Historical Thinking: Impact of Ethnographic Approach for Interpretability of a Historic Urban Area, India.

¹Godwin Emmanuel Jeyaraj, ²A. Meenatchi sundaram

Abstract--Historic urban areas, merely by their being in existence, reflect the occurrence of various events since the past. Historical thinking can provide the interpretative capabilities to obtain knowledge about the historic urban area. This study examines the ethnographic approach for gathering and organizing information on past events in a historic urban area of south India. Prior to the study, the researcher evolves a conceptual question, from Peter Seixas's historical thinking model. 'How to interpret the past events between the text, context and the questions that drive the inquiry in a historic urban area?' Here the researcher assumes the role of a participant observer. Three ethnographic methods are useful; 1) Literature sources, 2) Archival sources, 3) Urban transect walk. Literature sources help one to interpret the texts about past events. Archival sources help in the interpretation of geographical settings within which such events occurred. Urban transect walk along a path helps one to trace the remnant structures of the study area. In the end, the study has resulted in a narrative description about settlement evolution in the study area. However this interpretability further calls for external validation. Besides the researcher, interpretations from historians and local people should also be considered. The concept of historical thinking in this study has therefore induced a comprehensive description of the study area in its larger spatial context. Besides, it can possibly create more empathized citizens towards conservation of heritage values in such historic urban contexts.

Key words--Archival Sources; Ethnographic Approach; Historical Inquiry; Historical Thinking; Historic urban area; Information Gathering; Interpretability.

¹Research Scholar, Associate Professor, C.A.R.E. School of Architecture, Anna University, Chennai, Department of Architecture, National Institute of Technology Tiruchirappalli, Tamilnadu, India, Email ID: godwinarchitect@gmail.com ²Associate Professor, Department of Architecture, National Institute of Technology Tiruchirappalli, Tamilnadu, India, Email ID: a.me.sundar@gmail.com

I. INTRODUCTION

Since centuries, human settlements are constantly evolving. The historic towns have become the urban centres of today. The historic areas in many cities have undergone rapid changes in their natural, social, cultural, economic, political conditions, etc. The historical studies offer many advantages towards identifying more meaningful analogies or connections over time. [1]. Historic urban areas, merely by their being in existence, reflect the occurrence of various events since the past. An evaluation of these events will help in enhancing one's historical knowledge about the place. Generally, evaluations are often done for any of these three reasons: improvement, accountability or knowledge generation. [2]. Historical thinking can provide the interpretative capabilities to obtain knowledge about the historic urban area. A conceptual question is evolved in this study to interpret the past events through reading of texts and contexts of historical thinking. This study examines the ethnographic approach for gathering and organizing information on past events in a historic urban area of south India.

II. LITERATURE REVIEW

Historic urban area

According to the ICOMOS Washington Charter, the term, 'Historic urban area', denotes either small towns or larger cities refer more specifically to historic district of a large city. Historic urban areas are often associated with the natural landscapes that are present either within or adjacent to it. One may find a number of historic structures, archeological monuments, integrated with the dense commercial and urban development in such historic urban areas. The historic urban areas across south India, are often characterized with an inevitable existence of large natural landscapes such as a hillock, water systems, or any other features surrounded by buildings. [3]

Historic urban areas in large cities often provide a sense of identity and many other cultural relationships within themselves. However, qualities in such historic urban areas are seldom cherished and appreciated. [4]. The historic structures of today have often become the definite targets of urban development. Any significant modification or demolition that denies values on these historic structures would have a profound impact on the cultural flavour of the area. People therefore find it difficult to recollect the significance of such historic structures and their memories on the events associated with the structures in order to experience the cultural values of the past. [5]. Studies inform that Conservation planning in India, often have little consideration for an integrated approach for developments in the historic urban areas.

Historical Inquiry

The term historical inquiry refers to the study of history that attempts to identify the reality of how people lived in the past. Historical studies suggest the '5W 1H' principle, i.e., to reveal the What, When, Who, Where, Why and How of an event. Therefore activities such as researching are essential in the historical inquiry. [6]. Historical inquiry refers to the 'doing part' of history by examining the evidences, and challenges one to reach the answers. The discipline of history itself is often formulated through social sciences. Having embedded in the descriptive practices, the historical inquiry always involve in the questioning of a few unpopular facts. It further helps one to perceive a connection between the unrelated contents in order to identify a coherent pattern. [7]

Historical Information gathering

Information gathering refers to the understanding of procedures that help one to identify the answers to the questions posed. Generally, there are two sources in historical information gathering, namely as, primary and secondary source. There are also methods available in gathering the appropriate sources. Such sources of information may include artifacts, photographs, oral materials, written materials, and other evident documents, etc. While gathering the historical information, these sources need to be carefully explored in order to understand people's life in the past. [6]

Historical Thinking

In the field of history education, the term – 'Historical Thinking' plays a major role in both theory and practice. [8]. Learning to think historically is similar to learning to speak the language of the discipline that we call 'history'. [9] Historical thinking can provide interpretative capabilities through listening to stories and narrative-based inquiry. [10] Historical thinking can be developed among learners by way of conversing essential questions and bigger ideas. [11]. A study suggests behaviours of historical thinking, namely as observation, sourcing, inference, evidence, question-posing and corroboration. [12].

There are six broader concepts in historical thinking. They are namely as historical significance, primary source evidence, continuity and change, cause and consequence, historical perspective-taking and ethical dimension. Historical significance raises question on including the community views and meanings of past events. Primary source evidence emphasizes on facilitating the interaction between text, context and the question of inquiry. Continuity and change focus upon the need to interpret things that have changed and things that are remained since the past. Cause and consequence calls

for a careful consideration before interpreting the history. Historical perspective-taking requires an imagination of people's mind in the past. Ethical dimension questions the possibility of transformation of the traditional practices to the present. [9]

Ethnographic Approaches

Ethnography includes methods that describe and record the characteristics of a historic context. Studies in heritage conservation use a variety of approaches for assessing heritage and cultural values in historic contexts. A number of methodological approaches are available for value assessment in conservation planning. 1) Expert analysis use textual, iconographical, formal and semiological approaches for interpreting values based on a theoretical background study. [13].

Cultural studies examine a number of qualitative methodologies such as cognitive, observational, phenomenological, ethnographic and discourse-based approaches, etc. A study suggests Rapid Ethnographic Assessment Procedures (REAP) methodology for identification of elements in a historic context and their inter-relationships. REAP methodology reveals the local knowledge through the qualitative data collection process. This methodology provides a number of methods using varied sources which can undergo triangulation in order to provide a comprehensive analysis of the study area. 'Historical and Archival documents' is one such method in which the information is gathered through newspaper clippings, collection of books and articles, reading notes, etc. [14]

Study Area

Tiruchirappalli is one of the significant cultural cities in South India. It is an old town with the size of approximately 1 sq.km. located at the northern part of the present Tiruchirappalli City Corporation limits. **Fig.01.** shows the location of the study area in the city of Tiruchirappalli. An age-old rock outcrop of about 273 feet high is the landmark for the city, located in the north. While climbing along, there are two historic temples and one more at the top. Below the rock, one can observe a temple tank and a few residential streets around. There are many temples, mandapas, and other associated religious spaces all around the rock. Further, Boulevards of the west and east, Butterworth road on the north and Gandhi market on the south confine this early Nayak's fort. Tiruchirapalli Fort Railway station lies opposite to the Main guard gate and Tiruchirapalli Town Railway station lies towards its eastern entrance.

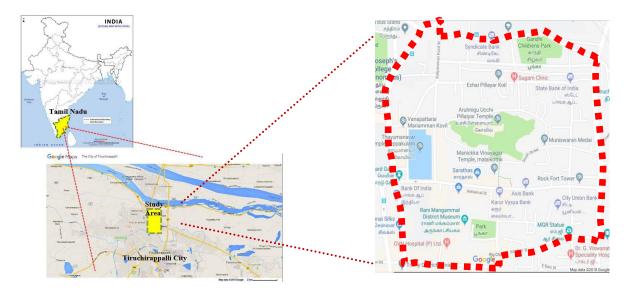


Fig.01 Location of the study area in the city of Tiruchirappalli (Source: Google maps re-edited by author)

III. STUDY METHODOLOGY

The study has so far explored on an overall understanding of the skills, concepts and behaviours that are necessary for the historical thinking. Rooted on the literature aforesaid, the study intends to explore primary sources of evidence using the concept of historical thinking. As a first step, the researcher evolves six conceptual questions using Peter Seixas's Historical Thinking model. [9]. They are: 1) How to include community-views while articulating the narratives of historical information? 2) How to facilitate a dynamic interaction between the text, context and the questions that drive the inquiry for interpreting primary source evidence? 3) What has changed and what has remained the same since history? 4) How to locate both the causes of irrational decisions and unintended consequences while interpreting the history? 5) How does one understand human psyche, intentions, sense of individuality and agency, emotions, beliefs, commitments and loyalties of people from the past? 6) How does one understand the possible transformation of traditional practices, as a benefit to the present day context?

Here the researcher assumes the role of a participant observer. Among the six conceptual questions of historical thinking, this paper explores the second question, i.e., how to facilitate a dynamic interaction between the text, context and the questions that drive the inquiry for interpreting primary sources of evidence. To address the second question, the study

primarily examines three ethnographic methods, in the study area. They are as follows: 1) Literature sources, 2) Archival sources, 3) Urban transect walk.

Literature sources

In order to identify the appropriate context one requires a fundamental understanding of principles in searching. Mostly it starts with a research question. [15]. Anyone who does a systematic review, attempts to search from the available studies in order to provide a result which is unbiased and replicable. [16]. Typically, the literature sources may be available in the form of published studies, reviews, monographs, etc. These studies often illustrate various historical facts about the kings, the lives of people, and the major events that has taken place in the history. Further, there are texts available from the historic literature such as books written by local poets, travellers' descriptions, etc. These studies can provide descriptions about etymology of places, natural settings and the evolution of built-forms in and around the study area. There can also be religious-based sources of literature that may provide a varied perspective to such studies. Sources from religious literature, can have detailed descriptions about the local deities, festivals, religious events, and descriptions about sacred areas such as temples and the related precincts in the study area.

Archival sources

Historical information is often available in archival records such as the district gazetteers, written during the colonial period in history, can also be useful in understanding the past. Publishers during the nineteenth century, created lengthy gazetteers, sometimes more than hundred thousand words long. [17]. Sources such as physical features, political history, and people's life in the past, their customs, major trade and economy may be available in such records. Archival maps can graphically illustrate the human settlement patterns of a city or town. These maps can also indicate the spatial position of various natural features, buildings, streets, roads, etc. Maps from various periods of monarchy can show valuable information on the evolution of the historic urban area. For example, maps from the colonial period, can locate cantonments and the related defence infrastructure in and around the historic urban area. The early maps may not have been prepared with an adequate scientific understanding. Most often they may not even represent spaces clearly. [18]

While addressing the concerns of accuracy due to distortions present in the archival maps, a study proposes to use geographical information system (GIS) technology, for a more precise representation of the historic urban area since its early times. [19]. Archival maps are helpful in analysing the historic changes in the land use or land cover of a city and beyond.

Though they are not necessarily accurate, they can still serve as useful tools for understanding changes and their causes, thereby providing a basis for formulating strategies in heritage conservation. [20]

Besides maps, the old photographs play a vital role in cultural and historical studies. The photographs form a strong basis of historical explanation. They may not tell stories but they can provide the evidence of stories. The evidence is silent here which calls for further interpretation. [21]. They inform people and places in their environment. One can also examine the contrast in visual quality by comparing the old and new photographs. Photographs, in spite of their potentials and constraints, are fundamental to historical narrative. People can be made aware of these photographs through public photographic archives. They are available to people through media and learning environments such as schools, museums, etc. [21].

Urban transect walk

The objective of the urban transect walk is to observe, record and analyse the types and conditions of the historical context along the streets. The transect walk is a useful technique for the purpose of mapping the specific features in cultural landscapes. [22].This method includes a systematic walk on a designated path through the study area. The study team observes records and discusses among themselves. At times they may even discuss or do a 'go-along interview' with the local people who are often a passer-by. Within the study team, there will be note takers, interviewers and observers who will also take photographs. This method gathers historical information, from both the experts as well as the in-siders (local people) point of view. Prior to the urban transect walking, it is always important to do adequate reconnaissance trips to the study area. These recon trips will help in identifying the major roads and streets accessible for both vehicular and pedestrians.

IV. FINDINGS

Literature sources

This study examines four types of literature sources. They are namely as, 1) Ancient literature, 2) Historian books, 3) Gazetteer, 4) Religious books. Literature sources have helped in understanding the geographic context of heritage significance. Local literature sources have become the most essential source of information to understand the history of Tamilnadu. They illustrate various historical facts about the local monarchy, life of people, and the quality of natural landscapes prevailed during the Classical Sangam era. For example, the significance of the river Cauvery and the related socio-economic and political changes have been spoken about in the ancient Tamil literature known as *"Silapathikaram"*, written by *Ilangovadikal*, a significant poet of Chera dynasty.

Quoting such sources as references, many historians, in their books, have illustrated the significance of Tiruchirappalli in the history of Tamilnadu. In his book, "*History of Tiruchirappalli (upto 1947)*", *T.Sundarraj*, mentions the etymological reason behind the name Tiruchirappalli. Further he mentions about the demolition of fort walls and the moat built by Nayak dynasty in order to form Boulevards as a means to expand the walled city. Yet another book has been written in Tamil by a school teacher turned historian, named *Roosevelt*. In his book, entitled as "*En oor En Makkal*"- (*My Place My people*), he mentions the etymology of places, history of natural landscapes and man-made built forms in and around the city of Tiruchirappalli.

The *District Gazetteer of Trichinopoly*, written in 1907 by F.R.Hemingway, with reference from the original *District Manual of Trichinopoly* of 1878, by the Late Lewis Moore, Indian Civil Service is found to be a useful literature source. According to *F.R.Hemingway*, the history of Trichinopoly is largely the history of the Cholas and the Nayakkans. The initial chapter of this book, describe the physical features of Tiruchirappalli district. Subsequently, the other chapters of this book describes primarily about political history, natural environment, people, trade, economy etc., of Tiruchirappalli district at that time.

Religious significance of Tiruchirappalli, is described in a book called, "*Thala varalaaru*"(Place History) published by the temple committee, instituted at the premises of Rock fort. Unlike other historian's books, this book also describes the etymology of the place with reference to its religious literature sources. It further describes significant temples, deities and religious festivals conducted in the study area.

Archival sources

Maps are often the essential sources of identifying and locating features of historical significance. Only since 18th century, maps have been engraved by a number of British geographers for the city of Tiruchirappalli. "*Robert Orme's Old map of Trichinopoly*" shows the country round Tiruchirappalli with the Camps and Marches of the English and French troops in 1753 and 1754. This map was engraved by *Thomas Jefferys*, Geographer to his Majesty. This map could inform geographical context of the study area including cauvery river, canals, hillocks and a few villages around the fortified town of Tiruchirappalli. A few significant forms were identified from Kitchin's general plan of the Trichinopoly fort, on the attempt of the French troops to take Tiruchirappalli in 1753, is one of the oldest map available exclusively for the study area. Fort wall with moat all around is showing the early existence of the monarchical era. Further, one can trace out all the significant streets of the present including the rock fort of Tiruchirappalli in the study area.

A few significant forms from "*Trichinopoly-pharoah-1854*"- an uncommon 1854 Pharoah and Company map of the city of Tiruchirapalli. Centered on the Uyyakondan canal, it covered the capital city of the district of Tiruchirapalli (Trichinopoly in old terms). This map has documented cantonment area and signifies many roads, official buildings, barracks, fields, swamps, tanks and other important landmarks of that time. This map included the old fort area with the ancient rock. This map was engraved by *J. and C. Walker* and issued as *plate no.* 65 by *Pharoah and Company* in their *1854 Atlas of Southern India*. The *Tiruchirappalli map of 1955* is the latest historic map available which shows the extent of urbanisation beyond the study area including development of cantonment during post-independence of the country. Urban expansion is seen prevalent around the fortified town, including new colonial establishments in the study area. **Fig.02** shows Robert Orme's *Old map of Trichinopoly* shows Tiruchirappalli during the 1750s (*Source: Archives*)



Fig.02. Robert Orme's Old map of Trichinopoly shows Tiruchirappalli during the 1750s (Source: Archives)

Urban transect walk

The researcher is on a transect walk with a team of students of architecture within the study area. The objective is to observe, and photograph the historic structures along the street. Further the researcher carries old photographs while doing the transect walk in the study area. These old photographs are sourced from the archives. Along the walk, the researcher attempts to locate oneself in an appropriate position from where the old photograph is taken. The significant changes in the physical setting, conditions of the historic structures, visual quality, etc., are observed and analyzed. **Fig.03** shows the past and present view of the rock from a sacred pond in the study area. **Fig.04** and **Fig.05** shows the analytical drawings of a historic sacred pond, drawn along the transect walk in the study area.



Fig.03 Past and present view of the rock from a sacred pond in the study area (Source: Archives)

The study has resulted in a narrative description about settlement evolution in the study area. **Fig.06** shows the researcher's narrative of the chronological evolution of events across monarchy on different times of history in the study area.

'Rivers, as natural landscapes, are often worshipped by many since history. They play a significant role in the siting of many human settlements. People choose a hardy elevated topography to settle themselves in groups. Still the proximity to water is always inevitable. The natural features such as hillocks are considered sacred to place temples on top, later enveloped by the monarchical territory. Fort walls are built around. A local kingdom, establishes their political power on this settlement. They further facilitate renewed ritual and socio-cultural values, accessible to all. They patronize secularism. Basic necessities of food are drawn from the natural landscapes of the hinterlands. Water is brought in to their defensive territory from the nearby river. Canals and moats are made abutting the fort walls, not only as an age old defence mechanism and also to provide life for the urban centre. Such a deliberate place making activity is much evident in this historic settlement in its larger context of landscape.

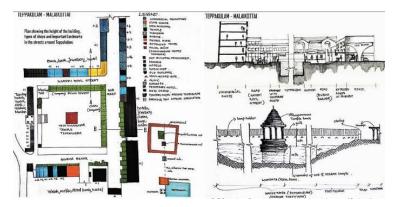


Fig.04 Fig.05 Analytical drawings of the sacred pond drawn along the transect walk (Source: Monisha)

Later when colonial power, impedes over these monarchies, especially in the developing countries, there emerges an altogether different perception in experiencing cultural value through newer built forms of historic significance. Monarchies begin to recede with the rise of colonial power. Historic urban centres have already been conquered by the colonial establishments. With the rise of colonial power in the developing world, town planning takes a new expansion in its urban form. Historic centres are expanded beyond earlier territories to intrude in the hinterlands of the vicinity. Cantonments are established. Defensive fort walls of monarchies are shattered after a hard fought. Moats are made dry and disconnected from their primary water source and often buried using such debris of the earlier fort wall. The buried moats are made to become boulevards, primarily for the elite people to drive and enjoy the scenic beauty of the hinterland. Roads become a significant phenomenon in town planning. With the emergent of boulevards, historic urban centres are expanded in its territory and grow unbound.

Tiruchirappalli today, is characterized with a few historic features such as remnants of the fort wall and a few palatial buildings depicting the early powers of the local monarchy. One can also observe a number of institutional buildings established during the British colonisation. History has become a boon to the economic growth of the place today. Unlike any other Asian cities, one can observe an extensive commercial development happening around the religious precincts in the historic urban centre of Tiruchirapalli. Further with the ongoing trends on globalisation, one can also observe a number of large stores and malls, booming ahead of the present retail markets, while keeping the historic and religious values intact.'

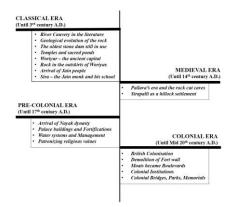


Fig.06 Chronological evolution of events as obtained from various ethnographic methods (Source: Author)

V. DISCUSSION AND CONCLUSION

A number of ethnographic methods have been analyzed so far. "Literature sources" are one among the significant ethnographic methods, which are useful in assessing the historical and sacred significances of the study area. Etymological significances are described about many historic and sacred places in and around the study area. Archival sources such as old maps and photographs are helpful in locating the streets that existed since early years. With the use of a transect walk, the study is able to identify the significant historic structures and precincts.

Application of the concept of historical thinking using the ethnographic approach has resulted in a narrative description about settlement evolution in the study area. The study has shown the researcher's contribution as a participant observer. Here the researcher is not an independent observer. However challenges persist in participant observations method where it lacks objectivity. There is always a degree of emotional attachment from the subject content and the clear objective of the researcher in conducting the research. [23]

Therefore this interpretability further calls for an external validation. Besides the researcher's interpretability, one must also consider gathering and organizing the historical information and interpretations from historians and other local expertise of the study area. In this scenario, one cannot ignore the interpretations from local people, who are associated with the study area since generations. Triangulation may be useful in either consolidation or validation of such interpretations.

The concept of historical thinking in this study has therefore induced a comprehensive description of the study area in its larger spatial context. Such an understanding is essential to value assessments in conservation planning. Heritage conservation while protecting the historic structures needs to consider the larger understanding of the spatial contexts beyond time. Authorities, while assessing the historic values for conservation, they cannot ignore the potentials of the ethnographic approach from both people as well as experts. If they address the questions based on the concepts as suggested in Peter Seixas's Historical thinking model, may therefore induce them towards a comprehensive understanding of the historical context. Community-views will be included; Primary source evidences can be interpreted to facilitate a dynamic interaction; One can understand the changes and continuity of the history; Causes and consequences can have a better historical position; Researchers can understand better about the people of the past; One can even think of a possible transformation of the traditional practices as a benefit to meet the needs of the present day context. Besides, historical thinking can possibly create more empathized citizens who value their own heritage towards conservation in such historic urban contexts.

Acknowledgements

Author truly acknowledges the commendable participation of the following personnel during the entire process of this research work: Mr.Durairaj, Librarian, St.Joseph's College, Tiruchirapalli for his timely help on the archival records, Students team from C.A.R.E school of Architecture, Tiruchirapalli for their fruitful participations and subjective observations during the transect walk.

REFERENCES

- 1. Ikejiri, R., Yoshikawa, R., & Sumikawa, Y. (2019, March). Towards enhancing historical analogy: clustering users having different aspects of events. In Future of Information and Communication Conference (pp. 756-772). Springer, Cham.
- 2. Rossi, P. H., Lipsey, M. W., & Henry, G. T. (2018). Evaluation: A systematic approach. Sage publications.
- 3. Nations, U. (2011). Records of the General Conference, *1*(November), 59.
- 4. Heath, T., Oc, T., & Tiesdell, S. (2013). Revitalising historic urban quarters. Routledge.
- 5. Swensen, G. (2012). Integration of historic fabric in new urban development—A Norwegian case-study. Landscape and urban planning, 107(4), 380-388.
- 6. Talin, R. (2015). Historical Thinking Skills The Forgotten Skills? International Journal of Learning and Teaching. 7(1), 15-23.
- 7. Pope, M. (2018). Historical Inquiry And Student Perceptions Of Cultural Groups In A Social Studies Classroom.
- 8. SEIXAS, P. (2015). A Model of Historical Thinking.
- 9. Jon A. Levisohn (2017) Historical Thinking -- and Its Alleged Unnaturalness, Educational Philosophy and Theory, 49:6, 618-630, DOI: 10.1080/00131857.2015.1101364
- 10. Arias-Ferrer, L., Egea-Vivancos, A., & Levstik, L. S. (2019). Historical Thinking in the Early Years: The Power of Image and Narrative. In Story in Children's Lives: Contributions of the Narrative Mode to Early Childhood Development, Literacy, and Learning (pp. 175-198). Springer, Cham.
- 11. Viator, M. G. (2012). Developing Historical Thinking through Questions. Social Studies, 103(5), 198-200.
- 12. Tally, B., & Goldenberg, L. B. (2005). Fostering historical thinking with digitized primary sources. Journal of Research on Technology in Education, 38(1), 1-21.
- 13. Mason, R. (2002). Assessing values in conservation planning: methodological issues and choices. Assessing the values of cultural heritage, 5-30.
- 14. Low, S. M. (2002). Anthropological-ethnographic methods for the assessment of cultural values in heritage conservation. *Assessing the values of cultural heritage*, 31-49..
- 15. Beaven, O., & Craig, J. V. (2019). Searching the literature. The Evidence Based Manual for Nurses.
- 16. Pickup, D. I., Bernard, R. M., Borokhovski, E., Wade, A. C., & Tamim, R. M. (2018). Systematically Searching Empirical Literature in the Social Sciences: Results from Two Meta-Analyses Within the Domain of Education. Российский психологический журнал, 15(4), 245-265.
- 17. Southall, H. (2016). Constructing a Vision of Britain through Time: Integrating old maps, census reports, travel writing, and much else, into an online historical atlas. In Historical Atlas: Its concepts and methodologies (pp. 133-151). Northeast Asian Historical Foundation.

- Stângă, I. C., & Niacşu, L. (2016). USING OLD MAPS AND SOIL PROPERTIES TO RECONSTRUCT THE FOREST SPATIAL PATTERN IN THE LATE 18TH CENTURY. Environmental Engineering & Management Journal (EEMJ), 15(6).
- 19. Chiriac, C., GHEMIŞ, C., & Bucur, L. (2017). Challenges in extracting spatial features from Old maps and engraving prints of Oradea. The Image of the Other in the European Intercultural Dialogue, 233.
- 20. Šantrůčková, M., Dostálek, J., & Demková, K. (2015). Assessing long-term spatial changes of natural habitats using old maps and archival sources: a case study from Central Europe. Biodiversity and conservation, 24(8), 1899-1916.
- 21. JENNIFER TUCKER in collaboration with Tina Campt. (2009). Entwined practices: engagements with photography in historical inquiry. History and Theory, 48(4), 1-8.
- 22. Hemmersam, P., & Morrison, A. (2016). Place Mapping-transect walks in Arctic urban landscapes. SPOOL, 3(1), 23-36.
- 23. Iacono, J., Brown, A., & Holtham, C. (2009). Research Methods--a Case Example of Participant Observation. Electronic journal of business research methods, 7(1).
- 24. Zhang, W., Liu, H., Al-Shabrawey, M., Caldwell, R., Caldwell, R.Inflammation and diabetic retinal microvascular complications(2011) Journal of Cardiovascular Disease Research, 2 (2), pp. 96-103. DOI: 10.4103/0975-3583.83035
- 25. Dane, Senol, Menizibeya Osain Welcome, and . "A case study: Effects of wet cupping therapy in a male with primary infertility ." Journal of Complementary Medicine Research 10 (2019), 155-161. doi:10.5455/jcmr.20190807074320