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Impact of Smart City on Economic and Environment Sustainability

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Abstract - **This research examines the effect of Smart City projects on economic and environmental sustainability in Coimbatore, a fast-growing Indian city. The researchers hope to uncover the public's feelings about how much Smart City policies support sustainable living in cities. Information was collected from 226 people using a unified questionnaire with participants from different groups. Two important dimensions were identified through factor analysis: support for environmental protection such as energy efficiency, lower carbon emissions, using renewable energy and better waste management, and socio-economic development which covers providing employment, digital infrastructure, fair-priced housing, and reliable transportation. It was clear from a basic calculation that most of the people surveyed believe these government initiatives help improve their lives. It is clear from the results that smart city projects will last only if policies continue to support, cities plan cities well and people are involved. The study gives important guidance to city administrators and planners by proposing a model for citizen-led evaluation useful for shaping sustainable development in other similar urban areas. The research adds to the increasing scholarly debate on smart urbanism by providing region-specific observations and underlining the necessity of coordinating smart infrastructure with both environmental objectives and economic development. Future studies might apply this framework to comparative or longitudinal studies across cities.**

Keywords: **Smart City Development, Economic Sustainability, Environmental Sustainability, Urban Planning, Impact of Smart City**

I. Introduction And Background

The smart city paradigm exists globally as an active adoption strategy for metropolitan areas which permits the solution of environmental problems, along with high infrastructure needs and enduring economic inequalities (Raman et al., 2024). Urban infrastructure and services within a smart city depend on digital and information systems together with sustainable planning, which results in enhanced life quality for citizens (Praveen et al., 2023; Filfilan & Alattas, 2025). Starting in 2015, the Smart Cities Mission from the Indian Government focused on changing 100 existing cities to improve life for citizens and protect the environment. According to the Smart City initiative, Coimbatore is among the leading cities for carrying out environmental sustainability and economic development with the help of its existing smart city projects (Sharipov et al, 2024).

Coimbatore exists as 'South India's Manchester', although its people also recognize it as the location of a strong industrial base combined with elite educational facilities and a developing metropolitan zone. Under the Smart Cities Mission, the city received selection for upgrades in its energy system, and transportation and digital resources were developed as well as new waste management methods (Akshaya et al., 2022). Experts have shown that these efforts are making a real difference in economic matters and the condition of the environment (Mehdizadeh & Ravanshadniya, 2018).

Their work allowed them to see how the adoption of smart energy in Coimbatore made buildings use less energy and introduced more efficiency through smart meters and LED lights. Electric vehicles and new infrastructure for walking and cycling have reduced carbon emissions and made Coimbatore's air cleaner, suggest Karthika & Senthil, (2022).

Smart bin systems and GPS for waste collection alongside decentralized waste processing have helped bring faster changes in solid waste management, according to Coimbatore Smart City Limited (CSCL in 2023). New technologies make it possible for waste services to improve and promote cleaner communities. The city is making progress in saving water through projects such as the development of green corridors and restoring Singanallur Lake which supports aims to control climate change.

Public Wi-Fi networks and integrated command and control centers besides smart governance systems, are building digital infrastructure throughout Coimbatore, according to Ramesh & Devi, (2022). The modern advancements have resulted in more efficient administration while generating technology-based entrepreneurial activities that produce employment options for people. The current smart city initiatives prioritize affordable housing because they aim to

create an inclusive urban development by providing residences for low and middle- income group citizens.

Significant progress has occurred but sustainability issues together with equity issues remain in smart service delivery. The continued successful growth of Coimbatore's smart city requires both dynamic governance and continuous monitoring as well as inclusive engagement from all stakeholders.

A. Improved Energy Efficiency

The implementation of advanced technologies creates energetic efficient and decreased energy consumption systems for smart cities. The energy efficiency levels in Coimbatore have increased through LED street lights smart measurement systems and energy-efficient public buildings. Real-time energy monitoring through these technological interventions allows the detection of inefficiencies which paves the way for administrators to act promptly to minimize energy losses. Public institutions achieve energy savings through their implementation of automated lighting and cooling systems. Energy efficiency improvement stands as a critical need because of the growing energy costs and increasing demand. The implementation of smart energy grids together with user-level feedback systems creates both positive awareness about energy consumption and responsible behavior among the residents.

B. Reduced Carbon Emissions

By using smart city solutions, the reduction of carbon emissions becomes possible. Coimbatore has initiated multiple steps including electric vehicle promotion programs renewable energy initiation and energy-efficient building development to decrease greenhouse gas emissions. The city reduces vehicle idling through its traffic management system while public transportation options promote the decrease in private car usage. Strengthened air quality results from the combination of these tactics that decrease fossil fuel consumption. The city government uses real-time continuous monitoring through carbon footprint calculators and dashboards to track emission levels. Technology and policy work together in Coimbatore to develop a lower carbon emission urban environment by encouraging population behavior changes and infrastructure modernization.

C. Enhanced Waste Management

The efficiency of Coimbatore waste management practices is significantly improved through embedded technological solutions during waste collection and disposal processes in the smart city implementation. An alert is sent to collectors when sensors found inside city bins detect that bags are reaching full capacity, allowing the emptying of the containers before overflow. With GPS in their trucks, garbage companies can design routes that use the least fuel and take the least time, thanks to high technology. Following waste sorting, recycling, and landfill operations with electronic monitoring increases compliance with the regulations. To teach residents about source waste sorting, the municipality relies on mobile applications for public campaigns. Both cleanliness and damage to the environment have improved thanks to the strategies used. By following a detailed urban strategy, the city exhibits advanced approaches to sustainable sanitation in cities Sharma & Maurya, (2024).

D. Adoption of Renewable Energy

The city's plan for smart development relies heavily on using renewable energy. Now, schools and medical facilities are making good use of rooftop solar panels, helping them reduce their need to rely on standard energy providers. Combining solar streetlights and traffic signals helps save power and places less strain on the main power grid utilities. Carbon footprint is cut down by solar initiatives in Coimbatore which helps them to save more money every month on power bills. Regularly, the city helps people adopt solar energy by giving financial help and teaching them about the many benefits. Using these systems helps us better manage how we use renewable resources. They all play a role in helping Coimbatore reach energy independence, build a more sustainable environment, and improve its overall resilience Mendez & Esquivel, (2025).

E. Efficient Public Transport

Public transport services must be operating effectively to support successful sustainable urban mobility. Thanks to the use of bus tracking and ticket integration systems plus real-time updates on bus routes, Coimbatore makes life easier for its passengers by reducing their waiting times. Making technological solutions available makes more people choose public transit, so the number of private vehicles on city streets becomes smaller. A transition toward electric vehicles as well as low-emission public transport systems will happen progressively to reduce the carbon footprint of Coimbatore. Bus shelters now feature intelligent design components which include free Wi-Fi access and power charging capabilities and electronic display screens for passenger convenience. The transportation strategy in Coimbatore focused on energy efficiency together with environmental sustainability and accessibility works effectively to generate a more alive and linked urban infrastructure.

II. PROBLEM STATEMENT

The Indian nation is performing rapid urbanization while cities sustain substantial amounts of pressure upon their infrastructure and environmental elements. The Indian government created the Smart Cities Mission after this development which aims to introduce technological solutions for urban development. The selected smart city Coimbatore carries out multiple programs to create supportive environments for economic advancement and environmental preservation by applying smart waste management solutions, along with renewable energy implementation and enhanced mass transit systems and energy- saving infrastructure. The technological developments have shown limited effects on

economic growth together with environmental sustainability and urban quality of life for Coimbatore residents because researchers have not studied them extensively. The sustainability effectiveness of these ongoing projects remains unclear since we do not know if they are achieving their goals of emission reductions while improving efficiency generating employment and ensuring resource sustainability. The assessment process should reveal if these projects include all socioeconomic groups with equal benefits and opportunities. The main goals of this paper investigate how Coimbatore's smart city initiatives impact both economic sustainability and environmental sustainability. The research seeks to deliver essential information to policymakers, together with urban planners and stakeholders regarding the effectiveness of smart city projects and their impact on long-term sustainable urban development in Coimbatore.

Objectives of the Study

To ascertain the impact of smart cities on economic and environmental sustainability.

III. NEED

Coimbatore operates as a smart Indian city that utilizes numerous technological solutions to handle current problems. The exact impact that smart city initiatives have on both economic development and environmental sustainability remains unidentified when we consider their implementation through Coimbatore. The analysis serves a vital purpose because it allows the assessment of smart city initiatives' performance in soil carbon emission reduction and resource management, economic advantages, and life quality improvement. This research evaluates how smart city practices function in Coimbatore to recognize what needs improvement and where the effectiveness has its restrictions. This investigation enables all stakeholders to base their plans regarding city sustainability along with inclusiveness and long-term urban development by using smart city projects.

IV. PURPOSE AND METHODOLOGY

The purpose of this study is to assess the impact of smart city initiatives on economic and environmental sustainability in Coimbatore. This research examines how technological smart systems implemented in energy efficiency and waste control renewable power utilization and transit systems will help the city fulfill its sustainability objectives. The analysis examines different smart city programs and seeks to determine their impact on economic expansion emissions reduction and societal quality improvement. The research adopts purposive sampling to obtain representative results from 226 Coimbatore citizens. The study uses a properly designed questionnaire to obtain details about smart city development aspects that include energy efficiency as well as air quality job creation and urban digital infrastructure. The research team analyzes the gathered information through descriptive design methods to identify patterns found during smart city strategy deployment. Analysis techniques involving percent tables together with thematic content methods and factor analysis.

V. LITERATURE REVIEW

Toli & Murtagh (2020) conducted an analysis of sustainability conceptualization within academic and policy frameworks that define smart cities. The research demonstrated that most definitions focus on technology but only a small number include explicit goals regarding environmental and economic sustainability. Smart city initiatives require sustainability to function as a core component rather than serving only as a product according to their argument. The authors support planning approaches that unite technological advancement with sustainable environmental stewardship as well as equal social participation. The research demonstrates that smart city advancement needs to integrate sustainability concepts to reach its full urban development potential.

Stamopoulos et al., (2024) into how the smart city industry affects the economy and sustainability targets. Their analysis puts a monetary value on the numerous financial advantages of implementing smart cities by assessing labor market growth alongside innovation expansion and enhanced infrastructure performance. The research presents vital concerns about whether the created economic value achieves comparable environmental accountability. The authors maintain that sustainable development should emerge from purposeful smart city planning instead of naturally developing as a result. The authors present vital policy guidelines that promote economic development along with environmental protection which provides essential direction to urban areas wishing to achieve smart and green growth.

Lim et al., (2024) created the Smart City Impact Index to describe the numerous effects that smart city programs produce. The research assesses the four essential components of smart cities which include economic activity together with environmental sustainability technological development and social participation. An assessment of city global citizenship shows that projects creating advanced ecosystems through smart initiatives generate social value and environmental benefits that depend mostly on governance approaches and area-specific factors. Establishing a full assessment system stands vital for ensuring that smart city operations deliver correct enhancements to urban growth while maintaining sustainability and inclusive policies.

Shuang & Zheng, (2024) various smart city strategies throughout the world aim to deliver better life quality alongside optimized management effectiveness. People throughout the world watch with admiration as China's smart megacities develop rapidly through their concentration of large population numbers in urban areas. According to Zheng and Zheng, the intelligent megacity framework has its core component as a branch of intelligent urban subservient that serves as a vital multi-functional full-service intelligent urban region. Mega smart infrastructure accompanies the rise of smart spaces which now receive priority through

technological advancements. Closed loop monitoring and control systems are enabled by intelligent city subs-systems featuring transport system control functions within advanced monitoring automation. A multi-environment system employs digital control systems for the peripheral control of macro environment monitoring operations.

Abu-Rayash & Dincer, (2025) created a unified model for better environmental sustainability and economic effectiveness within the context of smart cities. Their model implements a systems-based structure that establishes energetic efficiency as well as renewable power implementation with digital platforms and economic measurement elements. The authors utilize smart city project database findings to prove that cities reach their best sustainability when sustainably oriented environmental goals meet economic functionalities and innovation-based performance measures. According to the study adaptive planning systems and inter-sectoral collaborations should be used to achieve smart city objectives. The authors have developed an operational framework that enables urban areas to achieve sustainable growth.

Sumra et al., (2025) the authors make clear that sustainable smart cities need to move away from non-return resource system practices because they should establish recycling alongside waste harvesting and resource renewal systems. The authors explain circular system support in construction activities and the water and energy domains by analyzing policies and investigating particular cases. The authors guide readers through value-creation techniques and demonstrate economic and environmental sustainability by explaining how smart cities remain viable through sustainable asset management.

Wu & Wang, (2025) investigated how smart city construction creates changes in Carbon Total Factor Productivity (CTFP) rates throughout Chinese cities. The results from their empirical research demonstrate that smart city projects enhance CTFP significantly because they enhance energy efficiency along with industry structure and the adoption of low-carbon technology. The research stressed that smart technologies including smart grid systems together with intelligent transport systems and real-time data monitoring lead to carbon reduction and better environmental achievements. The authors state that these findings obtain effectiveness from both proper regional coordination and appropriate structured investments together with effective governance. The authors establish that smart city policies serve as instruments to support green economic expansion.

Prateeppornnarong, (2025) examined how smart city implementations affect social sustainability specifically through innovation and urban olonae–social development. According to the study, several positive benefits resulting from smart cities including enhanced service delivery increased citizen engagement and digital inclusivity have not solved existing challenges about accessibility and governance failure, social inclusion, and equity problems. The research utilizes case studies and varied analyses to demonstrate how social sustainability should receive complete planning integration in smart cities. The author emphasizes the importance of creating inclusive infrastructure that enables active stakeholder engagement through continuous participation to make smart cities promote inclusive urban societies.

Mora et al., (2025) provided a thorough exploration of smart city governance problems because the integration of various stakeholders, technological systems, and policy structures proves challenging. The authors demonstrate in their Nature Cities publication that smart cities require a commitment to inclusive governance with adaptability and transparency for success together with their technological benefits. The authors suggest that smart initiatives face limitations because of decisions made by separate departments limited citizen involvement and inadequate institutional coordination. The authors advocate for a governance framework that promotes teamwork alongside responsibility and future-oriented thinking as the main elements required to develop successful sustainable transformations via smart urban strategies which demand robust leadership together with public involvement.

Wang et al., (2021) analyzed how smart cities handle their energy requirements regarding economic benefits and regulatory systems paired with new smart technologies. These researchers presented evidence that smart appliance technologies including IoT monitoring systems and smart grids decrease operational costs together with carbon emissions. Strong sustainable practice-enabling regulatory frameworks according to the authors drive maximum adoption of these technologies. Their research confirmed that energizing smart city concepts with energy efficiency leads to environmental sustainability at the same time it fosters economic progress through financial savings and innovative approaches.

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VI. Results And Discussion Socio - Economic Profile Demography Analysis Simple Percentage Analysis

TABLE I AGE (YEARS)

Age (Years)	Number	Percentage
Up to 20	7	3.1
21 to 40	164	72.6
Above 40	55	24.3
Total	**226**	**100.0**

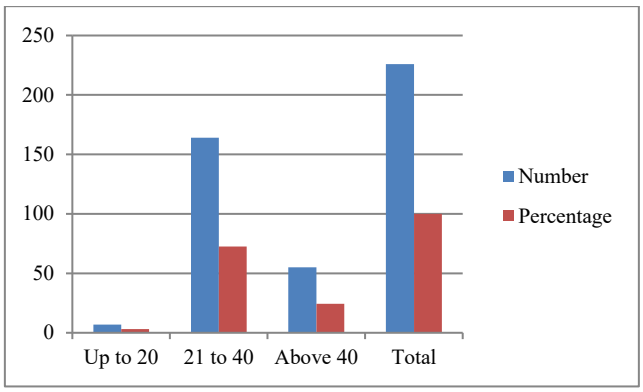

Fig 1. Age (Years)

Table I and Fig 1 illustrate out of 226 respondents, seven (3.1) respondents are up to the age of 20 years, one hundred and sixty-four (72.6) respondents are in the age between 21 and 40, and fifty-five (24.3) respondents are above age of 40. Thus, it is inferred that, the majority of the respondents are between the age group of 21 and 40.

TABLE II GENDER

Gender	Number	Percentage
Male	125	55.3
Female	101	44.7
Total	**226**	**100**

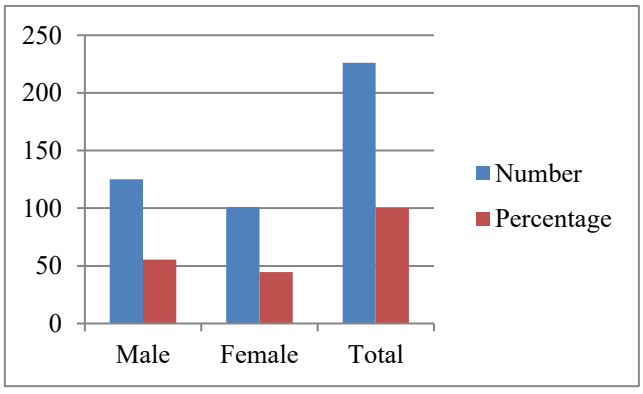

Fig 2. Gender

Table II and Fig 2 illustrate that out of 226 respondents, hundred and twenty-five (55.3) respondents are Male, one hundred and one (44.7) respondents are Female. Thus, it is inferred that, the majority of the respondents are Male.

TABLE III EDUCATION QUALIFICATION

Education Qualification	Number	Percentage
Illiterate	20	8.8
SSLC	37	16.4
HSC	14	6.2
Under Graduate	101	44.7
Post Graduate	38	16.8
Professionals	16	7.1
Total	**226**	**100.0**

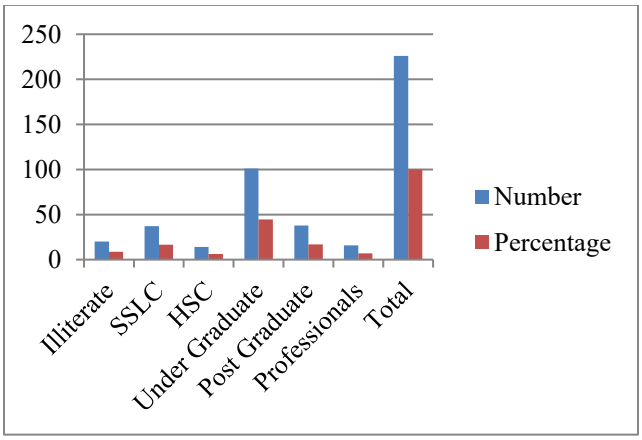

Fig 3. Education Qualification

Table III and Fig 3 illustrate out of 226 respondents, twenty (8.8) respondents are illiterates, thirty-seven (16.4) respondents are SSLC Qualified, fourteen (6.2) respondents are HSC Qualified, hundred and one (44.7) respondents are Under Graduates, thirty - eight (16.8) respondents are Post Graduates and sixteen (7.1) respondents are Professionals. Thus, it is inferred that, the majority of the respondents are Undergraduates.

TABLE IV OCCUPATION

Occupation	Number	Percentage
Agriculture	5	2.2
Business	44	19.5
Employed	99	43.8
Self Employed	26	11.5
Student	37	16.4
Home Maker	14	6.2
Retired	1	0.4
Total	**226**	**100**

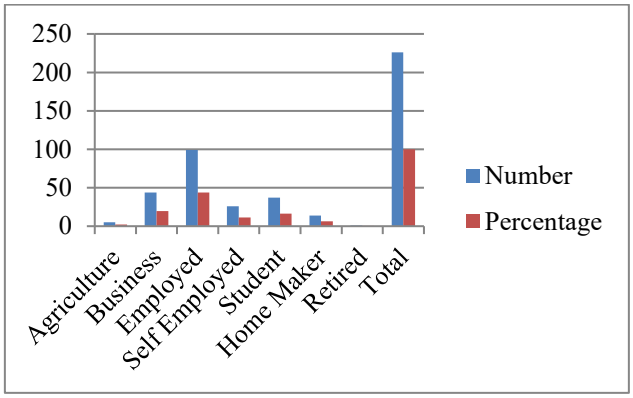

Fig 4. Occupation

Table IV and Fig 4 illustrate out of 226 respondents, five (2.2) respondents are Agriculturist, forty - four (19.5) respondents are doing Business, nineteen nine (43.8) respondents are employed, twenty-six (11.5) respondents are self-employed, thirty -seven (16.4) respondents are student, fourteen (6.2) respondents are homemaker, one (0.4) respondent are retired. Thus, it is inferred that, the majority of the respondents are employed.

TABLE V TYPE OF FAMILY

Type of Family	Number	Percentage
Joint	60	26.5
Nuclear	166	73.5
Total	**226**	**100.0**

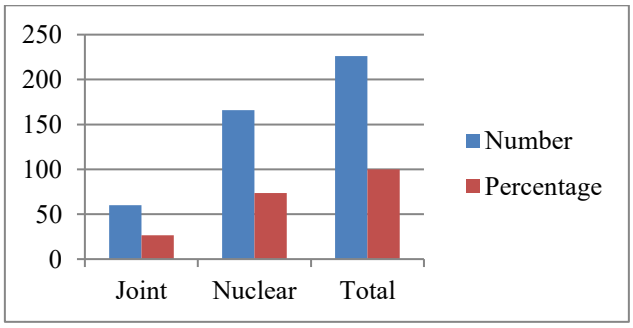

Fig 5. Type of Family

Table V and Fig 5 illustrate out of 226 respondents, sixty (26.5) respondents belong to a Joint Family, hundred and sixty-six (73.5) respondents belong to a Nuclear Family. Thus, it is inferred that, the majority of the respondents belong to the Nuclear Family.

TABLE VI STATUS IN FAMILY

Status in family	Number	Percentage
Head	56	24.8
Member	170	75.2
Total	**226**	**100.0**

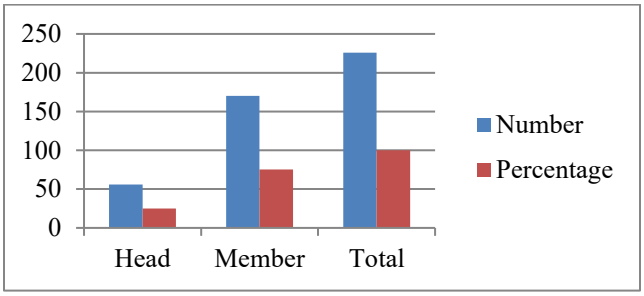

Fig 6. Status in family

Table VI and Fig 6 illustrate out of 226 respondents, fifty-six (24.8) respondents are acting as head of the family, and one seventy (75.2) respondents are acting as family Members. Thus, it is inferred that, the majority of the respondents are acting as family Member.

TABLE VII MONTHLY INCOME

Monthly Income	Number	Percentage
Up to 8000	31	13.7
8001 to 20000	165	73.0
Above 20000	30	13.3
Total	**226**	**100.0**

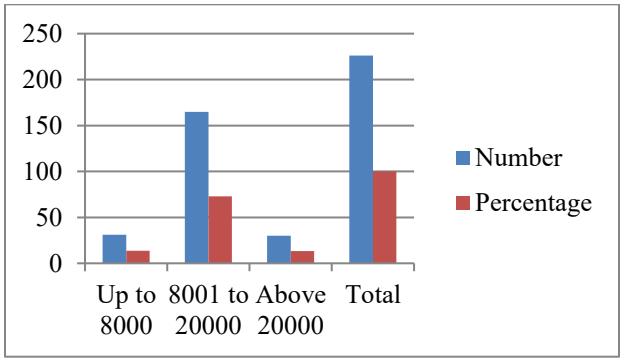

Fig 7. Monthly Income

Table VII and Fig 7 illustrate out of 226 respondents, thirty-one (13.7) of the respondent's monthly income is up to Rs8000, and one hundred and sixty-five (73.0) respondents' monthly income is between Rs8001 and Rs20000, thirty (13.3) respondents monthly income is above Rs20000.Thus it is inferred that, the majority of the respondent's monthly income ranges between Rs 8001 and Rs20000.

TABLE VIII FAMILY INCOME

Family Income	Number	Percentage
Up to 16000	19	8.4
16001 to 50000	181	80.1
Above 50000	26	11.5
Total	**226**	**100.0**

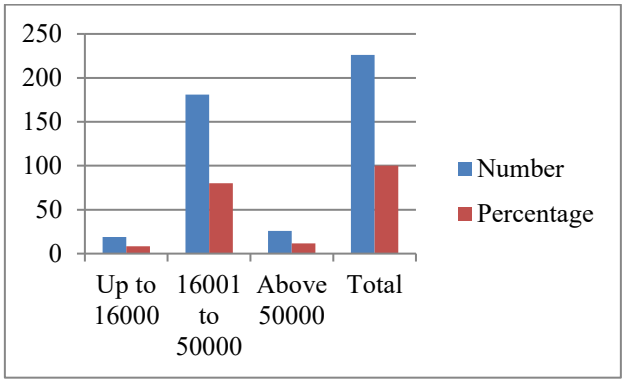

Fig 8. Family Income

Table VIII and Fig 8 illustrate out of 226 respondents, nineteen (8.4) respondents family income is up to Rs16000, and one hundred and eighty--one (80.1) respondents family income is between Rs16001 and Rs 50000, twenty-six (11.5) respondents family income is above Rs50000. Thus, it is inferred that, the majority of the respondent's family income ranges between Rs16001 and Rs50000.

TABLE IX FAMILY EXPENDITURE

Family Expenditure	Number	Percentage
Up to 35000	201	88.9
Above 35000	25	11.1
Total	**226**	**100.0**

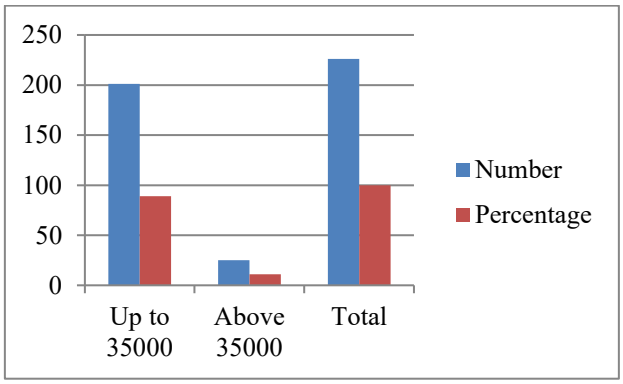

Fig 9. Family Expenditure

Table IX and Fig 9 illustrate out of 226 respondents, two hundred and one (88.9) respondent's family expenditure is up to Rs35000, twenty-five (11.1) respondent's family expenditure is above Rs35000. Thus, it is inferred that, the majority of the respondent's family expenditure ranges below Rs35000.

TABLE X NUMBER OF NON-EARNING MEMBERS

Number of non-earning members	Number	Percentage
Up to 2 members	24	10.6
2 to 4 members	158	69.9
Above 4 members	44	19.5
Total	**226**	**100.0**

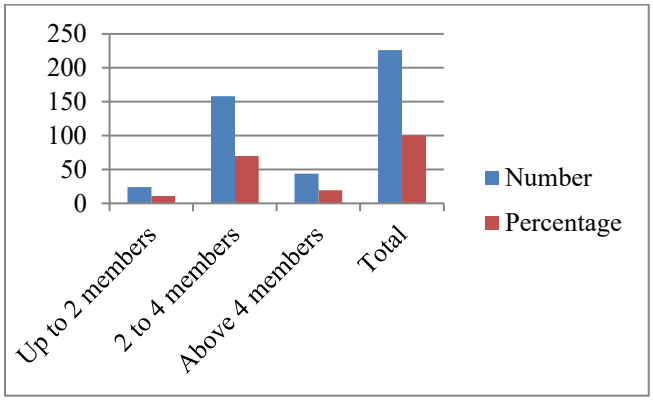

Fig 10. Number of non-earning members

Table X and Fig 10 illustrate out of 226 respondents, twenty-four (10.6) respondents are up to two non-earning members, one hundred and fifty-eight (69.9) respondent's non-earning member range are between 2 to 4 members, forty-four (19.5) respondents are above 4 members. Thus, it is inferred that, majority of the respondents are between 2 to 4 members of non-earning members in the family.

TABLE XI NUMBER EARNING MEMBERS

Number Earning members of EarningMembers	Number	Percentage
Up to 2 members	33	14.6
2 to 4 members	178	78.8
Above 4 members	15	6.6
Total	**226**	**100.0**

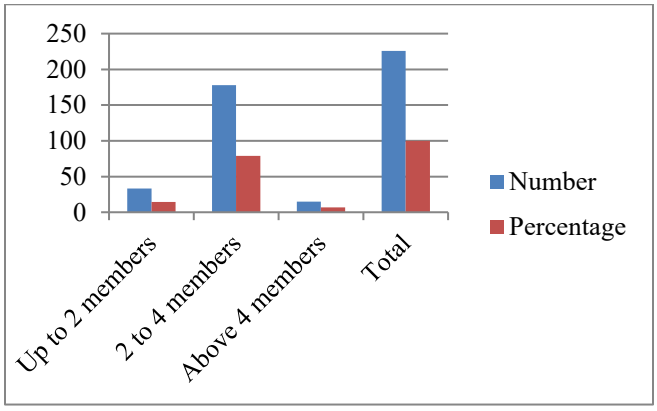

Fig 11. Number earning members

Table XI and Fig 11 illustrate out of 226 respondents, thirty-three (14.6) respondents have up to two earning members, one hundred seventy-eight (78.8) respondents have between 2 to 4 earning members, and fifteen (6.6) respondents have more than four earning members. Thus, it is inferred that, the majority of the respondents have between 2 to 4 members in earning member in the family.

A. Factor Analysis

In this chapter, the researcher performs factor analysis to determine the most significant economic and environmental sustainability impact factors concerning Smart City development among Coimbatore residents. After assessing

the full sample's suitability for factor analysis, the extraction procedure was embarked upon. For this purpose, the KMO (Kaiser Meyer Olkin) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were calculated. With a KMO of 0.901, it indicates excellent sampling adequacy which supports the claim that the dataset is factorable. Furthermore, Bartlett's Test of Sphericity also yielded a Chi-square value of 634.412 with 105 degrees of freedom, and at a sig level of 0.000. This shows that with their control of the significance level, the correlation matrix is not an identity matrix and hence the data is appropriate for further analysis through factor analysis. Thus, the data with 226 respondents as a sample portrays high adequacy and reliability for analysis.

TABLE XII

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.901
Bartlett's Test of Sphericity	Approx. Chi-Square	634.412
	df	105
	Sig.	.000

Rotated Component Matrix[a]		
	Component	
	1	2
Improved energy efficiency	0.773	
Reduced carbon emissions	0.765	
Enhanced waste management	0.759	
Adoption of renewable energy	0.751	
Efficient public transport	0.749	
Reduced traffic congestion	0.692	
Air quality improvement	0.673	
Water resource conservation	0.662	
Promoted green spaces	0.608	
Increased Job creation rate		0.954
Increased digital infrastructure		0.946
Affordable housing availability		0.938
Reduced energy consumption		0.931
Climate change mitigation		0.918
Cost-effective technologies		0.913
Total	6.078	3.652
Percentage of Variance	40.52%	24.35%
Cumulative Percentage	40.52%	64.87%

These two components were extracted due to the results of the factor analysis performed earlier and the two components with eigenvalues above one were retained. These two components together explained 64.87 percent of the total variance which is considered high. The first factor, which contributed 40.52 percent of the variance, includes high loadings from improved energy efficiency, lowered carbon emissions, improved waste management, the use of renewable energy resources, air quality improvement, water conservation, greening, less energy use, and climate change mitigation. This factor is Environmental Sustainability and Green Infrastructure which suggests that, at least, the public believes that the smart city programs greatly improved the ecological results of the city. The second factor accounts for 24.35 percent of the variance and includes increased job opportunities, better digital infrastructure, effective public transport, reduced traffic congestion, low-cost housing, low-cost energy, and new technologies.

VII. Conclusion

The results of the study establish that smart city projects in Coimbatore have made significant contributions to economic development and environmental sustainability. The factor analysis identified two significant dimensions: environmental sustainability, covering enhanced energy efficiency, reduction in carbon emissions, use of renewable energy, and enhanced waste and water management; and socio-economic development, covering enhanced employment opportunities, improved digital infrastructure, enhanced transport systems, and affordable housing. The straightforward percentage breakdown also corroborates the above points, with most respondents—primarily educated, young, and active economically—being aware of these advantages in their city. The conversation implies that the smart city initiatives not only enhanced the residents' quality of life but also developed sustainable practices in the city. The interaction between green infrastructure and technology integration has forced positive public opinion. Still, the success of the initiatives hinges on ongoing engagement, policy backup, and inclusive planning.

In conclusion, the research affirms that smart city initiatives play an important role in sustainable urban living in Coimbatore. For long-term success, local governments need to be committed to scaling up such projects while guaranteeing accessibility, affordability, and active citizen engagement in decision-making.

VIII. Research Implications

This research holds significant implications for policymakers, city planners, and sustainability proponents who are engaged in Smart City planning. Researchers note the importance of balanced city planning that combines new technology with concern for nature by studying environmental sustainability and socio-economic development. From the survey results, people seem to value better energy use, easier travel, more suitable technology, and greater green presence, revealing there is a need for inclusive and sustainable development plans. The findings serve as a basis for policy decisions and can lead to smarter ways to use money for infrastructure. The paper provides an approach for measuring Smart City performance which can be used in other cities following the

same system. The work offers further support to the ideas of smart urbanism by highlighting that regional impact plays a key role, especially in tier-two cities such as Coimbatore which depend on local actions meeting sustainability goals.

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