality and equality, 89–92
- Local companies, 103
- Local data ecosystem, 26–28
- Local ecosystem, 79
- Local growth and economic outcomes, 104–111
- Long-term orientation, 56

- Machine learning (ML), 21, 29–30, 83–84, 151–152
- Managers, 144–154
- Marketing innovation in smart city development, 120–122
- Masculinity–femininity, 56
- Municipalities, 24
- ‘MyHelsinki’ platform, 84

- National data ecosystem, 26–28
- National Recovery and Resilience Plan (PNRR), 37, 92
- Navigating urban environment, 139
- Nearly Zero-Emission Building project (NZEB project), 25, 36–37
- New businesses, 105
- Nonprofit organizations (NPOs), 147–148

- Online learning platforms, 43–44
- Online portals, 23
- Open data, 6
- Organizational practices, 56

- Parks, 94–95

- Personalized services, 83
- Policymakers, 7, 101, 144, 154
- Power distance, 56
- Privacy, 29, 131–132
- Public managers, 7, 41
- Public services, 17–18

- Quality of life, 78

- Regular security audits, 29
- Renewable energy sources, 80
- Resilience, 140, 150–151

- Safer Travel App, 81
- Security, 44
- Self-reinforcing cycle, 112
- Sensors, 58–59, 80
- SGSecure app, 82
- Smart city/cities, 1–3, 5, 17–18, 31, 100, 108, 137–138
 - attractiveness, 9–10
 - city development, 45–47
 - city to, 1–3
 - collaborative partnerships and stakeholder engagement, 49–51
 - competition in digital edge, 118–120
 - competitive edge, 10–12
 - data ecosystem and key actors, 6–8
 - data sharing and interoperability, 51–54
 - development, 131–133
 - digital implementation in, 22–26
 - dimensions, 8–9, 31, 33, 45
 - ecosystems, 16, 101–102
 - future directions, 157–159
 - geographical distribution and internal drivers of smart city projects, 63–66
 - geographical influence on smart city management, 61–63
 - guideline for navigating smart city edge, 138–154
 - ICTs, 5–6
 - implementation, 55–59
 - initiatives, 151–152

- integrated planning and policy frameworks, 48–49
- limits and criticism, 154–157
- objectives and expected outcomes, 77–79
- orchestrating and balancing smart city dimensions, 47–54
- trajectories, 5–6
- Smart destination, 124–131
- Smart economy, 8, 32, 40, 42, 46–47
- Smart environment, 8, 32, 36, 38
- Smart governance, 8, 32, 34, 36
- Smart living, 8, 32, 42, 44
- Smart mobility, 8, 32, 38, 40
- Smart museums, 131
- Smart pedestrian crossings, 82–83
- Smart people, 8, 32, 44–45
- Smart tourism, 130
- Social equity, 61
- Social media, 25–26, 70
- Socioeconomic drivers, 59–61
- Solar panels, 93
- Stakeholder engagement, 49–51
- Start-ups, 107
- Strategic differences, 56
- Sustainability, 4, 77–78, 118, 131, 150–151
- Sustainable Development Goals (SDGs), 37, 88–89
- Sustainable urban environment, 94–96
- Talents, 127–128
- Technological advancements, 119
- Technological dependency, 137–138
- Technological entrepreneurial ecosystem, 112
- Technological foundations, 73
- Technological infrastructure, 24–25
- Technological reliance, 131–132
- Technology, 4, 32, 35, 79–80, 102, 131
- Technology-centric smart city projects, 56, 58–59
- Top-down approach, 67–68, 70, 139
- Tourists, 129–131
- Transport for London (TfL), 81
- Twinning relationships, 64
- Uncertainty avoidance, 56
- Universities, 101
- Urban competitiveness, 131
- Urban ecosystem, 101, 122, 124
- Urban efficiency, 92–94
- Urban environment, 99–100
 - assessing and evaluating urban outcomes, 96–98
 - citizens' engagement, 85–87
 - customized and tailored services, 83–85
 - digital outcomes in, 79–87
 - environmental outcomes of smart city, 87–96
 - safety and monitoring, 81–83
 - smart city objectives and expected outcomes, 77–79
- Urban land-use planning, 94
- Urban mobility plan, 39
- Urbanism, 60
- Urbanization, 118
- Users, 139–144
- Video surveillance, 90
- Virtual reality (VR), 43–44
- Wind turbines, 93