Kaohsiung City:
A Blueprint for Creating Livable Smart Cities Around the World

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Abstract： We assess Kaohsiung City's alignment with smart city indicators using SDGs 7, 11, and 12. While progress is seen through solar panels and light rail systems, challenges including air pollution and water consumption persist. Recommendations include ESG certification for enterprises and engaging the public as citizen scientists for a smarter Kaohsiung.

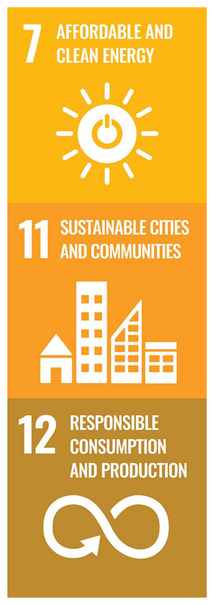
Motivation:
· Taipei and Kaohsiung are important cities in Taiwan
· Taipei is a smart city ⇨ How about Kaohsiung?

Methods:

Refer to the indicator of SDGs:
7.a : Clean Energy
11.2 : Sustainable Transportation
12.6 : Responsible Production

Data Collection and Organizing

Field Work in Kaohsiung City



Targets

Current Situation of other Smart Cities

The Plans that Kaohsiung Executed

The Ways to make Kaohsiung Better

Make Kaohsiung a Top International Technologically Advanced Smart City

Definition of Smart City:
· More efficient with the use of digital solutions
· Better resource use and fewer emissions
· More interactive and responsive city administration

According to IMD smart city index 2023
· Zurich (No.1)
· Singapore (No.7)
· Taipei (No.29)

International Institute for Management Development

SDG 7: Affordable and Clean Energy
Target: Make the energy more clean and affordable.
Example in Kaohsiung: EMS
· 333 schools (96%) with solar panels
· Using the Cloud to control the usage, to promote efficient energy uses
· The power generated by solar panels is TWO times as the air conditioners

EMS= Kaohsiung Campus Energy Management System

SDG 11: Sustainable Cites and Communities
Target: Safe, affordable, user-friendly, and sustainable transportation system for everyone.
Example in Kaohsiung: Light Rail Vehicle-Road Coordination
⇨ To avoid accidents at Light Rail track
1.Detector
2.Real-time dynamics information
3.CMS (Changeable Message Sign)
4.On-Board Unit (OBU)
5.Pay attention and stop

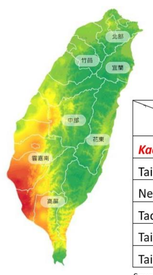
SDG 12: Responsible Consumption and Production
Target: Businesses Adopting Sustainable Practice
Existing industrial structure → sustainable industries
Example in Kaohsiung: Industrial Transformation of KSP

Heavy Industry Factories ⇨ Serious pollution

Transform the industry of Kaohsiung Software Park (KSP)
From heavy industry to high-tech industry

Problems in Kaohsiung:

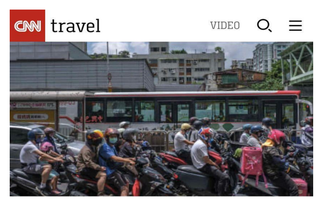
· Worst air quality
· Highest daily water consumption



	Tap Water Coverage Rate(%)	Water Consumption ($1000m^3$)	Daily Water Usage per Person(liters)
Kaohsiung city	***96.08***	***568017***	***580***
Taipei city	99.79	419621	430
New Taipei City	97.84	610930	420
Taoyuan City	95.52	403985	520
Taichung City	95.86	506684	510
Tainan City	99.07	331895	490

Source: Statistical Database of the Water Resources Agency, Ministry of Economic Affairs

· Violations of traffic regulations
· Sidewalks being occupied



Solutions:

1.Government	2.Companies	3.Citizens
· Technological Enforcement For motorcycles · Reusing water Resources · Water leaking Detection	· Technology Development · Cooperation with Government · ESG Certification	· Citizen Scientists · Education · Supervise the Government

ESG Environmental Social Governance

References:

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