



FROM TECHNOCRATIC CITIES TO TRUST-BASED URBANISM: RE-CONCEPTUALISING URBAN PLANNING THROUGH ISLAMIC ETHICAL EPISTEMOLOGY IN THE DIGITAL AGE

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Abstract

The modern rhetoric of smart cities is largely technocratic in its rationale in the sense that it privileges algorithmic efficiency and data mining over human wellbeing. This paradigm is commonly referred to as algorithmic governance, which has occasioned a crisis in trust, which comes in form of surveillance anxiety and social alienation into the urban space. The paper is a critique of the sterile determinism of the modern digital urbanism and suggests the re-conceptualisation of the planning structures by referring to the Islamic ethical epistemology. Using a qualitative conceptual approach, the paper integrates classical Islamic ideas, namely, *Amanah* (trustworthiness), *Khilafah* (stewardship), and *Hisbah* (public accountability), with contemporary theory of the city in order to create a model of Trust-Based Urbanism. These results indicate that the Islamic concept of *Khilafah* radically changes the planner into a bottom-up controller but *Amanah* re-categories data not as an object of extractibility (surveillance capitalism) but as a religious trust to be defended by ethical considerations. In addition the principle of *Hisbah* provides an algorithmic transparency mechanism so that digital systems are not unaccountable to the society. The paper finds that the incorporation of these metaphysical aspects of ethics do not rejection of technological progress but rather humanises the urban pathway by transforming the urban city into a technocratic city of sensors into a city of souls based on trust. It is a non-Western conceptual framework that contributes to the discussion of ethics and city governance in the digital world in a new way.

Keywords: Sustainable, Islamic Ethical, Smart Cities, Trust-Based Urbanism, Khilafah.

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INTRODUCTION

Historically, the technological trends have significantly influenced the development of urban planning that has introduced what we currently call the technocratic cities or urban settings that heavily depend on Information and Communication Technologies (ICT) and more information-based decision-making systems (Gavade, 2024). The self-proclaimed smart cities strive to make their cities more efficient, sustainable and the overall quality of their life through the use of the latest technologies, including the Internet of Things (IoT), artificial intelligence (AI) and big data analytics (Esashika et al., 2021; Garg & Sharma, 2023; Gavade, 2024).

However, this technocentric paradigm has also not been devoid of its critics with insevere issues of concern about surveillance capitalism coming out. The unification of human behavior into commodities and the widespread harvesting of information by monopolistic enterprises like Google, Amazon, and Microsoft have caused an immense amount of discussion regarding the problems of privacy and moral control (Mahmoudi et al., 2024; Zuboff, 2022).

Whereas the technocratic model emphasizes on social trust, community participation, and ethical values to a lesser extent, the trust-based urbanism model lays an immense insistence on social trust, community involvement, and ethical issues in urban planning. This paradigm will seek to achieve an inclusive, participatory urban environment where the expectations and expectations of the immediate populace are preempted rather than being tied to technological remedies only (Åström, 2020; Bosso et al., 2025). The concepts of trust-based urbanism are in line with the values of the Islamic ethical epistemology that fosters justice and equity and communal wellbeing as the main principles of urban development (Kannike & Fahm, 2025; Raimi, 2024).

The digital era presents unique prospects and obstacles regarding re-imagining the city planning with the explicit reference to the Islamic ethical epistemology. Transparency, accountability, and involvement of people can be enhanced through the inclusion of digital technologies in the urban governance system, thus making people trust authorities and authorities trust citizens (Duenas-Cid et al., 2022; Ulivieri, 2005). However, it also requires a careful evaluation of the ethical standards in order to make sure that the technological advancement does not undermine the basic postulates of justice, privacy, and human dignity (Kannike & Fahm, 2025; Misra et al., 2025).

Incorporating Islamic ethical principles into urban planning can enhance urban resilience of the city especially in disaster management. The investigative studies based on the outcomes of empirical research in the location of Banda Aceh, Indonesia help to shed the light on the central place of the influence which religious and cultural determinants occupy in space planning paradigms. These determinants have been purposely grouped into spatial

patterns, infrastructural structures, cultural dimensions, non-physical and religious constituents, all of which are invaluable foundations of the engineering of a sound urban milieu. By integrating indigenous wisdom that emerges through religious and cultural systems of values to the realities of city planning, the practitioners are enabled to incorporate a more context-specific approach to urban planning so as to enhance resiliency in cities (Senjana et al., 2025; Zuraidi et al., 2023).

The Islamic epistemology, which highlights the complementary nature of Islamic revelation and human reason, provides invaluable information to modern urban planning. Classical Islamic philosophers like Al-Farabi and Al-Ghazali have contributed to this intellectual tradition and have entangled the philosophical inquiry and political administration. Modern examples, especially Masdar City can show how injunctions of the Quran on co-operation and justice and ecological trusteeship can be used to model sustainable and ethically sound urban development. Overall, this view testifies to the visionary nature of Islamic thinking on addressing the contemporary issues of the world and promoting social welfare (Elouazzani, 2024).

Islamic urbanism, which is based on ethical requirements and community-based orientation, is a potentially useful alternative to the current technocratic paradigm. The doctrine of *Huqūq* a rights based praxis, which creates self-regulation and equity, is central in this discourse and is consistent with the epistemological schema of Lakatos. This position is quite different to the traditional Western model which often simplifies the Islamic city situation into superficial morphological observation. Islamic urbanism has the potential to alleviate such pressing issues of environmental degradation and social economic inequity by prioritising the rights mechanism together with decentralised decision-making process that will further develop a model of sustainable and participatory urban development (Akbar, 2025).

Although there is a bright future in adopting Islamic ethical practices in the city planning systems, empirical confirmation and comparative studies are conspicuously low. Although there is theoretical exposition on the salutary gains of an Islamic orientated paradigm, there is a need to conduct more research to examine modern *huqūq*-based advancements and their concrete implications (Soud et al., 2010). Further, in most cases, the encroachment of contemporary Western urbanization has resulted in culturally discordant and ecologically unsustainable metropolis. The requirement is to face these challenges through a methodological synthesis between conventional Islamic principles and the latest technological advances, hence allowing the creation of a more just and inherently resilient urban landscape (Kamal et al., 2025).

To explore the topics of transition to trust-based urbanism and the change in technocratic cities, this article will question the relevance of Islamic

epistemological principles as navigations in the modern planning praxis in the digital era. Combining the moral requirements of the Islamic teaching with the possibilities of contemporary digital technologies, the research introduces a model of the sustainable and morally responsible city building, putting the interests of the city in the background of the well-being of the whole society and the balance between the ecological environment.

LITERATURE REVIEW

The concept of smart cities has been extensively studied over the past two decades, with a focus on their primary characteristics such as advanced ICT technology, sustainability, innovative governance, and citizen participation (Esashika et al., 2021; Garg & Sharma, 2023). These cities leverage technology to optimize urban functions, enhance economic growth, and improve the quality of life for their residents. However, the implementation of smart city initiatives often faces challenges related to inadequate public participation, transparency, and the alignment of urban developments with local needs (Angelidou, 2017; Bosso et al., 2025).

Surveillance capitalism, a term coined to describe the commodification of human behavior through data extraction, has become a significant concern in the context of smart cities (Mahmoudi et al., 2024; Zuboff, 2022). The pervasive use of surveillance technologies, such as AI-powered cameras and facial recognition, has raised alarms about the erosion of personal freedoms and the potential misuse of data (Misra et al., 2025; van 't Wout & Molina, 2024).

Islamic ethical epistemology offers a valuable framework for addressing these challenges by emphasizing principles such as justice, equity, and the well-being of the community. Islamic ethics, derived from the Qur'an and Hadith, advocate for sustainable development through ethical behavior, environmental stewardship, and social responsibility (Kannike & Fahm, 2025; Raimi, 2024). These principles can guide the integration of digital technologies in urban planning to ensure that they align with the values of justice, transparency, and human dignity.

The role of trust in urban planning is crucial for fostering a sense of community and ensuring the success of participatory governance initiatives. Trust-based urbanism emphasizes the importance of building trust between citizens and authorities through transparent and inclusive decision-making processes (Åström, 2020; Ulivieri, 2005). This approach aligns with the Islamic concept of trust (amanah), which underscores the responsibility of leaders to act in the best interests of their communities (Kannike & Fahm, 2025; Raimi, 2024).

Digital technologies can play a significant role in enhancing trust in urban governance by improving transparency, accountability, and public participation. E-participation platforms, for example, can facilitate citizen

engagement in urban planning processes, thereby fostering a sense of ownership and trust in the outcomes (Duenas-Cid et al., 2022; Ulivieri, 2005). However, it is essential to address the ethical challenges associated with digital surveillance and data privacy to ensure that these technologies do not undermine the fundamental values of trust-based urbanism.

In conclusion, the transition from technocratic cities to trust-based urbanism requires a re-conceptualization of urban planning practices through the lens of Islamic ethical epistemology. By integrating the principles of justice, equity, and community well-being with contemporary digital innovations, it is possible to develop sustainable and ethically grounded urban environments that prioritize the needs and aspirations of their inhabitants. This approach not only addresses the ethical concerns associated with surveillance capitalism but also fosters a more inclusive and participatory urban governance model.

Conceptual Framework

This conceptual framework illustrates the transition from a technocratic, efficiency-driven urban model toward a trust-based urbanism. The model identifies 'Technocratic Urbanism' and 'Traditional Islamic Urbanism' as the primary drivers and foundational paradigms. The core of the framework is the 'Islamic Ethical Epistemology,' which acts as a mediator by synthesizing divine revelation and human reason. This epistemology manifests through three specific mechanisms: *Huqūq* (rights-based self-regulation), Care Ethics (reclaiming socio-spatial dynamics), and Local Wisdom (enhancing resilience). These mechanisms collectively mitigate the negative impacts of datafication and instrumental rationality, resulting in a synthesized 'Trust-Based Urbanism' that yields resilient, equitable, and sustainable societal outcomes.

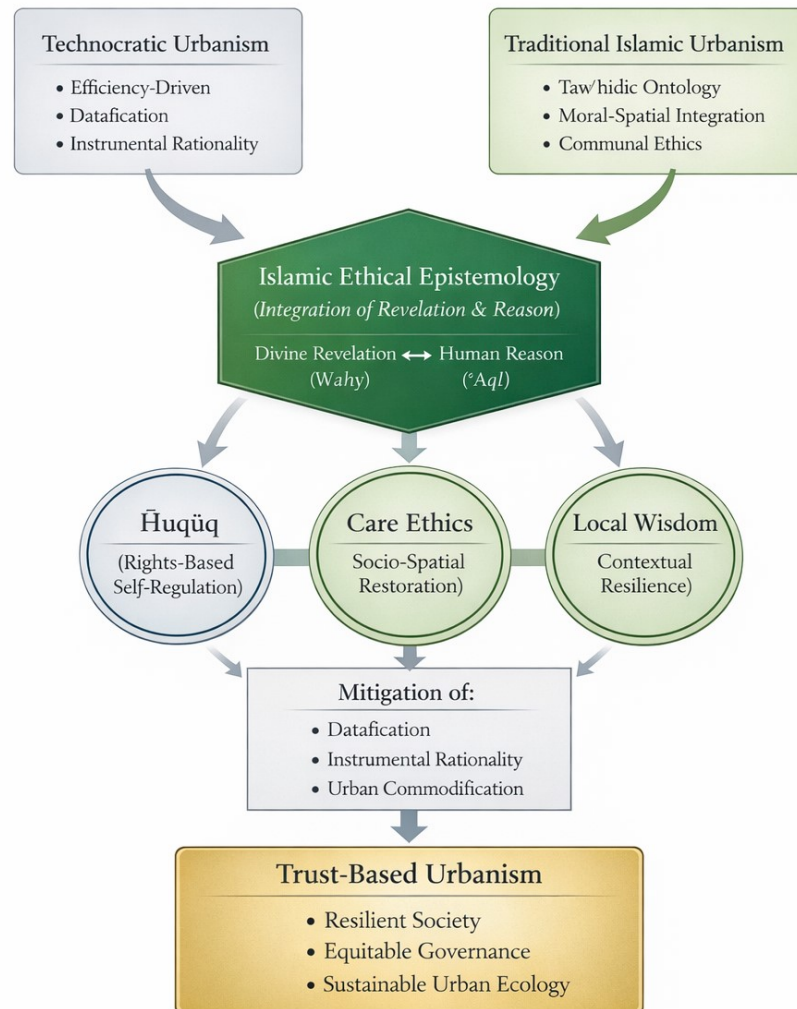


Figure 1: Conceptual Framework

METHODOLOGY

This study takes the form of a conceptually informed qualitative research design that is based on the critical urban theory and the epistemology of Islamic moral imagination. Instead of basing on empirical measurement, the methodological position tries to focus on systematic theoretical synthesis (Richardson et al., 2019) to also challenge the epistemological substratum of technocratic smart-city governance but also builds an ethical urban paradigm which presents an opposing view.

The analysis path is organized into three phases which are connected to each other. The first stage involves a critical synthesis of the existing literature and algorithmic governance on smart-city issues in a bid to explain how efficiency-based rationality reframes urban power structures, data practices, and subjectivities of citizens. The second stage challenges classical and modern sources of Islamic ethics with a view to reducing fundamental principles of governance, to the state of normative epistemological constructs and not theological abstractions. This step materialises the Islamic ethics in the logics of governance that is able to interact with the contemporary digital systems. The third step arrives at a conceptually synthesizing model integrating Islamic moral processes with technocratic urbanism failures in an identified manner, resulting in the Trust-Based Urbanism model as an alternative model of smart-city governance.

The study relies on thematic conceptual mapping and comparative paradigm analysis to protect the rigor of the analysis (Kumar, 2024; Ridley & Jeffrey, 2017). The essential aspects of governance, such as rationality, data governance, accountability, role of citizens, and technological control are comprehensively compared in terms of technocratics smart-city models and the suggested model of Islamic ethical governance. This is a systematic opposition that helps in theory-building with the abstraction, synthesis and normative reconstructions. Although the study does not use empirical approaches, it adds explanatory layers by reinventing ethics as a structuring factor in the governance of the digital cities, and not as a regulatory supplement. Thus, the methodology advances urban research by providing a conceptual framework of the sustainability of urban development ethically and smartly, that is, at the foundational philosophical basis of operational conceptual models.

RESULT AND FINDING

Technocratic Governance and the Ethical Crisis of Smart Cities

Modern models of smart cities are becoming more technocratic in epistemology and understand urban life in terms of optimisation, prediction, and control. It is within this paradigm that the algorithmic systems are not just considered as the administrative tools, but as the governing rationality that dictates what is considered to be knowledge, efficiency, and success in managing urban areas. The pre-eminence of indicators of performance that are measurable reconfigures the city into an enumerable system, in which the complex social matter is fragmented into datasets and modes of behaviour. This means that normative aspects like social justice, dignity, and collective wellbeing become subcontracted to instrumental goals to yield a type of governance that is operationally effective but ethically thin. This change represents a further change

in city planning in the context of deliberate reasoning of the masses into managerialism by technologic structures.

Algorithms governance is tightly connected with the political economy of surveillance capitalism, where urban data is derived as a strategic commodity by means of omnipresent digital infrastructures. Continuous monitoring is incorporated into the daily city through the integration of sensors, facial recognition and predictive analytics, and the data mining becomes a matter of course to provide security and service. This is a process of concentration of power on technological platforms and the privatized vendors of digital architectures that pose novel dependencies to governments. Opacity in governance represents the situation in which algorithmic systems start to mediate the decisions on mobility, policing, allocation of resources, and urban services without a clear accountability mechanism. Citizens are thereby rearranged as rights-bearing subjects to data generating subjects whose behaviour is being continually profiled and monitored.

These kinds of structural changes have far-reaching implications on social trust and civic livelihood. The understanding of being under constant surveillance combined with the little knowledge that the general public has on the nature of processing and implementation of this data creates the atmosphere of uncertainty and psychological discomfort in the urban realm. Algorithms urbanism is likely to promote isolation, obedience and fragmentation of society instead of creating involvement and shared ownership over city governance. It is not that trust is destroyed by the mere existence of surveillance but this is because power is concentrated asymmetrically within the invisible technological systems that can no longer be subject to democratic control. The smart city thus becomes a regime of political-economic control, which is concerned with power and performance rather than ethical legitimacy and subverts such relational principles as inclusive and strong urban communities rely on.

Islamic Ethical Epistemology as a Normative Reorientation of Urban Governance

The ontological and normative background of the digital era of the city governance is presented as radically different by the Islamic ethical epistemology. Instead of defining technology as a means of neutral optimisation, it places governance in a moral universe, which is organised around responsibility, accountability and communal wellbeing. The moral principles of *Amanah*, *Khilafah* and *Hisbah* are not abstract moral ideals but they comprise governance logics that can reorganise institutional behaviour and technological design. This paradigm shift puts smart city development in a new framing as a moral undertaking that is interested in the fair exploitation of power, security of human dignity, and management of social and environmental resources.

The principle of *Khilafah* transforms the concept of urban authorities and planners as the custodians of people and place and not as technocratic operators of infrastructures. Governance is made to be geared towards protection of common interests, inclusiveness and social harmony instead of maximizing performance measures. The logic of stewardship per se requires participatory involvement since only the responsiveness to community needs can constitute ethical legitimacy, not just algorithmic results. The city is therefore perceived as collective ethical zone where making decisions has social and spiritual responsibility other than bureaucratic effectiveness.

The notion of data as a trust instead of a commodity, which Amanah changes digital governance ethics even further, also occurs. Unlike the extractive logic of surveillance capitalism, Amanah data stewardship must involve consent, proportionality, transparency, and guard against misuse. Information infrastructures are consequently morally obliged to be used as communal good and not corporate hoarding or governmental oversight. In addition to this, Hisba comes in with a structure of societal responsibility, which requires that power is checked, even an algorithmic system that is increasingly defined of the city. It offers the standard upon which transparency, ethical audit, and social questioning of the processes of digital governance are founded. Collectively, these ethical constructs instantiate moral responsibility into technological systems, which provides a holistic governance architecture that can accommodate the ethical shortcomings of the current smart cities.

Emergence of Trust-Based Urbanism as an Alternative Smart City Paradigm

Trust-Based Urbanism is an alternative governance paradigm based on the integration of Islamic ethical epistemology with the critical urban theory of digitally mediated cities. This framework does not contradict technological progress but essentially reinvigorates its role not in control and extraction but in social trust, moral responsibility and human flourishing. Digital technologies are re-evaluated as a means of enhancing relational governance and making transparent decisions, involving all participants and managing ethical data. City smartness turns into the tool of community empowerment, but not into behaviour surveillance.

In this paradigm trust is a governance goal and organising principle of urban systems. Trust is nurtured by openness, accountability and mutual moral responsibility as opposed to being built by behavioural surveillance. Citizens can actively participate in urban planning and make decisions fairly with the help of participatory digital platforms, transparent algorithmic processes, and ethically regulated data ecosystems. Governance therefore becomes more about relationships based on mutual responsibility between communities and institutions as opposed to command structures that are hierarchical.

Trust-Based Urbanism eventually turns the smart city into an ethical ecosystem of sensors as embedded in society. The city is made a place of moral interaction instead of algorithmic control by integrating metaphysical principles of stewardship, trust and accountability in digital governance. The idea of this non-Western computing philosophy brings a fresh dimension to the concept of the smart city around the world because it shows that ethical epistemologies can also be used as a working form of government instead of a symbolic mark of value. It provides a way forward to humanising digital urban futures whilst keeping technological progress and innovation, controlling the excesses of surveillance, rebuilding civic trust, and placing human dignity back at the centre of the modern city development.

DISCUSSION

The analysis mentioned that technocratic smart city governance is not simply a model of functional administration but rather an epistemological configuration of the urban order in terms of calculability, optimisation and predictability of behaviour. In such an arrangement, algorithmic systems play a role as a lawmaking institution that reconfigures power by giving preference to technical knowledge and proprietary digital infrastructures over democratic decision-making. This transformation creates a governance environment whereby the ethical legitimacy is supplanted by the functioning efficacy and the citizens are being increasingly turned to data objects in the surveillance-based urban ecosystems. The ensuing crisis of trust is thus not accidental, but inherent in the logic of algorithmic urbanism itself.

The Islamic ethical epistemology is based on an ontology of governance which is radically different, which is based on moral responsibility, relational accountability and stewardship of communal life. The main idea of this re-orientation is the notion of Khilafah, which makes human authority a trust and not a sovereignty. When applied to city government, Khilafah redefines planners, policymakers and technological institutions as custodians responsible to society and superior moral standards with the consequences of their choices. This logic of stewardship is a direct response to technocratic determinism which makes the maximisation of technology subordinate to the morality and the common good. Urban planning as practiced under Khilafah can therefore be an ethically-driven practice that is geared towards social justice, environmental sustainability and participatory legitimacy as opposed to a managerial practice that is aimed at maximising performance.

To supplement this governance reorientation, there is what is known as the principle of Amanah that reestablishes the ethical position of digital data in smart city systems. Amanah views information as a moral trust and vested in institutions to benefit the community where algorithmic governance views data

as a resource to be extracted and operationalised to generate profits. This would mean that there is a high ethical responsibility with regard to the consent, restriction on use, safeguarding against harm, and data flow transparency. Regarding real-life governing practices, Amanah requires the development of digital infrastructures which focus on data minimisation, accountability to the people, and anti-commodification. The principle in this way squarely challenges the extractive logics of surveillance capitalism by instituting moral limits within technological systems per se.

The Hisba concept also further terms the ethics mode of governance through the establishment of continuous public accountability to authority and power. As a social supervisory mechanism in the past, Hisba offers normative basis to current algorithms transparency and ethical audit. In smart city governance, Hisba can be translated into institutionalised systems whereby digital systems become subject to the scrutiny of the public, the explanation requirement, and remedial intervention. Instead of making algorithmic decision-making opaque and technocratically insulated, Hisba requires technological power to be socially responsible. This becomes a moral obligation and not a procedural compliance exercise, but an obligation to accountability based on the common good and fairness.

The synthesis of Khilafah, Amanah, and Hisba creates the structure of Trust-Based Urbanism that recreates the smart city government as a socio-technical system of ethics. Trust is not a behavioural product that is a result of predictive analytics but as a relational state that arises as a result of stewardship, ethical data governance and public accountability. The digital technologies are available to be repurposed in accordance with the common good, in the process of participative decision-making and moral accountability. Here, technological advancement is not dismissed but humanised thus making it possible to replace the cities that are controlled by surveillance systems with the cities that are organised in terms of ethical relation and social legitimacy.

Table 1: Comparative Paradigms of Smart City Governance

Dimension	Technocratic Smart City	Trust-Based Urbanism (Islamic Ethical Framework)
Governance Rationality	Governance driven by quantification, algorithmic optimisation and efficiency	Normative-ethical rationality grounded in stewardship (<i>Khilafah</i>), moral responsibility, and communal wellbeing
View of Citizens	Data subjects	Moral stakeholders
Role of Technology	Governing authority	Ethically regulated tool
Data Governance	Extractive commodification	<i>Amanah</i> (ethical trust)
Accountability	Opaque algorithmic control	<i>Hisbah</i> (public oversight)
Planning Orientation	Top-down technocracy	<i>Khilafah</i> (Participatory stewardship)
Social Outcome	Surveillance-driven alienation	Trust-based cohesion

Theoretical Contributions

This study advances smart city scholarship by demonstrating that the ethical crisis of algorithmic governance is fundamentally epistemological rather than merely regulatory. It contributes a novel non-Western normative framework that positions Islamic ethical principles as operational governance architectures capable of structuring digital systems and institutional practices. By translating *Khilafah* into stewardship governance, *Amanah* into ethical data regimes, and *Hisba* into algorithmic accountability mechanisms, the study moves Islamic ethics from moral discourse into applied urban governance theory. The concept of Trust-Based Urbanism further provides an integrative paradigm that bridges technology, ethics, and participatory governance within a coherent theoretical model.

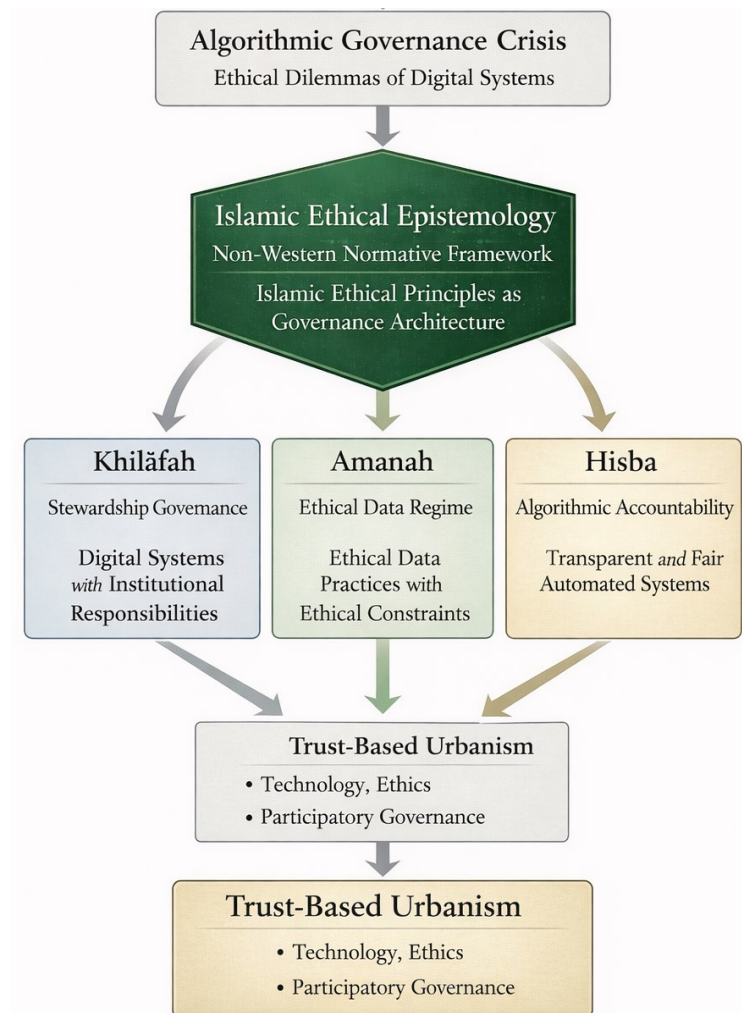


Figure 2. Epistemological Reconfiguration of Smart City Governance through Islamic Ethical Frameworks

CONCLUSION

This study demonstrates that the ethical challenges of contemporary smart cities are not primarily technological or regulatory but epistemological, rooted in the technocratic rationality of algorithmic governance that prioritises optimisation and data extraction over human-centred values. By revealing how digital urban systems restructure power relations, commodify urban life, and erode social trust, the paper reframes smart cities as socio-political regimes rather than neutral technological solutions. This reconceptualisation shifts scholarly attention from

implementation failures to the underlying governance logic that shapes urban digitalisation.

By integrating Islamic ethical epistemology, the study advances a novel normative framework in which Khilafah, Amanah, and Hisba operate as governance architectures that restructure institutional authority, ethical data practices, and public accountability. The resulting paradigm of Trust-Based Urbanism demonstrates that technological innovation can be humanised through moral stewardship, ethical data governance, and participatory oversight, offering an alternative smart city model that restores civic trust while maintaining digital advancement. This non-Western theoretical contribution expands urban governance scholarship by positioning ethics as a structural driver of digital city design rather than a supplementary regulatory concern.

Urban policymakers should move beyond technocratic optimisation frameworks and institutionalise ethical governance mechanisms within smart city strategies. This includes embedding data stewardship principles that prioritise consent, transparency, and public benefit; establishing independent oversight bodies to audit algorithmic systems; and adopting stewardship-oriented planning approaches that centre community participation in digital urban development. Recognising trust as a form of critical urban infrastructure is essential for ensuring the long-term legitimacy, resilience, and social sustainability of smart city initiatives.

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