

Activity Report of EASTS IRG (International Research Group)

Date of Submission: ____03____ / ____August____ /2008

1. IRG code and Name of IRG

1) IRG code: IRG -_03__ - 2005__

2) Name of IRG

Dynamics of Poly-centric employment formation in East and Southeast Asian Cities

2. List of research members:

- Professor Yoshitsugu HAYASHI, Dean, Graduate School of Environmental Studies, Nagoya University, Japan (Responsible for Budget)
- Professor John BLACK, Planning Research Centre, Faculty of Architecture, Design and Planning, University of Sydney, Australia (Responsible for Project Proposal and Technical Direction)
- Dr Pelin ALPKOKIN (Project Director), Division of Transport, Faculty of Civil Engineering, Istanbul Technical University, Istanbul (Project Manager)
- Ms Kirti BHANDARI, Doctoral Candidate, Graduate School of Environmental Studies, Nagoya University, Japan
- Dr Charles CHEUNG, Senior Consultant, Steer Davies Gleave, London SE1 9PD, United Kingdom
- Mr Ken DOUST, Doctoral Candidate, School of Civil and Environmental Engineering, University of New South Wales, Australia
- Dr Heru JATMIKA, New South Wales Roads and Traffic Authority, Blacktown, NSW, Australia
- Mr Stefan KLUG, Doctoral Candidate, Graduate School of Environmental Studies, Nagoya University, Japan
- Mr Naohisa KOMIYAMA, Department of Civil and Environmental Engineering, Nagoya University, Japan
- Dr John LEA, Honorary Associate Professor, University of Sydney, Sydney, Australia
- Professor Yuzo MASUYA, Dean, Department of Civil and Environmental Engineering, Hokkaido College, Senshu University, Japan
- Professor Haixiao PAN, Department of Urban Planning, Tongji University, The People's Republic of China
- Mr Jia PENG, Doctoral Candidate, Graduate School of Environmental Studies, Nagoya University, Japan
- Emeritus Professor Kazuo SAITO, Department of Civil Engineering. and Architecture, Muroran Institute of Technology, Hokkaido, Japan
- Dr. Heru SUTOMO, Director, Center for Transportation and Logistic Studies, Gadjah Mada University, Indonesia.
- Ms Ofra SHABTAY, Research Assistant, Planning Research Centre, University of Sydney, Australia

- Professor Tohru TAMURA, Department of Civil Engineering. and Architecture, Muroran Institute of Technology, Hokkaido, Japan
- Dr Varameth VICHENSAN, Department of Civil Engineering, Kasetsart University, Thailand

3. Purpose and Mission of IRG:

Mission: To conduct international collaborative research, to build team of young researchers, and to summarize results of analytical methods and policies in manual for practicing planners.

All very large metropolises, whether in developing or developed countries, sooner or later have to face the problem of spatial re-organization from mono-centric structure to multi-centric structure that is the relocation (decentralization and further de-concentration) of firms and houses outside the CBD in particularly emerging employment centers. Such poly-centric dynamics have been extensively explored in American cities and a recent report was also published on a European Union Project. Despite these works, the lack of a methodology for the analysis of multi-centric growth and its impacts on commuting characteristics triggered us to propose an analytical framework for grasping the multi-centric dynamics in large metropolitan areas, particularly appropriate for developing countries where there is lack of precise data in most cases.

4. Past Achievements

- 1) Paper, Report or Book: (Title, Authors, Year, Name of journal etc.)

REPORT

1. Eastern Asia Society for Transport Studies (EASTS), International Co-operative Research Activity (ICRA) IRG-03-2005, *Asian Poly-centric Employment Collaborative Transport (APEC-TR) Final Report*, October, 2007

THESES

2. Komiyama N. (2007) Analyzing Tokyo Metropolitan area growth by firm location and associated commute patterns. Undergraduate thesis, Nagoya University (in Japanese).
3. Alpkokin, P. (2006) Analyzing urban dynamics and business locations of poly-centric cities: A case study of Istanbul, Doctorate thesis, Nagoya University.
4. Doust, Ken (2008) "Metrics for Urban Sustainability", PhD, University of New South Wales.
5. Cheung, Charles (2006) "Journey to Work Stratified by Occupation/Industry: Implications for Sustainability Analysis and Trip Distribution Models", PhD, University of New South Wales

PAPERS and PRESENTATIONS

6. Alpkokin, P., Black, J. and Hayashi, Y., 2008. Dynamics of clustered employment growth and

its impacts on commuting patterns in rapidly developing cities. *Transportation Research Part A: Policy and Practice* 42(3), 427-444.

7. Alpkokin, P., Black, J., Kato, H., and Vichiensan, V., 2007. Poly-centric employment formation in mega-cities: Analysis from APEC-TR collaborative research. *Journal of the Eastern Asia Society for Transport Studies* 7, 1446-1459.
8. Alpkokin, P., Komiyama, N., Takeshita, H. and Kato, H., 2007. Tokyo metropolitan area cluster employment formation in line with its extensive rail network. *Journal of the Eastern Asia Society for Transport Studies* 7, 1403-1416.
9. Alpkokin, P., Kato, H., Black, Y., Hayashi, Y. (2007) Empirical model of firm location for clustered cities: The case of Istanbul, 11th World Conference on Transportation Research Society, Berkeley, USA, 24 – 28 June (CD-ROM).
10. Bhandari, K., Peng, J., Alpkokin, P. (2007) Policies, commuting patterns and accessibility in a non-monocentric city: case study of Delhi. *Proceedings of the Eastern Asia Society for Transport Studies* 7, 192.
11. Bhandari, K., Alpkokin, P., Kachi, N., Peng, J., Kato, H. (2007) Dynamics of employment distribution and accessibility index: Case of Delhi. Forthoming, *36th Proceedings of Japan Society of Civil Engineers Conference, Hachinohe, Japan (CD Rom)*.
12. Black, J. (2007) Spatial plans and policies to support poly-centric employment in Canberra. 7th International Conference of Eastern Asia Society for Transport Studies, Dalian, China (paper submitted and fully accepted for Journal of EASTS, but withdrawn from Journal).
13. Black, J., Cheung, C., Doust, K., Shabtay, O. (2007) Metrics of changes to major employment centres: analyses of spatial plans for Sydney 1948 – 2031. *Journal of the Eastern Asia Society for Transport Studies* 7, 1311-1325.
14. Cheung, C., Black, J. (2007) Poly-centric employment location in Canberra: planning a home-work balance and the journey-to-work. *Proceedings of the Eastern Asia Society for Transport Studies* 7, 197.
15. Klug, S., Alpkokin, P., Black, J. and Hayashi, Y., 2007. Current and historic policies for employment centers in metropolitan regions. *Journal of the Eastern Asia Society for Transport Studies* 7, 1417-1432.
16. Komiyama, N., Alpkokin, P., Takeshita, H., Kato, H., Hayashi, Y. (2007) Analyzing Tokyo Metropolitan area growth by firm location and associated commute patterns Coming 36th Proceedings of Japan Society of Civil Engineers Conference, Hachinohe, Japan (CD Rom, in Japanese).
17. Sutomo, H. (2007) Integrating highway and public transport network development towards a more compact city: A policy study on Jakarta. Presentation on ICRA-03 Special Session, 7th International Conference of the Eastern Asia Society for Transport Studies, Dalian, China.
18. Masuya, Y., Tamura, T., Black, J., Saito, K. (2007) Dynamics of employment location specific preference functions in Sapporo from 1972 to 1994. *Proceedings of the Eastern Asia Society for Transport Studies* 7, 128.
19. Vichiensan, V. (2007) Dynamics of urban structure in Bangkok based on employment cluster and commuting pattern. *Journal of the Eastern Asia Society for Transport Studies* 7, 1559-1574.

20. Vichiensan, V. (2007) Dynamics of employment agglomeration pattern and urban mobility: An empirical analysis in Bangkok from 1995 to 2005 paper submitted to 87th Transportation Research Board Conference, Washington, D.C., January, 2008.
21. Alpkokin, P., Kato, H. Shimizu, K. and Hayashi, Y. (2006) Business location model applicable to non mono-centric structure: The case of Istanbul. *34th Proceedings of Japan Society of Civil Engineers Conference, Kagawa, Japan* (CD Rom, in Japanese).
22. Black, J. (2006) Sustainable urban transport technologies and policies: A research perspective, *Dialogues in Urban Planning, The Planning Research Centre at The University of Sydney*, pp. 4 – 20.
23. Alpkokin, P., Hayashi, Y., Black, J. and Gercek, H. (2005) Polycentric employment growth and impacts on urban commuting patterns: *Case study of Istanbul. Journal of the Eastern Asia Society for Transportation Studies*, 6, 3835-3850
24. Alpkokin, P., Kato, H., Hayashi, Y. and Shimizu, K. (2005) Analyzing urban dynamics in multi-centric cities. The case of Istanbul. *Japan Society of Civil Engineers, 32nd Proceedings of Japan Society of Civil Engineers Conference, Hiroshima, Japan* (CD Rom)
25. Cheung, C., Black, J. (2005) Residential location-specific travel preferences in an intervening opportunities model: Transport assessment for urban release areas. *Journal of the Eastern Asia Society for Transportation Studies*, 6, 3773-3788.

2) Seminar, Symposium or Special Session: (Title, Date, Venue & abstract)

26. Black, J. (2006) East Asia Society for Transportation Studies International Collaborative Research Activity (ICRA) – Asian Polycentric Employment Collaborative: Transport (APEC-TR), Presentation to Members of the Parliament of the Republic of Indonesia, held at University of Sydney, 4 December.

27.



**International Research Center for
Sustainable Transport and Cities**
Graduate School of Environmental Studies, Nagoya University

**EASTERN ASIA SOCIETY FOR TRANSPORTATION STUDIES (EASTS)
INTERNATIONAL CO-OPERATIVE RESEARCH ACTIVITY (ICRA)**

<http://www.easts.info/activities/irg/>

**WORKSHOP on POLY-CENTRIC EMPLOYMENT
Asian Polycentric Employment Collaborative – Transport
(APEC – TR)**

PROGRAM

25 November 2006 (Saturday) 10:00-18:00

**Meeting Room II, Second Floor of Building for Graduate School of
Environmental Studies**

<p><u>PROJECT GENERAL MANAGER:</u> Prof. Yoshitsugu Hayashi, Nagoya University</p> <p><u>DISTINGUISHED GUEST:</u> Prof. Robert Cervero, University of California, Berkeley</p> <p><u>RESEARCH MEMBERS:</u> Prof. John Black , University of Sydney Prof. Haiziano Pan, Tongji University Prof. Yuzo Masuya, Hokkaido College, Senshu University Dr. Varameth Vichiensan, Kasetsart University Dr. Charles Cheung, Sydney University Dr. Heru Jatmika, University of New South Wales Dr. Pelin Alpkokin, Nagoya University Bhandari Kirti, Nagoya University Naohisa Komiyama, Nagoya University Peng Jia, Nagoya Univeristy</p> <p><u>SECRETARIAT:</u> Dr. Pelin Alpkokin Phone : +81-52-789-2773 Fax: +81-52-789-1454 E-mail : pelin@urban.env.nagoya-u.ac.jp</p>	<p><u>OUTLINE</u></p> <p>The aim of the research is to conduct an international collaborative study of metropolitan employment and transport and to summarize results of analytical methods and policies in a manual for practicing urban planners.</p> <p>All very large metropolises, whether in developing or developed countries, sooner or later have to face the problem of spatial re-organization from a mono-centric structure to a multi-centric structure - that is the relocation (decentralization and further deconcentration) of firms and businesses outside the CBD, in particular into government designated emerging employment centers. However, the lack of a methodology for the analysis of multi-centric growth and its impacts on commuting characteristics has lead to an analytical framework for grasping the multi-centric dynamics of change in large metropolitan areas. Case studies utilising spatial and journey to work data were conducted in Tokyo, Sapporo, Sydney, Canberra, Bangkok, Shanghai, Delhi, Dalian, Seoul and Istanbul. Metropolitan planning documents in these cities were reviewed and the research will further illuminate policy making to build the environmentally sound (and sustainable urban development when considering spatial employment).</p> <p style="text-align: right;">Yoshitsugu Hayashi)</p>
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- 10:10-10:40 Key Note Speech (Prof.

Robert Cervero)

Decentralization, Balanced Growth, and Travel Behavior: Lessons from the San Francisco Bay Area

- 10:40-11:00 Introduction of APEC – TR (Dr. Pelin Alpkokin)
- 11:00-11:25 Presentation on ISTANBUL (Dr. Pelin Alpkokin)
- 11:25-11:50 Presentation on SYDNEY (Prof. John Black)

- 11:50-12:15 Presentation on SAPPORO (Prof. Yuzo Masuya)
- 12:15-14:00 Lunch
- 14:00-14:25 Presentation on BANGKOK (Dr. Varameth Vichiensan)
- 14: 25-14:50 Presentation on CANBERRA (Prof. John Black)
- 14:50-15:15 Presentation on TOKYO (Mr. Naohisa Komiyama)
- 15:15-15:40 Presentation on DALIAN (Jian Peng)
- 15:40-16:05 Presentation on SHANGHAI (Prof. Haixiao Pan)
- 16:05-16:30 Presentation on DELHI (Ms. Bhandari Kirti)
- 16:30-16:45 Coffee Break
- 16:45-17:00 Summary (Prof. John Black)
- 17:00-18:00 Discussion (Chaired by Prof. Yoshitsugu Hayashi)
- 19:00 Dinner

28. EASTS Conference Dalian September 2007

September-24-Time to be determined ICRA Session 90 minutes (5 presenters and 18 minutes per presentation including discussions)

Chairman :Prof.
John Black, Sydney
University

Presenter	Affiliation	Title of the paper	Paper ID
Dr. Pelin Alpkokin	Assistant Professor Nagoya University	Poly-centric employment formation in mega-cities:	100430

Stefan Klug	Doctoral Candidate, Nagoya University	Analysis from APEC–TR collaborative research Policies for employment centers in metropolitan regions	100417
Naohisa Komiya	Graduate Student, Nagoya University	Tokyo metropolitan area employment cluster formation in line with its extensive rail network	100411
Dr. Charles Cheung	Sydney University	Poly–centric employment location in Canberra: Planning a home–work balance and the journey–to–work	100506
Dr. Pelin Alpkokin	Asisstant Professor, Nagoya University	Why do the firms cluster?: Lessons from Istanbul	Paper not submitted, Member of IRG and ICRA, Special presenter

Date and time to be determined **IRG-03 Session** 90 minutes (6 presenters and 15 minutes per presentation including discussions)

Chairman: Dr. Pelin Alpkokin, Nagoya University

Presenter	Affiliation	Title of the paper	Paper ID
Kirti Bhandari	Doctoral Candidate, Nagoya University	Policies, commuting patterns and accessibility in a non–monocentric city: Case of Delhi	100471
Dr. Varameth Vichiensan	Asisstant Professor, Kasetsart University	Dynamics of urban structure in Bangkok based on employment cluster and commuting pattern	100522

Dr. Pan Haixiano	Professor, Tongji University	To be determined	Paper not submitted, Member of the IRG, Special presenter
Dr. Yuzo Masuya	Professor, Hokkaido College, Senshu University	Dynamics of employment location-specific preference functions in Sapporo from 1972 to 1994	100602
Ken Doust	Research Student, Sydney University	Metrics of changes to major employment centers: Analyses of spatial plans for Sydney 1948 – 2031	100305
Dr. Heru Sutomo	Visiting Professor at Nagoya University, Gadjah Mada University	Integrating highway and public transport network development towards a more compact city: A policy study on Jakarta	Paper not submitted, Member of the IRG, Special presenter

3) Group meeting: (Date, Venue & abstract)

Group meeting held at Graduate School of Environmental Studies, Nagoya University, September, 2007

4) Result of Application to other research funds: (Name & result)

NONE

5) Promotional activities of your IRG: (Home page, Newsletter, Mailing list etc.)

NONE

Will you continue your IRG activity in next term (after August 2008) ? [YES / NO]

→ If “YES”, please answer the following questions.

NO

5. Future research plan including time frame with the following items:

- Planned seminar, symposium etc. (Date & Venue)

We do not have any planned seminar or symposium because of the unavailability of a research grant at the moment.

- Possibility of Special Session at the next EASTS conference in 2009

NO

- Special considerations to young researchers

This research project was written jointly by established researchers (Black and Hayashi) and a then doctoral candidate (Alpkokin). On graduation as a Post-doctoral Fellow Alpkokin was project manager for IRG-3. The collaborative research undertaken involved 7 young researchers at undergraduate and postgraduate levels plus several young researchers. This research has produced a number of papers and conference presentations giving the young researchers opportunity to learn from senior researchers, enhance their research skills and present their work in the international arena (for example, EASTS, WCTRS, TRB). One further step for the young researchers is to complete papers to be published in the international scientific journals.

Up to now one paper from the IRG group has been published at one of the best transport related journals entitled "Transportation Research Part A". We are planning to submit two or three more papers to such well-rated international journals.

We formulated a proposal to the EASTS Board for further funding to allow this activity to continue but were unsuccessful with that application. However, continue this research with more detailed case studies of selected sub-centers in our cities we need funding from foundations that will enable the team members to conduct group meetings and workshops. Without this the talents of young researchers gathered to this project and its extension will die.