[도시환경공학부] 2019년도 2학기 창의시스템구현 신청 안내

* 2019년 2학기 졸업예정인 1트랙 기준 도시환경공학부 학생들은 아래 공지내용을 숙지하여 신청 및 진행 바랍니다.

1. 신청대상

- 2019년 2학기 졸업 예정자 (8학기 차 재학생, 초과 등록생, 조기졸업 신청자)

2. 주요 일정

일정	기간
포털 신청마감	2019년 09월 06일(금)
프로젝트 수행기간	2019년 2학기 중
포스터 제출마감	2019년 11월 27일(수)
보고서 제출마감	2019년 11월 27일(수)
포스터 발표회	2019년 12월 06일(금) 오후 2시

3. 신청 방법

1) 구 교육과정 및 신 교육과정 학생 공통

① 주 지도교수님 및 공동 지도교수님께 개별 연락 후 사전 협의

② “포털 – 수강 – 창의시스템구현” 메뉴에서 지도교수님과 공동 지도교수님 선정 및 프로젝트 관련 정보 입력

2) 구 교육과정 학생

- 학기 수강신청 및 정정기간 중 “포털 – 수강신청” 메뉴에서 본인의 1트랙 및 2트랙에서 개설한 창의시스템구현 과목(각 1학점)을 모두 신청 -〉 총 2학점 수강신청

4. 평가 방법

① 학기 중 자율적으로 프로젝트 수행계획 수립하고 지도교수님과의 주기적인 면담 혹은 첨삭 요청 등을 통해 제출마감일 전까지 보고서 작성 완료

② 완성된 보고서 업로드 : “포털 – 수강 – 창의시스템구현 – 첨부파일”

③ 주 지도교수님 및 공동 지도교수님께 업로드한 보고서의 평가 개별적으로 요청

④ 지도교수님 두 분은 A,B,C,F 중 하나의 점수를 부여

-〉 (A,B,C : 통과 / F : 미통과) / 두 분 모두 통과 처리를 해야 최종 통과

5. 포스터 제출 및 발표

-〉 포스터 제출 후 포스터 발표회에 참여해야 학점 인정

① 포스터 시안 최종 완성본 형태 : PPT 파일 한 장으로 전체자료 제작 후 PDF파일(가로 70CM * 세로 90CM)로 변환하여 제출

-〉 minsun4567@unist.ac.kr로 제출

-〉 파일 제출 후 제작에 들어가면 수정 X ! 미리 주 지도교수님께 확인 받은 후 제출!!!

-〉 제출 시 제목 & 파일명 : “창의시스템구현포스터시안_이름(학번)” 으로 제출

② 제출기한 : 2019년 11월 27일(수)

-〉 업체작업 5일 소요 예정 / 미 제출 시 본인이 직접 포스터 주문&제작해야 함

③ 포스터 발표회 : 2019년 12월 06일(금) 오후 2시 / 108동~110동 1층 로비

④ 포스터 예시(뒷 페이지 참조)

6. 보고서 양식

① 영문 작성을 원칙으로 하며 분량은 항목 당 100단어 이상 작성

② 글자크기 : 11pt / 폰트 : Times New Roman / 글자색 : 흑색

(수치 및 그림 등의 붙임자료는 컬러 가능)

③ 참고문헌 작성 방법 : ACS, AMS, APA, IEEE, Harvard 중 선택 가능하나, ACS 권장

7. FAQ

1. 창의시스템구현 지도교수 선정

① 주 지도교수님 및 공동 지도교수님은 본인의 1트랙 및 2트랙 소속에서 각각 1분씩 선정할 것 권장 (1명만 선정 X)

② 본인 소속 트랙과 다른 학부/트랙 교수님을 지도교수님으로 선정하는 것은 해당 교수님 및 지도교수님과 사전협의 및 동의 하에 가능

-〉 주 지도교수님 및 공동 지도교수님을 사전 협의 및 동의를 구하지 않고 임의로 선정하여 신청한 경우 F 평가를 받을 수 있음 : 반드시 주 지도교수님 및 공동 지도교수님과 직접 면담 혹은 메일/전화상담 등을 통해 승인을 받은 후 포털 신청 처리

2. 창의시스템구현 프로젝트 주제 선정

-〉 창의시스템구현 프로젝트 : 4년간의 학부 과정에서 습득한 창의적 융합전공 수행성과를 보고서의 형태로 평가 받는 졸업과제의 일환

① 본인이 직접 참여한 연구 관련 내용

EX) 연구인턴십에서 수행한 연구, 소속 교수님 LAB에서 진행 중인 연구 등

② 관심 있는 분야에 대한 논문 리뷰

EX) 최신 연구동향 관련 논문 5편 리뷰

3. 그 외

1) 창의시스템구현 지도교수님은 학사 지도교수님으로 선정해야 함? 2트랙은 지도교수님이 안 계신데 어떡함?

- 학생이 진행하고자 하는 분야에 있어 조언과 지도를 해주실 수 있는 교수님 두 분을 직접 선정해야 함

2) 구 교육과정 학생은 1트랙 1학점, 2트랙 1학점 총 2학점이니 보고서 2개 써야 함?

- 1개의 융합 보고서를 작성해서 주 지도교수님과 공동 지도교수님께 평가받는 것이므로 평가가 완료되면 각각 학점으로 인정 됨

(예시)

〈 Poster of Ji-hoon Jung〉

URBAN ENVIRONMENTAL ENGINEERING
ULSAN INSTITUTE OF SCIENCE AND TECHNOLOGY

Impact of New Metro Line on Nearby Housing Price : Gangseo gu, Seoul

Jeong Jihoon[1], Kim Jeongseob[2]
[1] School of Urban and Environmental Engineering, Ulsan National Institute of Science and Technology, Korea, Degree of Bachelor
[2] School of Urban and Environmental Engineering, Ulsan National Institute of Science and Technology, Korea, Assistant Professor

Introduction

TOD(Transit-Oriented Development)

- Urban rail transit has been widely considered an *efficient and environmentally friendly* mode of transport to address deteriorating urban transportation conditions(Diao et al. 2015)
- TOD has the potential to provide a *comprehensive alternative to the automobile*(Bernick and Cervero, 1997).
- TOD is a way to *reduce driving and redress auto-related problems*(Cervero et al, 2002).

Seoul Metro Line 9

2009.07.24
Section 1
<Gaehwa – Sinnonhyeon>

2015.03.28
Section 2
<Sinnonhyeon – Sports Complex>

2017(Plan)
Section 3
<Sports Complex – Gimpo>

Gangseo-gu

Before
High Dependency on Bus

After
New & Alternative Transit Mode
Active TOD Development
Magok New Town

Research Objective

- *Analyzing with Hedonic Price Model and DiD(Difference-in-Difference), temporal impact of new metro line 9 on nearby housing price by each period is estimated.*
- *Showing positive impact of new TOD on Housing Price, synergetic relationship between TOD and Pedestrian environment is revealed.*

Method

Data

- Total 28,711 Transactions in 161 Apartments from 2006.01 to 2015.06 : MOLIT's sale database
- Housing Price Index(2006.01 to reference, 100) : Korea Appraisal Board
- Reference Real Estate Information : NAVER Real Estate

Hedonic Price Model & DID (Difference-in-Difference)

$$SP = \beta_0 + \beta_1 {}^*P + \beta_2 {}^*L + \beta_3 {}^*TRENDALL + \beta_4 {}^*TREND1 + \beta_5 {}^*TREND2 + \beta_6 {}^*TOD9\_500 + \beta_7 {}^*TIME1 + \beta_8 {}^*TIME2 + \beta_9 {}^*TOD9\_500 {}^*TIME1 + \beta_{10} {}^*TOD9\_500 {}^*TIME2 + \varepsilon$$

Variables	Description
SP (Sell Price)	Housing Sale Price adjusted for the market trend (Dependent Variable)
Property Characteristics(P)	
SPACE	Area of exclusive use of housing unit (m²) in an apartment
TOTAL_FLOOR	Total Floor of a housing unit
LOW_FLOOR	First floor = 1, Otherwise = 0
AGE	Building Age
AGESQUARE	Square of the AGE
APTUNIT	Total number of housing units in an apartment
Locational Characteristics(L)	
EXPRESS	If the nearest line 9 station is express station, then 1
PARK	Distance to access point of Neighborhood Park
RIVER	Distance to access point of Han River
Time	
TRENDALL	Monthly Time Trend Variable in all period <200901~201506>
TREND1	Monthly Time Trend Variable after Section 1 is opened <200908~201506>
TREND2	Monthly Time Trend Variable after Section 2 is opened <201504~201506>
TIME1	Dummy for the period after Section 1 is opened, but Section 2 is not opened <200908~201503>
TIME2	Dummy for the period after Section 2 is opened <201504~201506>
TOD Effect	
TOD9_500	TOD Zone(Station of Metro Line 9 Station = 1, otherwise = 0
TOD9_500_TIME1	Interaction between TOD Zone(500m) and after Section 1 is opened
TOD9_500_TIME2	Interaction between TOD Zone(500m) and after Section 2 is opened

- *Also, Hedonic Price Model is estimated using Multi-level(Random-Intercept Model) in order to redress the spatial autocorrelation problem of variables. Group variable for Multi-level model is each apartment complex.*

Result & Conclusion

Regression Analysis of each model is done by STATA 14.0 (StataCorp, Texas, USA)
- Linear : SP is dependent variable / Semi-log : ln(SP) is dependent variable

<Result of Regression Analysis>

Variables	Model 1 (OLS Linear)	Model 2 (Multi-Level Linear)	Model 3 (OLS Semi-log)	Model 4 (Multi-Level Semi-log)
Property Characteristics(P)				
SPACE	0.159***	0.328***	0.014***	0.017***
TOTAL_FLOOR	0.489***	0.427***	0.018***	0.017***
LOW_FLOOR	-2.718***	-2.745***	-0.129***	-0.127***
AGE	-0.618***	-0.660***	-0.031***	-0.030***
AGESQUARE	0.010***	0.009***	0.000***	0.000***
APTUNIT	0.001***	0.001***	0.000***	0.000***
Locational Characteristics(L)				
EXPRESS	0.309***	2.540***	0.034***	0.059***
PARK	-1.711***	-1.091***	0.004***	-0.008***
RIVER	-0.698***	-0.295***	-0.001***	-0.030***
Time				
TRENDALL	0.357***	0.309***	0.003***	0.003***
TREND1	0.007*	0.190***	-0.002***	-0.002***
TREND2	0.382***	0.406***	0.013*	0.010***
TIME1	-0.181*	-0.204**	0.001*	-0.001
TIME2	-1.101***	-1.118***	-0.026*	-0.030***
TOD Effect				
TOD9_500	0.654***	1.140***	0.042***	0.035***
TOD9_500_TIME1	0.781***	0.828***	-0.006*	0.004
TOD9_500_TIME2	1.175***	0.598***	0.064*	0.018*

Note. *, **, *** refer to significance at the 0.10, 0.05, 0.01 level, respectively

-> According to the statistical significances of coefficients, *Model 2(Multi-Level Linear Model)* is the most appropriate model to final analysis.

Property Characteristics(P)
Coefficients of all variables in this category coincide well about the relationship between housing price and each variable, as we expected.

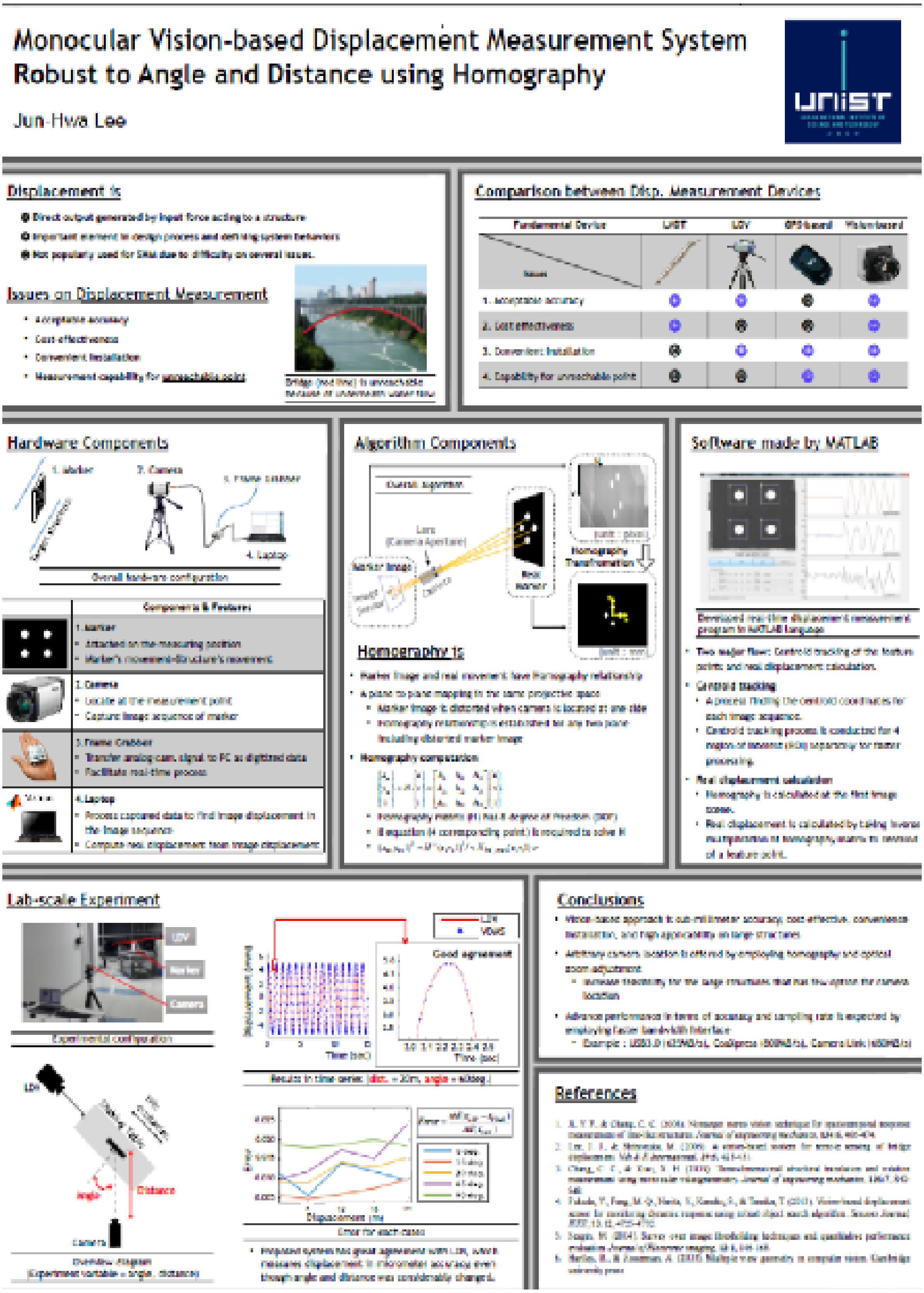
Locational Characteristics(L)
Whether the nearest station is express station or not affect greatly on housing price. Near express station positively affect on housing price. And also, the accessibilities to neighborhood park and Han river are important factors to evenly housing price.

TOD Effect

	Sum	After Section 1 – Before Section 2	After Section 2
TOD(500m) Zone	TOD9_500 : 1.140	TOD9_500 : 1.140 TIME1 : -0.204 TOD9_500_TIME1 : 0.828	TOD9_500 : 1.140 TIME2 : -1.118 TOD9_500_TIME2 : 0.598
Total Impact	1.140	0.764(+67.0%)	0.620(+54.4%)

In the period 'After Section 1 – Before Section 2', housing price within TOD zone(500m) increases as 67.0%. In contrast, result about the period 'After Section 2' is negative. Housing price decreases as 54.4%. Because period in terms of 'TIME2' variable is too short(2015.04~2015.06), quantity of data may not examine or represent this period well. If the longer period in terms of 'TIME2' is longer, result about section 2 will show the positive impact of Section 2 opening on housing price.

〈 Poster of Jun-hwa Lee〉



[Urban and Environmental Engineering] Fall 2019 Interdisciplinary Project Guidelines

1. For whom

- Students whose 1st track is UEE registered in the course "Interdisciplinary Project" this semester for graduation, including early graduation

2. Overall Schedule

Contents	Date
Application through portal	2019. 09. 06. (Fri)
Project period	During Fall 2019 semester
Submission of Project Poster	2019. 11. 27.(Wed)
Submission of Project Report (For evaluation)	2019. 11. 27.(Wed)
Presentation of Project	2019. 12. 06.(Fri) 2 p.m.

3. Application Procedure

1) Both students whose first track is UEE(OLD) and UEE(NEW)

- Contact professors in advance for nomination of directors.
- Apply for the project through portal (Enter both advisors' names and project proposal)

2) For students whose firs track is UEE(OLD)

- Register for Interdisciplinary Project Courses from both 1st and 2nd track

4. Evaluation of Project

1) Completing report of project after planning and conducting the Project during the semester having discussion with two advisors

2) Uploading the report : Portal – Course – Interdisciplinary Project – File

3) Request for evaluation to the advisor and the co-advisor respectively

4) Two advisors provide you with one of A, B, C, F (A, B, C : Pass / F : Fail)

-〉 You are able to pass and get the credits only if both of two advisors give you the score of PASS

5. Submission and presentation of Poster

-〉 You could get the credits attending poster presentation after submission

1) Form of the poster : After making it 1 sheet of PPT file, transform it to PDF file (Width 70CM * Length 90CM)

-〉 Submission : To minsun4567@unist.ac.kr

-〉 Once it is submitted, there's no way to fix, so submit it after reviewing from advisors.

-〉 Designation of the file name : "Interdisciplinary Project Poster_ Name(Student #)

2) Due date of submission : 2019.11.27.(Wed)

-〉 You yourself should make the poster if you don't submit on time.

3) Poster Presentation : 2019.12.06.(Fri) 2 p.m. / 1f lobby between bldg.108 and 110.

4) Example of posters(Next page)

6. Report

1) Over 100 words in English for each section

2) Letter point : 11 / Font : Times New Roman / Color : Black(Figures or pictures can be colored)

3) References : Choose one among ACS, AMS, APA, IEEE, Harvard; ACS is recommended

7. FAQ

1. Nomination of two advisors

① It is recommended that two advisors would be nominated from 1st track and 2nd track respectively

(One advisor is not acceptable)

② It is possible that two advisors are nominated only under their agreement

-〉 You could get a "F" if there was no agreement of nomination

-〉 Application for nomination of advisors should be proceeded with the approval

2. Topic of Project

-〉 Interdisciplinary Project : Evaluation of report which has established for 4 years

① Related to research in which you have worked on

Ex) Research you have worked on in the lab during the research internship period or the research on going by the professor

② Review of Thesis you are interested in

Ex) Review of thesis related to

3. Etc

1) Should I choose the advisor as the educational advisor? What about the advisor from the 2nd track?

- Students themselves need to choose 2 professors who could give you an advice on the field of the project.

2) Should students whose are in old tracks write 2 reports since they get 2 credits from 2 tracks respectively?

- It would be the one report which will be evaluated by 2 professors. 2 credits would be accepted for each track after evaluation.

(Examples)

〈 Poster of Ji-hoon Jung〉

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$$SP = \beta_0 + \beta_1 P + \beta_2 L + \beta_3 TRENDALL + \beta_4 TREND1 + \beta_5 TREND2 + \beta_6 TOD9\_500 + \beta_7 TIME1 + \beta_8 TIME2 + \beta_9 TOD9\_500*TIME1 + \beta_{10} TOD9\_500*TIME2 + \varepsilon$$

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AGESQUARE	Square of the Age
APTUNIT	Total number of housing units in an apartment
Locational Characteristics(L)	
EXPRESS	If the nearest line 9 station is express station, then 1
PARK	Distance to access point of Neighborhood Park
RIVER	Distance to access point of Han River
Time	
TRENDALL	Monthly Time Trend Variable in all period <2009.01 - 2015.06>
TREND1	Monthly Time Trend Variable after Section 1 is opened <2009.08 - 2015.06>
TREND2	Monthly Time Trend Variable after Section 2 is opened <2015.04 - 2015.06>
TIME1	Dummy for the period after Section 1 is opened, but Section 2 is not opened <2009.08 - 2015.03>
TIME2	Dummy for the period after Section 2 is opened <2015.04 - 2015.06>
TOD Effect	
TOD9_500	TOD Zone(Within 500m of Metro Line 9 Station = 1, otherwise = 0
TOD9_500_TIME1	Interaction between TOD Zone(500m) and after Section 1 is opened
TOD9_500_TIME2	Interaction between TOD Zone(500m) and after Section 2 is opened

- Also, Hedonic Price Model is estimated using **Multi-level/Random-Intercept Model** in order to redress the spatial autocorrelation problem of variables. Group variable for Multi-level model is *each apartment complex.*

Result & Conclusion

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TOTAL_FLOOR	0.419***	0.427***	0.018***	0.017***
LOW_FLOOR	-2.718***	-2.745***	-0.129***	-0.127***
AGE	-0.618***	-0.660***	-0.031***	-0.030***
AGESQUARE	0.010***	0.009***	0.000***	0.000***
APTUNIT	0.001***	0.001***	0.000***	0.000***
Locational Characteristics(L)				
EXPRESS	0.309***	2.540***	0.034***	0.059***
PARK	-1.711***	-1.091***	0.004***	-0.008***
RIVER	-0.0598**	-0.295***	-0.001***	-0.030***
Time				
TRENDALL	0.107***	0.109***	0.005***	0.003***
TREND1	0.007*	0.190***	-0.002***	-0.002***
TREND2	0.352***	0.406***	0.013*	0.010***
TIME1	-0.181*	-0.204**	0.001*	-0.001
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TOD9_500_TIME1	0.781***	0.829***	-0.006*	0.004
TOD9_500_TIME2	1.173***	0.998***	0.064*	0.018*

Note. *, **, *** refer to significance at the 0.10, 0.05, 0.01 level, respectively

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TOD Effect

	Sale	After Section 1 – Before Section 2	After Section 2
TOD(500m) Zone	TOD9_500 : 1.140	TOD9_500 : 1.143 TIME1 : -0.204 TOD9_500_TIME1 : 0.829	TOD9_500 : 1.140 TIME2 : -1.118 TOD9_500_TIME2 : 0.998
Total Impact	1.140	0.768(+67.4%)	1.020(-10.5%)

In the period 1(After Section 1 – Before Section 2), housing price within TOD zone(500m) increases as 67.4%. In contrast, result about the period 2(After Section 2) is negative. Housing price decreases as 10.5%. Because period is terms of 'TIME2' variable is too short(2015.04~2015.06), quantity of data may not examine or represent this period well. If the longer period in terms of 'TIME2' is longer, result about section 2 will show the positive impact of Section 2 opening on housing price.

〈 Poster of Jun-hwa Lee〉