

Geographical Studies of Urbanization Processes and Their Spatial Organization in Bulgaria

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ABSTRACT

Cities have always been drivers of culture and social progress. They are centers of socio-economic life, concentrating not only population, but also infrastructure, services, and others on their territory. Urban change is most often characterized by two main units of measurement: the degree of urbanization and the rate of growth of the urban population. Intensive urbanization in conditions of rapid population growth and its activity is a basic prerequisite for the need to create scientifically based concepts for the city and settlement formations. The development of settlements is an essential part of the development of society. Historical and geographical knowledge is necessary to clarify the genesis of settlements and understand modern settlement processes. From their formation as a geographical feature with an increasing concentration of functions and population on a limited territory to their current state of a complex and dynamic social organism, the development of cities gives rise to significant research interest. The settlement type of the city is relatively young, if compared to villages. The city is the result of the division of labor, the differentiation and concentration of non-agricultural activities. The emergence and development of certain cities must be linked to their place and contribution to public life during different periods. The growing industrialization since the middle of the last century has led to strong urbanization, which poses many challenges to cities, both in Europe and Bulgaria, and around the world. The growth of cities leads to serious demographic and economic changes, which modern cities have difficulty coping with. Therefore, they need research for the purpose of planning and good management in the name of citizens and business.

Keywords: City development, Urbanization, Urban population, Spatial organization

INTRODUCTION

The development of human civilization has always been closely connected with the development of cities. Although the relative share of the population living in cities at the global and regional level has changed over time, the importance and functions of cities, their role in social life, have always dominated over rural settlements. Cities have been at the focus of changes, often their carriers or the "field" for their creation and establishment (Shopov, K. 1993). That is why the scientific and research

interests of specialists from various fields of knowledge have focused on them – from archaeologists who uncovered the most ancient settlements of the “river civilizations” (Mechnikov, 1898) to contemporary researchers of urbanized territories and creators of models for sustainable urban development. Among all of them, a worthy place is occupied by geographer researchers studying the influence of the environment on urban development (Stoyan Dinev, Hristo Ganey, Rumen Penin).

The emergence of cities in the past, their development over the centuries, and their contribution to social life during different periods should be associated with the geographical characteristics of the location and the significant changes in social life. The favorable geographical position of territories with water resources, fertile soils, and climatic conditions without significant fluctuations in temperature regimes were preferred in antiquity when establishing cities. During the Middle Ages, a favorable geographical position for the creation of cities was associated with territories possessing natural protection from several sides against attacks and wars, as well as territories with a crossroads geographical location.

The era of the Great Geographical Discoveries (GGD) defined coastal territories as places for the establishment of urban settlements. Their role in the development of trade between the Old and the New World and in the utilization of the resources of territories that were their natural hinterland was of key importance. They served as a kind of springboard toward the interior of the newly discovered territories. The industrialization carried out at the end of the 19th and the beginning of the 20th century led to accelerated urbanization, which established cities as leading settlements, assigned them new functions, and placed them before new challenges, both in Europe and around the world. The expansion of cities resulted in serious demographic and economic changes, which modern cities find difficult to cope with. (Garvanov, I., Slavova, S., Marinkov, Z., & Momchilov, G.)

Bulgaria, as part of European civilization, is also a territory where these processes are manifested. In its development, they are influenced both by global trends and by local, specific factors related to the national space and the region.

LITERATURE REVIEW

The development of cities and urban space has always been connected with the understanding of the role of the geographical environment as a fundamental factor for their emergence and development. In scientific literature, this approach is known as geographical determinism. According to it, natural conditions largely determine social and spatial processes (H. Ernste, C. Philo, 102–110). At the beginning of the 20th century, Ellsworth Huntington and Ellen Semple developed the thesis that climate, relief, and resources directly influence the character of civilizations and cities.

In Bulgarian geographical science, the issues concerning the relationship between the natural environment and urban development have been discussed since Prof. Ivan Batakliiev and Prof. Georgi Bonchev, who analyzed the location and spatial functions of settlements depending on natural and geographical conditions. During the second half of the 20th century, Stoyan Dinev and Hristo Ganey deepened these studies, emphasizing the territorial organization and regional structure of the urban network in Bulgaria.

Contemporary Bulgarian authors such as Rumen Penin (2006), Petar Slaveykov (2008), Borislav Georgiev (2015), and Emilia Toncheva (2020), Patarchanov and Petrov (2021), expand the understanding of geographical determinism by including socio-economic, ethno-political, and cultural factors in their analyses. They point out that, despite the historical dependence of cities on the natural environment, in the contemporary stage of urbanization there is an increasing role of technological, political, and social processes in shaping urban space.

In the international context, the concept of geographical determinism has undergone an evolution—from classical physical determinism to the geographical possibilist approach (P. Vidal de la Blache, 1911), according to which nature provides opportunities, and society chooses how to use them. This understanding is also reflected in modern models of sustainable urban development, where the



interaction between the natural environment and human activity is viewed as a dynamic and interdependent process.

MATERIALS & METHODS

To achieve the objectives of the study, a combination of general scientific and geographical methods has been used, ensuring a comprehensive analysis of urban development and its spatial manifestations. The research is based on the historical approach, through which the evolution of the urban environment and its main stages of development have been traced. This method allows the identification of cause-and-effect relationships between socio-economic changes and spatial structure, related to the study of the emergence of cities.

The spatial approach has been applied in examining the geographical characteristics of the environment in which cities arise and develop. The comparative-geographical method has been used to compare different cities and periods in order to identify similarities and differences in the dynamics of urbanization and territorial organization. The combination of these methods provides a comprehensive and objective analysis of the spatial and functional development of cities, integrating quantitative and qualitative approaches in contemporary geographical science.

RESULTS AND DISCUSSION

Leading Geographical Factors in the Emergence and Development of Cities in Antiquity.

Human civilization arose after a long period of development. It began with the primitive communal system, when humans were entirely dependent on nature, which was also their surrounding environment. During this early period, the creative activity of humans manifested itself as they began to build their own microenvironment. The unification of people into groups to ensure survival and security, access to resources, social needs, and reproduction was the main achievement of the initial stage of the development of human civilization. In antiquity, the grouping of people differed from the contemporary one. It occurred on the basis of complementarity (Gumilev, L.) and depended on the availability of food and water in the respective territory, on the opportunities for the development of crafts and trade, on climatic and geographical conditions, and above all on the need for security and protection.

Among the factors that influenced the formation and development of ancient cities, great importance was held by geographical location, natural conditions, the presence and quantity of raw materials and resources, and the routes for their transportation. The ancient Egyptian civilization developed in the lower course and delta of the Nile River. The Nile Valley provided the population of the cities with sufficient water for drinking and domestic needs, as well as water for agriculture. The annual summer–autumn flooding of the river during the high-water phases (the river's floods) created fertile alluvial soil, very suitable for agriculture, which was naturally enriched every year. The river itself was the main transport artery in the ancient state and the link between the coast and the interior. The population of Egyptian cities consisted of craftsmen, merchants, landowners, state and religious administration, soldiers, and slaves. The large floods, during which the Nile turned into a huge lake a kind of natural disasters were the reason why the Egyptians built their cities on natural or artificially created terraces.

For greater security, they built their temples on the second, higher terrace. The floodplain was used for agriculture. Thus, the most rational rectangular canal network for its time was created, which was also transferred into the concepts of cities (urban planning). The main building materials were brick and clay, so the traces of the constructions from that period have been largely erased. Stone, transported from the territories in the upper course of the Nile, was used only for public buildings – temples, palaces, pyramids, and others. According to their significance and functions, the cities in Egypt can be divided into several groups: capitals, temple cities, commercial cities, and fortress cities. Alongside the cities, a special type of settlements developed, intended for the construction of pyramids, irrigation facilities, and large palace and temple complexes. Under the influence of the network of irrigation canals, the



rectangular street system appeared here for the first time, with the orientation of the streets following the cardinal directions. Such orientation of settlements is also found among other peoples and civilizations on different continents – Europe, America, and Asia.

The Mesopotamian civilization arose in the alluvial lowlands between the Tigris and Euphrates rivers. The climate in the upper course of the rivers is mountainous, in the middle course – continental, and in the lower course – subtropical. Similar to Egypt, in Mesopotamia the spring–summer flooding of the rivers provided fertile soil for the development of agriculture, but with the help of irrigation systems. This contributed to the creation of a state organization from the earliest stage of the development of the territory. The cities in Mesopotamia also had a rectangular shape, but unlike Egypt, their orientation followed the intermediate world directions – northwest to southeast.

Characteristic features of Mesopotamian cities are the irregular street network, their construction on terraces, and the building of numerous inner courtyards. The social composition of the population of the cities was similar to that of the ancient Egyptian cities: kings and courtiers, officials, religious servants, craftsmen, merchants, soldiers, farmers, and slaves. In the territory between the Tigris and Euphrates rivers, the city was perceived as something new, given by God, and different from the already traditional ordinary settlements. (Asenov, K. (2024).



Fig. 1 Model of an ancient city
Source: AI



Fig. 2 Location of Mesopotamia
Source: Wikipedia

The Greek civilization originated in the southern part of the Balkan Peninsula and gradually expanded to Asia Minor, the Black Sea coast, and parts of the Mediterranean shores. The natural conditions were very diverse. The northern part of Greece was covered with ancient forests and pastures with a predominantly continental climate, suitable for the development of livestock breeding. Central Greece was also forested but had a transitional Mediterranean climate, while in the southern part of the country the climate was Mediterranean, suitable for growing olive groves, vineyards, wheat, and others. Greece was rich in mineral resources – clay, silver, marble, iron, and others. The location of the cities was determined by the search for the most protected sites on rocky hills, inland (Nikolov, P. N. (2019)), with a preference for the southern slopes, which were illuminated by the sun for a longer time, since the natural slope of the terrain ensured the quick drainage of surface waters.

The highly rugged mountainous terrain made communication between the different parts of the country difficult, which necessitated that connections between individual cities be carried out by sea. That is why the Greeks built a large naval fleet since ancient times. In this way, the geography of the territory largely determined a distinctive characteristic of Greek civilization – the mastery of the aquatic area and the development of a coastal civilization. Later, when the military power of the Greeks increased and trade developed, territories located near ports became strategically important, which also influenced urban planning. The cities began to be located on islands, peninsulas, bays, and even straits. (Jordan Adamson, 2025). Greek civilization gradually developed following the model of the Mesopotamian one – the “City of Palaces,” but on a smaller scale.

Urban planning in ancient Greece advanced significantly with the improvement of the rectangular street system and the formation of a square called the agora. In some cities of ancient Greece, partial water supply and sewerage systems existed. The cities consisted of two parts: the acropolis and the city itself. In some of the city-states of Ancient Greece, the urban population was predominant. The cities that relied more on trade than on conquests were not particularly large. The ancient Greeks were unsurpassed in the skillful integration of the city into the relief and the coastline. They achieved remarkable aesthetic impact with minimal labor expenditure and an optimal combination of defensive and commercial functions.



Fig. 3 Remains of the Acropolis and ancient Greek temples in Athens. *Source: Travelstyle.gr*

The Roman civilization dominated the entire Mediterranean basin, with its borders extending north to the British Isles and south to Egypt and Mesopotamia. The natural and geographical conditions within the empire were extremely diverse and included almost all major climatic types. The Roman Empire left traces on the development of settlements and roads throughout almost all of Europe, including in our lands. The Romans improved the existing road network inherited from the Thracians, creating new roads, cities, and fortresses to protect the developing empire. The main military roads were served by specially established small settlements built at a distance of one day's walking journey. An innovative achievement with important consequences for future spatial organization was the construction of a geodetic coordinate network during this period.

By building this network and properly distributing the land areas, the Romans were able to determine the exact location of every geographical object important to them, in order to create accurate maps (geographical, military road maps, maritime route maps, etc.). Rome represents the pinnacle of ancient urbanization, in which the natural and geographical features of the Apennine Peninsula – favorable climate, availability of construction materials, and access to seas and rivers – created the prerequisites for spatial and infrastructural development. This combination of natural resources and a highly organized socio-political structure allowed the Roman Empire to establish lasting urban models that influenced the subsequent development of European urbanization.

Leading Geographical Factors in the Emergence and Development of Cities during the Middle Ages

The fall of the Roman Empire and the formation, on its territory, of numerous small barbarian states led to the decline of urban culture, architecture, and urban planning. The old Roman cities lost their social and economic significance. During this period, feudal estates replaced cities as the main economic centers. The feudalization of Europe was accompanied by the formation of many small and large kingdoms, duchies, and other state entities. In the organization of their territories, they were entirely subordinated to the will and interests of the ruling dynasty. Thus, many fortress cities emerged, performing commercial, administrative, and defensive functions. They were characterized by a small permanent population that served the ruler and his family. The main part of the population lived in villages and was engaged in farming and animal husbandry.

During this period, citadels also appeared as an integral part of territorial organization – a type of fortress where the ordinary population found refuge during attacks and wars. These, too, were built in naturally fortified locations and possessed infrastructure that allowed the population to survive, including during sieges. (More could be written about the citadels.) The Middle Ages were also marked by another large-scale process – the spread and domination of Christianity and the formation of the Roman Catholic Church as a leading factor in the development of social, political, and economic processes. The Church became the ideological foundation for the establishment, governance, and development of the new feudal system. It was itself among the richest landowners, possessing land, forests, and other resources. It became the initiator of the construction of hundreds of churches and monasteries, some of which developed into economic centers by the end of the period.

The architecture of medieval cities was strongly influenced by the conditions under which they were built – located in inaccessible places, with irregular street networks, narrow and winding streets, and vertical development. During the first period of the Middle Ages, the Romanesque architectural style spread, which is characterized by low and heavy vaults, solid brick or stone walls, few openings in them, and heavy stone towers. Later, by the 12th century, the Gothic style developed, which became particularly widespread in Western Europe. This style originated in Northern France, where some of the most perfect works of Gothic architecture were created.

Medieval cities had a huge impact on the formation of the network, appearance, and structure of modern cities. This applies to the greatest extent to Europe. New cities were not built during the Early Middle Ages. Monasteries were the only centers of material and spiritual culture. They were located near existing settlements, or they themselves became the beginning of new ones. The majority of Western European cities arose not at the monasteries, but around feudal castles. The location for building the castle was chosen for strategic reasons – to be naturally protected: mountainous terrain, rocky inaccessible areas, islands, peninsulas, etc., which were additionally fortified with vertical defensive walls and powerful towers.

From the 12th to the 16th centuries, based on the overall economic development of feudal Europe, there was a revival in urban planning activity. New cities were built in places where trade routes intersected, near mineral deposits, ports, and others. The development of trade and crafts led to the increase of the significance and functions of cities, which began to unite in alliances and fight against feudal dependence. The architecture of medieval cities was strongly influenced by the conditions under which they were built – located in inaccessible places, with irregular street networks, narrow and winding streets.

The initial core from which the development of the medieval city began was the feudal castle, the cathedral, or the market square with the town hall. The defensive walls were round, and the streets were directed radially in all directions. The center of the medieval city, similar to ancient Greek cities, had a dual structure, consisting of the castle located on a high hill and the squares with the town hall, the cathedral, shops, and workshops, which occupied the central place in the city. Public squares were built in front of the town halls. (Kovachev, A, Shishmanova M et al., The City, 2014).

The choice of a naturally protected location largely predetermined the planned structure of medieval cities. Their shape and street network closely followed the relief of the terrain, the outlines of the islands, or the coastline of the peninsulas where they were located. That is why the shape and structure of medieval cities are the most diverse, in contrast to Roman cities, which were largely uniform.



Fig. 4 Carcassonne, Medieval City in France. Source: *History of France* (www.historia.fr)

Leading Geographical Factors in the Emergence and Development of Cities during and after the Age of Great Geographical Discoveries (AGGD)

After the dark era of the Middle Ages, as a result of the rapid development of productive forces and the expansion of large-scale international trade throughout Europe, a revival occurred, which was felt particularly strongly in Italy. The development of manufacturing production and intermediary trade were leading factors in the growth of cities. The Crusades revealed to the Italians the wealthy countries of the East. Wealthy Italian cities conducted active maritime trade with distant countries. On this basis, conditions arose for the rapid development of city-republics – Venice, Florence, Genoa, Milan, and others. Thanks to their central geographical location in the Mediterranean basin, favorable climate, and natural environment, they subjugated the surrounding territories and became not only city-states but also major intermediaries in trade between European states and the Eastern empires. The accumulated wealth allowed them to act as patrons of art and science, which developed favorably and paved the way for the Renaissance.

In the architecture of the urban environment, two new styles emerged – Renaissance and Baroque. The Renaissance represents a revival, continuation, development, and refinement of ancient principles in the art of construction under new socio-economic conditions. This was a period of the emergence of capitalist production relations in Northern and Central Italy and the rise of the urban bourgeoisie, a period of cultural flourishing in the Mediterranean countries – Italy, Spain, France, and later Germany and England, from the 14th to the beginning of the 17th century. The overall progress led to a rapid increase in population, which necessitated large-scale construction in the cities for that time. Thus, urban planning became an important public issue with great scientific and practical significance.

Renaissance urban planning is characterized by the parallel development of theory and practice, with theory preceding practice. This was expressed in the theories regarding the concept of the “ideal city.” At the center of the Renaissance architects’ considerations stood Man, with his material and spiritual interests. Theorist-urban planners, such as Alberti, Lorini, Scamozzi, Vassari, and others, created theories and plans for building the “ideal city,” which would meet all theoretical and practical requirements. Thus, the first urban planning schemes appeared, which had

a purely theoretical character. With them, the theorists of the Renaissance laid the foundation for the science of cities – urban planning.

An example of the ideal city is Lorini, with a main square in front of the ruler's palace center. On its two sides are located two commercial squares. North of the palace is the exchange square, and south of it is the market square. With the development of trade, the importance of market squares increased. They became the precursor of Renaissance squares, which had an open center. The "San Marco" square in Venice is among the most remarkable works of Italian urban planning art. Cleared of booths and shops, it became the "parade hall" of Venice. This is one of the most beautiful architectural and urban planning ensembles in the world.



Fig. 5 "San Marco" Square in Venice. Source: *Evenice.it*

The theory of ideal cities had a great influence on the planning and construction of cities in France. Among the most famous builders of fortress cities in France was Sébastien Le Prestre de Vauban. Under his leadership, more than 50 fortress cities were built, and twice as many were reconstructed, many of which were located on the eastern border of France. The first French "ideal cities" largely copied the Italian Renaissance models, and later the composition of the plan was modified with the introduction of geometrically regular squares. With the construction of the city of Richelieu, the French broke away from Italian influence and laid the foundations of French classicism. The squares became larger and geometrically regular.

At the end of the 15th century, a new style in art – Baroque was created in Italy, which gradually spread throughout Europe. The strict and calm facades of Renaissance buildings were replaced with complex and highly plastic forms. In the southern countries of Europe, the mild climatic conditions allowed for open squares, gardens, fountains, and long boulevards – typical elements of the Baroque city. Light and sunlight were consciously used as an aesthetic tool to create contrast and impression. The presence of stone and marble deposits, timber, and developed trade in luxury goods facilitated the construction of large-scale and richly decorated buildings. Baroque architects used colored marbles, bronze, gold, and painting for the facades and interiors of buildings.



Fig. 6 St. Peter's Square in Rome. *Source: Linvisibile.com/fr*

Cities differ significantly in their development and size. Their identity, although rooted in history, continuously changes. Over time, most cities have undergone evolution driven by new needs, ideals, lifestyle, living standards, and quality of life (Shishmanova & Karadzhov, 2015).

A powerful impetus for urban development was provided by the Great Geographical Discoveries and the colonization of the New World, the creation of centralized states, and bourgeois revolutions. The discovery of America and the sea route to India shifted the most important routes of world trade. The Mediterranean Sea became a closed sea, an arena of military confrontation between the Christian states and the Ottoman Empire. Spanish and Portuguese colonization focused on building fortress cities both along the coast and in the interior of the newly discovered continent, completely destroying the existing Indian cities. The general upsurge led to a rapid increase in population. This necessitated very large-scale construction in the cities. Theorist-urban planners, such as Alberti, Lorini, Scamozzi, Vassari, and others, created theories and plans for building the “ideal city,” which would meet all theoretical and practical requirements.

Leading Geographical Factors in the Emergence and Development of Cities under the Influence of Industrialization

The development of industry and the release of labor from the agricultural sector led to the concentration of population in cities and their rapid growth. The expansion of cities resulted in serious demographic, structural, and economic changes that even modern cities struggle to cope with (Jonatan Andersson, Jakob Molinder, Vol. 148, July 2025, 103772). Many new industrial enterprises were established mainly in areas rich in mineral resources, which became the nuclei of new urban settlements or future industrial zones adjacent to existing ones. In coastal areas, the construction of port infrastructure also played a localizing role in shaping industrial centers, accompanied by the utilization of space for the development of urban settlements.

The crossroad's geographical location also favored the development of urban settlements with predominantly commercial functions at first, which were later supplemented by industrial and other functions. The growth of cities occurred at the expense of the massive migration of the rural

population. An important role in the development of cities was played by the emergence and development of railway transport (Sazonov, Sergey Leonidovich). The major European cities became centers of the wealthy bourgeoisie, which radically changed their appearance. The construction of industrial zones on the outskirts of cities and the spontaneous building of residential neighborhoods led to environmental pollution. This necessitated the creation of the first legal and legislative frameworks to regulate urban construction, planning, and better city management, as well as the accumulation of financial resources for their improvement.

Until the 20th century, the development of cities was characterized by a certain balance. The twentieth century, as the century of the scientific and technological revolution, led to the accelerated development of urbanization on a global scale. As a result, there was a spontaneous territorial and demographic expansion of large cities and a complication of their planning and spatial structure (Kovachev, 2003).

Leading Geographical Factors in the Emergence and Development of Cities in Bulgaria

The Bulgarian lands, with their geographical location and favorable natural conditions, were very suitable for the development of the economy and culture of the peoples who inhabited them.

Systematic archaeological excavations prove that settlements existed on the territory of Bulgaria since ancient times. The earliest traces of human presence in Bulgarian lands date back to the Middle Paleolithic period (100,000–40,000 BC), corresponding to the Riss glacial period. Due to the cold and harsh climate, and in order to protect themselves from natural forces, humans lived in caves and under rock overhangs. The caves in the Gabrovo region, inhabited by humans since ancient times, are numerous. Their greatest concentration is along the valleys of the Yantra, Rositsa, Dryanovska, and Loposhnitsa rivers, and around the Dryanovo Monastery. Among them are the Bacho Kiro Cave, Momina Cave, Polichkite, and others (Milchev, Atanas, 1979).

The discovered remains – bone and antler tools, fragments of clay vessels, bones of deer, cave bears, and other animals, as well as two human teeth belonging to a Cro-Magnon-type person – from the inhabitants of the “Bacho Kiro” Cave date back to the middle period of the Old Stone Age (approximately 70,000–40,000 BC) (Hublin, J.J., Sirakov, N., Aldeias, V. et al., 2020; Hajdinjak, M., Mafessoni, F., Skov, L. et al., 2021).

Archaeological excavations in the Devetashka Cave (Lovech Region) provide evidence of the early stages of human settlement in the area, dating back to the Old Stone Age, with the earliest traces of human activity originating from the Middle and Late Paleolithic (approximately 200,000 – 10,000 BC) (Georgiev, G.). During this period, the cave served as a shelter and dwelling for hunter-gatherers, which is confirmed by the discovered flint tools as well as animal remains that were used for food. The bone tips of spears and arrows found in the cave indicate progress in hunting technologies and weapon-making. Although these findings belong to the Paleolithic period, the Devetashka Cave is also an important site for studying the transition to later historical stages.

Of archaeological significance are also the discoveries from the Neolithic (New Stone Age) period, dating from around 6200 to 4900 BC, when human life began to change with the development of agriculture and the emergence of permanent settlements. In the Devetashka Cave, fragments of clay vessels, stone axes, and ceramic tools have been discovered, confirming the existence of early agricultural and craft practices. The presence of furnaces also testifies to the development of primary economic structures in the region. With a length of almost 2 km and a height reaching up to 38 m in some places, it is one of the longest caves in Bulgaria and also offers a number of geographical and ecological advantages that made it suitable for human habitation.

It is located on the southern slopes of the Central Balkan Mountains, near the Osam River, which contributed to the supply of water and the availability of various resources. These conditions allowed both the hunting-gathering economy and, later, agriculture to develop. During the Chalcolithic period, also known as the Copper-Stone Age, the cave became almost fully inhabited. Archaeological findings indicate that people not only used the cave as a shelter but also began to build permanent dwellings within it, which shows the development of social structures and architectural practices. The Devetashka Cave and the discoveries made there provide valuable data about the historical and geographical

development of the region. They demonstrate how human societies adapted to the natural conditions of the Balkans while also highlighting the importance of this area as a significant cultural and geographical center during the prehistoric stages of human evolution (B. Mihaylova, K. Kostov, 2024; Alexey Zhalov).

During the Eneolithic period, the spatial organization of life in northeastern Bulgaria was strongly dependent on the natural environment and geographical conditions. The Varna region became a key center because it combined a protected coastline, waterways, and access to valuable resources. The stilt settlements near the Varna and Devnya basins arose on wooden structures in the shallow waters of lakes and the bay. This form of settlement was dictated by geographical conditions – the water provided protection while also enabling transportation and communication.

The concentration of population in such large settlements was unparalleled in the Balkans at that time. The existence of the Varna civilization is inconceivable without resources from different geographical regions. Provadia, located inland, was a center for salt production. In the basin with rich salt deposits, salt was produced and shaped into ingots, which were transported via the Provadiya River to the Varna Bay. Meanwhile, the southern Black Sea coast and the Strandzha region were rich in copper ore, which was transported by sea to the same region.

Thus, Varna became a geographical hub where raw materials – salt and copper – converged, giving rise to a metalworking center. Varna's location on the Black Sea connected it to extensive trade routes. From here, copper and gold products were exported northward to Durankulak, and further to Ukraine, Romania, Moldova, and Slovakia. Southern routes enabled exchange with other centers along the Black Sea coast. Geography therefore defined Varna's role as an intermediary between the inland resources of the Balkans and the extensive contacts across the Black Sea basin and Central Europe. This combination of inland wealth, coastal location, and convenient transport links created the unique foundation of the Varna civilization, making it one of the earliest economic and cultural centers of the Old Continent.



Fig. №7 Aerial view of the Provadia Settlement Mound. Source: Provadia-Solnitsa (<https://www.provadia-solnitsata.com/bg>)

Remains of human activity dating back to the fifth millennium BCE have been found in the eastern parts of the Rhodope Mountains, at the archaeological complex of Perperikon, located near the village of Gorna Krepost, in the valley of the Perperishka River. Perperikon is the largest and best-preserved rock sanctuary in the Rhodopes and an important geographical and cultural center

of the region (Asenov, K., 2024). The geographical context of Perperikon is unique. The rock complex is situated on Hisar Tepe hill, which is part of the Rhodopes – an area known for its strategic location, rich natural resources, and sacred sites. This mountainous region is extremely rich in gold, which was also a factor in the development of ancient civilizations. Gold extraction around Hisar Tepe hill, near the village of Stremtsi, was of fundamental importance for the economic activity in the area during various historical periods. Perperikon existed through different eras: Late Chalcolithic, Bronze Age, Iron Age, Hellenistic and Roman periods, as well as Late Antiquity and the Middle Ages.

The inhabitants of this geographical area chose to build their settlement on a rocky elevation, which not only offered strategic advantages for observation and defense but also symbolized their religious connection with the Sun. The rocky location provides a wide view of the horizon, from which the rising of the Sun can be observed, forming part of their religious cult. The architectural structure of Perperikon is organized on three levels: the Acropolis, the fortified palace-sanctuary, and the suburbs, located to the north and south. The temples and rock constructions in the region are carved directly into the stone of the hills surrounding the city. This unique architecture is part of the broader cultural and geographical context of the region, which during the Late Bronze Age was connected with the development of the first European civilization. Ancient Perperikon and its geographical significance serve as a symbol of one of the earliest and most complex cultures in Southern Bulgaria, which has a direct connection to the specific natural and geographical conditions of the Rhodopes.

Consequently, in the territory of the Balkan Peninsula, including present-day Bulgarian lands, the natural environment played a decisive role in the emergence and development of settlements. The presence of various mineral resources, the availability of water sources for drinking and domestic needs, water basins, and favorable soil and climatic conditions had a localizing function regarding the establishment of settlements and the scale of population growth, as well as their development as economic centers in antiquity and later. The natural protection offered by the relief in relation to the settlements was also very important.

During the ancient and medieval periods, the territories we today know as Bulgarian lands occupied a central position on the Balkan Peninsula. They consist of three main historical-geographical regions: Moesia (present-day Northern Bulgaria), Thrace (present-day Southern Bulgaria), and Macedonia. This key location determined their role as a strategic bridge between Europe and Asia. Such a geographical position facilitated both trade and cultural interactions, but it also made them a target for numerous migrations and military campaigns (Tsenova, E., 2014).

The Thracian civilization is one of the oldest and most significant cultures to have inhabited the present-day Bulgarian lands. Material evidence, such as archaeological finds, tombs, and sanctuaries, allows for a partial reconstruction of the geographical extent and spread of Thracian culture. These serve as a primary source for mapping the territories of different tribes and for establishing their relationship with the landscape, natural resources, and trade routes. It is believed that the Thracian ethnic community formed during the 2nd millennium BCE as a result of the merging of the local Balkan population with tribes from the north and south. They were organized into numerous tribes, among the most well-known being the Odrysians, Getae, Triballi, and Bessi.

The Thracian economy was primarily based on agriculture and animal husbandry. Particularly advanced were the crafts related to metalworking, including the extraction and processing of precious metals such as gold and silver. By the 8th–7th centuries BCE, although the dominant social structure was still clan-based, the Thracians began to form more complex state structures. The unification of a large part of the tribes along the Maritsa River led to the creation of the Odrysian Kingdom, with its capital at Odrysa, and later at Seuthopolis. This was a key moment in the development of Thracian civilization, as it marked the transition from a tribal to a state model of governance, which was an important factor in their relations with neighboring peoples.

Remains of significant urban centers have been discovered, exhibiting the typical dual structure of antiquity: a ruler's fortress (*located on a high, strategic site – a hill or rocky promontory*) and a city for the people (*situated in the flatter area around the fortress, with convenient access to roads, water sources, and agricultural land*). The cities featured a rectangular street network but had irregular shapes, surrounded by high defensive walls with watchtowers. With the onset of Greek colonization,

the Black Sea coast began to develop, with city layouts adapted to the terrain. In present-day Bulgaria, some of the most significant archaeological finds related to Thracian civilization have been discovered, many of which are now included in the UNESCO World Heritage List. Among the most impressive monuments are the Thracian tombs in the "Valley of the Thracian Kings" in the Kazanlak Valley, renowned for their exquisite murals.

Bulgaria is also home to some of the most beautiful and richly decorated Thracian treasures, showcasing the extraordinary skill of the ancient Thracians in working with gold and silver. Notable examples include the Panagyurishte (gold), Rogozen (silver), and Valchitran treasures. Remains of Thracian cities have also been discovered, such as Seuthopolis, the capital of King Seuth III, which today lies beneath the waters of the "Koprinka" reservoir, as well as fortresses and sanctuaries like those in Perperikon and Starosel.

By the end of the 5th century, the entire Balkan Peninsula had been conquered by the Romans, who undertook extensive construction activities. The Romans did not merely conquer the territory; they organized and transformed it according to its geographical features. The Danube River became the natural northern boundary of the empire and of the province of Moesia. The Balkan Mountains (Hemus) served as a natural barrier and a border between the provinces of Moesia to the north and Thrace to the south. The Romans expanded settlements near warm mineral springs, demonstrating their appreciation of natural resources.

Cities such as Sofia (Serдика) and Kyustendil (Pautalia) owed their prosperity precisely to their mineral springs. The construction of roads represented the greatest geographical transformation. They connected newly established cities, military camps, and economic zones. This network "shortened" distances, facilitated trade and troop movements, and integrated the Balkans into the economic and military geography of the entire empire. The creation of cities with a rectangular layout was an attempt to impose order and standardize the appearance of settlements. This changed the population map—from predominantly rural, it became more urban, with clearly defined administrative, military, and economic centers. The Roman Empire skillfully utilized the geography of the territory (rivers, mountains, springs) for its administrative and strategic purposes while simultaneously creating a new socio-economic geography through roads and cities (A. Vanessa, 2013, pp. 125–140).

In the 5th–6th centuries, Slavic tribes settled on the Balkan Peninsula, mainly occupying the fertile lowlands and valleys along the Danube and Maritsa rivers, pushing the local Thracian population to the more inaccessible mountainous regions. At the same time, from the steppes of Asia, movements toward Europe began by the Proto-Bulgarians, who proceeded along the path to the Balkans and became part of the process of forming the new ethnic and political map of the region. The Proto-Bulgarians, also known as a horse-riding people, lived in yurts and tents, which were easily adapted to the steppe geographical environment. The yurt was a portable round tent, covered and insulated with skins. Their livestock-based way of life required constant movement due to the grazing needs of the herds. In the 7th century, the Proto-Bulgarians and Slavs established the first Bulgarian state on the Balkan Peninsula, whose borders were outlined by rivers, mountains, and the Black Sea, providing natural protection and control over fertile lands and trade routes. The new state occupied the lands from the Eastern Carpathians in the north to the Balkan Mountains in the south, and from the Timok and Iskar rivers in the west to the Black Sea and the Dnieper River in the east.

The urban development of the First Bulgarian State developed based on the construction traditions of the Slavs and Bulgarians. The destroyed ancient cities were restored, and extensive construction of new fortresses and public buildings for the needs of the state and churches was carried out. The first Bulgarian capital, Pliska, was built on a flat terrain with the shape of an irregular quadrangle and a division into an inner and outer city. In the inner city were located the khan's palace, a small church, the residences of the boyars, and economic buildings; between the inner and outer city – barracks, workshops, and more than 30 small churches; and in the outer city – the large Preslav Basilica, which reflects functional zoning and the socio-administrative organization of the early Bulgarian state.

A true flourishing of construction and culture occurred under Simeon I (893–927), who moved the capital from Pliska to Preslav. The second Bulgarian capital, Preslav, was built near the Balkan Mountains, by the Ticha River. The city's shape was irregular, with two stone fortress walls. Bulgarian cities of this period generally bore the characteristics of medieval cities: location on naturally defensible sites, irregular street networks, and a two-part fortress structure. The first and second capitals of the Bulgarian state were situated on flat terrain and were planned very spaciouly, with considerable open space between the inner and outer fortress walls, which was highly atypical for medieval cities in Europe. Historians explain this with the military organization of the Bulgarians, whose main strength was cavalry.

The most prominent among Bulgarian cities was Veliko Tarnovo, the capital of the Second Bulgarian State. The city's location on the two hills, Tsarevets and Trapezitsa, was chosen with a view to effective defense against enemy attacks. On Tsarevets were located the royal palaces, fortified with walls and defensive towers. There was a large throne hall, a palace church, and various residential rooms. On Trapezitsa were located many boyar churches. Alongside the restored monasteries from the First Bulgarian Empire, new monasteries also began to be built. During the time of the Second Bulgarian State, architecture and construction reached a great flourishing. Cities were built on strategically defensible sites – hills, along rivers, and on the Black Sea coast. Other important cities such as Sredets (Sofia), Mesembria (Nessebar), Vidin, Preslav, Yambol, Targovishte, and Lovech served as administrative, military, and trading centers, with their locations providing control over the territory, access to trade routes, and natural defense.

The flourishing of Bulgarian cities did not last long. In 1393, Bulgaria fell under Ottoman rule, which lasted about five centuries and brought severe Ottoman domination. During the Ottoman period, Bulgarian cities lost much of their medieval administrative and military significance, with many fortresses being destroyed and/or depopulated. Some retained a role as commercial and craft centers, especially those located on major rivers, important roads, and along the Black Sea, but the social, economic, and religious structure changed through the construction of mosques, baths, and administrative buildings of the Ottoman Empire.

Under Ottoman rule, Bulgarian cities and settlements acquired a typical Oriental medieval appearance, with narrow and winding streets, low-rise houses, mosques, and minarets. Wealthier residents built houses with thick walls for protection against attacks (for example, in Arbanasi and Vratsa). The cities turn into commercial-administrative and artisan centers, where mainly Turks, Greeks, Jews, and foreign merchants settled, and the Bulgarians remain mainly craftsmen. The villages and mountain regions remain inhabited mainly by Bulgarians, engaged in agriculture, livestock breeding, and craftsmanship. In some predominantly mountainous territories, entirely Bulgarian settlements arise. The cities and settlements are organized into cities, small towns (palankas), villages, and neighborhoods, and trade is concentrated in bazaars, which are lively during the day and close in the evening, with time regulated by clock towers.

At the beginning of the 19th century, order in the Bulgarian lands was restored through the introduction of a regular army, which allowed the development of production, trade, and construction, including the building of railway lines, bridges, roads, and public buildings. In this period, a revival of culture and education began, with the opening of the first Bulgarian schools (Gabrovo, Elena) and the introduction of worship in a language understandable to the people. Church and cultural independence stimulated the construction of churches and monasteries (including the Rila Monastery).

During this period, the Bulgarian Revival culture emerged, developed, and took shape, including architecture and urban planning. The construction of churches, houses, schools, fountains, bridges, and others changed the appearance of Bulgarian settlements. Even without preliminary plans, the settlements were built as ensembles. Examples of this are Melnik, Plovdiv, Koprivshtitsa, Tryavna, Elena, Smolyan, Tarnovo, Dryanovo, and others.

With the restoration of the Third Bulgarian State, the so-called post-liberation period begins. The Main Directorate of Public Buildings is created to regulate construction issues. Intensive construction of roads, railway lines, ports, banks, factories begins, and foreign capital enters Bulgaria massively. Many specialists also come from abroad, including architects and engineers. The first specialists

working in our country were the Russian engineers who remained after the war. In 1878–79, they made a cadastral survey of Sofia, and later developed the first regulatory plan of the city, which contained only the street network and a few public buildings. The development of capitalism pushed cities to the forefront and quickly turned them into the main type of settlements, which rapidly increased their population. Natural advantages such as location along main roads, railway lines, and raw material deposits gave an additional boost to the development of some cities. They also developed as leading centers of industry – Sofia, Plovdiv, Ruse, Varna, Burgas, and others.

The Revival Balkan settlements declined, which in turn allowed their heritage to be preserved. In 1897, the first Law on the Improvement of Settlements was drafted, which required all cities to be provided with regulatory plans. From the Turkish rule, Bulgaria inherited settlements with irregular street networks, with the exception of Orhanie (Botevgrad). Mass “straightening” of the street network and modernization of the settlements began. Recent studies indicate that the integration of information and communication technologies significantly influences tourism and spatial organization, supporting the evolution toward smart, sustainable destinations (Lile, Kalluçi & Kaçurri, 2025). The Revival urban planning heritage was being destroyed wholesale. Construction in the cities, and especially in their centers, had a speculative character and led to a deterioration of hygiene. The cooperative residential buildings that emerged after the First World War represent a progressive Bulgarian tradition. The large cities were composed of poor working-class outskirts and well-organized centers.

The period after 1944 is directly connected with clearing the ruins, restoring the destroyed capital Sofia, and carrying out a number of measures to strengthen the socialist economy. The adoption of the Law on Land Ownership provided land to a large number of landless and poor peasants. After that, the nationalization of industrial enterprises was carried out, a new constitution was drafted, and the first two-year national economic plan was composed. Mainly the existing enterprises were restored, and the construction of some new enterprises began, but still on a limited scale, in accordance with the not yet consolidated economic power of the country.

During this period – from 1944 to 1948 – active urban planning and survey activities also began. Industrialization of the country began. The large complex of buildings of the Chemical Plant in Dimitrovgrad, the Metallurgical Plant in Pernik, the numerous non-ferrous metal mines and flotation factories in the Rhodope mining basin, and others, became pioneers of industrial development and construction in the country. In connection with the new industrial centers, new cities and settlements also grew–Dimitrovgrad, Madan, Rudozem, and others. With the construction of the Sofia Thermal Power Plant, the “V. Kolarov” dam in the Rhodopes, the “Al. Stamboliyski” dam on the Rositsa River, the “G. Dimitrov” dam on the Tundzha River, and others, the energy base of the country also began to develop. Separate enterprises were built in the cities, for example, the “Ernst Thalmann” spinning factory in Sofia. At this time, the complete cooperation of agriculture was also carried out.

The image of a large part of contemporary Bulgarian settlements bears the marks of Thracian and Slavic settlements, of ancient Greek and ancient Roman settlements, of the settlements from the First and Second Bulgarian States, of the Turkish rule, and the Bulgarian Revival, as well as of their development during the twentieth century. The layering of these cultures gives the richness and diversity in the composition of Bulgarian settlements, their uniqueness, and at the same time their indisputable belonging to European civilization. That is why the problem of the settlement network, of its condition and development prospects, is very relevant for Bulgaria, which is undergoing complex and rapid socio-economic changes. Similar technological influences have been observed in virtual environments, where digital transformation reshapes regional sustainability and spatial perception (Karadzhov & Kirilov, 2023).

During the period of socialist development and the centralized planned economy, the role of spatial planning increased significantly. A Law on Territorial and Settlement Organization was adopted, territorial-organization, urban planning, construction, and regulatory plans were developed, as well as a General Scheme for the Territorial Distribution of Productive Forces and a Unified Territorial-Organization Plan (UTOP) for the state territory. With it, the planned-

normative economic and social prerequisites are combined to ensure equal living conditions in the settlements of the country. (Almanac Scientific Research 2017).

CONCLUSION

The development of cities during different historical periods clearly shows the dependence between the natural environment and urbanization. Specific characteristics and features of the climate, relief, soil and water resources, and the presence of raw material deposits determine the location, pace of development and prosperity, structure, and functions of the settlements. From ancient civilizations to the industrial era, geographical factors remain key for the formation of urban economic centers. With the development of society, socio-economic and technological processes gradually become dominant, but the natural foundation continues to influence the sustainability and planning of cities, as well as the ecological parameters of the urban environment.

Not only in a historical context, but also in their contemporary development, cities reflect the continuous process of interaction between humans and nature. The knowledge, study, and management of processes in the urban environment begin precisely in the extra-urban environment, which to a lesser or greater extent is natural. Therefore, the significance of this environment, in which cities develop, and the changes that occur in it, necessarily influence the present and future development of cities. That is why the interaction between them remains relevant for contemporary concepts of sustainable urban development.

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