Studies on the spatial-functional structure of a town on the example of Brodnica

Summary

A market economy has been restored to Poland since 1989. It is expected that it will liberate local socio-economic initiatives. Small towns will gradually regain market grounds for existence through imparting dynamism to the growth of the operation of servicing the surrounding area. At present, it seems that a particularly advantageous starting position has been gained by those small towns which, after world war II, acquired strong industrial processing plants of various kinds, often based on local resources; they are also carrying out privatisation quickly, especially of services, thus are bringing dynamism to the growth of the operation of servicing the surrounding area more quickly. Industrial operation, as regards its physical dimensions, will become more stable, and its proportion should decrease relatively; on the other hand, growth of the operation of services should be expected, and its proportion should increase relatively quickly. In the case of this group of small towns, particularly rapid growth can be expected in the nearest future because they are capable of rendering old development factors more dynamic, and at the same time of gaining modern ones. However, this requires the appropriate pro-development strategy to be chosen.

Today this problem represents an intellectual challenge, both for the elite and local communities, and for science. Which road for future development to choose? The goal of mutual efforts should be to discover socio-economic reserves existing in small towns, and then to define the conditions, possibilities and methods of activating them in the long term. The appropriate choice of the directions of future development and of the strategies for executing it is today a priority for the majority of small towns in Poland. The prosperity of local communities depends on this choice and execution, as does the fact whether, within the next generation, we will reduce the shocking disproportion in the conditions of life in comparison with those of communities from developed countries. The first step to achieve this is to make a diagnosis of the present state of the development of small towns, and of the factors which conditioned it. Only on the basis of such a diagnosis can the second stage be to make a prognosis of the choice of the most efficient directions of future development. Such a diagnosis should take into account the genesis of small towns, their historical transformations, location in the geographical environment, the state of the management and the structure of production, and the population and living conditions, all of which focuses on their functions hitherto. Only then can this base, together with knowledge acquired on the expected development tendencies (on a macro scale) in the economy indicate those functions which can guarantee development in the future. The division of tasks between science and practice well illustrates the still valid claim by J. Kostrowicki (1957) that the role of geography is to draw attention to the shortcomings that are present, and even to indicate the necessity of more detailed research of a given problem, to determine the socio—economic reserves, and to draw conclusions as to the possibilities and methods for activating them. The task of practice, on the other hand, is to propose and execute concrete investment activities.

Brodnica, with a population today of 28,000 inhabitants, belongs to this group of small towns which enjoy particularly favourable conditions for further development. The town has many advantages, but also limitations, which in favourable conditions can bring dynamism to its development, but they can also hinder it. The reconstruction of a market economy places a range of possibilities and choices before Brodnica. The right choice of socio—economic activity which should be invested in today in order for it to bring profits in the future and guarantee the town a dynamic and harmonious development is of fundamental significance for Brodnica and its inhabitants.

The ideogram of the range of research carried out which includes the diagnosis, working hypotheses and their verification, and the indication of development perspectives are presented in table 1.1.

The arrangement of the paper corresponds to the hypotheses formulated and to the aims of the research. The paper consists of ten chapters. In the first chapter the foundations of research, source materials and review of literature are discussed. In the second chapter an analysis is presented of the geographical conditions for the creation, functioning and development of Brodnica. The third chapter contains an analysis of the spatial structure of the town based on a photograph of land use. In the fourth chapter the demographic and social conditions for the development of Brodnica are presented. The next three chapters (fifth, sixth and seventh) analyse the economic base of the town. In the fifth chapter the analysis of the economic base of Brodnica is presented on a broad basis. In the sixth and seventh chapters, however, a detailed analysis is presented of two exogenous functions which, in the authors' opinion, could in the nearest future be a strong stimulus for the development of the town, namely tourism (a specialised exogenous function) and post--primary education (a standard exogenous function). The eighth chapter contains an analysis of the socio-economic sphere of influence of Brodnica. It represents a synthesis of the current role of the town in creating a region, and can be used as the basis for the delimitation of its socio-economic region. The ninth chapter contains a study of surveys devoted to the perception of the town and conditions of living there by its inhabitants. In the last chapter a summary of the research carried out is presented and a critique is made of the domain of verifying the hypotheses raised and realising the aims of the research.

List of tables

- Tab. 1.1. Essential scope of the diagnosis, foundations, and aims of socio-economic development in Brodnica
- Tab. 3.1. Structure of land use in Brodnica (July 1995)
- Tab. 3.2. Coefficients of Spearman's rank correlations showing the dependence of the spatial arrangement of individual forms of land use in relation to the town centre
- Tab. 3.3. Coefficients of Spearman's rank correlations showing the dependence of the spatial arrangement of service points in relation to the town centre
- Tab. 3.4. Coefficients of Spearman's rank correlations showing the co-appearance of different forms of land use within the urban area
- Tab. 3.5. Structure of land use according to different functional-spatial zones of Brodnica (July 1995)
- Tab. 4.1. Population growth in Brodnica in 1910–1995
- Tab. 4.2. Population distribution in the town according to eight urban units
- Tab. 4.3. Structure of population age in Brodnica in 1970–1994
- Tab. 4.4. Natural population movement in Brodnica in 1975-1994
- Tab. 4.5. Migratory population movement in Brodnica in 1976–1994
- Tab. 4.6. Relations between town and country in migrations in 1976–1994
- Tab. 4.7. Magnitude of foreign migration in 1976–1994 (number of people)
- Tab. 4.8. Direction of foreign migration in the period 1.01.1992-31.05.1995
- Tab. 4.9. Migrants arriving in Brodnica according to level of education in the period 1.01.1992–31.05.1995
- Tab. 4.10. Migrants arriving in Brodnica according to profession in the period 1.01.1992-31.05.1995 (%)
- Tab. 4.11. Direction of migration in the period 1.01.1992–31.05.1995
- Tab. 4.12. Magnitude and structure of employment in Brodnica (July 1995)
- Tab. 4.13. Structure of places of work in Brodnica and its rural surroundings in 1994
- Tab. 4.14. Productive and non-productive population in 1994
- Tab. 4.15. Dynamics of unemployment and selected categories of it in the town of Brodnica from 31.12.1991–30.09.1995
- Tab. 4.16. Unemployed people in the town of Brodnica according to the length of time of being without a job
- Tab. 4.17. Unemployed people in the town of Brodnica according to age
- Tab. 4.18. Unemployed people in the town of Brodnica according to their level of education

- Tab. 4.19. Selected characteristics of the phenomenon of unemployment within the sphere of influence of the Regional Employment Office in Brodnica for 31.12.1992–30.06.1995
- Tab. 4.20. Selected indications characterising the situation on the labour market within the sphere of influence of the Regional Employment Offices in the Toruń province for 31.12.1994–30.06.1995
- Tab. 4.21. Unemployed and working people in the town of Brodnica and in the communes in its immediate surroundings
- Tab. 4.22. Selected features of unemployed people in the town of Brodnica and in the communes in the surrounding area according to the position on 30.06.1995
- Tab. 4.23. Differentiation in the level of unemployment within the town of Brodnica (July 1995)
- Tab. 5.1. Magnitude and structure of enployment in industry in Brodnica in 1993
- Tab. 5.2. Magnitude and structure of employment in Brodnica in 1970-1995
- Tab. 5.3. Magnitude and structure of employment according to three economic sectors in Brodnica in 1970–1995
- Tab. 5.4. Magnitude and structure of places of work in Brodnica according to exogenous and endogenous sectors (position in July 1995)
- Tab. 5.5. Magnitude and structure of places of work in Brodnica according to economic and functional sectors (position in July 1995)
- Tab. 5.6. Structure of activity and line of trade of economic businesses registered in Brodnica in 1989–1995 (%)
- Tab. 6.1. Size of hotel base in Brodnica (position at the end of July, beginning of August 1995)
- Tab. 6.2. Attitude of inhabitants of Brodnica to the growth of tourism in their town (according to age and sex of those questioned)
- Tab. 6.3. Age of tourists visiting Brodnica according to individual market areas
- Tab. 6.4. Motives for which tourists visit Brodnica from different market areas
- Tab. 7.1. Magnitude and structure of post-primary education (average number of pupils in 1990–1995)
- Tab. 7.2. Pupils of post-primary schools in Brodnica in 1990/1991-1994/1995
- Tab. 7.3. Place of origin of pupils from post-primary schools learning in Brodnica in 1977/1978-1994/1995
- Tab. 7.4. Changes in the spatial sphere of influence of post-primary education in Brodnica in 1977/1978-1994/1995
- Tab. 7.5. Number of pupils learning in post-primary schools in Brodnica calculated per 1000 permanent inhabitants in 1990/1991-1994/1995
- Tab. 8.1. Size and resources of the sphere of influence of Brodnica
- Tab. 9.1. Opinion of those questioned on their acceptance of living in Brodnica
- Tab. 9.2. Opinion of those questioned on the basic services provided by the town
- Tab. 9.3. Opinion of those questioned on their attitude to people visiting the town

List of illustrations

- 2.1. Schema of associations defining the functions of the town
- 2.2. Location of Brodnica against the background of geographical-physical lands
- 2.3. Development of urban settlement on the territory of the Chełmno and Dobrzyń Districts
- 2.4. Communication system in Brodnica. 1 fortified settlement in Michałów, 2 foundation charter Brodnica
- 2.5. Location of Brodnica within the national and regional settlement and communication network
- 2.6. Brodnica against the background of the hydrographical network and the configuration of the land
- 2.7. Plan of the town of Brodnica in XIV century (R. Birkholz 1981)
- 2.8. Development of Brodnica after the second world war. A. Administrative borders and the buildings of the town before 1977 (according to Maps of the administrative district of Brodnica, Warsaw 1952), B. Administrative borders and the buildings of the town in 1996 (according to Topographical maps, Warsaw 1992)
- 2.9. Investors in residential building in Brodnica after the second world war
- 3.1. Distribution of residential areas within the urban space of Brodnica
- 3.2. Variability of the proportion of 10 different forms of land use in Brodnica according to the distance from the town centre. A areas invested in, B areas not invested in
- 3.3. Proportion of I, II, III, IV and V storey buildings according to sector and distance from the town centre
- 3.4. Proportion of I, II, III, IV and V storey buildings according to sector and distance from the town centre: A. proportion of I storey buildings, B. proportion of II storey buildings, C. proportion of IV and V storey buildings
- 3.5. Distribution of service areas within the urban space of Brodnica
- 3.6. Variability of the proportion of service points according to sector, kind of service, and distance from the town centre. A service points according to sector, B service points according to kind of service
- 3.7. Distribution of communication areas within the urban space of Brodnica
- 3.8. Distribution of production areas within the urban space of Brodnica
- 3.9. Distribution of green and recreation areas within the urban space of Brodnica
- 3.10. Distribution of other areas invested in within the urban space of Brodnica
- 3.11. Distribution of all areas invested in within the urban space of Brodnica

- 3.12. Distribution of urban areas that have been developed and that are developing within the area of Brodnica
- 3.13. Functional zones of Brodnica (names given in table 3.5) divided according to types of land use distinguished by the method of leading elements in the structure (circumference of the circle shows the average proportion 25% of each of the 4 different balance forms of land use)
- 3.14. Functional-spatial structure of Brodnica
- 3.15. Variability of the proportion of the size of plots according to distance from the town centre
- 4.1. Growth in the population of Brodnica in 1783-1995 (compiled based on E. Kwiatkowska 1973, S. Bilski 1978, Statistical Annals of Toruń province, 1970, 1978, 1988, and materials from the Population Census Office in Brodnica)
- 4.2. Map of population concentration within Brodnica; position in 1995 (number of population shown by pie chart)
- 4.3. Differentiation of the population density coefficient within Brodnica (position in 1995)
- 4.4. Differentiation of the feminisation coefficient within Brodnica (position in 1995)
- 4.5. Structure of population age and sex in Brodnica (position in 1988)
- 4.6. Changes in the structure of education of the inhabitants of Brodnica in 1970-
- 4.7. Natural population growth in Brodnica in 1975-1994
- 4.8. Balance of migration for the town of Brodnica in 1975-1994
- 4.9. Age and sex structure of the migration turnover in the period 1.01.1992-31.05.1995
- 4.10. Migrational population exchange between Brodnica and other towns and rural areas in 1975–1994
- 4.11. Age and sex structure of the migrational influx to Brodnica in the period 1.01.1992-31.05.1995
- 4.12. Age and sex structure of the migrational outflow from Brodnica in the period 1.01.1992-31.05.1995
- 4.13. Map of the concentration of the migration turnover of Brodnica in the period 1.01.1992-31.05.1995 (size of migration turnover shown by pie chart)
- 4.14. Map of the concentration of migrational influx to Brodnica in the period 1.01.1992–1.05.1995 (size of migrational influx shown by pie chart)
- 4.15. Map of the concentration of migrational outflow from Brodnica in the period 1.01.1992-31.05.1995 (size of migrational outflow shown by pie chart)
- 4.16. Spatial distribution of the balance of migration of Brodnica in the period 1.01.1992-31.05.1995 (size of balance of migration shown by pie chart)
- 4.17. Map of the concentration of the positive balance of migration of Brodnica in the period 1.01.1992-31.05.1995 (size of the positive balance of migration shown by pie chart)
- 4.18. Map of the concentration of unemployed people within Brodnica in July 1995 (number of unemployed people shown by pie chart)

- 4.19. Map of the concentration of unemployed people claiming unemployment benefit within Brodnica in July 1995 (number of unemployed people shown by pie chart)
- 4.20. Differentiation of age and sex stucture of unemployed people within the town of Brodnica (July 1995)
- 4.21. Differentiation of education structure of unemployed people within the town of Brodnica (July 1995)
- 4.22. Differentiation of the structure of profession of unemployed people within the town of Brodnica (July 1995)
- 5.1. Variability of the functional structure of Brodnica in 1970-1995
- 5.2. Market connections in the domain of buying and selling goods by the 'Polmo' Mechanical Equipment Enterprise from Brodnica: A. Sales (%), B. Purchases (%)
- 5.3. Dynamics of the growth of the number of small economic businesses in Brodnica in 1975–1995
- 5.4. Dynamics of the growth of the number of small economic businesses in individual lines of business in Brodnica in 1975–1995
- 6.1. Anthropogenous touristic values of Brodnica
- 6.2. Extent to which rooms are occupied and the seasonality of tourist traffic in hotels in Brodnica in 1994
- 6.3. Areas of demand for the touristic product of Brodnica calculated using the method of concentration
- 8.1. Brodnica's regional communication connections by the PKS coach company (number of in-coming coaches)
- 8.2. Total journeys to work in Brodnica (July 1995)
- 8.3. Radius of journeys to work in industry and construction in Brodnica (July 1995)
- 8.4. Journeys to work in industrial and construction enterprises in Brodnica (July 1995)
- 8.5. Radius of journeys to work in service institutions in Brodnica (July 1995)
- 8.6. Journeys to work in service institutions in Brodnica (July 1995)
- 8.7. Brodnica's sphere of influence in the domain of journeys to work and the place of origin of pupils from secondary schools (July 1995)
- 8.8. Place of permanent residence of pupils from post–primary schools learning in Brodnica (July 1995)
- 8.9. Concentration of places of permanent residence of pupils from post–primary schools learning in Brodnica (July 1995)
- 8.10. Influx of permanent migrants from the region to Brodnica in the period 1.01.1992-31.05.1995
- 8.11. Outflow of permanent migrants to the region from Brodnica in the period 1.01.1992-31.05.1995
- 8.12. Permanent regional migration (turnover) to and from Brodnica in the period 1.01.1992–31.05.1995
- 8.13. Regional balance (positive) of permanent migration to and from Brodnica in the period 1.01.1992-31.05.1995
- 8.14. Private economic businesses from outside Brodnica with branches in the town (A), and economic businesses from Brodnica with branches outside the town (B)

- 8.15. Formal sphere of influence of Brodnica in the domain of bank and insurance services, health care and the post office
- 8.16. Socio-economic sphere of influence of Brodnica (July 1995)
- 9.1. Cleanness of estates in the opinion of those questioned
- 9.2. Residential estates preferred as the place for living
- 9.3. Cultural-educational establishments lacking in Brodnica
- 9.4. Service-craft establishments lacking in Brodnica