

Instytut Geografii i Gospodarki Przestrzennej UJ  
Kraków 2003

*Rajmund Mydel, Hiroshi Ishihara*

## **KYOTO. DIURNAL TRANSFORMATIONS OF THE FUNCTIONAL AND SOCIO-ECONOMIC STRUCTURE OF THE CENTRAL BUSINESS DISTRICT (CBD) OF JAPANESE HISTORICAL CITY**

*Abstract:* The authors present the extent and the character of diurnal transformations of functional and socio-economic structure of the CBD of the city of Kyoto – the historical capital of Japan, presently perceived as the “spiritual capital” of Japan. The analysis was carried out for occupationally active persons in the categories of the night-time and day-time population, aggregated in the main sectors and branches of the economy as well as for socio-economic strata and groups.

*Key words:* Central Business District, night-time population, day-time population, white collar workers, grey collar workers, blue collar workers, FIRE activities

### **1. The issues covered in and the aim of the study**

The functional centres of great cities (so-called CBDs – Central Business Districts) are places of high concentration of activities in the non-productive area of the urban economy. This means that as regards their functional structure, they are dominated by persons employed in sector III, while, in categories of socio-economic strata, by representatives of white collar and grey collar workers. So far, scarce studies (e.g. Greenwood 1980, Scott 1982, Mydel, Ishimizu 1988; Mydel, Ishimizu 1991; Mydel 1993), have shown that the greatest dynamics of diurnal variability and structural growth is seen among white collar workers, whose structural domination is noted both during the day and at night not only within CBD but in the whole city and in transitional and external zones of the whole metropolitan area. This quantitative and structural domination of white collar workers is typical for great central cities and the metropolitan areas formed in highly developed countries (e.g. the USA, Germany, United Kingdom, Japan).

The greatest extent of the relevant transformations is noted in the functional centres, which remain the most important centres of the city in terms of administration, management, finances and banking, and trade. This development increases in connection with the highly advanced process of the depopulation of such the areas which is one

of the consequences of the increasing gap between the night-time (N) and day-time (D) population (to the benefit of the latter). Its source is an increasing stream of commuters working in the institutions located in the city-centre, which leads to the fundamental transformation of its functional and socio-economic image. The scale of this process is evidenced by the results of research concerning the centre of Tokyo (Mydel, Ishimizu 1991), where, as a result of a daily increase of the occupationally active population number by as much as 947.2% (from 187.1 thousand to 1 959,3 thousand), the structural share of white collar workers increases from 43.6% (at night) to 59.1% (during the day). The main source of it is a huge influx of clerical workers (increase D/N by 1803.5%) – with a percentage of 21.1% at night and 38.3% during the day).

The functional centre of Kyoto is the management centre of this largest historical city in Japan, where not only is the highest concentration of the heritage to be found in terms of the old urban infrastructure but also in terms of its functional image. It is connected with the government policy aimed at the preservation of an “urban tissue” and traditional occupations, recognised as a lasting historic heritage of the city and the entire country. Kyoto was founded in 794 (in 1994 it celebrated its 1200th anniversary) and by the late 19th c. (1868) was the imperial capital. After the capital was moved to do (since – Tokyo), Kyoto remained the “spiritual capital” of Japan. Kyoto’s CBD consists of two administrative districts (*ku*): Nakagyo-ku and Shimogyo-ku, representing the historical core of Heian-kyo (the name borne by today’s Kyoto until 1868).

Kyoto’s CBD covers an area of 14.2 km<sup>2</sup> (2.3% of the total area of the city), in 1995 it has a population of 161.8 thousand (11.0% of the city’s total one). Like the other city-centres in Japan, it is subject to a depopulation process, initiated in 1955-1960 (Fig 1.). During the forty years from 1955 to 1995, the population of Kyoto’s CBD decreased from 312.7 thousand to 161.8 thousand, i.e. by 51.7%. It brought about a decrease in the share of the district’s residential population in the city’s total population from 25.6% (1955) to 11.0% (1995). It was accompanied with a differentiation of its night-time (N) and day-time (D) population, which in 1995 reached a level of 91.0% (D/N). Significant disproportions between night-time and day-time populations are typical for the city-centres, and change their functional and socio-economic image, all the more that the main participants of diurnal migrations are persons chiefly representing the category of occupationally active people. At night, Kyoto’s CBD has 11.7% of the occupationally active population of the city, whilst during the day this share increases to 27,3% (growth rate D/N of occupationally active reached 163.8% in 1995 – Tab. 1).

The main objective of this study is to investigate the scope and the character of diurnal transformations of the functional and socio-economic structure of the Kyoto CBD. They will be analysed in the categories of basic employment in main sectors and branches economy (functional structure), as well as in socio-economic strata and groups (socio-economic structure) of the occupationally active population. The study has a cognitive asset lying in the fact that these issues concern the centre of a historic city, where the development of modern urban centre functions (including finance, banking and administration) is accompanied by high heritage activities as regards traditional crafts (including artistic ones), commerce and services. The latter function is related to the services provided to 40 million domestic and foreign tourists visiting the city.

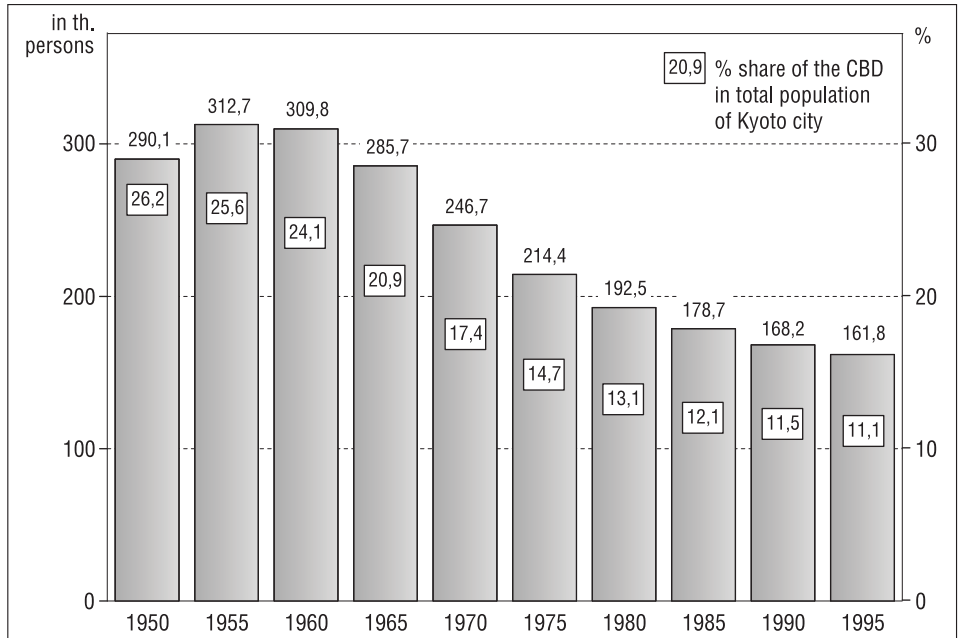


Fig. 1. Demographical development of the Kyoto CBD (1950-1995)

Ryc. 1. Zmiany zaludnienia CBD Kyoto (1950-1995)

## 2. Diurnal transformations of the functional structure of the CBD of Kyoto

As regards its territory, Kyoto's CBD covers most of the old town urban fabric of the oldest Heian-kyo (as of 794). Central offices, banks, industry and commerce enterprises have their headquarters in this area, (particularly concentrated along Oike-dori and Karasuma-dori streets), innumerable commerce and service establishments (often creating complexes of mono-functional sub-districts with popular traditional restaurants, bars, tea-rooms, shops and stalls with artistic craftware and entertainment spots, such as Kawaramachi-shijo), including the largest departments stores in the city (e.g. Daimaru, Takashimaya, Haikyu, Kintetsu), modern and traditional (*ryokan*) hotels, as well as numerous complexes of historic architecture of the highest historic and architectural value (e.g. the complex of the Niji-jo castle and those of Nishi-Hongan-ji and Higashi-Hongan-ji temples). The important and characteristic spatial and functional elements of the Kyoto CBD are a wide gamut of craft workshops and the ultra-modern centre of commerce, service, culture and entertainment opened in 1997 within the area of Kyoto's main railway station, in the southern part of the CBD. It has become the greatest commercial attraction of Kyoto, due to the easy transport access, the rich offer of trade, services and entertainment, the modern architecture of the entire complex – and the unique conditions for viewing a panorama of the city (Phot. 1,2,3).

The functional centre of Kyoto, the city with a population of 1.46 million, is characterised by a night-time population dominated by those employed in tertiary sector (73.8% of the total of the occupationally active persons). Significant is here the structural balance between commerce (35.2%) and service employees (34.3%), which indicates a special relationship between the places of residence and work. On the other hand, Kyoto's CBD indicates a relatively low percentage (4.3%) of persons employed in the FIRE sector (financing, insurance and real estate), whose presence is currently considered as one of the most important measures of the modernity of the CBD functional structure. No less characteristic is the very high share of persons employed in secondary sector (26.1%), especially in industry (21.3%). Their considerable number in the city-centre is connected with the presence of industrial crafts (including artistic crafts) and typographical services. For example, almost 1/3 of the employed in industry is represented by those working in weavers' workshops (as a rule family businesses), mostly manufacturing cloth from natural silk.

During the day, the number of the occupationally active population of the Kyoto's CBD increases by approx. 165.0% (117.3 thousand). The highest growth rate index (186.5%) is noted for employees of tertiary sector, representing 80.2% of the total of the occupationally active persons. In particular groups of occupations, the highest level of change concerns those employed in finance and insurance (increase D/N by 600.0%), who, together with real estate employees account for 8.5% of the total number of employed in CBD. Practically, this occupational group is decisive for the functional transformation of the centre of Kyoto, as the absolute increase of number of those employed in commerce and services (by 175.0% on the average), is accompanied by a relative standstill of their structural share as compared with the night-time population of the CBD. The employees of secondary sector are clearly less significant during the day (19.7% of the total of the occupationally active), especially those employed in industry (a decrease to 15.9%).

The character of the functional transformations of the night-time and day-time image of Kyoto's CBD may be considered as a typical phenomenon, chiefly because of the clear increase in employment in the FIRE sector. On the other hand, a characteristic feature of Kyoto's CBD is a relatively high share (both at night and during the day) of employees in commerce and service industries, which is connected with an extremely high concentration of establishments providing comprehensive services for both city residents and the above-mentioned 40 million tourists (Tab. 1).

### **3. Diurnal transformations of socio-economic structure of the CBD of Kyoto**

The characteristic domination of commerce and service employees in the occupationally active population of the centre of Kyoto with a relatively high share of those active in industry (mainly in industrial crafts), is directly reflected in the specific image of its socio-economic structure. Its most characteristic feature is a relatively high share of grey collar workers (35.9%), including commerce employees who constitute the second largest socio-economic group of the "night-time" CBD.

Tab. 1. Diurnal transformations of functional structure of the Kyoto CBD (1995)

Tab. 1. Dobowe zmiany struktury funkcjonalnej CBD Kyoto (1995)

Employment by sectors and main branches of economy	Employed population				D/N growth (in %)
	Nighttime (N)		Day time (D)		
	Number (in 1,000)	%	Number (in 1,000)	%	
I Sector	0.1	0.1	0.2	0.1	100.0
II Sector	22.3	26.1	44.1	19.7	97.8
Industry	18.2	21.3	35.5	15.9	95.1
Construction	4.1	4.8	8.6	3.8	109.8
III Sector	62.9	73.8	108.2	80.2	186.5
Trade	30.0	35.2	84.3	37.5	181.0
Financing and insurance	2.2	2.6	15.4	6.9	600.0
Real estate	1.5	1.7	3.5	1.6	133.3
Services	29.2	34.3	77.0	34.2	163.7
Total CBD	85.3	100.0	225.0	100.0	163.8

\* with persons engaged in electricity, gas, heat and water supply and transport-communication.

*Source:* enumerated by the authors on the basis of: 1995 *Population Census of Japan Vol. 5-2-26*, Labour Forces Status of Population.... Kyoto-fu, Tokyo 1997.

Another significant feature is the relatively low percentage of persons representing the group of white collar workers (35.5% of the total of the occupationally active population), who, as a rule, constitute the most numerous group among the city-centre residents of the centres of large cities. It is mainly caused by a low share of those employed in management and administration (only 4.9% of the total of the occupationally active). In this respect, a significant role is played by an especially strong presence of blue collar workers (in terms of their actual number and structural share – 28.3%). They consist of both qualified and non-qualified workers who actually form the largest of all socio-economic groups of the city centre. The above-quoted facts clearly confirm the distinct specificity of the social structure of the population of the centre of the discussed Japanese historic city. It is rooted in the above-mentioned strong heritage of the traditional crafts and services (actively supported by state authorities) connected with the dynamic growth of the most modern forms of commercial and service activities (large department stores and exclusive shops, restaurants, night clubs etc.) As indicated, the poor presence of management and administration employees in Kyoto's CBD is to a large extent due to the proximity of Osaka, Japan's second-largest administrative and economic (also financial) centre after that of Tokyo.

The no less characteristic image of the socio-economic structure represents Kyoto's CBD during the day, when white collar and grey collar workers represent respectively 40.0% of the total occupationally active population. The significance of blue collar workers at that time is significantly lower (20.0%), and their growth rate index D/N (85.5%) is the lowest among all social groups of the centre. Despite this fact, their structural share is relatively high.

The highest growth rate index is noted for clerical workers (D/N=242.6%), who account for only 24.7% of the total occupationally active population. Similarly, a relatively low share (5.4%) is noted for higher-rank officials of administration and management. Especially significant is the fact that the share of commerce employees is very high (27.8%) and they represent the most numerous socio-economic group of Kyoto's CBD population during the day-time. Considering also significant presence of service employees (11.8% of the total occupationally active population), the Kyoto's CBD appears to be an area with extraordinarily strong commerce and service activities, developed practically in parallel with management, administration and financial functions (Tab. 2).

Tab. 2. Diurnal transformations of socio-economic structure of the Kyoto CBD (1995)

Tab. 2. Dobre zmiany struktury społeczno-ekonomicznej CBD Kyoto (1995)

Socio-economic strata and groups	Employed population				D/N growth (in%)
	Nighttime (N)		Day time (D)		
	Number (in 1,000)	%	Number (in 1,000)	%	
White Collar Workers	30.7	35.8	90.6	40.4	195.1
Professional and technical workers	10.3	12.0	22.9	10.3	122.3
Managers and officials	4.2	4.9	12.2	5.4	190.5
Clerical workers	16.2	18.9	55.5	24.7	242.6
Grey Collar Workers	30.8	35.9	89.0	39.6	189.0
Sales workers	19.3	22.5	62.4	27.8	223.3
Service workers	11.5	13.4	26.6	11.8	131.3
Blue Collar Workers	24.2	28.3	44.9	20.0	85.5
Skilled workers and labourers	24.2	28.3	44.9	20.0	85.5
Total CBD	85.7	100.0	224.5	100.0	162.0

Source: enumerated by the authors on the basis: 1995 Population Census of Japan. Analytic Series No 7. Commuting Population, Tokyo 1998

## 4. Conclusions

In the light of the research which was carried out, it should be stated that the centre of the city of Kyoto, the largest and the most important historic urban centre in Japan (in a broader context as the centre of a historic city) has a specific functional and socio-economic structure, both as regards its night-time and day-time population. First and foremost, it is expressed with a specific time-related "over-representation" of the structural share of commerce and service employees and the industrial ones; in socio-economic categories this translates into the significant presence of grey collar and blue collar workers. In the relatively very low structural presence of white collar workers, the clear deficit of office staff and higher-rank officials of administration and management is noted. The structural distinctiveness of Kyoto's CBD can best be seen when compared with the centre of Tokyo, where as much as 59.1% of the occupationally active persons during the day-time are white collar workers, and the greatest socio-economic group is that of office staff, accounting for 37.1% of all the employed (1995).

## References

- Fujioka K., 1970, *Historical Development of Japanese Cities, Japanese Cities: A Geographical Approach*, Special Publication 2, The Association of Japanese Geographers, Tokyo, 13-16.
- Greenwood M.J., 1980, *Metropolitan Growth and the Intrametropolitan Location of Employment, Housing and Labour Force*, Review of Economics and Statistics, 42, 491-501.
- Mydel R., Ishimizu T., 1988, *Evolution of Socio-Economic Structure of Japan's Metropolitan Areas*, Scientific Reports Jagiellonian University, Geographical Studies, No 79, Kraków, 113.
- Mydel R., Ishimizu T., 1991, *Diurnal Transformations of Socio-Economic Structure of the Tokyo CBD*, Scientific Reports Jagiellonian University, Geographical Studies, 87, Kraków, 107-117.
- Mydel R., 1993, *Diurnal Transformations of Demographical and Social Space of Tokyo*, Scientific Reports Jagiellonian University, Geographical Studies, 93, Kraków, 113.
- Mydel R., Ishihara H., 2002, *Kioto. Japońskie miasto historyczne. Zróżnicowanie demograficznej, funkcjonalnej i społeczno-ekonomicznej przestrzeni*, Instytut Geografii i Gospodarki Przestrzennej UJ, Monografia, 19, Kraków
- Scott A.J., 1982, *Production System Dynamics and Metropolitan Development*, Annals Association American Geographers, 72, 2, New York, 185-200.
- Takahashi S., 1995, *Japanese Ancient Cities*, Tokyo.
- Uemura Y., Ueno H., 1999, *Kyoto chizu monogatari (Kyoto Told by Maps)*, Koko-shoin, Tokyo.
- 1995 *Population Census of Japan, 3-2-26, Labour Force Status Population, Industry (Major Groups) of Employed Persons, Kyoto-fu*, Statistics Bureau, Management and Coordination Agency, Government of Japan (SB MCA GJ), Tokyo 1997.
- 1995 *Population Census of Japan, 4-2-26, Occupation (Major Groups) of Employed Persons, Types of Household, Kyoto-fu*, SB MCA GJ, Tokyo 1998.
- 1995 *Population Census of Japan, 6-2-26, Population by Place of Work or Schooling, Sex and Age of Population, Industry (Major Groups) of Employed Persons, Kyoto-fu*, SB MCA GJ, Tokyo 1997.

## Kioto. Dobbowe przemiany funkcjonalnej i społeczno-ekonomicznej struktury centrum (CBD) japońskiego miasta historycznego

### Streszczenie

Funkcjonalne centrum (CBD) historycznego miasta Kioto (założ. w 794 pod nazwą Heian-kyo) tworzą dwie dzielnice administracyjne: Nakagyo-ku i Shimogyo-ku o łącznej pow. 14,2 km<sup>2</sup> (2,3% pow. miasta), zamieszkałe przez 161,8 tys. osób (11,1% ogółu ludności Kioto). Reprezentujące ośrodek dyspozycyjny miasta w zakresie zarządzania i administracji oraz finansów i handlu, notuje bardzo wysoki stopień historycznego dziedzictwa zarówno w zakresie struktur przestrzennych jak i funkcjonalnych. Związane jest to zasadniczo z faktem rządowej ochrony jego staromiejskiej tkanki urbanistycznej oraz tradycyjnych zawodów (głównie w ramach rzemiosła przemysłowego i artystycznego).

Od przełomu 1955/1960 obszar CBD objęty jest procesem wyludniania, który za okres 1955-1995 odnotował wielkość 93,3% (z 312,7 tys. do 161,8 tys. osób – Ryc.1). Notowany jest tu równocześnie rosnący stopień zróżnicowania pomiędzy nocnym (N) i dziennym (D) zaludnieniem (w 1995 osiągnął poziom  $D/N=91,0\%$ ). Związany jest on zasadniczo z napływem w ciągu dnia licznej rzeszy czynnej zawodowo ludności znajdującej zatrudnienie w instytucjach, placówkach handlowych i usługowych ( $D/N=163,8\%$ ). Sprawia to, że czynni zawodowo nocnego centrum Kioto reprezentują 11,7% tej kategorii ludności całego miasta, by w ciągu dnia zwiększyć swój udział aż do 27,3%. Powyższe okoliczności muszą powodować dobowe przemiany funkcjonalnej i społeczno-ekonomicznej struktury CBD.

W kategoriach nocnego zaludnienia znamionuje je dominacja zatrudnionych w sektorze III (73,8% ogółu czynnych zawodowo) z charakterystyczną strukturalną równowagą pracowników handlu (35,2%) oraz usług (34,3%). Znamienny dla CBD Kioto jest bardzo wysoki udział osób zatrudnionych w sektorze II (26,1% ogółu czynnych zawodowo) a w szczególności w przemyśle (21,3%), który ma swe źródło w silnym rozwoju rzemiosła artystycznego, przemysłowego i przemysłu poligraficznego.

W ciągu dnia najwyższy wskaźnik wzrostu notują pracownicy sektora III ( $D/N=186,5\%$ ) z udziałem 80,2% ogółu zatrudnionych, a wśród nich reprezentantów zawodów kategorii FIRE ( $D/N=600,0\%$ ) reprezentujących 8,5% og. liczby pracowników dziennego CBD. W związku z relatywnie niskim wzrostem zatrudnionych w sektorze II ( $D/N=97,8\%$ ) zmniejszają oni swój udział do 19,7% (Tab. 1).

Znamienna dla CBD Kioto dominacja wśród czynnej zawodowo ludności pracowników handlu i usług przy względnie wysokim udziale zatrudnionych w przemyśle, znajduje wyraz w specyficznym wizerunku jego społeczno-ekonomicznej struktury. Najbardziej charakterystyczny jest względnie bardzo wysoki udział w kategoriach nocnego zaludnienia grey collar workers (35,9%) a pośród nich pracowników handlu (30,0% og. czynnych zawodowo). Swoistym ewenementem jest relatywnie niski odsetek white collar workers (35,8%), związany głównie z symboliczną obecnością pracowników sfery zarządzania i administracji (4,9% og. czynnej zawodowo ludności). Równocześnie zwraca uwagę fakt wysokiej pozycji blue collar workers (28,3%).

Nie mniej znamienny obraz społeczno-ekonomicznej struktury prezentuje CBD Kioto w ciągu dnia, gdzie średnio po 40,0% czynnej zawodowo ludności przypada na reprezentantów white collar i grey collar workers. Za szczególnie charakterystyczny uznać należy także fakt względnie niskiego udziału pracowników biurowych (24,7%), którzy odnotowują zarazem najwyższy wskaźnik wzrostu pośród wszystkich grup społeczno-ekonomicznych centrum ( $D/N=242,6\%$ ). Osobliwością strukturalną dziennego centrum Kioto jest poza tym bardzo wysoki odsetek pracowników handlu (27,8%) przy względnie silnej strukturalnej pozycji zatrudnionych w usługach (11,8% – Tab. 2).

*Rajmund Mydel*  
*Institute of Geography and Spatial Management*  
*Jagiellonian University, Cracow*

*Hiroshi Ishihara*  
*Department of Geography*  
*Kyoto University, Kyoto*