The Time Tax of Distance: Housing Affordability and Commuting Burdens in the Capital Region

Replication

Download raw data by hour from:

https://data.seoul.go.kr/dataVisual/seoul/seoulLivingMigration.do

Execute code from 1 to 9 manually.

Table 1: File name

	File name	Explanation
1	OD_월별_HW_WH_TOTAL_2020_streamed	2020 merged data for H1
2	OD_월별_HW_WH_TOTAL_2021_streamed	2021 merged data for H1
3	OD_월별_HW_WH_TOTAL_2022_streamed	2022 merged data for H1
4	OD_월별_HW_WH_TOTAL_2023_streamed	2023 merged data for H1
5	OD_월별_HW_WH_TOTAL_2024_streamed	2024 merged data for H1
6	OD_월별_HW_WH_TOTAL_2025_streamed	2025 merged data for H1
7	DEST_월별_인바운드_위딘_갭_2020_streamed	2020 merged data for H2 and 3
8	DEST_월별_인바운드_위딘_갭_2021_streamed	2021 merged data for H2 and 3
9	DEST_월별_인바운드_위딘_갭_2022_streamed	2022 merged data for H2 and 3
10	DEST_월별_인바운드_위딘_갭_2023_streamed	2023 merged data for H2 and 3
11	DEST_월별_인바운드_위딘_갭_2024_streamed	2024 merged data for H2 and 3
12	DEST_월별_인바운드_위딘_갭_2025_streamed	2025 merged data for H2 and 3
13	COMBINED_OD_DEST_2020_2025	Combined Data OD and DEST
14	df_APT	APT Price
15	ROUTE_PANEL_H1_2020_2025)	Data merged with APT for H1
16	DEST_PANEL_H2H3_2020_2025)	Data merged with APT for H2 and 3
17	df_H1 (same data: ROUTE_PANEL_H1_2020_2025_DESTinSeoul)	Final data for H1 (Employment districts are only Seoul Districts)
18	df_H2_H3 (same data: DEST_PANEL_H2H3_2020_2025_DESTinSeoul)	Final data for H2 and H3 (Employment districts are only Seoul Districts)

Table 2: H1 data

	Variable Name	Explanation
1	Ym	Year and Month
2	출발시군구명	Darting district
3	도착시군구명	Arriving district
4	APT_price_o	APT price of home district
5	APT_price_d	APT price of work district
6	ln_APT_price_o	Logged APT price of home district
7	ln_APT_price_d	Logged APT price of work district
8	Delta_log_price	(ln_APT_price_d) – (ln_APT_price_o)
9	Rel_level_price	$(\text{ln_APT_price_d}) - (\text{ln_APT_price_o}) / \text{ln_APT_price_o}$
10	HW_총이동인구	Population (Home → Work)
11	WH_총이동인구	Population (Work → Home)
12	HW_가중평균시간	Minutes (Home → Work)
13	WH_가중평균시간	Minutes (Work → Home)
14	TOTAL_통근시간(분)	Total Commuting Minutes
15	TOTAL_플로우_보조지표(최소값)	Min (Population (Home → Work))

Table 3: H2 and H3 data

	Variable Name	Explanation
1	Ym	Year and Month
2	도착시군구코드	Darting district
3	ln_APT_price_d	Logged APT price of employment district
4	ln_origin_in	Logged APT price of Origin
5	GapPrice	Gap price between employment and origin district
6	HW_flow_total	Total employed workers in employment district
7	HW_flow_inbound	Inbound employed workers in employment district
8	InboundShare_HW	$\frac{\text{Inbound employed workers in employment district}}{\text{Total employed workers in employment district}}$
9	HW_inbound_가중평균	Commuting minutes inbound (Home → Work)
10	HW_within_가중평균	Commuting minutes within (Home → Work)
11	WH_inbound_가중평균	Commuting minutes inbound (Work → Home)
12	WH_within_가중평균	Commuting minutes within (Work → Home)
13	TOTAL_inbound_가중평균	Total Commuting minutes inbound
14	TOTAL_within_가중평균	Total Commuting minutes within
15	GAP_inbound_vs_within_HW	Gap between minutes inbound and within (Home → Work)
16	GAP_inbound_vs_within_WH	Gap between minutes inbound and within (Work → Home)
17	GAP_inbound_vs_within_TOTAL	Total Gap between minutes inbound and within