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A Digital Humanities Approach to the Kurlisten of Baden bei
Wien (1850–1859)

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Abstract

This master's thesis explores the applicability of digital tools to the analysis of *Kurlisten*, spa guest lists widely preserved in many European cities but under-researched due to their scale and complexity. Using lists from Baden bei Wien between 1850–1859 as a case study, it demonstrates a workflow using AI-based tools for transcription, data manipulation, analysis, and visualisation tasks. These accessible tools significantly accelerate data preparation and enable analysis, though manual verification of outputs remains important. By presenting the methodology, dataset, scripts, and by deploying a simple register of European spa towns using a publicly available dataset, the thesis provides a foundation for further research on *Kurlisten* with a Digital Humanities approach. Extracting *Kurlisten* data from different cities in a standardised way would allow the creation of a central database through which tourism patterns can be analysed and cross regional comparisons drawn.

Kurzfassung

Diese Masterarbeit untersucht die Anwendbarkeit digitaler Werkzeuge für die Analyse von Kurlisten, die in vielen europäischen Städten überliefert sind, aber aufgrund ihres Umfangs und ihrer Komplexität bislang wenig erforscht wurden. Am Beispiel von Listen aus Baden bei Wien in den Jahren 1850–1859 wird eine Methodik vorgestellt, die KI-basierte Werkzeuge für Transkription, Datenbereinigung, Analyse und Visualisierung einsetzt. Diese leicht zugänglichen Werkzeuge beschleunigen die Datenaufbereitung erheblich und ermöglichen Analysen, auch wenn die manuelle Überprüfung der Ergebnisse weiterhin unverzichtbar bleibt. Durch die Präsentation der Methodik, des Datensatzes und der Skripte sowie durch die Erstellung eines einfachen Registers europäischer Kurorte auf Basis eines öffentlich zugänglichen Datensatzes schafft die Arbeit eine Grundlage für weitere Forschung zu Kurlisten mit einem Ansatz der Digital Humanities. Die standardisierte Extraktion von Kurlistendaten aus verschiedenen Städten würde die Erstellung einer zentralen Datenbank ermöglichen, mit der Tourismusmuster analysiert und regionale Vergleiche angestellt werden können.

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1. Introduction

In the 19th and early 20th centuries, the *Kurlisten* (spa guest lists) were printed in many European spa towns. Evolved from the less reliable *Brunnenlisten* (spa lists) or *Brunnenverzeichnisse* (spa registers),¹ they can be understood as part of the growing impulse toward systematic registration in modernising states² which also affected hotel guests, jobseekers, travelling journeymen, soldiers, servants, etc.³ Put on public view, the *Kurlisten* also served to inform other guests of recent arrivals to the town.⁴ Later on, the records came to be used for taxation⁵ which was levied based on social class. The rules and many exceptions pertaining to these taxes were published in the so-called *Kurtaxordnungen* (spa tax regulations) which can be considered a separate source material. Although printed in different cities across the continent, they shared many similarities regarding layout and information content.

As they provide comparable data over a broad time frame, the *Kurlisten* can be used to study different trends over time and space.⁶ Some work has already been done on this source. Juliane Mikoletzky highlighted the potential of the *Kurlisten* as a socio-historical source, comparing Baden bei Wien⁷ and Bad Gastein for selected years.⁸ Kristian Streicher conducted a quantitative analysis on nine sample years of *Kurlisten* from Bad Ischl in his diploma thesis.⁹ Hermann Sommer's detailed analysis of visitors to Bad Ems is both qualitative and

¹ Reinhold P. *Kuhnert*, *Urbanität auf dem Lande. Badereisen nach Pyrmont im 18. Jahrhundert* (Göttingen 1984), 120–122.

² Sigrid *Wadauer*, *Sorting, Reporting and Ways to Use Registration: Habsburg Austria from the Late Nineteenth to the Early Twentieth Century*. In: *Immigrants & Minorities* (2025) 1–30, here 2, online: <https://doi.org/10.1080/02619288.2025.2492497> (14.01.2026).

³ *Ibid.*, 7–8.

⁴ Ute *Lotz-Heumann*, *The German Spa in the Long Eighteenth Century. A Cultural History* (New York 2022) 40.

⁵ Juliane *Mikoletzky*, *Zur Sozialgeschichte des österreichischen Kurorts im 19. Jahrhundert. Kurlisten und Kurtaxordnungen als sozialhistorische Quelle*. In: *Mitteilungen des Instituts für österreichische Geschichtsforschung (MIÖG)* 99/3–4 (1991) 393–433, here 397, 401–403, online: <https://doi.org/10.7767/miog.1991.99.jg.393> (20.12.2025).

⁶ Andreas *Förderer*, *Playgrounds of Europe. Europäische Kurstädte und Modebäder des 19. Jahrhunderts* (Baden-Baden 2010), 53–55.

⁷ Sometimes anglicised as “Baden near Vienna”. In order to increase readability, Baden bei Wien will simply be referred to as “Baden” from now on.

⁸ *Mikoletzky*, *Zur Sozialgeschichte des österreichischen Kurorts*.

⁹ Kristian *Streicher*, *Die Ischler Kurlisten des 19. Jahrhunderts als sozialgeschichtliche Quellen* (Diploma Thesis University of Vienna 2019), online: <https://doi.org/10.25365/thesis.60596> (25.09.2025).

quantitative in nature.¹⁰ In a comparative analysis between Bad Ischl, Meran, Reichenau an der Rax, and Semmering, Ursula Butz, among other materials, used *Kurlisten* to study the relationship between the Habsburgs and tourism.¹¹ Comparing tourism in Austria and Ireland in the early 20th century, Andrea Penz used *Kurlisten* from Bad Aussee and Bad Gastein together with hotel guestbooks.¹² The works of Reinhold Kuhnert¹³ and Burkhard Fuhs,¹⁴ on Bad Pyrmont and Wiesbaden respectively, remain influential examples of research on individual spa towns and the spa phenomenon in general. Finally, there has been a Digital Humanities project on Bad Homburg, where the entire *Kurlisten* corpus has been digitised, transcribed, and published online as a digital edition.¹⁵ The web portal supports a detailed search function and the scanned originals can also be viewed. Where possible, people and places have been connected via Linked Open Data (LOD).

And yet, the *Kurlisten* remain an under-researched source considering their temporal and geographical range.¹⁶ Even when scanned lists can be found online, information on the completeness of these scans and the extent to which they have been worked on remains unclear. The sheer number of pages available for each spa town can make quantitative analysis a challenge, with studies typically limited to selected years. The Bad Homburg project is a rare example that demonstrates what is possible, but it does not explain how similar projects can be undertaken elsewhere. Taking Baden as an example, this thesis assesses the capabilities of artificial intelligence (AI) powered tools for the analysis of *Kurlisten* with the intention of contributing methodological insights for future, comparative research.¹⁷

It should be explained why Baden was chosen. The initial idea for this thesis emerged during a visit to Baden's *Kaiserhaus*, where a single page highlighting one of Ludwig van

¹⁰ Hermann Sommer, *Zur Kur nach Ems. Ein Beitrag zur Geschichte der Badereise von 1830 bis 1914* (Stuttgart 1999).

¹¹ Ursula Butz, *Habsburg als Touristenmagnet. Monarchie und Fremdenverkehr in den Ostalpen 1820–1910* (Vienna 2021).

¹² Andrea Penz, *Inseln der Seligen. Fremdenverkehr in Österreich und Irland von 1900 bis 1938* (Cologne/Weimar/Vienna 2005).

¹³ Kuhnert, *Urbanität auf dem Lande*.

¹⁴ Burkhard Fuhs, *Mondäne Orte einer vornehmen Gesellschaft. Kultur und Geschichte der Kurstädte 1700–1900, Historische Texte und Studien 13* (Hildesheim/Zurich/New York 1992).

¹⁵ Homburger Kur- und Badelisten, online: <https://www.lagis-hessen.de/de/klhg> (20.11.2024).

¹⁶ For an overview, see: The European Spa as a Transnational Public Space and Social Metaphor, List of Digital Resources, online: <https://www.theeuropeanspa.eu/materials/digital-resources> (26.09.2025); Wikipedia, List of Spa Towns (12.08.2025), online: https://en.wikipedia.org/w/index.php?title=List_of_spa_towns&oldid=1305545772 (20.08.2025).

¹⁷ Förderer, *Playgrounds of Europe*, 88.

Beethoven's visits to the city was on display. Owing in part to my employment in the city's archive, I was then able to quickly familiarise myself with the entire corpus. The importance of Baden as a spa town both within Austria and across Europe, as evidenced by its inscription as one of the Great Spa Towns of Europe by United Nations Educational, Scientific and Cultural Organization (UNESCO),¹⁸ added to its appeal to be used in this case study.

After a general introduction to spa towns and their features in the 19th century, the society of the era with a focus on Austria will be portrayed. The thesis does not present a comprehensive history of Baden as a spa town. Instead, as spa landscapes in the Great Spa Towns became increasingly similar during this period,¹⁹ a broader approach to spa-related topics has been adopted. Individual cities, like the *Kurlisten* themselves, can therefore be compared on the basis of these similarities. Nevertheless, specific information on Baden is included within the relevant chapters and subchapters. Domain knowledge in these areas is essential in order to make the most of the data contained in the *Kurlisten*.

Then, the methodology used to gather and prepare data from the sample years between 1850–1859 will be presented. In this chapter, not only the use cases of AI-based tools are explored, but the management of the research data is also explained. Additionally, a new online register of spa towns will be introduced.

The emphasis on digital tools will continue in the chapter on data analysis with tables and plots. The core data relevant to this thesis include the date of arrival, name, occupation, place of origin, address in Baden, and the total number of people in each travelling party. The chronological numbering of individuals has been omitted as these started anew in each year.²⁰ Pages containing additional information potentially useful to visitors, such as lists of doctors, transportation schedules, and announcements, have also been excluded.

¹⁸ United Nations Educational, Scientific and Cultural Organization (UNESCO), World Heritage Centre, The Great Spa Towns of Europe, online: <https://whc.unesco.org/en/list/1613/> (07.09.2025). Other cities that made it into the list are: Spa in Belgium; Františkovy Lázně, Karlovy Vary, Mariánské Lázně in Czechia; Vichy in France; Bad Ems, Baden-Baden, Bad Kissingen in Germany; Montecatini Terme in Italy; and Bath in the United Kingdom.

¹⁹ Martin Scheutz, *Kurstädte im Kontext interdisziplinär Forschungen*. In: Andrea Pühringer, Martin Scheutz (eds.), *Die Kurstadt als urbanes Phänomen. Konsum, Idylle und Moderne* (Vienna/Cologne 2023) 15–62, here 22, online: <https://doi.org/10.7788/9783412525903.15> (10.01.2026).

²⁰ In retrospect, if these numbers had been retained, it would still be possible to sort the visitors according to their order of appearance in the lists. As it would be necessary to differentiate between years, a four-digit prefix based on the year could be added. For example, the first person in the dataset would have the ID “18501”, or “1850–1”.

Throughout the thesis, emphasis has been placed on the usability of the tools and methods for readers who may not yet be familiar with Digital Humanities. Even with ever more capable tools, mining this vast body of historical data for research requires many hands. While this thesis specifically applied digital tools to the *Kurlisten*, the methodology presented can also be applied to other materials with a similarly structured format.

2. Spa Towns

Many European spa towns, including Baden, trace their origins back to the Romans.²¹ In the literature, a gap is often noted between the fall of the Western Roman Empire and the high Middle Ages, when ancient knowledge of mineral waters returned to Europe through the Islamic world.²² In the late Middle Ages, alongside existing urban baths, numerous mineral springs in rural areas were discovered.²³ After the Thirty Years' War, the *Trinkkur* (drinking cure) became popular,²⁴ reshaping both spa habits and spa architecture.²⁵ In the 18th century, seaside resorts began to appear in England,²⁶ and subsequently spread to the North Atlantic coast.²⁷ In the second half of the 19th century, the *Luftkurort* (climatic spa) emerged as a new type, experiencing a particular boom in Switzerland.²⁸

The number of spas varies depending on the source. In 1883, Robert Flechsig listed 638 spa towns in the first edition of his *Bäder-Lexikon* (spa encyclopaedia).²⁹ In 1903, 650 spa towns and sanatoriums in Germany, Austria, Switzerland and neighbouring regions were recorded in the *Bäder-Almanach* (spa almanac).³⁰ In 1914, 421 spa towns were counted in Austria-Hungary,³¹ categorised by the type of treatment offered and type of healing waters available. In a classification from 1910, spa towns in the Cisleithanian half of the Austro-Hungarian Empire were divided into 13 groups.³² Geographically, spas of the Empire could be grouped

²¹ Volkmar *Eidloth*, *Kleine historische Geographie europäischer Kurstädte und Badeorte im 19. Jahrhundert*. In: Volkmar *Eidloth* (ed.), *Europäische Kurstädte und Modebäder des 19. Jahrhunderts* (Stuttgart 2012) 15–39, here 16.

²² *Ibid.*

²³ *Ibid.*, 17.

²⁴ *Sommer*, *Zur Kur nach Ems*, 23.

²⁵ *Eidloth*, *Kleine historische Geographie*, 18.

²⁶ *Ibid.*, 22.

²⁷ *Ibid.*, 23.

²⁸ *Ibid.*, 24. On the origins of climatic spas, see: Alison F. *Frank*, *The Air Cure Town: Commodifying Mountain Air in Alpine Central Europe*. In: *Central European History* 45/2 (2012) 185–207, online: <https://doi.org/10.1017/S0008938912000027> (28.12.2025).

²⁹ Robert *Flechsig*, *Bäder-Lexikon. Darstellung aller bekannten Bäder, Quellen, Wasserheilstätten und klimatischen Kurorte Europas und des nördlichen Afrikas in medizinischer, topographischer, ökonomischer und finanzieller Beziehung. Für Ärzte und Kurbedürftige* (Leipzig 1883) as cited in: *Eidloth*, *Kleine historische Geographie*, 15.

³⁰ *Bäder-Almanach. Mitteilungen der Bäder, Luftkurorte und Heilanstalten in Deutschland, Oesterreich, der Schweiz und den angrenzenden Gebieten für Aerzte und Heilbedürftige* (Berlin 1907) as cited in: *Scheutz*, *Kurstädte im Kontext interdisziplinär Forschungen*, 17.

³¹ Gerhard J. *Hickel*, *Zur Kur im alten Österreich* (Vienna 1996) 9.

³² *Ibid.*, 13.

into five clusters: alpine and subalpine regions, Western Bohemia, Hungary, Tatra mountains, and the Adriatic.³³

Spa towns fulfilled multiple functions: they served as places of healing, marriage markets, casinos, shopping centres, places of exile, diplomatic venues, and amusement districts.³⁴ They were situated close to nature but were also easily accessible by modern transportation.³⁵ They offered amenities and activities found in major cities, but without the negative aspects like grime, noise, and poverty.³⁶ Jill R. Steward notes that spa towns in more rural parts of the Empire, such as those in Hungary, played a particularly important role as centres of commerce and leisure due to the absence of alternatives.³⁷ Volkmar Eidloth notes that three types of buildings defined the 19th century spa towns: the large thermal bath, the pump room, and the *Kurhaus*.³⁸ Nature was integrated in and around the spa towns through the *Kurpark* (spa gardens), hiking routes and viewing towers.³⁹

Spa towns were considered neutral ground, a notion that manifested in various ways. Owing to their international clientele, a degree of deconfessionalisation occurred. In Meran, Catholic, Protestant, Anglican, Greek Orthodox, Russian Orthodox, and Jewish religious services were held by 1891.⁴⁰ Heads of state and politicians met in spa towns, often in a less formal setting than otherwise.⁴¹ Spa towns were regarded as sanctuary cities to be left untouched during wartime.⁴² Ironically, during the First World War the main German Army Headquarters came to be located in Bad Kreuznach and later also in Spa, while the main Austro-Hungarian Army Headquarters were in Baden for the final two years of the conflict.⁴³

³³ Jill R. Steward, *The Spa Towns of the Austro-Hungarian Empire and the Growth of Tourist Culture 1860–1914*. In: Peter Borsay, Gunther Hirschfelder, Ruth-Elisabeth Mohrmann (eds.), *New Directions in Urban History. Aspects of European Art, Health, Tourism and Leisure since the Enlightenment* (Münster/New York/Munich/Berlin 2000) 87–125, here 97–98.

³⁴ Förderer, *Playgrounds of Europe*, 14.

³⁵ Ibid., 33.

³⁶ Ibid., 34.

³⁷ Steward, *Spa Towns of the Austro-Hungarian Empire*, 99–100.

³⁸ Eidloth, *Kleine historische Geographie*, 29. *Kurhaus* will be described on page 24.

³⁹ Peter Payer, *Sommerfrische. Ein bürgerliches Ritual als Sehnsucht nach antiurbanen Sinnesreizen*. In: Ferdinand Oppl, Martin Scheutz (eds.), *Fernweh und Stadt. Tourismus als städtisches Phänomen* (Innsbruck 2018) 77–107, here 82.

⁴⁰ Butz, *Habsburg als Touristenmagnet*, 135.

⁴¹ Ibid., 129.

⁴² Vladimír Křížek, *Kulturgeschichte des Heilbades* (Leipzig/Stuttgart 1990) 172.

⁴³ Ibid., 173.

The primary focus was on serving visitors, often at the expense of seasonal workers or locals.⁴⁴ In Bad Ems, it was forbidden to shake a carpet out of a street-facing window,⁴⁵ and the trash was to be collected at 22:00, after the visitors had gone to bed.⁴⁶ The locals of Bad Ems were also quick to switch to standard German to communicate more easily with the visitors,⁴⁷ and they also requested that their children be taught French at school so they could communicate with foreign visitors.⁴⁸

The success of a spa town depended not only on its healing effect, but also on its geographic location, the foresight of local authorities and the presence of modern amenities and activities.⁴⁹ Local spa administrations were acutely aware of international competition and closely followed developments in other spa towns to remain up to date.⁵⁰ Conflicts between locals and foreign investors could, however, undermine development.⁵¹ Tourism transformed local economies and, in some cases, led to housing shortages. In Meran, for example, high rents in summer forced locals to relocate to surrounding areas.⁵² External factors also played a decisive role in visitor numbers. Conjunctural changes such as market crashes or wars left clear traces in the overall statistics.⁵³ In the following, different elements of a spa visit will be separately examined.

2.1 Travel

Prior to the improvements brought by the Industrial Revolution, travelling was often undertaken out of necessity rather than for leisure. The reasons included trade, pilgrimage, research,⁵⁴ and war. Horse-drawn carriages of various types⁵⁵ were often the only feasible

⁴⁴ *Förderer*, *Playgrounds of Europe*, 29–30.

⁴⁵ *Sommer*, *Zur Kur nach Ems*, 366.

⁴⁶ *Ibid.*, 365.

⁴⁷ *Ibid.*, 397.

⁴⁸ *Ibid.*, 390.

⁴⁹ *Förderer*, *Playgrounds of Europe*, 17.

⁵⁰ *Ibid.*, 96.

⁵¹ Andrea *Leonardi*, *Entrepreneurial Mobility in the Development of the Austrian Kurorte in the Nineteenth Century*. In: *Journal of Tourism History* 2/2 (2010) 101, 107–108.

⁵² *Butz*, *Habsburg als Touristenmagnet*, 134.

⁵³ *Ibid.*, 92.

⁵⁴ *Förderer*, *Playgrounds of Europe*, 23.

⁵⁵ Michael *Hascher*, *Kurorte als "Hotspots" der Technikgeschichte? Wechselwirkungen zwischen Heilbädern, Eisenbahn und Technikentwicklung im "langen" 19. Jahrhundert*. In: Andrea *Pühringer*, Martin *Scheutz* (eds.), *Die Kurstadt als urbanes Phänomen. Konsum, Idylle und Moderne* (Vienna/Cologne 2023) 419–458, here 428, online: <https://doi.org/10.7788/9783412525903.419> (10.01.2026).

option for covering long distances on land. In the 19th century, steam-powered trains and ships made travelling faster and cheaper than ever before. The journey from Vienna to Bad Ischl, the favourite summer residence of Franz Joseph (r. 1848–1916),⁵⁶ initially took 84 hours by horse-drawn carriage, around 38 hours with a combination of steamship and horse-drawn railway in 1849, around eight hours by train in 1900, and only five hours in 1910.⁵⁷ Guidebooks from the period describe different routes, modes of transport, and associated costs.⁵⁸ Spa doctors suggested that travel to and back from the spas should be undertaken at a relaxed pace, with stops and overnight stays in between if necessary.⁵⁹ Pre-railway travel times make it clear that this was indeed sound advice.

Michael Hascher categorises the arrival of railways in spa towns into four phases: 1825–1848 as “early”, 1848–1870 as the “main expansion phase”, 1870–1875 as “late adoption”, and post-1875 as “very late”.⁶⁰ Thanks to its close proximity to Vienna, Baden was at the forefront of this trend and became accessible by train in 1841.⁶¹ Other spa towns which gained railway access around the same time include Bath and Wiesbaden in 1840, and Baden-Baden in 1845, whereas railways first reached spa towns in western Bohemia three decades later.⁶² In 1907, Baden gained another modern connection to Vienna via an electric tram service.⁶³ In towns where the spa infrastructure was located outside the historic centre, train stations were often built with the convenience of visitors in mind rather than locals.⁶⁴

The cost of travel depended on the distance, the mode of transport, and the level of comfort. This is a complex and under-researched topic to which Sommer dedicated a chapter.⁶⁵

⁵⁶ He visited Bad Ischl over 80 times. See: *Křížek*, *Kulturgeschichte des Heilbades*, 171.

⁵⁷ *Butz*, *Habsburg als Touristenmagnet*, 99.

⁵⁸ *Hascher*, *Kurorte als “Hotspots” der Technikgeschichte*, 422.

⁵⁹ *Sommer*, *Zur Kur nach Ems*, 293.

⁶⁰ Michael *Hascher*, *Modebäder und Eisenbahn. Zur Frage des Beitrages der Technikgeschichte zum möglichen Welterbestatus europäischer Kurstädte*. In: Volkmar *Eidloth* (ed.), *Europäische Kurstädte und Modebäder des 19. Jahrhunderts* (Stuttgart 2012) 159–172, here 160.

⁶¹ Alfred *Niel*, *Die grossen k.u.k. Kurbäder und Gesundbrunnen* (Graz 1984) 12.

⁶² *Hascher*, *Modebäder und Eisenbahn*, 161.

⁶³ Matthias *Marschik*, *Kurstädte – Sportstädte? Die Entwicklungen einer ambivalenten Beziehung*. In: Andrea *Pühringer*, Martin *Scheutz* (eds.), *Die Kurstadt als urbanes Phänomen. Konsum, Idylle und Moderne* (Vienna/Cologne 2023) 351–383, here 353, online: <https://doi.org/10.7788/9783412525903.351> (10.01.2026).

⁶⁴ Andrea *Leonardi*, *Der Aufstieg der österreichischen Kurorte im 19. Jahrhundert. Ein Interpretationsmodell*. In: Harald *Pechlaner* (ed.), *Destinations-Management. Führung und Vermarktung von touristischen Zielgebieten* (Vienna 1999) 261–285, here 272.

⁶⁵ *Sommer*, *Zur Kur nach Ems*, 518–602.

Regarding Bad Ems, Sommer notes that most German visitors came from nearby areas, before providing a detailed account of costs and timetables.⁶⁶

Upon arrival, the horse-drawn carriages could serve as a display of opulence.⁶⁷ The coachmen were regulated to ensure a high standard of service. In Bad Ems, they had to wait for customers in designated areas, follow fixed price rates, refrain from smoking during rides, and avoid cruelty to their animals so as not to upset visitors.⁶⁸ First-rate hotels generally provided their own carriages at the station,⁶⁹ but hotels were not permitted to advertise by pestering newly arrived travellers.⁷⁰ In some towns, cable cars and boat rides were available, but mainly for recreational purposes.⁷¹

Improvements in transport affected not only the number of visitors but also their overall “character”.⁷² In 1850s, head of the spa commission in Bad Ems voiced concerns about the railway connection on two counts: the lower classes could now reach the city more easily and in greater numbers, altering the social composition of visitors; and the health of those who genuinely sought treatment might be negatively affected by the larger crowds.⁷³

The impact of railway connections on spa tourism has been a subject of debate. Using Wiesbaden as an example, Eidloth reports an exponential increase from 27.500 in 1839 to 769.551 in 1841, whereby these numbers do not reflect the actual spa visitors and must include short-term travellers.⁷⁴ Still, not every town experienced such a dramatic rise. In Baden, visitor numbers increased from 5.918 in 1840 to 7.077 in 1841, but then fell back to 6.618 the following year and remained at this level for the next three years. Eidloth considers spa towns to have been influential in the spread of railways, noting that they were also destinations for luxury trains.⁷⁵ Hascher, by contrast, argues that freight was the decisive factor in railway placement rather than passenger traffic.⁷⁶ He also points out the lack of evidence for railway initiatives by local governments,⁷⁷ and observes that metropolises, seaside

⁶⁶ Ibid., 524.

⁶⁷ Fuhs, *Mondäne Orte*, 362.

⁶⁸ Sommer, *Zur Kur nach Ems*, 396.

⁶⁹ Hascher, *Kurorte als “Hotspots” der Technikgeschichte*, 423.

⁷⁰ Sommer, *Zur Kur nach Ems*, 366.

⁷¹ Hascher, *Kurorte als “Hotspots” der Technikgeschichte*, 423.

⁷² Penz, *Inseln der Seligen*, 145.

⁷³ Sommer, *Zur Kur nach Ems*, 96–97.

⁷⁴ Eidloth, *Kleine historische Geographie*, 27.

⁷⁵ Ibid.

⁷⁶ Hascher, *Kurorte als “Hotspots” der Technikgeschichte*, 436–437.

⁷⁷ Ibid., 436.

resorts, and Alpine destinations were more significant for luxury trains than spa towns.⁷⁸

Andrea Pühringer, however, underlines the importance of railways for increasing visitor numbers and points out that spa towns actively sought railways.⁷⁹

Some spa towns played an important role in popularising automobiles and bicycles. Both inventions were initially regarded as novelties, but fashionable spas attracted affluent visitors who had both the means and the inclination to use them.⁸⁰ Local authorities varied in their responses to these new vehicles, with guidebooks labelling towns as “automobile-friendly” or “bicycle-unfriendly”.⁸¹ In some places, such as Baden-Baden, cyclists were required to carry number plates along with a *Radfahrerkarte*, which was similar to a driver’s licence.⁸² By the First World War, it had become fashionable to travel to spa towns by automobile, which could also be used for excursions in the surrounding countryside.⁸³ Routes for automobiles and bicycles appeared in Baedeker guides around 1900.⁸⁴ Buses, trams, and in the rare case of Baden-Baden, zeppelins also brought visitors to spa towns.⁸⁵ After the war, competition from other modes of transport and declining use by the upper classes led to the closure of some railway lines.⁸⁶

2.2 Accommodation

The history of accommodation, particularly in the context of spa towns and tourism, remains an under-researched topic,⁸⁷ though not for lack of sources. Contemporary guidebooks provide detailed information on available lodgings,⁸⁸ and the *Kurlisten* provide valuable data

⁷⁸ Ibid., 437.

⁷⁹ Andrea Pühringer, Zu klein, zu jung, zu unbedeutend – die Kurstadt in der Stadtgeschichtsforschung. In: Andrea Pühringer, Martin Scheutz (eds.), Die Kurstadt als urbanes Phänomen. Konsum, Idylle und Moderne (Vienna/Cologne 2023) 63–97, here 74, online: <https://doi.org/10.7788/9783412525903.63> (10.01.2026).

⁸⁰ Hascher, Modebäder und Eisenbahn, 167–168.

⁸¹ Hascher, Kurorte als “Hotspots” der Technikgeschichte, 444.

⁸² Hascher, Modebäder und Eisenbahn, 168.

⁸³ Ibid.

⁸⁴ Hascher, Kurorte als “Hotspots” der Technikgeschichte, 428–429.

⁸⁵ Hascher, Modebäder und Eisenbahn, 169.

⁸⁶ Ibid.

⁸⁷ Fred Kaspar, Wohnen an informellen Treffpunkten der Gesellschaft. Auf der Suche nach der besten Unterkunft im Kurort zwischen Spätmittelalter und Ende des 19. Jahrhunderts. In: Peter Weidisch, Fred Kaspar (eds.), Kurort und Modernität (Würzburg 2017) 159–232, here 159–160.

⁸⁸ For example: Hans Lutter, Führer durch den Curort Baden bei Wien und seine Umgebungen (Baden [bei Wien] 1897) 58–66.

on the number of visitors to each establishment. This subchapter provides a general overview of accommodation in 19th century spa towns.

Visitors had a wide range of options: single rooms in apartments, multiple rooms with or without a kitchen, rooms in guesthouses, entire villas, and even palaces. At first glance, the various types of accommodation can be confusing, especially given the overlaps: lodging house, inn, guesthouse, hotel, sanatorium, etc.⁸⁹ While hotels, guesthouses, and bed and breakfast establishments all offered overnight stays, hotels, unlike guesthouses, also served food and drink to non-resident guests, and bed-and-breakfasts offered only breakfast to overnight guests.⁹⁰ Having a restaurant open to the public reduced the level of privacy for residents.⁹¹ Whether or not an establishment had stables was an important consideration for those travelling with a private carriage.⁹² Ultimately, the choice of accommodation was more a financial decision than a class-based one.⁹³

Costs depended on the neighbourhood, the level of comfort, the duration of stay, and the season.⁹⁴ Accommodation was a major expense, and visitors often sought to economise,⁹⁵ and negotiating prices was advisable especially for longer stays.⁹⁶ Rather than purchasing or renting everything they might need during their stay, people of all classes brought with them as much as they could.⁹⁷

Over the course of the 19th century, the hotel industry became increasingly professionalised.⁹⁸ Guidebooks from the era make the changes in furnishings clear. In the first half of the century, relatively basic features such as wallpapers, couches, wardrobes, and heating were explicitly mentioned.⁹⁹ By the 1860s, these were considered standard.¹⁰⁰ By the 1880s, descriptions included exotic wood furniture, silk curtains, and innovations such as central heating, telephones, lifts, electric lighting, and car parks.¹⁰¹ Martina Bleymehl-Eiler notes that

⁸⁹ *Kaspar*, *Wohnen an informellen Treffpunkten*, 165.

⁹⁰ *Ibid.*, 166–167.

⁹¹ *Ibid.*, 215–216.

⁹² *Ibid.*, 187.

⁹³ *Kuhnert*, *Urbanität auf dem Lande*, 115.

⁹⁴ *Sommer*, *Zur Kur nach Ems*, 538.

⁹⁵ *Kuhnert*, *Urbanität auf dem Lande*, 140.

⁹⁶ *Lutter*, *Führer durch den Curort Baden bei Wien*, 58.

⁹⁷ *Kuhnert*, *Urbanität auf dem Lande*, 140.

⁹⁸ *Förderer*, *Playgrounds of Europe*, 36.

⁹⁹ Martina *Bleymehl-Eiler*, *Luxus am Kurort. Ausdruck der Modernität?* In: Peter *Weidisch*, Fred *Kaspar* (eds.), *Kurort und Modernität* (Würzburg 2017) 269–283, here 275.

¹⁰⁰ *Ibid.*

¹⁰¹ *Ibid.*, 276.

guidebooks regarded only establishments offering these amenities as “modern”.¹⁰² Other hotels could still be considered “elegant”¹⁰³ or even “good”,¹⁰⁴ just not “modern”.

The trend toward shorter stays over the 19th century is generally accepted in the literature.¹⁰⁵ Improvements in transport enabled large-scale tourism, leading to both an increase in the number of individuals visiting a single spa town and an influx of visitors staying for shorter periods across several towns.¹⁰⁶ Even the upper classes, who alone had the means and leisure to spend several months in their summer residences, began to shorten their stays,¹⁰⁷ perhaps in reaction to this new wave of tourism. Middle-class visitors were more limited regarding these resources.¹⁰⁸

However, it must be acknowledged that concrete information on the visit duration is often lacking. In her study, Penz made use of hotel guestbooks, which are difficult to come by.¹⁰⁹ In some cases, the *Kurlisten* can be useful because they include departure information, both the date and the destination, though this is often a short-lived feature, only available for a few years.¹¹⁰ For Baden the *Meldezettel*, official registration form, could serve as an additional source, as it contained a deregistration field for date of departure and destination. Wadauer points out the shortcomings of these forms, saying that people often registered under false names, not to mention honest mistakes in record-keeping.¹¹¹ Moreover, these certificates are seldom digitally available, as collections can be sizeable and local Archives Acts may restrict publication. Mikoletzky suggests that changes to spa tax regulations over time reflect shifts in visitor habits and composition, with shorter stays and a growing proportion of visitors from lower classes.¹¹² In the absence of sufficient data, it is not possible to establish relationships between the length of stay and variables such as occupation, place of origin, or group size.¹¹³

The relationship between accommodation type and spa type has been studied to some extent. Fred Kaspar finds that *hotels* first appeared in spa towns with warm mineral waters, private

¹⁰² Ibid.

¹⁰³ Ibid.

¹⁰⁴ Hascher, Kurorte als “Hotspots” der Technikgeschichte, 430.

¹⁰⁵ Penz, Inseln der Seligen, 215.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid., 215–216.

¹⁰⁸ Ibid., 216.

¹⁰⁹ Ibid., 20, 34. Wadauer confirms that this is also the case in Zwettl, see: Wadauer, Sorting, Reporting and Ways to Use Registration, 9.

¹¹⁰ For the selection at hand, this data was available in 1855, 1856, 1857, 1858, 1859.

¹¹¹ Wadauer, Sorting, Reporting and Ways to Use Registration, 2.

¹¹² Mikoletzky, Zur Sozialgeschichte des österreichischen Kurorts, 412–413.

¹¹³ Sommer, Zur Kur nach Ems, 601.

accommodation remained common until the 20th century in towns where the drinking cure was dominant, and guesthouses were most common in places where mineral baths were dominant.¹¹⁴ Near many of the smaller mineral springs, the *Bauernbäder* (peasants' baths), only private accommodation was available.¹¹⁵ In other cases, accommodation was not even an issue, as the clientele consisted solely of local residents.¹¹⁶

Until the 1840s, guesthouses were differentiated by the names of their owners, by the suffix *-hof*,¹¹⁷ or by traditional names derived from signs or paintings, such as the *Gasthof zum grünen Baum* (Green Tree Inn) in Baden. From the 1840s, influenced by French usage, the term *hotel* spread in German-speaking regions and was used alongside existing names.¹¹⁸ Initially, the presence of this term in a name made little difference to the facilities offered, rather, it was a welcoming signal to an international clientele.¹¹⁹ After 1850, *hotels* were expected to have a dining hall, but by the 1880s the term had become so common that guesthouses without a restaurant were also being called one.¹²⁰

The innovations that made hotels “modern” reached private apartments and houses only later.¹²¹ Hotels in the spa towns were competing with those in the metropolises, where by the 1880s, private baths had become standard.¹²² In spa towns, the adoption of such features was delayed because of their proximity to public baths.¹²³ Metropolitan hotels also tended to operate year-round, unlike spa hotels, which were generally seasonal.¹²⁴

In the second half of the 19th century, the *Grand Hotel* emerged as a new form of luxury accommodation and marked the prestige of a spa town.¹²⁵ Kaspar observes that *hotels* suited those staying for shorter periods and interested in the social aspects of spa life.¹²⁶ From the standpoint of privacy, however, private apartments or villas were preferable. Members of the

¹¹⁴ Ibid., 228.

¹¹⁵ Fred Kaspar, Exklusive Kur? – ein Mythos! Bauern als Kurgäste. In: Lu Seegers, Matthias Frese, Malte Thießen (eds.), *Kurorte in der Region. Gesellschaftliche Praxis, kulturelle Repräsentationen und Gesundheitskonzepte vom 18. bis zum 21. Jahrhundert* (Göttingen 2024) 151–176, here 168.

¹¹⁶ Ibid., 172.

¹¹⁷ Kaspar, *Wohnen an informellen Treffpunkten*, 211.

¹¹⁸ Ibid.

¹¹⁹ Ibid.

¹²⁰ Ibid., 212.

¹²¹ Hascher, *Kurorte als “Hotspots” der Technikgeschichte*, 447.

¹²² Ibid.

¹²³ Ibid.

¹²⁴ Kaspar, *Wohnen an informellen Treffpunkten*, 166.

¹²⁵ Ibid., 223.

¹²⁶ Ibid., 226–227.

aristocracy avoided hotels until the late 19th century, preferring villas or small palaces, often rented along with servants.¹²⁷

In many spa towns, entire villa districts were built by aristocratic and bourgeois patrons.¹²⁸ These villas served representative functions while also offering privacy and a connection to nature through gardens.¹²⁹ The criticism of Kaspar regarding the lack of research on these villas¹³⁰ has since been answered to some extent by a series of publications.¹³¹ It was also common for resident spa doctors to offer accommodation, the premise being that patients would receive better medical care during their stay.¹³² These establishments, built much like villas, came to be called a *Heilanstalt* or *Kuranstalt* (sanatorium).¹³³ The most affordable option was the shared accommodation, where guests stayed in multi-bed rooms¹³⁴ resembling barracks.

The wide range of issues that arose between the visitors and their temporary landlords are described in detail by Sommer.¹³⁵ To quickly resolve any issues, the visitors were advised to put contracts down in writing.¹³⁶ Analysing the accommodation patterns in Bad Ems, Sommer observes a discrepancy between men and women where in general, men valued the perks of being a regular visitor more and women were more likely to choose different lodgings the following year if dissatisfied.¹³⁷

¹²⁷ Klaus *Bergdolt*, *Gesundheit als Ausrede? Gesellschaftlicher Glanz und politische Bedeutung der Kurorte im 19. und frühen 20. Jahrhundert*. In: Peter Weidisch, Fred Kaspar (eds.), *Kurort und Modernität* (Würzburg 2017) 83–97, here 86.

¹²⁸ *Eidloth*, *Kleine historische Geographie*, 27.

¹²⁹ Silke *Ebster*, “...Ein treuer und dankbarer Freund Vöslaus...”. *Mietvillen, Ihre Besitzer und Gäste im Kur- und Sommerfrischeort Bad Vöslau während der franzisko-josephinischen Epoche (1852–1914)* (Dissertation University of Vienna 1996), here 30–32.

¹³⁰ *Kaspar*, *Wohnen an informellen Treffpunkten*, 229.

¹³¹ Amalthea Verlag, *Wenn Häuser Geschichten erzählen*, online: https://amalthea.at/?s=Wenn+H%C3%A4user+Geschichten+erz%C3%A4hlen&post_type=product (28.08.2025). Also see: Bettina *Nezval*, *Villen der Kaiserzeit. Sommerresidenzen in Baden* (Horn/Vienna 1993).

¹³² *Kaspar*, *Wohnen an informellen Treffpunkten*, 221.

¹³³ *Ibid.*

¹³⁴ *Kaspar*, *Exklusive Kur*, 170.

¹³⁵ *Sommer*, *Zur Kur nach Ems*, 390.

¹³⁶ *Ibid.*, 369.

¹³⁷ *Ibid.*, 385.

2.3 Health

Historically, spa visits were primarily motivated by medical concerns. The 18th and 19th centuries brought not only changes in spa clientele but also greater professionalisation among medical practitioners, alongside advances in chemistry as a scientific discipline. On the orders of Maria Theresa, mineral waters of the Empire were analysed, regulated, and licensed.¹³⁸ Kuhnert notes a heightened awareness of illness in the 18th century which helped popularise spa towns.¹³⁹ During this time, even hypochondria came to be viewed positively, as the natural state of mind of sensitive individuals who had achieved a higher level of understanding.¹⁴⁰

There were many facets to the healing process in a spa town. Water, with its different types, could be considered the central element, but there were towns like the *Luftkurort* Semmering, which did not offer water, but air for healing. Mineral waters were used in different therapies that involved bathing, drinking, inhaling, and other applications. For best results, visitors were generally advised to practise moderation in food and alcohol, exercise, avoid business matters, enjoy music, and socialise.¹⁴¹ The idyllic landscapes in and around the spa town also contributed to healing.¹⁴² By following such guidance, it was possible to restore what Heikki Lempa calls the “emotional balance of the patient”.¹⁴³

A spa visit was regarded as an effective treatment for a wide variety of medical conditions, including arthritis, gout, rheumatism, injury, syphilis, and gynaecological disorders.¹⁴⁴ Potential visitors could consult lists that matched illnesses with appropriate types of mineral water.¹⁴⁵ By the late 19th century, the “nervous” diseases which referred to psychological

¹³⁸ Steward, *Spa Towns of the Austro-Hungarian Empire*, 91.

¹³⁹ Kuhnert, *Urbanität auf dem Lande*, 60.

¹⁴⁰ Ibid., 72.

¹⁴¹ Heikki Lempa, *The Spa. Emotional Economy and Social Classes in Nineteenth-Century Pyrmont*. In: *Central European History* 35/1 (2002) 37–73, here 58.

¹⁴² Marina Soroka, *The Summer Capitals of Europe 1814–1919* (London 2017) 28.

¹⁴³ Lempa, *Spa*, 44.

¹⁴⁴ Jill R. Steward, *Travel to the Spas. The Growth of Health Tourism in Central Europe 1850–1914*. In: Gemma Blackshaw, Sabine Wieber (eds.), *Journeys into Madness. Mapping Mental Illness in the Austro-Hungarian Empire* (New York/Oxford 2022) 72–89, here 77.

¹⁴⁵ Heiko Stoff, *Wissen, Erfahrung und Menschenkenntnis. Indikationen für Kuren vom 18. bis zum frühen 20. Jahrhundert*. In: Lu Seegers, Matthias Frese, Malte Thießen (eds.), *Kurorte in der Region. Gesellschaftliche Praxis, kulturelle Repräsentationen und Gesundheitskonzepte vom 18. bis zum 21. Jahrhundert* (Göttingen 2024) 33–46, here 35.

issues, and obesity, also counted under common complaints.¹⁴⁶ These more modern conditions were believed to stem from a middle-class lifestyle characterised by insufficient physical activity and overconsumption of food.¹⁴⁷ The curative powers of spa towns shaped the social composition of their visitors. At Franzensbad, renowned for treating gynaecological disorders, three-quarters of the visitors in 1900 were women.¹⁴⁸ While the diseases categorised as gynaecological shifted with the increasing scientific basis of medicine,¹⁴⁹ infertility, of which only women were suspected, remained a major complaint.¹⁵⁰

The scientific writings of the spa doctors, in which the curative powers of spa towns were analysed, played a crucial role in shaping reputation and therefore success.¹⁵¹ Similarly, the healing accounts, particularly those involving aristocratic patients, brought positive attention to towns.¹⁵² Visitors could also consult the *Kurlisten* to see which resident doctors were available for the season. In general, visitors were not required to consult a doctor beforehand.¹⁵³ In 1860 only 20% of the visitors to Wiesbaden saw one.¹⁵⁴ Even in the early 20th century there were still smaller spa towns without a doctor.¹⁵⁵ In France, by contrast, a consultation was required before a spa visit already in the 1830s.¹⁵⁶

The reputation of spa doctors, despite their influence and privilege, has been a subject of debate in the literature. According to Kuhnert, spa doctors in Pyrmont were at the top of their profession both in terms of prestige and income.¹⁵⁷ Klaus Bergdolt, however, argues that within academic medicine they were not ranked as highly as other specialists, though they understood the needs of spa visitors.¹⁵⁸ Many treatments still associated with spas, such as massage, mud therapy, and electrotherapy, originated in institutions run by spa doctors before being adopted more widely.¹⁵⁹ Interestingly, as medicine was becoming more

¹⁴⁶ Jill R. Steward, *Moral Economies and Commercial Imperatives. Food, Diets and Spas in Central Europe 1800–1914*. In: *Journal of Tourism History* 4/2 (2012) 181–203, here 196, online: <https://doi.org/10.1080/1755182X.2012.697487> (25.09.2025).

¹⁴⁷ Ibid.

¹⁴⁸ Scheutz, *Kurstädte im Kontext interdisziplinär Forschungen*, 34.

¹⁴⁹ Christina Vanja, *Arme und Frauen im alten Kurbad*. In: Peter Weidisch, Fred Kaspar (eds.), *Kurort und Modernität* (Würzburg 2017) 67–81, here 74–75.

¹⁵⁰ Ibid., 76–77.

¹⁵¹ Butz, *Habsburg als Touristenmagnet*, 151.

¹⁵² Ibid., 152.

¹⁵³ Sommer, *Zur Kur nach Ems*, 603.

¹⁵⁴ Fuhs, *Mondäne Orte*, 367.

¹⁵⁵ Sommer, *Zur Kur nach Ems*, 20.

¹⁵⁶ Soroka, *Summer Capitals of Europe*, 19.

¹⁵⁷ Kuhnert, *Urbanität auf dem Lande*, 62.

¹⁵⁸ Bergdolt, *Gesundheit als Ausrede*, 94.

¹⁵⁹ Steward, *Moral Economies*, 194.

professionalised, some of the most influential figures in alternative therapies such as Vincenz Priessnitz and Sebastian Kneipp were laymen rather than trained physicians.¹⁶⁰

2.4 Diet

The importance of a healthy and balanced diet was well known to both doctors and spa visitors. Consumption of food deemed “unnatural” or “luxurious” in large amounts was considered one of the causes of modern illnesses.¹⁶¹ Despite this, the subject of food in the context of spa towns remains under-researched, especially when compared to mineral waters.¹⁶² Primary sources also reflect this imbalance, with personal memoirs and letters offering the richest insights into diet in spa towns.¹⁶³ Towards the end of the 19th century, more detailed descriptions and a stronger emphasis on luxury appeared in guidebooks.¹⁶⁴ The logistics for fresh provisions, along with the support of seasonal workers for local establishments, were crucial to the functioning of every spa town.¹⁶⁵

Specific diets were prescribed in some, especially smaller and more rural spa towns, which could play a role in choosing between different destinations. These included programmes based on milk, grapes, or even chocolate.¹⁶⁶ Others relied on more generic regimens that excluded tea, coffee, wine, and beef, aiming to cleanse the body with the help of drinking cold spring water.¹⁶⁷ In larger spa towns, vegetarian restaurants began to appear during the 19th century.¹⁶⁸ Ideally, guests would follow a stricter diet than usual so that their spa stay would be more curative. In cases where the visit had a primarily recreational character, however, visitors were more inclined to enjoy the rich culinary offerings in hotels and restaurants, testing the discipline of those who attempted to maintain a spa diet.¹⁶⁹

A typical day included drinking the waters between 06:00 and 08:00, a light breakfast at 10:00, lunch around 13:00, and a light supper between 19:00 and 20:00.¹⁷⁰ Out of these meals,

¹⁶⁰ *Soroka*, Summer Capitals of Europe, 14.

¹⁶¹ *Steward*, Moral Economies, 191–192.

¹⁶² *Ibid.*, 184.

¹⁶³ *Ibid.*, 187.

¹⁶⁴ *Bleymehl-Eiler*, Luxus am Kurort, 278–279.

¹⁶⁵ *Steward*, Moral Economies, 188.

¹⁶⁶ *Ibid.*, 195–196.

¹⁶⁷ *Ibid.*, 193.

¹⁶⁸ *Ibid.*, 198.

¹⁶⁹ *Ibid.*, 193.

¹⁷⁰ *Lempa*, Spa, 42; *Steward*, Moral Economies, 188.

lunch was considered the most important.¹⁷¹ During lunch, the *table d'hôte* provided a valuable opportunity for the middle classes to meet new people¹⁷² in a relatively casual atmosphere, where the traditional social hierarchy was not observed.¹⁷³ In some cases, two sittings were served, at 13:00 and 17:00, with the latter being of higher quality at a higher price.¹⁷⁴ Over the course of the 19th century, this social function of the *table d'hôte* became less significant as the middle classes increasingly participated in spa life, and shared tables became smaller.¹⁷⁵ Visitors seeking more privacy could opt for *diners à part* in a smaller room,¹⁷⁶ which cost a third more,¹⁷⁷ or have their meals prepared in kitchens, usually rented as part of their lodgings.¹⁷⁸

2.5 Economy

Economic activity in spa towns relied on tourism, which sustained the service industry and the trade in luxury goods.¹⁷⁹ An essential part of this system has already been discussed under *Accommodation*.¹⁸⁰ Naturally, spa visitors who stayed for several weeks contributed more than the *Passanten*, the so-called passers-by or short-term visitors, though the share of these groups in the economy¹⁸¹ and the total number of overnight stays¹⁸² varied from town to town. During the 19th century, the average length of a spa visit shortened from four to five weeks to three to four weeks.¹⁸³ Spa doctors played an active role in the economy, not only through their work but also by investing in towns.¹⁸⁴ States, too, took an interest in the growth and functioning of spa towns, regulating or encouraging bottled water production and gambling to

¹⁷¹ Steward, *Moral Economies*, 188.

¹⁷² Fuhs, *Mondäne Orte*, 251–252.

¹⁷³ Sommer, *Zur Kur nach Ems*, 505.

¹⁷⁴ Steward, *Moral Economies*, 189.

¹⁷⁵ Sommer, *Zur Kur nach Ems*, 253–254.

¹⁷⁶ *Ibid.*, 299.

¹⁷⁷ *Ibid.*, 470.

¹⁷⁸ *Ibid.*, 472–473.

¹⁷⁹ Förderer, *Playgrounds of Europe*, 36.

¹⁸⁰ Pages 10–14.

¹⁸¹ Fuhs, *Mondäne Orte*, 368.

¹⁸² Sommer, *Zur Kur nach Ems*, 518.

¹⁸³ Fuhs, *Mondäne Orte*, 368.

¹⁸⁴ Leonardi, *Entrepreneurial Mobility*, 112.

keep towns within their domain profitable,¹⁸⁵ while private investment became increasingly important over time.¹⁸⁶

Many spa towns boomed in parallel with industrial centres. In the early stages of industrialisation, production also took place in spa towns, but this changed over the course of the 19th century as industrial activity was moved out of idyllic spa settings.¹⁸⁷ The rare cases of industry that remained were usually linked to the production of goods such as cigarettes¹⁸⁸ or bottled mineral water.¹⁸⁹ In any case, efforts were made to conceal industrial activity, for example by locating facilities on the far side of the train station¹⁹⁰ or in nearby non-touristic villages.¹⁹¹

As the 19th century progressed, displays of financial strength became more important than aristocratic roots.¹⁹² This is evident in the way price categories for services were structured, reflecting wealth rather than class.¹⁹³ By offering cheaper or even free services on certain days or during specific hours, spa authorities created distinctions within their clientele.¹⁹⁴ The generally high prices in spa towns also highlighted differences between the middle classes who were more reluctant to spend extravagantly on moral and fiscal grounds, and the aristocracy.¹⁹⁵ For context, Fuhs cites an example from an 1877 guidebook for Wiesbaden, where a one-hour boat ride cost two marks, while the services of a *Dienstmann* (porter for hire) cost two and a half marks per day.¹⁹⁶

The end of the 18th century marked an increase in the consumption of luxury goods.¹⁹⁷ Relative to their size, spa towns offered a wide range of antiques and luxury stores,¹⁹⁸ with products comparable to those found in metropolises,¹⁹⁹ though often only available during the

¹⁸⁵ Pühringer, *Zu klein, zu jung, zu unbedeutend*, 86.

¹⁸⁶ Förderer, *Playgrounds of Europe*, 38.

¹⁸⁷ Pühringer, *Zu klein, zu jung, zu unbedeutend*, 80–81.

¹⁸⁸ Förderer, *Playgrounds of Europe*, 36.

¹⁸⁹ Hascher, *Kurorte als "Hotspots" der Technikgeschichte*, 454–455.

¹⁹⁰ *Ibid.*, 455.

¹⁹¹ Pühringer, *Zu klein, zu jung, zu unbedeutend*, 80.

¹⁹² Fuhs, *Mondäne Orte*, 303.

¹⁹³ *Ibid.*

¹⁹⁴ *Ibid.*

¹⁹⁵ *Ibid.*, 307.

¹⁹⁶ *Ibid.*

¹⁹⁷ Kuhnert, *Urbanität auf dem Lande*, 186.

¹⁹⁸ Fred Kaspar, *Kurort im Umbruch oder Kurort und Modernität*. In: Peter Weidisch, Fred Kaspar (eds.), *Kurort und Modernität* (Würzburg 2017) 13–29, here 23.

¹⁹⁹ Bleyemehl-Eiler, *Luxus am Kurort*, 276–277.

spa season.²⁰⁰ Basic tourist gifts were available regardless of a town's size,²⁰¹ but many goods such as bottled mineral waters, cosmetics, lozenges, and liqueurs were specific to particular spas.²⁰² These could serve as souvenirs but were also exported, contributing to both the fame and the economy of spas.²⁰³ Some products, such as *Emser Pastillen* and *Elixir de Spa* remain available today, despite changes in spa clientele and perception of spas. Coffee, tea, and chocolate, though criticised by the middle classes as "luxurious", became staples of spa culture thanks to their socialising effect.²⁰⁴

Those with means followed the latest trends,²⁰⁵ displaying wealth and taste on the promenade and in the ballroom. They also required suitable equipment for hunting, fishing,²⁰⁶ and sports. The presence of luxury in spa towns is also revealed in unexpected sources, such as lost-and-found advertisements, which, as Sommer shows, often contained detailed descriptions of jewellery.²⁰⁷

The demand for modern amenities in spa towns supported a range of industries. The abundance of spas, public baths, thermal baths, bathrooms, and toilets created ample work.²⁰⁸ The construction industry also grew with the building of hotels and villas.²⁰⁹ The introduction of the drinking cure further stimulated bottling, allowing waters to be sent elsewhere. Already in the late 16th century, water from Spa in Belgium was exported as far as Italy, around 1600 it reached Russia, and by the early 18th century it was shipped to the Americas.²¹⁰ The scale of this trade was frequently mentioned in the Baedeker guides.²¹¹

Although not the main focus of this thesis, the spa tax must also be briefly addressed here. A detailed overview of spa taxes in different regions was published by Josef Charvát in 1967.²¹² Later on, Mikoletzky underlined the untapped potential of the *Kurtaxordnungen*, in which the

²⁰⁰ *Förderer*, *Playgrounds of Europe*, 36.

²⁰¹ *Steward*, *Spa Towns of the Austro-Hungarian Empire*, 113.

²⁰² *Förderer*, *Playgrounds of Europe*, 37.

²⁰³ *Ibid.*

²⁰⁴ *Kuhnert*, *Urbanität auf dem Lande*, 187–188.

²⁰⁵ *Soroka*, *Summer Capitals of Europe*, 74.

²⁰⁶ *Ibid.*

²⁰⁷ *Sommer*, *Zur Kur nach Ems*, 465–466.

²⁰⁸ *Hascher*, *Kurorte als "Hotspots" der Technikgeschichte*, 450.

²⁰⁹ *Pühringer*, *Zu klein, zu jung, zu unbedeutend*, 92.

²¹⁰ *Eidloth*, *Kleine historische Geographie*, 20.

²¹¹ *Hascher*, *Kurorte als "Hotspots" der Technikgeschichte*, 431.

²¹² Josef Charvát, *Die Kurtaxe. Geschichtliche Entwicklung und derzeitiger Stand* (Prag 1967).

details of the spa tax were published by the spa commissions.²¹³ Recently, Ulrike Scholda has written about the introduction of the spa tax in Baden.²¹⁴

In its older forms, the spa tax can be traced back to as early as the 16th century in Karlsbad and Baden-Baden.²¹⁵ From 1795 onwards,²¹⁶ it became more widespread as a way to finance modern spa infrastructure.²¹⁷ It was a major source of revenue from which Baden began to benefit in 1842,²¹⁸ and its intricate rules and exceptions, which underwent many changes over time, provide valuable insight into the social categorisation of spa clientele. These rules often prompted complaints from visitors, who argued they should be paying less than they were being asked.²¹⁹ Even for authorities, it was not always clear whether, for instance, a low-ranking yet noble member of the military should be taxed.²²⁰ In addition to the spa tax, visitors increasingly had to also pay a music tax. In Bad Ems this was introduced alongside the spa tax in 1848,²²¹ which Baden followed in 1856.²²² The following examples from different spa towns illustrate the general structure and complexity of the *Kurtaxordnungen*.

As a general rule, the tax was stratified, though the number of categories varied. While Baden had only two categories, the Bohemian spas had four, and Bad Gastein had five.²²³ Wiesbaden offered a family discount, counting sons as family members until adulthood, while daughters remained part of the family as long as they were unmarried.²²⁴ In Baden, children under 15 were initially exempt, though this was lowered to 14 in 1884.²²⁵

The point at which the tax became due also changed over time. In Baden, payment was initially required after five consecutive days in the city, which was changed to five total days

²¹³ Mikoletzky, *Zur Sozialgeschichte des österreichischen Kurorts*, 397.

²¹⁴ Ulrike Scholda, *Einblicke in die Anfänge der Kurtaxe und Kurkommission in der Kurstadt Baden bei Wien*. In: Ulrike Fritsch, Martin Scheutz, Jacqueline Schindler, Ulrike Scholda (eds.), *Kurbäder als Spiegel der Gesellschaft in der Neuzeit* (St. Pölten 2025) 163–189, online: <https://doi.org/10.52035/noil.2025.stuf81.06>.

²¹⁵ Penz, *Inseln der Seligen*, 191.

²¹⁶ Ibid.

²¹⁷ Scheutz, *Kurstädte im Kontext interdisziplinär Forschungen*, 37–38.

²¹⁸ Scholda, *Einblicke in die Anfänge der Kurtaxe*, 164.

²¹⁹ Penz, *Inseln der Seligen*, 193.

²²⁰ Mikoletzky, *Zur Sozialgeschichte des österreichischen Kurorts*, 409.

²²¹ Sommer, *Zur Kur nach Ems*, 316.

²²² Mikoletzky, *Zur Sozialgeschichte des österreichischen Kurorts*, 404–405.

²²³ László Kósa, *Badeleben und Kurorte in Österreich-Ungarn* (Budapest 1999) 109.

²²⁴ Fuhs, *Mondäne Orte*, 304–305.

²²⁵ Ibid., 410.

per season in 1876.²²⁶ This was further reduced to just two days in 1903.²²⁷ Additionally, visitors staying more than three weeks were required to pay extra, while off-peak visits after mid-September were discounted.²²⁸

Uniquely, doctors and their families were exempt from the spa tax, yet they were still listed by name in the *Kurlisten*. Their presence in the town was considered beneficial to its image and attested to the healing powers of its waters.²²⁹ The *Kurtaxordnung* for Wiesbaden in 1877 also granted exemptions to wounded soldiers and to the poor, whose admission was a charitable gesture provided their numbers remained small enough not to alter the spa landscape.²³⁰ Family members and even business associates staying with residents of Wiesbaden were also exempt.²³¹ By 1910, exemptions extended beyond doctors to other medical personnel, while business associates were required to pay.²³² Professionals travelling as part of the group, such as domestic servants, governesses, and tutors were also exempt.²³³

2.6 Amenities

In literature, the established understanding of the technological developments in the 19th century such as electricity, gas lighting, telegraph, elevator, canalisation, and automobile was that these had reached spa towns relatively early.²³⁴ In his article on this topic, Hascher notes that small industrial cities were also at least on par with spa towns in this regard.²³⁵ In Baden, many social amenities including a theatre, coffeehouses, a casino, salons, and billiard rooms were already present by 1800.²³⁶

2.6.1 Water

An essential part of the traditional spa culture was water. Contemporary guides, balneological writings, and *Kurlisten* listed different waters and their temperature, specific healing powers,

²²⁶ Ibid., 410.

²²⁷ Ibid., 411.

²²⁸ Ibid., 412.

²²⁹ Mikoletzky, *Zur Sozialgeschichte des österreichischen Kurorts*, 403.

²³⁰ Fuhs, *Mondäne Orte*, 307–308.

²³¹ Ibid., 308.

²³² Ibid.

²³³ Mikoletzky, *Zur Sozialgeschichte des österreichischen Kurorts*, 403.

²³⁴ Pühringer, *Zu klein, zu jung, zu unbedeutend*, 73.

²³⁵ Hascher, *Kurorte als “Hotspots” der Technikgeschichte*, 451–452.

²³⁶ Josef Bauer, *Kur & Unterhaltung im alten Baden. Wohltätigkeits- & Militäranstalten, Theater & Kino* (Berndorf 2016) 72.

and chemical categorisation.²³⁷ However, the availability and the quality of drinking water were problems in many spa towns, and new connections were needed as demand increased.²³⁸ In Reichenau, a climatic spa, people complained about water quality since the town initially had no access to the main pipeline supplying Vienna, despite its proximity to a mountain spring.²³⁹ Clean drinking water was also an issue in Baden, where, in remembrance of the failed assassination attempt on Crown Prince Ferdinand, a fountain was finally integrated into the Holy Trinity column in the main square in 1833.²⁴⁰ In 1880, this fountain was connected to the Vienna pipeline.²⁴¹

2.6.2 Illumination

Spa towns were first illuminated with gas and then with electricity. Baden introduced gas lighting in 1866,²⁴² Bad Ischl in 1870, Meersburg in 1873, and Reichenau in 1875.²⁴³ With 1894, Baden was also somewhat ahead with the electrification of its streetlights.²⁴⁴ In the first decade of the 20th century, the other three towns also switched to electricity.²⁴⁵ In both cases, gas and electric power, private investments played a role, and some hotels in Semmering even had their own power plants.²⁴⁶

2.6.3 Communication

Channels of communication were partly linked to transportation, which, as discussed earlier,²⁴⁷ became increasingly convenient in the second half of the 19th century. Post offices spread first, followed by the telegraph, and then the telephone. The presence of royalty was often a driving factor in the introduction of these technologies in smaller or emerging spa towns. Telegraph offices were set up for Emperor Franz Joseph's summer stays: in Bad Ischl

²³⁷ For some examples on Baden, see: Carl *Rollett*, *Baden in Österreich, seine reichlichen Quellen und deren heilende Kräfte, seine vorzüglichen Merkwürdigkeiten und malerischen Umgebungen* (Vienna 1838); Franz *Habel*, *Baden und seine Heilquellen* (Vienna 1852).

²³⁸ *Förderer*, *Playgrounds of Europe*, 27.

²³⁹ *Butz*, *Habsburg als Touristenmagnet*, 111–112.

²⁴⁰ *Bauer*, *Kur & Unterhaltung im alten Baden*, 79.

²⁴¹ *Ibid.*

²⁴² Hans *Hornyik*, *Baden bei Wien. Historische Entwicklung als Kur- und Badestadt und Teil des geplanten UNESCO-Weltkulturerbes "Great Spas of Europe"*. In: *Bade- und Kuranstalten* (St. Pölten 2017) 17–21, here 20.

²⁴³ *Butz*, *Habsburg als Touristenmagnet*, 110.

²⁴⁴ Elisabeth *Ulsperger*, *Baden. Eine Kurstadt nahe der Residenz*. In: Peter *Urbanitsch*, Hannes *Stekl* (eds.), *Kleinstadtbürgertum in der Habsburgermonarchie 1862–1914* (Vienna 2000) 79–135, here 115.

²⁴⁵ *Butz*, *Habsburg als Touristenmagnet*, 110.

²⁴⁶ *Ibid.*

²⁴⁷ Pages 7–10.

in 1856, in Reichenau in 1863, and in 1870 an ancillary telegraph office was established for the imperial couple visiting Meran.²⁴⁸ In 1887, a telephone call could be made from Schneeberg to Vienna.²⁴⁹ The Ems Dispatch, which led to the Franco-Prussian War, is often cited to underline the importance of spa towns in diplomacy and the power of rapid new communication methods.²⁵⁰

2.6.4 Kurhaus

A unique amenity of the spa town was the *Kurhaus*,²⁵¹ a building with long opening hours²⁵² that was off-limits to the lower classes exempt from the spa tax. In this lavishly decorated building, spa visitors could eat, drink, read, dance, socialise, and gamble.²⁵³ This centralisation of many aspects of spa life meant that society life became less public.²⁵⁴ A sign of true decadence, the interior of the Kurhaus and its surroundings were heavily lit first by candles, then gas, and finally electricity, on a scale of illumination otherwise seen only in operas and ballrooms of contemporary European metropolises.²⁵⁵ The actual offerings of a *Kurhaus* depended on local means, fashion, and the needs of the visitors, which necessitated alterations to the building over time.²⁵⁶

2.6.5 Reading

Fuhs contrasts the bourgeois pursuit of “reading” with the aristocratic focus on “dancing” in cultural spa life.²⁵⁷ In Germany, an increase in the number of published books and readers around 1800 has been attributed to politically disenfranchised women and the bourgeoisie,²⁵⁸ for whom self-improvement through reading was an especially important outlet. In Wiesbaden, the state’s initial attempts to control this wave by limiting bookselling and

²⁴⁸ Butz, Habsburg als Touristenmagnet, 111.

²⁴⁹ Ibid.

²⁵⁰ For example, see: Alexander Jendorff, Tanzende Kongresse? – Die Kurstadt als Ort der Diplomatie und ihrer Akteure. In: Andrea Pühringer, Martin Scheutz (eds.), Die Kurstadt als urbanes Phänomen. Konsum, Idylle und Moderne (Vienna/Cologne 2023) 99–126, here 114, online: <https://doi.org/10.7788/9783412525903.99> (10.01.2026).

²⁵¹ Other names for the same building type included *Kursaal*, *Conversationshaus*, *Casino*, *Vauxhall*. See: Förderer, Playgrounds of Europe, 46.

²⁵² Bleyemehl-Eiler, Luxus am Kurort, 272.

²⁵³ Förderer, Playgrounds of Europe, 47.

²⁵⁴ Bleyemehl-Eiler, Luxus am Kurort, 271.

²⁵⁵ Ibid., 274.

²⁵⁶ Förderer, Playgrounds of Europe, 46–47.

²⁵⁷ Fuhs, Mondäne Orte, 273.

²⁵⁸ Ibid.

lending libraries weakened in the first decade of the 19th century, and reading material in multiple languages aimed at international visitors became widespread.²⁵⁹

Reading rooms and materials were also available in the *Kurhaus*. In Wiesbaden, the *Kurhaus* offered four reading rooms, and the library contained not only books but also encyclopaedias, dictionaries, magazines on a wide range of topics, guidebooks for trips, *Kurlisten*, etc.²⁶⁰

Thus, a wide range of interests was covered, and visitors could also learn about other spa towns they might wish to visit.²⁶¹ Those who wanted to use the reading facilities of the *Kurhaus* had to comply with numerous rules: smoking was not allowed, silence was expected, and any overreaction provoked by the reading material had to be avoided.²⁶² Comparing guidebooks from 1877 and 1910, Fuhs interprets the absence of detailed instructions in the latter as a sign that people had by then learned how to behave in such spaces.²⁶³

2.6.6 Music

Traditionally, *Tafelmusik* (table music) was played to help with digestion.²⁶⁴ Minstrels and later on meistersingers performed in the baths, and new arrivals to spa towns were greeted with fanfare.²⁶⁵ In the 19th century, music in spa towns came to be considered not only a pleasant distraction but also a part of the healing regimen. Initially composed of locals, the spa orchestras became more professional and larger, with the additional costs covered by the music tax in many towns.²⁶⁶ The lower classes were exempt from this tax, as they also could not enter the *Kurgarten* (spa garden), where the orchestra could be heard properly.²⁶⁷ In Wiesbaden, the orchestra grew from 20 to 50 musicians between 1840 and 1877, and in 1883 it accounted to a fifth of public spa expenses.²⁶⁸

The spa orchestra performed before breakfast and supper²⁶⁹ on the bandstand²⁷⁰ which was in the *Kurgarten*, but also in the theatre or in the *Kurhaus*.²⁷¹ Over time, these bandstands, like

²⁵⁹ Ibid., 273–274.

²⁶⁰ Ibid., 275–276.

²⁶¹ Ibid., 275.

²⁶² Ibid., 277–278.

²⁶³ Ibid., 278.

²⁶⁴ Křížek, *Kulturgeschichte des Heilbades*, 209.

²⁶⁵ Ibid.

²⁶⁶ Ibid.

²⁶⁷ Lempa, *Spa*, 59.

²⁶⁸ Scheutz, *Kurstädte im Kontext interdisziplinär Forschungen*, 46.

²⁶⁹ Lempa, *Spa*, 60.

²⁷⁰ Eidloth, *Kleine historische Geographie*, 30.

²⁷¹ Förderer, *Playgrounds of Europe*, 47.

the *Kurhaus* itself, changed with fashion but remained staple features of spa life.²⁷² The rhythm of the music, paced at 75 to 80 steps per minute, helped visitors during early morning walks in the *Kurgarten* between glasses of spring water.²⁷³ The circumstances of spa towns made them ideal places to test new pieces before the winter season in the cities,²⁷⁴ and visiting musicians of influence were always welcome to give at least one performance.²⁷⁵

2.7 Activities

As spa visitors were advised not to work during their stay to achieve the best results, the daily routine left people with spare time,²⁷⁶ which they could fill with multiple activities.²⁷⁷ The range of activities changed from town to town. Andreas Förderer considers the presence of anything beyond libraries, concerts, and the promenade to be a sign that leisure, rather than health, had become the main motivation for visiting that spa.²⁷⁸ Theatre, opera, and balls were not available in most cities, yet the need to entertain spa visitors and compete with other spa towns led to what Kuhnert calls a “rural urbanity”.²⁷⁹ Thanks to an international clientele, many new sports arrived in spa towns earlier than in other cities. The rise of sports also aligned with the recommendations of health specialists, who emphasised the importance of exercise. With all activities came the welcome side effect of being seen by other spa visitors.²⁸⁰

It was common, or even expected, for groups to form in daily spa life. Social interactions, *table d'hôte*, and individuals acting as bridges contributed to these formations. A *Partie* was created with social standing in mind, but a totally homogenous one was considered “boring”,²⁸¹ defeating the purpose. A foreigner, a Jew, or a woman could make the whole group²⁸² and by extension the shared activity itself, more interesting.

²⁷² Ibid.

²⁷³ Lempa, Spa, 61.

²⁷⁴ Scheutz, Kurstädte im Kontext interdisziplinär Forschungen, 46.

²⁷⁵ Křížek, Kulturgeschichte des Heilbades, 210.

²⁷⁶ Förderer, Playgrounds of Europe, 93.

²⁷⁷ Bleyemehl-Eiler, Luxus am Kurort, 279–280.

²⁷⁸ Ibid.

²⁷⁹ Kuhnert, Urbanität auf dem Lande.

²⁸⁰ Erika Schmidt, Kuranlagen des 19. Jahrhunderts in Deutschland. Landschaftsarchitektur, Nutzungsangebot, Beitrag zur Stadtstruktur. In: Volkmar Eidloth (ed.), Europäische Kurstädte und Modebäder des 19. Jahrhunderts (Stuttgart 2012) 173–185, here 181.

²⁸¹ Lempa, Spa, 64.

²⁸² Ibid., 65.

2.7.1 Theatre

An important cultural activity in the spa town was a visit to the theatre. The end of the traditional play season in cities coincided with the high-season in the spa towns, allowing travelling artists and their companies to entertain spa visitors while also securing income.²⁸³ Since the usual spa stay lasted around a month, different shows were needed to keep guests interested.²⁸⁴ For locals, a theatre could be both a costly project and a potentially lucrative investment. Baden had the luxury of multiple theatres.

In Baden, a regular theatre company had existed since 1716, performing in a barn.²⁸⁵ In 1750, the *Komödienhaus* was built,²⁸⁶ which was demolished and rebuilt by the city in 1775.²⁸⁷ This building was also demolished and instead the *Hoftheater an der Schwechat* was opened in 1812²⁸⁸ and expanded in 1817.²⁸⁹ Further improvements in 1867 such as gas lighting and a new stage were followed by the expansion of the theatre season into winter, subsidised by the municipality to offset the lower number of visitors.²⁹⁰ Renovations followed in 1875, 1882, 1898, and the capacity was reduced to 900 people following the devastating *Ringtheater* fire in Vienna.²⁹¹

Between 1898–1908, there were efforts and discussions for a new *Stadttheater*, including an architectural competition.²⁹² Three local clubs, *Vergnügungsverein*, *Trabrennverein*, and *Sparkasse Baden* were essential in securing necessary capital.²⁹³ The foundation stone was laid on the 60th jubilee of Franz Joseph's ascension to the throne,²⁹⁴ leading to its name, the *Jubiläums-Stadttheater*.

In 1841, the *Sommerarena*, a wooden open-air theatre, was built and later renovated in 1865.²⁹⁵ Unsurprisingly, revenue was weather-dependent, and the structure required constant

²⁸³ Scheutz, *Kurstädte im Kontext interdisziplinär Forschungen*, 45.

²⁸⁴ Kuhnert, *Urbanität auf dem Lande*, 192.

²⁸⁵ Bauer, *Kur & Unterhaltung im alten Baden*, 167.

²⁸⁶ Christian Fastl, *Baden (bei Wien)*. Oesterreichisches Musiklexikon online (26.11.2024), online: https://musiklexikon.ac.at/ml/musik_B/Baden_bei_Wien.xml (08.07.2025).

²⁸⁷ Bauer, *Kur & Unterhaltung im alten Baden*, 167.

²⁸⁸ Ibid., 170.

²⁸⁹ Ibid.

²⁹⁰ Ibid.

²⁹¹ Ibid., 171.

²⁹² Ibid., 179–182.

²⁹³ Ibid., 182–183.

²⁹⁴ Ibid., 191.

²⁹⁵ Fastl, *Baden (bei Wien)*.

repairs.²⁹⁶ As with the *Stadttheater*, there were discussions within the local government regarding possible solutions to the issue.²⁹⁷ In 1905, a new *Sommerarena* with an innovative glass roof, which could be closed when needed, was approved.²⁹⁸ The construction, which took less than four months, was finished mid-1906,²⁹⁹ in time for the spa season. Despite this rapid development, the project would go 50% over budget.³⁰⁰

2.7.2 Casino

Gambling provided a lucrative revenue stream for spa towns.³⁰¹ The presence of a casino made them more attractive to visitors, which is evident in the increased numbers in major spa towns such as Baden-Baden, Spa, and Wiesbaden.³⁰² The first casino in Bad Ems, first of its kind in Germany, opened in 1720, in Spa in 1763,³⁰³ and in Bad Ischl in 1840.³⁰⁴ Casinos were subject to changing political circumstances, which could force them to shut down and push the owners to relocate.³⁰⁵ In France, their legal presence was limited to Paris and spa towns after the revolution, until an outright ban in 1838.³⁰⁶ In an attempt to shield the local population while still maintaining revenue, inhabitants of the Duchy of Nassau were prohibited from gambling in their own territory.³⁰⁷ After the Unification of Germany, casinos were closed in 1872.³⁰⁸ Towns that emphasised health tourism as much as leisure were less affected by these changes.³⁰⁹

The history of gambling in spa towns predates the opening of state-sanctioned casinos in the 18th century. Gambling was not only a display of wealth but also a carefree attitude toward money, a quality associated with the aristocracy.³¹⁰ As the power and visibility of the middle classes grew over the 19th century, both groups came into closer contact, particularly in spa

²⁹⁶ *Bauer*, Kur & Unterhaltung im alten Baden, 172.

²⁹⁷ *Ibid.*, 172–173.

²⁹⁸ *Ibid.*, 173–175.

²⁹⁹ *Ibid.*, 175.

³⁰⁰ *Ibid.*, 177.

³⁰¹ *Förderer*, Playgrounds of Europe, 37.

³⁰² Angelika *Pozdena-Tomberger*, Die historische Entwicklung des Fremdenverkehrs im Allgemeinen und die Entwicklung einzelner Fremdenverkehrsorte im ehemaligen österreichischen Küstenland. In: Willibald *Rosner*, Silvia *Petrin* (eds.), *Sommerfrische. Aspekte eines Phänomens* (Vienna 1994) 29–51, here 37.

³⁰³ *Förderer*, Playgrounds of Europe, 93.

³⁰⁴ *Butz*, Habsburg als Touristenmagnet, 113.

³⁰⁵ *Pühringer*, Zu klein, zu jung, zu unbedeutend, 87.

³⁰⁶ *Förderer*, Playgrounds of Europe, 93.

³⁰⁷ *Fuhs*, Mondäne Orte, 281.

³⁰⁸ *Eidloth*, Kleine historische Geographie, 30.

³⁰⁹ *Sommer*, Zur Kur nach Ems, 105.

³¹⁰ *Fuhs*, Mondäne Orte, 286.

towns. This led to a middle-class moral critique of gambling, based on frugality and industriousness, set against aristocratic extravagance.³¹¹ Even the railways were criticised for enabling civil servants and soldiers to easily reach spa towns and gamble, as these groups were considered vital to the health of the nation.³¹² They had to be kept away from empty promises of welfare, which could only be attained through honest labour.³¹³ But, gambling could also be seen as part of the healing process, as it helped alleviate ennui³¹⁴ which the aristocrats were privileged enough to suffer from. While other distractions existed, gambling remained the most exclusive, and changes in clientele after a ban were inevitable.³¹⁵

2.7.3 Balls

Balls were important social events in spa towns, serving not only as entertainment³¹⁶ but also as opportunities for social mingling and self-expression. Their therapeutic aspect, through music, should also be mentioned.³¹⁷ In Wiesbaden, balls marked the beginning and end of the spa season, and season tickets were available at a discounted price.³¹⁸

A clear, class-based distinction was observed at balls. Some events required invitations, but the increased participation of the middle classes in what had been a more exclusive activity occasionally led to tensions.³¹⁹ Not only the ability to dance properly, but also to be given the privilege by upper class ladies, to ask for a dance, was a strong indicator of belonging to the upper echelons of spa society.³²⁰

Over time, new styles would come into vogue, requiring resources to learn. Middle-class children often took dance classes during winter in preparation.³²¹ A single misstep could betray a less-refined social background³²² and result in exclusion. Over the course of the 19th century, the elitism surrounding balls became less pronounced.³²³

³¹¹ Ibid., 279.

³¹² Ibid., 281–282.

³¹³ Ibid., 281.

³¹⁴ Ibid., 287.

³¹⁵ *Sommer*, *Zur Kur nach Ems*, 105.

³¹⁶ *Butz*, *Habsburg als Touristenmagnet*, 114.

³¹⁷ *Scheutz*, *Kurstädte im Kontext interdisziplinär Forschungen*, 45.

³¹⁸ *Fuhs*, *Mondäne Orte*, 266.

³¹⁹ Ibid., 271–272.

³²⁰ *Kuhnert*, *Urbanität auf dem Lande*, 150.

³²¹ *Fuhs*, *Mondäne Orte*, 267.

³²² Ibid., 270–271.

³²³ Ibid., 266.

2.7.4 Sport

Spa towns were ideal places for practising various sports at different levels.³²⁴ Many of these had aristocratic origins, and others were imported from the United Kingdom, not only because of its general influence in the 19th century but also by British spa visitors themselves.³²⁵ The first continental tennis courts and golf courses opened in spa towns in Germany around 1880,³²⁶ not long after the founding of the world's first lawn tennis club in 1872.³²⁷ Fuhs speaks of “civilising” meadows into lawns, made possible by the invention of the lawnmower,³²⁸ and suggests that the popularity of sport in German spas was partly due to the gambling ban, which left a need for alternative forms of amusement.³²⁹ In some towns like Semmering, visitors could also pursue winter sports and alpine hikes.³³⁰ Smaller spa towns could specialise in certain sports to attract visitors.³³¹ Like music, sport was considered a part of the healing process.³³² It also reshaped the ideal body image from a pale, steady figure to a bronzed, active one.³³³

Until the 1920s, sports participation was largely limited to the upper and upper-middle classes. Not only private clubs but also publicly funded infrastructure was often inaccessible to the lower classes.³³⁴ This was especially the case for tennis, golf, and horse riding.³³⁵ Other activities, such as cycling, spread to the middle and then lower classes, with greater emphasis laid on transportation than sport.³³⁶ Upper and upper-middle class women actively participated in all sports, meaning that segregation in this area was based more on class than gender.³³⁷

In Baden, local clubs were crucial in promoting sports. The *Turnverein* was founded in 1862.³³⁸ The *Verein Internationaler Sportplatz Baden* organised annual tennis tournaments,

³²⁴ *Marschik, Kurstädte – Sportstädte*, 378.

³²⁵ *Förderer, Playgrounds of Europe*, 50.

³²⁶ *Ibid.*

³²⁷ *Fuhs, Mondäne Orte*, 292–293.

³²⁸ *Ibid.*, 294–295.

³²⁹ *Ibid.*, 290.

³³⁰ *Marschik, Kurstädte – Sportstädte*, 359–360.

³³¹ *Ibid.*, 374.

³³² *Ibid.*, 380–381.

³³³ *Fuhs, Mondäne Orte*, 293.

³³⁴ *Schmidt, Kuranlagen des 19. Jahrhunderts in Deutschland*, 180.

³³⁵ *Fuhs, Mondäne Orte*, 302.

³³⁶ *Ibid.*

³³⁷ *Marschik, Kurstädte – Sportstädte*, 381.

³³⁸ *Ibid.*, 355.

and later added automobile and winter sports sections.³³⁹ Sporting activity was seen as a sign of modernity,³⁴⁰ and spa towns invested heavily in infrastructure to keep up with the times.

Horse Racing

Like spas, horse racing also has its roots in antiquity. Modern horse races can be traced back to 18th century Britain, from where they spread to the continent.³⁴¹ In Germany, the first racecourse opened in a spa town in 1823.³⁴² In Baden, the *Trabrennverein* was founded in 1892, attracting 15.000 spectators to its first trotting event.³⁴³ *Reitalleen* (riding alleys) were created for riding purely as a sport, rather than commuting.³⁴⁴

Cycling

Bicycles were initially luxury items, but by 1900 cycling had become much more accessible.³⁴⁵ Among the lower classes, they were primarily used for commuting, while the middle classes treated them as sports equipment, relying more on trains and carriages for travel.³⁴⁶ The popularity of cycling led to additional regulations, and some cities banned bicycles outright.³⁴⁷ It was important to keep the core spa area undisturbed by cyclists,³⁴⁸ especially the lower class ones, who became more mobile thanks to bicycles. Bicycle races, however, were welcomed. In Bad Homburg, a cycling club already existed in 1886, and many races were organised there.³⁴⁹ Although cycling was generally considered a healthy habit, debates arose concerning its implications for women, both medically and morally.³⁵⁰

Tennis

It was also around this time that tennis entered the scene. Tennis kits made up of two rackets, a ball, two posts, and a net were brought to the continent by British spa visitors.³⁵¹ The first

³³⁹ Ibid., 356–357.

³⁴⁰ Ibid., 364.

³⁴¹ *Schmidt*, Kuranlagen des 19. Jahrhunderts in Deutschland, 179.

³⁴² Ibid.

³⁴³ *Marschik*, Kurstädte – Sportstädte, 356.

³⁴⁴ *Fuhs*, Mondäne Orte, 300.

³⁴⁵ Ibid., 295.

³⁴⁶ Ibid., 296.

³⁴⁷ Ibid., 300.

³⁴⁸ Ibid.

³⁴⁹ *Hascher*, Kurorte als “Hotspots” der Technikgeschichte, 446.

³⁵⁰ *Fuhs*, Mondäne Orte, 298–299.

³⁵¹ Ibid., 294.

tennis match in Bad Homburg took place in 1876.³⁵² In 1905, Hotel Gejzír in Karlovy Vary opened with six tennis courts,³⁵³ a testament to the popularity of the sport among spa visitors.

Golf

Another successful British export was golf, which had the most exclusive character.³⁵⁴ As with tennis, Bad Homburg played a pivotal role in spreading golf to the continent via British tourists, and it was there that Germany's oldest golf course opened.³⁵⁵ In Bohemia, another region popular with the British due to visits by Edward VII, the first golf course opened in 1904.³⁵⁶

Rowing

British traders introduced rowing to Hamburg in the 1830s, where the *Hamburger Ruder Club*, Germany's oldest sports club, was founded in 1836.³⁵⁷ In Bad Ems, the first regatta was held in 1858, which came to be called the *Kaiserregatta* in honour of Wilhelm I who spent many summers in the city.³⁵⁸

Motorsports

Spa towns were also at the forefront of motor racing events. In Baden, the first automobile race was held on the trotting course in 1900.³⁵⁹ From 1911 onwards, dirt track races for both motorcycles and cars were held regularly.³⁶⁰

2.7.5 Day Trips

Nearby attractions could also influence the choice of spa town. These included scenic views, rock formations, castles, ruins, churches, and monasteries.³⁶¹ Day trips often became part of the routine, with visitors hiking or exploring after lunch, often as a group.³⁶² As an extension of the promenade, spa towns developed trail networks that led to hilltop watchtowers.³⁶³

³⁵² Ansgar Molzberger, *Pferderennen, Tennis, Golf und Rudern. Kurorte als frühe Zentren des Sports*. In: Peter Weidisch, Fred Kaspar (eds.), *Kurort und Modernität* (Würzburg 2017) 285–297, here 289.

³⁵³ Marschik, *Kurstädte – Sportstädte*, 355.

³⁵⁴ Fuhs, *Mondäne Orte*, 292.

³⁵⁵ Molzberger, *Pferderennen, Tennis, Golf und Rudern*, 289.

³⁵⁶ Marschik, *Kurstädte – Sportstädte*, 355.

³⁵⁷ Molzberger, *Pferderennen, Tennis, Golf und Rudern*, 288.

³⁵⁸ Ibid.

³⁵⁹ Marschik, *Kurstädte – Sportstädte*, 357.

³⁶⁰ Ibid.

³⁶¹ Eidloth, *Kleine historische Geographie*, 32.

³⁶² Sommer, *Zur Kur nach Ems*, 301.

³⁶³ Hascher, *Kurorte als "Hotspots" der Technikgeschichte*, 443.

Visitors with limited mobility could rely on donkeys, and later funiculars or cable cars.³⁶⁴ In some towns like Bad Kissingen, steam-powered pleasure boats could be rented.³⁶⁵ A contemporary guidebook on Baden made sure to include Mödling, Laxenburg, and Heiligenkreuz,³⁶⁶ which are still popular with the visitors.

³⁶⁴ Ibid.

³⁶⁵ Ibid., 429.

³⁶⁶ Josef *Bersch*, *Der Curort Baden in Nieder-Oesterreich. Seine Heilquellen und Umgebungen* (Baden bei Wien 1866), here 94–138.

3. Spa Visitors

Understanding the social make-up of the spa visitors, especially over decades, is not an easy task. Attempts at statistical analysis go back as early as 1816.³⁶⁷ The popular image of the spa towns has long been dominated by the aristocracy, because the available sources referred mostly to nobles.³⁶⁸ This not only overlooks the smaller, traditional mineral springs and baths frequented by locals, but also overstates the percentage of aristocrats in spa towns. Kuhnert notes that there has been a shift from estate-based social categorisation to a class-based one in the 19th century.³⁶⁹ Changes brought by the Industrial Revolution such as rising welfare and population, cheaper and faster travel, and the growth of the middle classes,³⁷⁰ who in many ways, imitated aristocracy,³⁷¹ altered the visitor structure.

Beyond the middle classes, a spa visit had an emancipatory role for two groups: women and Jews.³⁷² Women of all classes visited spas, often travelling without men.³⁷³ Around 1850, half of the female visitors to Pyrmont travelled by themselves.³⁷⁴ For many married women, the right to a spa visit was secured in their marriage contract.³⁷⁵ In spa towns, upper-class women found freedom they lacked at home.³⁷⁶ Even young aristocratic girls, usually under strict control, could enjoy more freedom.³⁷⁷

Jews in Europe were discriminated against for hundreds of years, which also limited their access to spas.³⁷⁸ In Bad Pyrmont, they were summarily listed rather than named until around 1765, regardless of their class.³⁷⁹ Sommer mentions the name, occupation, and the place of accommodation in the *Kurlisten* as likely signs that a visitor may have been Jewish.³⁸⁰ From the late 18th century, Jewish emancipation, assimilation, and enlightenment gradually improved their situation in many European societies.³⁸¹ The growing numbers and visibility of

³⁶⁷ Fuhs, *Mondäne Orte*, 366.

³⁶⁸ Sommer, *Zur Kur nach Ems*, 19.

³⁶⁹ Kuhnert, *Urbanität auf dem Lande*, 119–120.

³⁷⁰ Förderer, *Playgrounds of Europe*, 15.

³⁷¹ *Ibid.*, 19.

³⁷² Kuhnert, *Urbanität auf dem Lande*, 196.

³⁷³ Vanja, *Arme und Frauen*, 73.

³⁷⁴ Lempa, *Spa*, 51–52.

³⁷⁵ Vanja, *Arme und Frauen*, 73.

³⁷⁶ Soroka, *Summer Capitals of Europe*, 73.

³⁷⁷ *Ibid.*, 81.

³⁷⁸ Kuhnert, *Urbanität auf dem Lande*, 202.

³⁷⁹ *Ibid.*, 203.

³⁸⁰ Sommer, *Zur Kur nach Ems*, 330.

³⁸¹ Scheutz, *Kurstädte im Kontext interdisziplinär Forschungen*, 31.

Jewish visitors led to new restaurants, kosher butchers, synagogues, and cemeteries in spa towns.³⁸² By the 1850s, antisemitism in spas was on the rise, accelerating after the First World War.³⁸³ Poorer Jews from Eastern Europe, the so-called *Ostjuden*, were especially targeted because of their distinctive clothes.³⁸⁴ In Meran, more than a third of doctors were Jewish in 1902, a situation attributed to rising antisemitism in Vienna.³⁸⁵ In the 1920s and 1930s, many Austrian lakeside towns began excluding Jews altogether.³⁸⁶

Besides visitor numbers, the internationality of a spa town was seen as a testament to its importance.³⁸⁷ In Wiesbaden, between 1858–1862, on average 39% of visitors were from abroad.³⁸⁸ In Bad Ems, from around 1845 to the 1860s, foreign visitors regularly made up over 45%, even exceeding 60% in 1858.³⁸⁹ Nevertheless, the visitors often sought to socialise with their compatriots.³⁹⁰ Members of the upper classes had both the necessary language skills, especially French, and family or marriage networks that allowed them to interact more easily with other upper class visitors from abroad.³⁹¹

An early social categorisation was made in 1787 by Count Johann Fekete de Galantha, in which the Viennese society was divided into five groups: aristocracy, gentry, third nobility, fourth class, and common people.³⁹² Another categorisation differentiated between three main groups: high nobility, second nobility, and the common man, which included everyone between nobles and servants.³⁹³ An even simpler one from 1789 divided the visitors based on their right to enter the ballroom.³⁹⁴ These examples show that both the number of categories and the list of occupations these should include are open to discussion. In the *Kurlisten*, multiple occupations can be found for each spa visitor, which makes the situation even less

³⁸² Ibid., 48–49.

³⁸³ Ibid., 48–50.

³⁸⁴ Steward, *Moral Economies*, 202.

³⁸⁵ Scheutz, *Kurstädte im Kontext interdisziplinär Forschungen*, 49.

³⁸⁶ Payer, *Sommerfrische*, 101.

³⁸⁷ Eidloth, *Kleine historische Geographie*, 28.

³⁸⁸ Ibid., 27.

³⁸⁹ Ibid.

³⁹⁰ Jeannette van Laak, *Scheu vor Fremden? Zur Wahrnehmung ausländischer Kurgäste in deutschen Kurbädern des 19. Jahrhunderts*. In: Lu Seegers, Matthias Frese, Malte Thießen (eds.), *Kurorte in der Region. Gesellschaftliche Praxis, kulturelle Repräsentationen und Gesundheitskonzepte vom 18. bis zum 21. Jahrhundert* (Göttingen 2024) 111–128, here 126.

³⁹¹ Ibid., 127.

³⁹² Hannes Stekl, *Adel und Bürgertum in der Habsburgermonarchie. 18. bis 20. Jahrhundert* (Vienna 2004) 148–149. In the original the groups are: *hoher Adel, niederer Adel, dritter Adel, vierte Gesellschaftsklasse, niederes Volk*.

³⁹³ Ibid., 149. In the original the groups are: *hoher Adel, zweiter Adel, gemeiner Mann*.

³⁹⁴ Kuhnert, *Urbanität auf dem Lande*, 123.

clear. The issues regarding this will be discussed in the *Occupation Categories* subchapter.³⁹⁵ To this end, more detailed and labour-intensive studies encompassing additional factors such as age, number of servants, living conditions provide a fuller picture.³⁹⁶ In this chapter, in order to describe the social groups more accurately, the main tiers of the society will be categorised as the upper, middle, and lower classes.³⁹⁷

3.1 Upper Classes

What is often indiscriminately described as the aristocracy was in fact composed of sub-groups with varying legal and socioeconomic status, reflecting the complex nature of the Austrian state.³⁹⁸ On a larger scale, these privileged groups are more accurately described as the upper classes. An important distinction to note is that *aristocracy* and *nobility* do not refer to the same group of people.

The imperial family was the most exclusive sub-group. Members of the Habsburg dynasty were generally not allowed to marry non-aristocrats or non-sovereign high aristocrats.³⁹⁹ For monarchs, travel served multiple purposes: representation, meeting other rulers informally, connecting with people,⁴⁰⁰ or hunting.⁴⁰¹ Sometimes they travelled under false names, avoiding official duties and socialising. Beyond the imperial family, two further groups were part of the upper classes: aptly named *erste Gesellschaft* (First Society) and *zweite Gesellschaft* (Second Society).

3.1.1 Erste Gesellschaft

The *erste Gesellschaft* was what is usually meant by the term *aristocracy*. To be considered a part of this group, a noble family history going back to eight generations on each parental line was necessary.⁴⁰² There were between 300 to 400 of these *hoffähig* families which made up the aristocracy, who had the right of presentation at Court.⁴⁰³ This meant not only participation in courtly activities like balls, festivities, and receptions, but also access to

³⁹⁵ Pages 78–84.

³⁹⁶ *Kuhnert*, *Urbanität auf dem Lande*, 120–122.

³⁹⁷ *Ibid.*, 128.

³⁹⁸ *Stekl*, *Adel und Bürgertum*, 15.

³⁹⁹ *Butz*, *Habsburg als Touristenmagnet*, 26.

⁴⁰⁰ *Soroka*, *Summer Capitals of Europe*, 117.

⁴⁰¹ *Butz*, *Habsburg als Touristenmagnet*, 175.

⁴⁰² *Ibid.*, 48.

⁴⁰³ *Ibid.*, 47–48.

certain high offices.⁴⁰⁴ They often travelled with the imperial family as part of their entourage.⁴⁰⁵ In order for a family to stay a part of the *erste Gesellschaft*, the subsequent marriages had to follow the rule of exclusivity by staying within it.⁴⁰⁶

In these families, the eldest son usually inherited the estate, while the younger sons pursued careers in bureaucracy, military, or church.⁴⁰⁷ The 19th century brought some changes to the privileged position of the *erste Gesellschaft*. After the revolutions of 1848–1849, the aristocracy lost its sovereign rights, though major landowners remained financially secure.⁴⁰⁸ Teaming up with the capitalist bourgeoisie, they invested in railroads, banks, and industry,⁴⁰⁹ while retreating from traditional roles in administration and the military.⁴¹⁰ Between 1804–1918, the percentage of aristocrats in high diplomatic positions dropped from 68% to 56%, in administration from 91% to 57%, and in the army from 92% to 25%.⁴¹¹ In the 1860s, constitutional reforms introducing a bicameral parliament, along with merit-based military reforms, created more opportunities for members of the *zweite Gesellschaft* to play a larger role in social, political, and military life.⁴¹²

3.1.2 Zweite Gesellschaft

The *zweite Gesellschaft* consisted of two groups: on the one hand, there was the landed gentry, who were not *hoffähig*; on the other hand, newly ennobled persons, usually from the military and administration, elevated for long or exceptional service to the state.⁴¹³

The upper part of the *zweite Gesellschaft* could enjoy the aristocratic lifestyle of leisure, having been ennobled before the Austrian Empire was proclaimed in 1804.⁴¹⁴ The lower part of the *zweite Gesellschaft* corresponds to what is referred to as the *nobility*,⁴¹⁵ or *Briefadel* (patent nobility).⁴¹⁶ Majority of the upper-class individuals belonged to this sub-group, which

⁴⁰⁴ Ibid.

⁴⁰⁵ Ibid., 53.

⁴⁰⁶ Ibid., 48.

⁴⁰⁷ Stekl, *Adel und Bürgertum*, 21–22.

⁴⁰⁸ Ibid., 26.

⁴⁰⁹ Ibid.

⁴¹⁰ Ibid., 30.

⁴¹¹ Ibid.

⁴¹² Butz, *Habsburg als Touristenmagnet*, 48.

⁴¹³ Jan Županič, *Die Umwandlung des österreichischen Adels im 19. Jahrhundert*. In: Ivo Budil, Gabriele Clemens (eds.), *West Bohemian Historical Review* 1 (2011) 99–109, here 101–102.

⁴¹⁴ Butz, *Habsburg als Touristenmagnet*, 49.

⁴¹⁵ Županič, *Umwandlung des österreichischen Adels*, 101.

⁴¹⁶ Stekl, *Adel und Bürgertum*, 16.

could also include impoverished nobles, who rarely ranked above *Knight*.⁴¹⁷ Unlike the other members of the upper classes, members of the *nobility* had to work.⁴¹⁸ The backgrounds of ennobled individuals varied widely, and so did their wealth. Bankers and industrialists could live at the same standard as aristocrats, even acquire former aristocratic estates.⁴¹⁹ Despite this, recently ennobled civil servants and officers, who were not as affluent, were more likely to become a *Geheimrat* (privy councillor), with access to the Court.⁴²⁰ Before 1848, businessmen were rarely elevated above untitled nobility.⁴²¹ After 1848, it became common to get elevated as a *Knight* or *Baron*, but rarely higher.⁴²² Civil servants and officers, however, could rise as high as *Count*.⁴²³ Officers earned significantly less than civil servants of the same rank, but enjoyed the prestige of uniform and privileges established under Maria Theresa.⁴²⁴

In Austria, patents of nobility were granted more generously than in other European states,⁴²⁵ and the sovereign had the right to directly ennoble.⁴²⁶ However, the most common ways of ennoblement were through civil or military service, or by receiving an order.⁴²⁷ The title inflation, which resulted from orders being awarded more generously after 1848, finally led to a limitation in 1884, whereby only the Military Order of Maria Theresa would lead to an elevation as *Baron*.⁴²⁸ Between 1701–1918 there were 12.408 ennoblements: 10.567 untitled nobility and *Knights*, 1.563 *Barons*, 278 *Counts* and *Princes*.⁴²⁹ Officers received 5.133 of these, civil servants 3.463, merchants, industrialists, and bankers 1.242, artists and scientists 520.⁴³⁰ Yet, throughout the 18th century the recently ennobled remained excluded from the circles of the *erste Gesellschaft*.⁴³¹

⁴¹⁷ Županič, *Umwandlung des österreichischen Adels*, 101–102.

⁴¹⁸ *Ibid.*, 101.

⁴¹⁹ *Ibid.*, 102.

⁴²⁰ *Ibid.*

⁴²¹ *Ibid.* The term untitled nobility, “einfacher Adel” in German, refers to the rank of *Edler* and the right to use “von”.

⁴²² *Ibid.*, 102–103.

⁴²³ *Ibid.*, 102.

⁴²⁴ *Ibid.*

⁴²⁵ *Stekl*, *Adel und Bürgertum*, 16.

⁴²⁶ Županič, *Umwandlung des österreichischen Adels*, 108.

⁴²⁷ *Ibid.*, 105.

⁴²⁸ *Ibid.*, 106–107.

⁴²⁹ *Stekl*, *Adel und Bürgertum*, 16.

⁴³⁰ *Ibid.*

⁴³¹ *Ibid.*, 25–26.

The newly-ennobled also included members of the bourgeoisie, intelligentsia, lower civil servants, and smaller business owners, whose lifestyle was often indistinguishable from the upper-middle classes.⁴³² They were still better off than the petty gentry from Galicia and Hungary, who despite their titles had to work as labourers or farmhands.⁴³³ Jan Županič points out that including these poor, working nobles in the *zweite Gesellschaft* is problematic.⁴³⁴ Such examples should be kept in mind when analysing the *Kurlisten*, as the title alone is not a reliable indication of wealth.

The visits of the upper classes to spa towns have been studied both quantitatively and qualitatively. Statistics illustrate the percentage of aristocratic visitors in different spas towns,⁴³⁵ and the impact of imperial Habsburg visits on state tourism has also been examined.⁴³⁶ As with most *Kurlisten*-based statistics, these are derived from samples rather than entire corpora. Even so, they are useful in evaluating claims about aristocratic dominance.⁴³⁷ Both Bad Ems⁴³⁸ and Bad Pyrmont⁴³⁹ show that despite being overrepresented, the upper classes did not constitute the majority of total visitors.

3.2 Middle Classes

The middle classes or the bourgeoisie refer to the heterogenous group of people, with varying degrees of education, political capital, and wealth. Enlightened middle class values of order, reason, industriousness, frugality, charity, merit, education, and professional expertise aimed to create independent individuals.⁴⁴⁰

While the idle, wasteful lifestyle of the aristocracy was criticised by the middle classes, it was also increasingly imitated by wealthy individuals eager to take part in high society.⁴⁴¹ Those who could afford it, bought manors in the countryside and built palatial villas in spa towns.⁴⁴² However, integration of the bourgeoisie into spa society was not without friction. The

⁴³² Županič, *Umwandlung des österreichischen Adels*, 103.

⁴³³ *Ibid.*, 103–104.

⁴³⁴ *Ibid.*, 104.

⁴³⁵ Sommer, *Zur Kur nach Ems*, 726–728.

⁴³⁶ Butz, *Habsburg als Touristenmagnet*.

⁴³⁷ Sommer, *Zur Kur nach Ems*, 420.

⁴³⁸ *Ibid.*, 268, 417.

⁴³⁹ Kuhnert, *Urbanität auf dem Lande*, 125.

⁴⁴⁰ Butz, *Habsburg als Touristenmagnet*, 51.

⁴⁴¹ Bleymehl-Eiler, *Luxus am Kurort*, 282.

⁴⁴² Sommer, *Zur Kur nach Ems*, 421.

atmosphere of leisure in spa towns contrasted with the everyday work ethic of the middle classes, who were less accustomed to managing boredom than the upper classes.⁴⁴³ Ironically, they often complained about a lack of glamour when the aristocracy was absent.⁴⁴⁴

In literature, there have been attempts at establishing sub-groups within the middle classes. These included the *Besitzbürgertum* (property-owning bourgeoisie),⁴⁴⁵ the *Wirtschaftsbürgertum* (economic bourgeoisie), and the *Bildungsbürgertum* (educated bourgeoisie).⁴⁴⁶ Oliver Kühschelm counts privatiers,⁴⁴⁷ meaning people who lived on passive income, estate owners, and landlords under the property-owning bourgeoisie;⁴⁴⁸ Penz places building contractors and engineers under the economic bourgeoisie; lawyers, doctors, pharmacists, teachers, clerics, writers, journalists, architects, and others with a university education under the educated bourgeoisie.⁴⁴⁹ Industrialists, traders, and financiers were placed under the property-owning bourgeoisie by Kühschelm⁴⁵⁰ but under the economic bourgeoisie by Penz.⁴⁵¹ These categorisations are not strict, as a member of the economic bourgeoisie like an industrialist could have also studied.⁴⁵² Such inconsistencies need to be kept in mind when comparing statistics across studies. Further issues with occupation categories will be discussed under *Data Manipulation and Data Cleaning with ChatGPT*.⁴⁵³

Over the course of the 19th century, the proportion of middle-class spa visitors grew. In summer, bourgeois wives and children often stayed in spa towns while men, working in the cities, could visit on weekends thanks to the railways.⁴⁵⁴ This type of summer retreat, *Sommerfrische* in German, boomed in cities like Baden, which was well connected to Vienna. Towards the end of the century, holiday entitlements expanded. In 1873, the Imperial Civil Servants Act granted unpaid holidays in Germany.⁴⁵⁵ Austria followed this development by

⁴⁴³ Soroka, Summer Capitals of Europe, 70–71.

⁴⁴⁴ Lempa, Spa, 54.

⁴⁴⁵ Oliver Kühschelm, Der Kurort Vöslau und seine Bürger. Bürgertum und Kommunalpolitik in einer Kleinstadt 1850–1914 (Diploma Thesis University of Vienna 1996) 43.

⁴⁴⁶ Penz, Inseln der Seligen, 197.

⁴⁴⁷ Not to be confused with “privateers” licensed by the authorities to attack enemy ships during wartime.

⁴⁴⁸ Kühschelm, Kurort Vöslau und seine Bürger, 43.

⁴⁴⁹ Penz, Inseln der Seligen, 197.

⁴⁵⁰ Kühschelm, Kurort Vöslau und seine Bürger, 43.

⁴⁵¹ Penz, Inseln der Seligen, 197.

⁴⁵² Ibid., 190.

⁴⁵³ Pages 55–57.

⁴⁵⁴ Payer, Sommerfrische, 81.

⁴⁵⁵ Pozdena-Tomberger, Historische Entwicklung des Fremdenverkehrs, 38.

introducing paid holidays for employees in 1910 and for civil servants in 1914.⁴⁵⁶ These changes allowed more lower middle class visitors to access spa towns.

3.3 Lower Classes

Research on lower class spa visitors is limited, despite their large numbers.⁴⁵⁷ This is partly because they do not fit the noble image often associated with spa towns, and partly because many were not listed by name in the *Kurlisten* but only counted summarily at the end of a season.

Kaspar notes that Bad Pyrmont, popular with the upper classes, was also heavily frequented by peasants in large numbers in the 18th and 19th centuries.⁴⁵⁸ In Bad Pyrmont, peasant visitors from nearby areas were listed as *Hausleute* and later *Landleute*.⁴⁵⁹ Most were poor and relied on the wealthier minority among them to provide transportation.⁴⁶⁰ In 1780, only 197 named guests were recorded until early July, while 1.820 *Hausleute* were present.⁴⁶¹ By the end of July that year, the number of named guests rose to 512, while 680 *Hausleute* were present.⁴⁶² In total, more than 90% of visitors in 1780 went unnamed.⁴⁶³ In the 1850s and 1860s, they still made up about a third of all visitors.⁴⁶⁴ While the percentage of unnamed visitors varied, this is a major weakness of the *Kurlisten* that must be considered in any analysis.

By the late 19th century, attempts were also made to bring urban workers and their families to spa towns in the context of *Sommerfrische*.⁴⁶⁵ The sports movement also began to factor into working class life during this period.⁴⁶⁶ Still, it was only after the First World War that workers began visiting spas in large numbers, with the exception of British railway workers

⁴⁵⁶ Payer, *Sommerfrische*, 82.

⁴⁵⁷ Kaspar, *Exklusive Kur*, 130–131.

⁴⁵⁸ *Ibid.*, 160.

⁴⁵⁹ Kuhnert, *Urbanität auf dem Lande*, 129.

⁴⁶⁰ *Ibid.*, 130.

⁴⁶¹ Kaspar, *Exklusive Kur*, 162.

⁴⁶² *Ibid.*

⁴⁶³ *Ibid.*

⁴⁶⁴ *Ibid.*, 160.

⁴⁶⁵ Payer, *Sommerfrische*, 101.

⁴⁶⁶ Rudolf Müllner, Sport and Social Difference in Vienna around 1900. On the Historical Significance of Otto Herschmann. In: *The International Journal of the History of Sport* 40/2–3 (2023) 190–203, here 198–199, online: <https://doi.org/10.1080/09523367.2022.2157405> (25.09.2025); Marschik, *Kurstädte – Sportstädte*, 377.

who had already established seaside traditions in places like Blackpool.⁴⁶⁷ Before the war, only about 10% of German workers had holiday entitlements.⁴⁶⁸

Like peasants, the poor were not named in the *Kurlisten*. Impoverished visitors could petition for a free spa visit⁴⁶⁹ and even financial support.⁴⁷⁰ Their petitions show they often sought out specific spas for particular ailments, and did not restrict themselves to spas in their immediate vicinity.⁴⁷¹ Mikoletzky notes that in Baden, poor people needing medical treatment were supported by charitable organisations or donations, whereas the poor but healthy, whether they were locals or not, were considered undesirable in the presence of the better-off guests.⁴⁷² As a result, the poorhouse in Baden was kept locked, and going in and out was subject to registration.⁴⁷³

The handling of beggars differed from town to town, which was regulated by the *Bettelordnungen* (begging ordinances).⁴⁷⁴ Begging was prohibited in Bad Pyrmont⁴⁷⁵ and in Bad Ems.⁴⁷⁶ In Baden, it was not prohibited, but increasingly controlled by the 1880s, with anti-begging societies established.⁴⁷⁷ Still, donations were collected, which were then published in the *Kurlisten* as an incentive.⁴⁷⁸ In Wiesbaden, the poor were prevented from moving into the city until 1868.⁴⁷⁹ To support the poor, a special tax was introduced in Bad Gastein.⁴⁸⁰

In addition to visitors from the lower classes, the personnel who ran the spa system must also be considered. Spa towns created new jobs as visitor numbers rose, the hotel industry professionalised, and facilities expanded. For example, a *Brunnenfrau* in Bad Ems, responsible for serving mineral water and preparing glasses, reportedly earned enough in tips

⁴⁶⁷ Penz, *Inseln der Seligen*, 187.

⁴⁶⁸ Ibid.

⁴⁶⁹ Vanja, *Arme und Frauen*, 67–69.

⁴⁷⁰ Kaspar, *Exklusive Kur*, 161.

⁴⁷¹ Vanja, *Arme und Frauen*, 72.

⁴⁷² Juliane Mikoletzky, *Die Schattenseiten der Sommerfrische. Armenbäder und Armenpolitik österreichischer Kurorte im 19. Jahrhundert am Beispiel Baden bei Wien*. In: Willibald Rosner, Silvia Petrin (eds.), *Sommerfrische. Aspekte eines Phänomens* (Vienna 1994) 53–62, here 62.

⁴⁷³ Ibid.

⁴⁷⁴ Ibid., 57.

⁴⁷⁵ Kuhnert, *Urbanität auf dem Lande*, 138.

⁴⁷⁶ Sommer, *Zur Kur nach Ems*, 365.

⁴⁷⁷ Mikoletzky, *Schattenseiten der Sommerfrische*, 61.

⁴⁷⁸ Ibid., 58.

⁴⁷⁹ Fuhs, *Mondäne Orte*, 398.

⁴⁸⁰ Mikoletzky, *Schattenseiten der Sommerfrische*, 58.

to buy two houses outright.⁴⁸¹ The better-off visitors brought their servants with them,⁴⁸² who remained unnamed but were often mentioned as part of travelling party by their profession. Meanwhile, members of travelling theatre troupes were looked down upon and often lived precariously.⁴⁸³

Authorities sought to keep the lower classes separate from wealthier visitors. Sometimes this was done physically, by outright forbidding or paywalling the entry of rural population to some areas like the *Kurgarten* or the coffee shop.⁴⁸⁴ In early 18th century Wiesbaden, craftsmen, servants, and Jews were barred from the promenade during the spa season.⁴⁸⁵ Historically, the *Armenbad* (baths for the poor) indirectly served the same purpose of separation.⁴⁸⁶ Another method was by scheduling timeframes. Peasants could be restricted to drink the waters between 03:00 and 06:00, after which other classes would begin with their cure.⁴⁸⁷ In Rehburg near Hannover, the spa season itself was restricted for the lower classes in 1807 on the pretext of the harvesting season.⁴⁸⁸ The lower classes and the poor were certainly part of spa life, but their visibility was deliberately limited⁴⁸⁹ until modern insurance systems and socialised spa visits emerged.

⁴⁸¹ Sommer, Zur Kur nach Ems, 584–585.

⁴⁸² Payer, Sommerfrische, 405.

⁴⁸³ Kuhnert, Urbanität auf dem Lande, 190.

⁴⁸⁴ Ibid., 137.

⁴⁸⁵ Vanja, Arme und Frauen, 71.

⁴⁸⁶ Regarding the *Armenbad* in Baden, see: Ulrike Fritsch, Vom Armenbad zum Theater am Steg. Ein Badener Schwefelbad im Wandel der Zeit. In: Kurbäder als Spiegel der Gesellschaft in der Neuzeit (St. Pölten 2025) 91–112, online: <https://doi.org/10.52035/noil.2025.stuf81.03>.

⁴⁸⁷ Kuhnert, Urbanität auf dem Lande, 137.

⁴⁸⁸ Kaspar, Exklusive Kur, 165.

⁴⁸⁹ Vanja, Arme und Frauen, 77–78.

4. Methodology

In recent years, AI-based tools for text recognition, data manipulation and data visualisation have been getting ever more capable. In this chapter, tools and methods used for turning the printed *Kurlisten* into machine readable data will be described. First, digitisation and transcription tasks will be covered followed by data manipulation, cleaning, and storing. While the specific tools will likely change in the future, the fact that these fundamental steps can be done more efficiently by utilising digital tools as much as possible, will not change.

The *Badener Kurlisten* corpus in *Stadtarchiv Baden* ranges from 1804–1959 in the form of bound books with some format changes over time. Few examples after 1920 remain. With the exception of the first volume which is handwritten, the rest of the corpus has been printed by different publishers. They have been compiled from handwritten registers, which are also kept in *Stadtarchiv Baden*. In these registers the visitors have been listed alphabetically. They do not cover the whole range of the printed lists, and the fact that they are handwritten makes them more expensive to get transcribed. But they can still serve as supporting materials to the *Kurlisten*, along with the *Meldezetteln* when needed. For example, the date of arrival of a person can be one or two days earlier on a *Meldezettel* than on a *Kurliste*. This means that the dates on a *Kurliste* should not be taken as a fact.

It is worth noting that there are other materials similar in format or information content that have already been studied. In the 18th century, visitors to Vienna were published in the *Wienerisches Diarium*,⁴⁹⁰ along with the lists of the deceased.⁴⁹¹ The information content which included titles, names, occupations, dates, place names, and addresses in the city⁴⁹² can be compared to that of the *Kurlisten*. Although the Named-Entity Recognition (NER) approach of the *Wienerisches Diarium* project has not been used on the *Kurlisten*, due to their already tabular structure, preparation steps and many of the issues related to vague historical data are found in both cases. In an ongoing project, the *Hof- und Staats-Handbuch der Österreichisch-Ungarischen Monarchie*, which shows Austrian state apparatus between

⁴⁹⁰ Nina C. Rastinger, Re-Reading Lists in Historical Newspapers. Digital Insights into an Overlooked Text Type (2024) 1–15, here 7, online: <https://doi.org/10.3384/ecp210016> (25.09.2025).

⁴⁹¹ Claudia Resch, Nina C. Rastinger, Thomas Kirchmair, From Semi-Structured Text to Tangible Categories. Analysing and Annotating Death Lists in 18th Century Newspaper Issues. In: Digital Humanities Quarterly 17/3 (2023) 1–15, online: <https://dhq-static.digitalhumanities.org/pdf/000711.pdf> (25.09.2025).

⁴⁹² Rastinger, Re-Reading Lists, 7, 9.

1702–1918 with its offices and officials, is being turned into a database.⁴⁹³ The lessons learned from these projects can also be useful for the further study of the *Kurlisten*.

4.1 Corpus Digitisation

The first step was to ensure that the material is digitally available. While the basic digitisation tasks can even be done with modern mobile phones and applications available to them, the optimal solution is to use an archive scanner for a consistent image quality, especially when the number of pages is substantial. This will not only ensure that the quality of the scans remains consistent, it will also make it easier to adjust the scanned images as needed before exporting them. A middle ground can be found by using specialised solutions such as ScanTent.⁴⁹⁴

For context, the total number of core pages in the *Badener Kurlisten*, meaning pages with relevant list data only, were 22.422 pages over 118 available years between 1805–1928. This averages 190 pages per year. For the sample dataset in this thesis the total number of relevant pages were 2.219 between 1850–1859. This range was chosen because it provided a decade of continuous data, the page layout remained the same apart from a change in the typeface after the first year, and the Austrian Empire was not actively involved in any major military actions apart from the Second Italian War of Independence in 1859.

Around two thirds of the whole corpus had already been digitised by the Austrian National Library (ÖNB) before the work on the thesis began. During this process, the individual pages were cut out from the bound format to make scanning easier. This approach meant that only the years where at least one duplicate existed were scanned by the ÖNB. These scans were then made available online on the AustriaN Newspapers Online (ANNO) platform,⁴⁹⁵ and the cut pages were returned to Baden. In 2023, the missing third was scanned using the in-house archive scanner at *Stadtarchiv Baden* at 300 DPI. These scans have also been also made available online via ANNO. Software used with the archive scanner was able to export the images in various formats, ranging from individual TIFF or JPEG documents to whole PDF

⁴⁹³ Andreas Schweiger, Der Hofstaat in der Datenbank. Uni Graz erschließt mit KI die kaiserliche Verwaltung (12.03.2025), online: <https://www.uni-graz.at/de/neuigkeiten/der-hofstaat-in-der-datenbank-uni-graz-erschliesst-mit-ki-die-kaiserliche-verwaltung/> (22.09.2025).

⁴⁹⁴ Transkribus, ScanTent, online: <https://www.transkribus.org/en/scantent> (25.09.2025).

⁴⁹⁵ Austrian National Library, AustriaN Newspapers Online (ANNO), Badener Curliste, online: https://anno.onb.ac.at/static_tables/bad.htm (26.09.2025).

files. This digitised output was used for the automatic transcription of text material found on the images.

4.2 Transcription with Transkribus

One of the biggest changes in recent years in the field of digital humanities is the advancement of Optical Character Recognition (OCR) technology, which can transcribe characters with over 95% accuracy. Previous work dealing with the *Kurlisten* missed out on advances in AI-powered optical character recognition tools and had to deal with the essential yet menial task of manually transcribing every single page. While it is possible that in the future Large Language Models (LLMs) like ChatGPT⁴⁹⁶ could replace other tools used for OCR, ready-made solutions have the advantage of accessibility. Being a machine learning application, there are several benefits to using OCR when working with *Kurlisten* or other documents in list format where the page layout stays relatively static. Comparing a *Kurliste* to a newspaper makes it clear that training a text recognition model for the latter would have to deal with ever-changing paragraph lengths, advertisements, images, different font sizes, and more, which is less of an issue with a *Kurliste*.

Tools with basic OCR capabilities such as PDF24 can often be found pre-installed on institutional computers.⁴⁹⁷ While these can be used for smaller tasks, there are definite advantages to using more capable tools. One such tool is Transkribus, a web-based service offering text recognition models that have been trained for different languages and typefaces with large amounts of text.⁴⁹⁸ If none of the publicly available models are up to the task, it is also possible to train a custom model by creating *ground truth* data from 30–50 pages of corrected transcription. Transkribus is well documented, with official videos and even webinars demonstrating its capabilities.

However, Transkribus is not completely free to use, and the services, while improving, became more expensive over time.⁴⁹⁹ In general, it is cheaper to have printed pages transcribed than handwritten pages, and some of the features are only available with an active subscription. Any project planning to work with Transkribus needs to carefully calculate the resources allocated to this service. It should be mentioned that free *credits* are available in

⁴⁹⁶ GPT stands for “Generative pre-trained transformer”, a popular type of LLM.

⁴⁹⁷ PDF24, online: <https://www.pdf24.org/en/> (25.09.2025).

⁴⁹⁸ Transkribus, online: <https://www.transkribus.org/> (25.09.2025).

⁴⁹⁹ Transkribus, Plans & Pricing, online: <https://www.transkribus.org/plans> (25.09.2025).

form of scholarships,⁵⁰⁰ and that there are open source alternatives to Transkribus such as eScriptorium⁵⁰¹ and OCR4all⁵⁰² which offer comparable features. The *Kurlisten* in this thesis were transcribed with free scholarship *credits*, but with an active subscription.

4.2.1 Table Recognition

With a quick glance at the *Badener Kurlisten*, it is easy to recognise the almost-tabular structure of the pages (see **Image 1**). The first step of transcription was marking these tables with the *Table Recognition* feature.⁵⁰³ During this process any changes to the table structure will become clear and completing this step instead of simply running OCR on a page will make data normalisation and cleaning tasks easier.

1850.

Nr. 1.

Chronologische Nummer.	Namen, Charakter und Wohnung der Kurgäste in der Stadt Baden.	Tag der Ankunft.	Zahl der Kurgäste ihrer Familien u. Dienerschaft.
Im Monate März.			
1	Frau Katharina Waldmüller, f. f. Hoffjängerin, aus Wien, wohnt zu Gutenbrunn Nr. 34.	2. März.	2
2	Herr Friedrich Graf Sauerna, Gutsbesitzer, aus Jülgendorf in preuß. Schlessen, wohnt in der Reingasse im Gasthose zum grünen Baum Nr. 30.	3. —	2
Im Monate April.			
3	Herr Alexander von Piers, f. f. Oberstwachmeister von Erzherzog Nassau Infanterie, wohnt im f. f. Militär-Badhaufe.	1. April.	1
4	Herr Franz Ziegler, f. f. Oberleutenant der 1. Arzieren Leibgarde, in Pension, wohnt in der Reingasse Nr. 324.	4. —	1
5	Herr Franz Seibert, f. f. Oberleutenant im Infanterie-Regimente Prinz Wafa, wohnt im f. f. Militär-Badhaufe.	16. —	1
6	Frau Johanna Grubka, f. f. Hauptmanns-Gattin, aus böhmisch Krumau, wohnt am Josefsplatz im Carolinenbade.	19. —	1
7	Herr Conrad Kuhn, Mechaniker, aus Josefsthal in Böhmen, wohnt in der Reingasse Nr. 424.	20. —	2
8	Herr August Katschnig-Weinberg, f. f. Hauptmann im Infanterie-Regimente Erzherzog Sigismund, wohnt im f. f. Militär-Badhaufe.	— —	1
9	Herr Anton Bietl, f. f. Hof-Seiler, aus Wien, wohnt zu Gutenbrunn Nr. 47.	30. —	1
10	Herr Adolf Frank, f. f. Oberleutenant im 20. Jäger-Bataillon, wohnt im f. f. Militär-Badhaufe.	— —	1
			13

Image 1: First page of the selected years.

⁵⁰⁰ Transkribus, Scholarship, online: <https://www.transkribus.org/scholarship> (25.09.2025).

⁵⁰¹ eScriptorium, online: <https://escriptorium.inria.fr/> (25.09.2025).

⁵⁰² OCR4all, online: <https://www.ocr4all.org/> (25.09.2025).

⁵⁰³ Transkribus, Table Models, online: <https://help.transkribus.org/tables> (25.09.2025).

When taking the whole corpus from Baden into account, potentially five different *Table Models* should be trained to account for changes, which include changes to the number of columns and their order (see **Table 1**). Any changes to the typeface have no bearing at this stage. Excluding the chronological number column, the *Badener Kurlisten* contained two relevant columns between 1805–1831, three between 1832–1863, four between 1864–1902, and three between 1902–1928. Between 1902–1928, the “Date of Arrival” was moved from its own column into a small header. Using models that reflect these changes so that the table number and width are taken into account is the best way to minimise the need for manual correction.

Years	Typeface	Relevant Columns	Table Model
1805–1831	Fraktur	2	v1
1832–1850	Fraktur	3	v2
1851–1863	Antiqua	3	v3
1864–1885	Antiqua	4	v4
1886–1889	Antiqua/Fraktur ⁵⁰⁴	4	v4
1890–1902	Antiqua	4	v4
1902–1928	Antiqua	3	v5

Table 1: Layout changes in the *Badener Kurlisten* 1805–1928.

While training the *Table Models*, 50 pages with corrected tables have been used. During this preparation, once a *Table Model* is fitted to the structure on a page, it could be copy-pasted to the next page where only minor adjustments were necessary. Due to changes in the column order after 1850, it was necessary to train two *Table Models* and on average, it took around 3,5 hours to train one. After training, these have been applied to pages sharing the same format. The models could also be applied to years with slightly different formats, but this would lead to less precise results, potentially costing more time than training an appropriate model. Being a more recent and specialised feature at the time, the number of available public models on Transkribus was limited, which made it even more important to develop customised models that matched the layout of different years. For the year 1850 with its 164 pages, *Table Recognition* took 23 minutes to complete.

⁵⁰⁴ In these years, the last names were printed in Fraktur.

4.2.2 Layout Recognition

The next step was *Layout Recognition* where the text baseline had to be marked.⁵⁰⁵ The public *Layout Recognition* models performed well with the *Badener Kurlisten*, making it unnecessary to train custom baseline models.⁵⁰⁶ Different parameters could be adapted before running a *Layout Recognition* model.⁵⁰⁷ Getting these parameters right involved some trial and error, but correct adjustment ensured that the baselines started and ended where they should, minimising the need for manual correction. Making sure that the baselines in each horizontal cell were separated from one another resulted in better transcription. Irrelevant text sections were ignored so that they would not be transcribed. For 1850, this step took 7 minutes to complete.

4.2.3 Text Recognition

While it is critical for text recognition to find the most suitable model for transcription to ensure a high accuracy, the variety of public models already available for different languages and typefaces mean that it is unlikely that the need to train a new model for most *Kurlisten* will arise. Transcribing *Badener Kurlisten* did not require training a new text recognition model.

The first the sample dataset was printed in Fraktur, while the rest of them were printed in Antiqua. For both cases, Print M1 model by Transkribus was able to deliver satisfying results because it was trained with different scripts. The official character error rate of this model is 2,2%, which means that for each individual letter there is a 97,8% chance of being transcribed correctly. There is a *Language Model* setting intended to improve transcription by taking possible words into account, rather than just transcribing individual characters, but it is better to ignore this setting as it can cause hallucinations in the transcription. For example, some Latin words appeared in the transcription of a page where only German was present. There were also *super models* better suited to transcribe multi-language documents, these were also not used. For 1850, text recognition took 32 minutes to complete.

The quality of the digitised material, print, and possible damages on the page all have an effect on the accuracy. The characters that caused the most issues were “t” transcribed as “l”,

⁵⁰⁵ Transkribus, Automatic Layout Recognition, online: <https://help.transkribus.org/automatic-layout-recognition> (25.09.2025).

⁵⁰⁶ Transkribus, Baselines Models, online: <https://help.transkribus.org/baselines-models> (25.09.2025).

⁵⁰⁷ Transkribus, Advanced Layout Configuration Settings, online: <https://help.transkribus.org/advanced-layout-configuration-settings> (15.09.2025).

“h” and “H” transcribed as “ll”, “I” transcribed as “J”, “1” transcribed as “7” and “u” transcribed as “n”. Before exporting, errors were viewed and corrected directly in Transkribus (see **Image 2**). Even though the text can be transcribed with high accuracy, the *gold standard* is to have the transcription checked by a human to ensure its quality. It is especially important that the numbers are accurate. Going through individual pages to ensure correct transcription still took considerable time, at around 20–25 pages per hour.

Chronologische Nummer.	Namen, Charakter und Wohnung der Kurgäste in der Stadt Baden.	Tag der Ankunft.	Zahl der Kurgäste ihrer Familien u. Dienerschaft.
Im Monate März.			
1	Frau Katharina Walbmüller, k. k. Hoffängerin, aus Wien, wohnt zu Gutenbrunn Nr. 34.	2. März.	2
2	Herr Friedrich Graf Sauerma, Gutsbesitzer, aus Zülzendorf in preuß. Schlesien, wohnt in der Renngasse im Gasthofe zum grünen Baum Nr. 30.	3. —	2
Im Monate April.			
3	Herr Alexander von Piers, k. k. Oberstwachmeister von Erzherzog	1. April.	1

1	Frau Katharina Walbmüller, k. k. Hofsängerin, aus Wien, wohnt	1 2. März	1 2
2	zu Gutenbrunn Nr. 34.		
1	Herr Friedrich Graf Sauerma, Gutsbesitzer, aus Zülzendorf in preuß.	1 3.	1 2
2	Schlesien, wohnt in der Renngasse im Gasthofe zum		
3	grünen Baum Nr. 30		
1	Herr Alexander von Piers, k. k. Oberstwachmeister von Erzherzog	1 1. April	1 1

Image 2: Verifying transcriptions in Transkribus. Tables and relevant text sections are visible.

4.2.4 Export

Once the quality of the transcription had been checked, there were multiple options for data export. The standard options included DOCX, TXT, PDF, and Extensible Markup Language (XML). With an active subscription, it was also possible to also export in comma-separated values (CSV) or Text Encoding Initiative (TEI) format. Even though the goal was to extract the data in a tabular format for manipulation, the best output was actually achieved by

exporting as a DOCX file with the “Force page breaks” option selected.⁵⁰⁸ The tabular structure of the page was preserved, and the data was then simply copy-pasted into an Excel file. This was preferable because the CSV export resulted in unnecessary line breaks within each cell, with no option to adjust this setting while exporting.

4.2.5 Future Outlook: Transcription with LLMs

Since the work on this thesis began, it has become advisable to also consider the usage of LLMs for transcription tasks instead of, or in combination to out-of-the-box solutions like Transkribus. A study on transcribing historical handwritten text with different LLMs has shown that satisfying results can be achieved significantly cheaper and faster in comparison to Transkribus.⁵⁰⁹ It was also found that having the LLMs correct their own transcriptions did not work so well, but having them correct transcriptions provided by Transkribus worked better.⁵¹⁰ Meanwhile there are also LLMs specifically trained for OCR tasks.⁵¹¹

In the current market, major players such as OpenAI, Google, Anthropic, Meta, and DeepSeek are engaged in a fierce competition for both performance and users in the field of LLMs.⁵¹² The cost of usage has been on the decline,⁵¹³ which is the opposite of the pricing strategy of Transkribus so far, and without the free *credits*, it becomes increasingly harder to recommend it for those who are willing to experiment using LLMs for this task. This is especially the case with languages like English which have been widely used in training LLMs. When transcribing less-common languages, however, specialised tools like Transkribus can still outperform LLMs.⁵¹⁴ This is an area that has seen rapid change in the

⁵⁰⁸ This setting was only available with an active subscription.

⁵⁰⁹ Mark *Humphries*, Lianne C. *Leddy*, Quinn *Downton*, Meredith *Legace*, et al., Unlocking the Archives: Using Large Language Models to Transcribe Handwritten Historical Documents. In: *Historical Methods. A Journal of Quantitative and Interdisciplinary History* (2025) 1–19, here 16–17, online: <https://doi.org/10.1080/01615440.2025.2500309> (25.09.2025).

⁵¹⁰ *Ibid.*, 12–16.

⁵¹¹ Haoran *Wei*, Yaofeng *Sun*, Yukun *Li*, DeepSeek-OCR 2: Visual Causal Flow (2026), online: <https://doi.org/10.48550/arXiv.2601.20552> (30.01.2026).

⁵¹² It should be mentioned that both Meta’s and DeepSeek’s models are open source, and considerably cheaper to use. There are a lot of websites comparing different models, for example: Artificial Analysis, LLM Leaderboard, online: <https://artificialanalysis.ai/leaderboards/models> (20.01.2026); Arena, Leaderboard, online: <https://arena.ai/leaderboard> (20.01.2026).

⁵¹³ Anand *Subramanian* (sanand0), LLM Pricing (02.11.2025), online: <https://sanand0.github.io/llmpricing/?quality=overall> (21.01.2026).

⁵¹⁴ *Humphries, Leddy, Downton, Legace, et al.*, Unlocking the Archives, 16.

last couple of years, and the tools are constantly being put to test on different languages, eras, and layouts.⁵¹⁵

4.3 Data Manipulation and Data Cleaning with ChatGPT

Going through these steps in Transkribus provided a sense of the data manipulation tasks that still had to be completed. At this stage, the data was cleaned and structured in line with data normalisation and data modelling, the main premises of which being standardisation, atomisation, and avoiding redundancy.⁵¹⁶ At the same time, it was necessary to come to terms with the ambiguities of humanities data, which were not always the result of human error. To model the *Kurlisten* according to these principles, some of the necessary steps included filling missing arrival dates in the “Date” column, splitting data in a cell into smaller parts, removing phrases such as *p. T.*,⁵¹⁷ and correcting recurring transcription errors not handled within Transkribus. Many decisions had to be made, which shaped the resulting model.

⁵¹⁵ For some examples, see: Alex Ghiriti, Wolfgang Göderle, Roman Kern, Exploring the Capabilities of GPT4-Vision as OCR Engine. In: Apostolos Antonacopoulos, Annika Hinze, Benjamin Piwowarski, Mickaël Coustaty, et al. (eds.), *Linking Theory and Practice of Digital Libraries* 15178 (2024) 3–12, online: https://doi.org/10.1007/978-3-031-72440-4_1 (25.09.2025); Laura Manrique-Gómez, Tony Montes, Arturo Rodríguez-Herrera, Rubén Manrique, Historical Ink. 19th Century Latin American Spanish Newspaper Corpus with LLM OCR Correction. In: *Proceedings of the 4th International Conference on Natural Language Processing for Digital Humanities* (2024) 132–139, online: <https://aclanthology.org/2024.nlp4dh-1.13.pdf> (25.09.2025); Patricia Murrieta-Flores, Rodrigo Vega-Sánchez, Alexander Sánchez-Díaz, Héctor Francisco Cruz-Ríos, Unlocking Colonial Records with Artificial Intelligence. Achieving the Automated Transcription of Large-Scale 16th and 17th-Century Latin American Historical Collections. In: *Science & Technology of Archaeological Research* 11/1 (2025) 1–13, online: <https://doi.org/10.1080/20548923.2025.2484828> (25.09.2025); Seorin Kim, Julien Baudru, Wouter Ryckbosch, Hugues Bersini, et al., Early Evidence of How LLMs Outperform Traditional Systems on OCR/HTR Tasks for Historical Records (2025) 1–15, online: <https://doi.org/10.48550/arXiv.2501.11623> (25.09.2025); David Fleischhacker, Roman Kern, Wolfgang Göderle, Improving OCR Quality in 19th Century Historical Documents Using a Combined Machine Learning Based Approach (2024), online: <https://doi.org/10.48550/arXiv.2401.07787> (20.12.2025); Spencer Dean Stewart, Sanskriti Sinha, Retrieving Information from Unstructured Historical Sources Using Large Language Models. In: *Computational Humanities Research* (2025), online: <https://doi.org/10.1017/chr.2025.10019> (29.01.2026); Selina Galka, Georg Vogeler, Annotating, Projecting, and Interpreting Named Entities in Digital Scholarly Editions with LLMs. In: *International Journal of Digital Humanities* (2026), online: <https://doi.org/10.1007/s42803-025-00114-8> (29.01.2026); Christopher Pollin, Franz Fischer, Patrick Sahle, Martina Scholger, et al., When It Was 2024 – Generative AI in the Field of Digital Scholarly Editions. In: *Zeitschrift für Digitale Geisteswissenschaften* 10 (2025), online: https://doi.org/10.17175/2025_008 (29.01.2026).

⁵¹⁶ For more on data modelling in Digital Humanities, see: Julia Flanders, Fotis Jannidis, Data Modeling. In: Susan Schreibman, Ray Siemens, John Unsworth (eds.), *A New Companion to Digital Humanities* (2015) 229–237, online: <https://doi.org/10.1002/9781118680605.ch16> (14.12.2025).

⁵¹⁷ “pleno titulo” from Latin, meaning “with full title”.

The simplest method for standardisation would be finding and replacing text in bulk within Excel. However, this is quite risky. Due to possible spelling errors in the original text, false positives are likely. To reduce this risk, the data should be atomised and changes applied to one column at a time. Here, atomisation refers to separating different data segments into their own cells. In **Table 2**, a regular row after the Transkribus export is shown.

Frau Katharina Waldmüller, k. k. Hofsängerin, aus Wien, wohnt zu Gutenbrunn Nr. 34.	2. März	2
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Table 2: A non-normalised row from 1850.⁵¹⁸

On printed page, the columns were called “Namen, Charakter und Wohnung der Kurgäste in der Stadt Baden” (name, character, residence of the spa guest in Baden), “Tag der Ankunft” (date of arrival), and “Zahl der Kurgäste ihrer Familien u. Dienerschaft” (number of family members and staff). In **Table 3**, the same row is shown after data normalisation. This way, it eventually becomes possible to create complex queries in a database and also visualise individual pieces of data. For example, without data normalisation we cannot directly search for all *men* who were called *Arthur*, visited from *Wiener Neustadt* in 1853 and worked as a *teacher*.

Frau	Katharina	Waldmüller	k. k. Hofsängerin	Wien	Gutenbrunn 34	02.03.1850	2
------	-----------	------------	-------------------	------	---------------	------------	---

Table 3: Normalised version of **Table 2**.

To achieve this an LLM, specifically ChatGPT was used.⁵¹⁹ Already the GPT-3.5 was capable of providing code to solve such problems, though the users had to run the scripts themselves. With GPT-4, released in March 2023, it became possible to upload files and have them manipulated by the LLM itself, given an active subscription. It is still possible to benefit from ChatGPT without a subscription, though this limits file upload and usage. The main advantage of such tools is that the user interacts with them in natural language, lowering the entry barrier for data-related tasks. One important point is that the quality of user prompts often determines the quality of the answers. ChatGPT and other LLMs require prompts to be as clear as possible, and this method of iteratively refining queries came to be known as *prompt engineering*.⁵²⁰ Another key consideration is to refrain from sharing confidential data with LLMs, as it can be used for training. Given adequate hardware and an open source LLM, this concern can be addressed by running the LLM locally.

⁵¹⁸ Stadtarchiv Baden (StAB) Z 21 1850c, Nr. 1^r.

⁵¹⁹ OpenAI, ChatGPT, online: <https://chatgpt.com> (25.09.2025).

⁵²⁰ For a detailed guide on *prompt engineering*, see: Lee Boonstra, Prompt Engineering, online: <https://www.kaggle.com/whitepaper-prompt-engineering> (14.12.2025).

This was the final prompt for manipulating the “Date” column: “You are a data analyst. I have an Excel file with various historical information in German on visitors to a city. You will only work with the first column, called ‘Date.’ This column shows dates, all from the year 1850. However, the data is not normalised. Sometimes the months are named, as in ‘1. März.’ If the next entry is also from March, it might be written as ‘3.’ or ‘3’ only, without the word ‘März.’ But this still means that the cell contains data from that month. You need to create a new column called ‘Normalised_Date’ with these normalised and transformed cells. Additionally, you need to fill the empty cells in the ‘Normalised_Date’ column with the same date as in the last given date, until another given date appears. When there is only a number in the Date column, it shows the day (DD), and the month (MM) will be the same as the last named month. The year (YYYY) is always 1850. Your task is to present the data in a DD.MM.YYYY format. Do not tell me how to do this myself, instead, make sure to provide me with the updated file.”.

This prompt would turn “2. März” from the original page into “02.03.1850”, while also filling any missing dates deliberately not printed in the column because multiple parties arrived on the same day. It is possible that rather than completing the task itself, ChatGPT may attempt to provide only a script. If this persists, it can be asked to explain how the user should run the code. Running such a script, most likely in Python,⁵²¹ is not a difficult task, but requires some basic knowledge of the command line. While there are specialised programs called integrated development environments (IDEs) for composing code, if necessary, even the basic text editor provided in each operating system can be used to copy and paste code from ChatGPT. LLMs are also very effective at answering follow-up questions in this area. ChatGPT can also be used to split the data into more columns based on common patterns in the data, such as “aus Wien.”

In **Table 3**, the data has been divided into these basic columns: “Title”, “Name”, “Surname”, “Occupation”, “Place”, “Address”, “Date”, “Party”. However, it cannot be expected that every row will be as clean as in this example. There will be cases of two people being named together in the same row, missing or too many occupations, false addresses, and linguistic variation of almost every possible combination. It is worth considering if it is necessary to work further on a given column. For instance, there is little to be gained from dividing the

⁵²¹ Python, online: <https://www.python.org/> (25.09.2025).

"Name" column into "Name" and "Surname", as this actually complicates the process of identifying misspellings by comparison.

In the "Occupation" column, the abbreviations and the actual occupations can be standardised. To give just an example, a *Doctor of Medicine* could have been registered as a *Med. Doctor*, *Med. Doktor*, *Med. Dr.*, *Med. Dor.*, *Med. Et Chir. Dr.*, *Medizine-Doktor*, *Med.-Dr.*, *Med-Doktor und k. k. Ministerialrat*, etc. Without data normalisation or tagging, the computer by itself does not connect these different variations to the same occupation. An additional challenge specific to the "Occupation" column is posed by the mostly female relatives of men, whose occupations were registered as *Med. Dors.-Gattin* (doctor's wife) etc., where instead of *Gattin*, *Witwe* (widow), *Tochter* (daughter), or *Sohn* (son) could also be found. In line with previous studies on *Kurlisten*, such individuals have been counted under the occupation of their named relative, because it can be assumed that they belong to the same social niveau.⁵²² The real life issues rising from social ranking based on occupation, gender, age, and education, have been studied.⁵²³

The number of unique occupations was brought down from around 6.500 to 5.067 with some data normalisation, but this number was still too large to make sense of. To make the occupation data workable, it has been divided into 19 categories closely following Streicher⁵²⁴ and Penz.⁵²⁵ These categories are: Aristocrats, Lesser Nobles, Employees, Senior Officials, Junior Officials, Property Owners, Service Providers, Clergy, Scholars, Businesspeople, Craftsmen, Merchants, Artists, Farmers and Foresters, Senior Officers, Junior Officers, Privaters, Others, and Unspecified.

Such a categorisation of occupations has been done in many other studies, but with different categories and different number of categories. For example, Charvát used nine categories.⁵²⁶ László Kósa went with 11.⁵²⁷ Despite seemingly ideal conditions for standardisation, in a

⁵²² Penz, *Inseln der Seligen*, 190; Kuhnert, *Urbanität auf dem Lande*, 126.

⁵²³ Barbara Stollberg-Rilinger, *Zur Verrechtlichung sozialer Rangkonflikte in der frühen Neuzeit*. In: *Zeitschrift für historische Forschung* 28/3 (2001) 385–418, here 398–400, online: <https://www.jstor.org/stable/43569553> (20.12.2025).

⁵²⁴ Kristian Streicher, *Kurlisten als neue sozialgeschichtliche Quellen und deren Auswertungsmöglichkeiten am Beispiel Bad Ischl*. In: *Jahrbuch des Oberösterreichischen Musealvereines* 165 (2020) 381–402, here 390, online: https://www.zobodat.at/pdf/JOM_165_0381-0402.pdf (20.12.2025).

⁵²⁵ Penz, *Inseln der Seligen*, 189.

⁵²⁶ Josef Charvát, *Eine analytische Betrachtung der Karlsbader Kurfrequenz 1756–1960*. In: *Balneologia et Balneotherapie* 20 (Karlov Vary 1961) 417, as cited in: Kuhnert, *Urbanität auf dem Lande* 120–121.

⁵²⁷ Kósa, *Badeleben und Kurorte*, 222.

diploma thesis⁵²⁸ and a dissertation⁵²⁹ from the same year, both supervised by the same person at the University of Vienna, respectively 13 and 14 occupation categories were used for visitors in Bad Vöslau, a smaller spa town near Baden. Sommer opted for more detail with 37 categories, even creating a category for visitors who had two occupations.⁵³⁰ However, creating too many categories runs the risk of overfitting, since the categories will contain too few entries to meaningfully analyse.

It is unavoidable that a categorisation like this also involves some simplifications and discussions. The nobles were divided into two groups, “Aristocrats” and “Lesser Nobles”,⁵³¹ with any title beyond *Knight* falling under “Aristocrats”. As it was explained under the *Upper Classes* subchapter,⁵³² while *aristocracy* matches the *erste Gesellschaft*, *nobility* is better suited for the lower section of the *zweite Gesellschaft*. Also, while the *Baron* rank became officially part of the higher nobility in 1877,⁵³³ due to the increase in nobilitations in the second half of the 19th century, Butz suggests that it should still be considered part of the lower nobility.⁵³⁴ Without any additional sources, it is not possible to differentiate between the old and new nobles.⁵³⁵ Sommer argues that being an aristocrat is not a job,⁵³⁶ but for some people in the *Kurlisten*, their title contained the only information regarding their social group. Additionally, a large number of unnamed soldiers, who came to stay at the military hospital in Baden, are excluded because they rank below the “Junior Officers” group.

It was decided to keep the nobles as a group as large as possible to make comparisons between them and the rest of society sharper. As a result, the sizes of other categories, most importantly “Senior Officials”, “Senior Officers”, and “Privatiers” were reduced, as only one occupation category per individual was assigned regardless of the number of occupations listed. The “Others” category was kept as small as possible by assigning any other possible

⁵²⁸ *Kühsehelm*, Kurort Vöslau und seine Bürger, 42.

⁵²⁹ *Ebster*, Mietvillen, ihre Besitzer und Gäste, 24.

⁵³⁰ *Sommer*, Zur Kur nach Ems, 249–251.

⁵³¹ *Streicher*, Kurlisten als neue sozialgeschichtliche Quellen, 390. In German they are: hoher Adel, niederer Adel, Angestellte, hohe Beamte, niedere Beamte, Besitzende, Dienstleistende, Geistliche, Gelehrte, Geschäftsleute, Handwerker, Kleinhändler, Künstler, Land- und Forstwirte, hohe Offiziere, niedere Offiziere, Privatleute, Sonstige, ohne Angaben.

⁵³² Pages 36–39.

⁵³³ *Stekl*, Adel und Bürgertum, 16.

⁵³⁴ *Butz*, Habsburg als Touristenmagnet, 117.

⁵³⁵ *Lotz-Heumann*, German Spa in the Long Eighteenth Century, 54–55. Although, title changes in the *Kurlisten* can be studied, if the same individual appears more than once.

⁵³⁶ *Sommer*, Zur Kur nach Ems, 249.

category based on the available information.⁵³⁷ The “Unspecified” means that no occupation data was provided in the *Kurlisten*.

There were quite a lot of grey areas in this step. For example, it is not so clear whether a mayor should be a part of “Senior Officials” or “Junior Officials”, because it is an occupation where the person is at the top of the civil hierarchy in a town, but depending on the size of that town, their power, influence, and responsibilities would change a lot. Being the mayor of a capital city like Vienna can be quite different from that of a small village, which is hard to model. This kind of problem which has also been noted in the earlier studies,⁵³⁸ is to be expected when working with humanities data, and some level of unclarity must be accepted.

This is one area where standardisation would make a big difference, so that statistics from spa towns can be meaningfully compared. The categorisation could also be partly automated via ChatGPT by providing some examples for each category, but in the end, due to initial variations in spelling and the overall variety of occupations, it was necessary to manually categorise and verify many of the occupations. This was another point where a lot of subjective decisions had to be made and it was essential to stay consequent. The dataset created during this thesis should be helpful for the future categorisation of occupations.⁵³⁹

The “Address” column was another part where a lot of work was needed. Recording the address changes and when these changes happened in Baden and its surroundings has been undertaken by Hans Hornyik in Baden, who kindly made his data available for this thesis. In the sample dataset, it was determined that both the older *Hausnummern* (house numbers) and the newer *Konskriptionsnummern* (conscription numbers) were used.⁵⁴⁰ As the same number could be found in both groups, it became necessary to find the correct modern address by paying attention to the street names as well as the numbers. For example, present-day “Kaiser-Franz-Ring 38” was “Parkstraße 187” in 1835 and “Aichelburggasse 231” in 1859. If the address showed the number “187”, we would find that to be on the “Berggasse” in 1859, which would be “Marchetstraße 32” today. During this period in Baden, street numbers did not start from the beginning in each street, but rather they continued over to the next street,

⁵³⁷ Streicher, Ischler Kurlisten, 61.

⁵³⁸ Kuhnert, Urbanität auf dem Lande, 126; Ebster, Mietvillen, ihre Besitzer und Gäste, 23.

⁵³⁹ Burak Demirci (icrimedkarub), spadata.xlsx (20.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/spadata.xlsx (20.02.2026).

⁵⁴⁰ For naming practices and houses in Baden, see: Rudolf Maurer, “...zu besserer erkanntnus”. Hausnamen, Hauszeichen und Adreßangaben im alten Baden (Baden bei Wien 2012), online: https://rollett-museum.at/wp-content/uploads/2017/12/Katalogblatt_Nr._5_Hausnamen.pdf (20.12.2025).

which could change over time, so that two numbers did not necessarily follow one another. It also does not mean that people have stopped using the old addresses immediately after they have been updated. Despite these challenges, there were only 22 instances where the modern-day address could not be determined. It is likely that they were all falsely recorded, considering that every single one of them appears only once in the dataset. The issues related to toponyms will be discussed in the next subchapter.

In addition, based on the “Title” column which contained not only *Frau* (Mrs), *Fräulein* (Miss), *Herr* (Mr) but also *Ihre Exzellenz* (Her Excellency), *Gräfin* (Countess) etc., a simpler “Gender” column using a binary categorisation of “F” for females and “M” for males was created. At this stage, this decade of the *Badener Kurlisten* revealed 18.545 unique, but not fully normalised names, 5.066 unique and mostly normalised occupations, 1.546 unique place names in 44 unique countries/regions, and 1.063 unique addresses in Baden. The total number of people was 75.756 from 26.527 parties,⁵⁴¹ which includes of people who were named, unnamed people who came as part of a group, those who stayed at one of the charitable organisations, and soldiers below the rank of *Feldwebel* (sergeant) who stayed at the *Militärbadehaus* (military baths).

4.4 Web Scraping and Linked Open Data

When dealing with the place names, ChatGPT was used to create scripts for web scraping based on the “Place” column. From Wikidata,⁵⁴² unique QIDs were retrieved,⁵⁴³ followed by country data linked to those QIDs.⁵⁴⁴ LOD refers to the practice of connecting pieces of data through unique identifiers that are freely accessible. For example, Baden is represented in

⁵⁴¹ Streicher counts c. 29.000 people and c. 10.400 parties over nine years: *Streicher*, *Ischler Kurlisten*, 35.

⁵⁴² Wikidata, online: <https://www.wikidata.org/> (22.09.2025).

⁵⁴³ Burak *Demirci* (icrimedkarub), *scrape_QID.py* (09.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/scrape_QID.py (09.02.2026).

⁵⁴⁴ Burak *Demirci* (icrimedkarub), *scrape_country.py* (09.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/scrape_country.py (09.02.2026).

Wikidata as the entity *Q486450*⁵⁴⁵ and is linked to *Austria*⁵⁴⁶ via the *country*⁵⁴⁷ property,⁵⁴⁸ both with their respective unique IDs *Q40* and *P17*. Other entities with the same name, such as *Baden*⁵⁴⁹ in Switzerland, have their own unique IDs.

Many of the place names were shared between different localities, and it was not always possible to ascertain which exact location is correct. For example, it is not certain which of the numerous examples of *Himberg*⁵⁵⁰ should be selected: municipality in *Bruck/Leitha District, Lower Austria, Austria*; *human settlement in Krems-Land District*; *settlement in Styria*; *village and exclave in Sandefjord, Norway*; *locality in Bad Honnef, Germany*; *locality and cadastral municipality in Melk District*, etc. Therefore, a very conservative approach was taken with place names when working on the *Badener Kurlisten*. The same issue was turned into a chapter in a book about the streets of Baden, where 22 other cities with the same name have been briefly described.⁵⁵¹

In order to avoid false positives, ambiguities were left unresolved, and as a result, the “Country” information for such cases is missing. This was less of an issue when all localities were situated in the same country, which meant that at least the “Country” column could be filled correctly. Sommer resolves such cases by choosing the larger town when several share the same name.⁵⁵² An experimental approach could involve a script that compares the coordinates of localities with shared names and selects the closest one to Baden as the correct option. While it was tempting to give preference based on proximity to Baden, especially if only two places shared a name, this was deliberately avoided. As long as the methodology during data preparation is explained, it is still possible to make these kinds of decisions. It appears that there is currently no consensus on how to tackle this issue.

Another layer of complexity came from the fact that there have been many border and demographic changes in Central and Eastern Europe, especially in the 20th century, resulting

⁵⁴⁵ Wikidata, Baden (11.08.2025), online: <https://www.wikidata.org/wiki/Q486450> (23.09.2025).

⁵⁴⁶ Wikidata, Austria (23.09.2025) online: <https://www.wikidata.org/wiki/Q40> (23.09.2025).

⁵⁴⁷ Wikidata, Country (25.09.2025), online: <https://www.wikidata.org/wiki/Property:P17> (25.09.2025).

⁵⁴⁸ Wikidata, List of All Properties (15.09.2025), online: https://www.wikidata.org/wiki/Wikidata:Database_reports/List_of_properties/all (20.09.2025).

⁵⁴⁹ Wikidata, Baden (06.11.2025), online <https://www.wikidata.org/wiki/Q63939> (22.12.2025).

⁵⁵⁰ Wikidata, Search Results for “Himberg”, online: <https://www.wikidata.org/w/index.php?search=Himberg&title=Special%3ASearch&profile=advanced&fulltext=1&ns0=1&ns120=1&searchToken=7qfnlib709gcms5axxi9o5ot7> (25.09.2025).

⁵⁵¹ Julius *Böheimer*, *Straßen & Gassen in Baden bei Wien*. Lexikon der Straßen, Gassen, Plätze, Wege, Stege, Brücken (Baden bei Wien 1997) 125–141.

⁵⁵² *Sommer*, *Zur Kur nach Ems*, 280.

in multiple changes to place names. When dealing with this issue, ideally the time period in which the name was used should be taken into account.⁵⁵³ At this stage, lists compiled for different regions were consulted.⁵⁵⁴ For many Hungarian place names it was necessary to check a register⁵⁵⁵ or text search within digitised maps.⁵⁵⁶ A basic list of place names in German based on multiple lists on Wikipedia⁵⁵⁷ and their corresponding versions in other languages was put together for quick reference.⁵⁵⁸ Variations in spelling pose another challenge here, for example *Graz* vs. *Gratz*. For the sake of clarity, modern place names were used in the dataset, e.g. *Brno* instead of *Brünn*.

However, assigning historical country data to the place names has not been truly achieved because this data is lacking for most of the place names on Wikidata, through which place names and countries were matched.⁵⁵⁹ This can be considered a weak point of the methodology, but any approach reliant on web scraping, LOD, or OpenRefine will also be limited in this regard due to, at least current, lack of available data.

Lastly, it should be noted that different LOD datasets have their strengths and weaknesses. While Wikidata, at least in some cases, contained entities for historical regions or countries that no longer exist, this was not the case with GeoNames⁵⁶⁰ with its more rigid structure.

As a result, for 26.469 travelling parties with named individuals, in 24.752 cases a place has been determined, but only in 24.089 cases has the country been determined. This leaves 663 instances with 297 unique place names, where the exact location could not be determined. In some cases this was because it was simply not possible to find any matches with the place

⁵⁵³ Ibid., 251.

⁵⁵⁴ Renate *Basch-Ritter*, *Die k.u.k. Riviera. Nostalgische Erinnerungen an die altösterreichischen Küstenländer, an idyllische Seebäder und mondänes Strandleben, an die Winterstationen und Sommerparadiese an der Adria* (Vienna 2002) 166; *Kósa*, *Badeleben und Kurorte*, 276.

⁵⁵⁵ Arcanum, Magyarország Geográfiai Szótára, online: <https://www.arcanum.com/en/online-kiadvanyok/Lexikonok-magyarorszag-geografiai-szotara-fenyek-elek-BABC3/> (26.09.2025).

⁵⁵⁶ Arcanum, Europa im 19. Jahrhundert, online: <https://maps.arcanum.com/de/map/europe-19century-secondsurvey/?layers=158%2C164&bbox=2103929.2658336638%2C5590073.554273671%2C309577.6.1448621107%2C6200346.788102517> (26.09.2025).

⁵⁵⁷ Wikipedia, Lists of German Exonyms (17.09.2017), online: https://en.wikipedia.org/w/index.php?title=Category:Lists_of_German_exonyms&oldid=801089459 (25.09.2025).

⁵⁵⁸ Burak *Demirci* (icrimedkarub), *ortsnamen.xlsx* (09.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/ortsnamen.xlsx (09.02.2026).

⁵⁵⁹ For an entity with detailed historical data, see the “Country” property of “Lviv”: Wikidata, Lviv (22.01.2026), online: <https://www.wikidata.org/wiki/Q36036> (26.01.2026).

⁵⁶⁰ GeoNames, online: <https://www.geonames.org/> (26.09.2025).

name, but mostly this was the result of the conservative approach to ambiguity in place names. There were a total of 1.775 parties without an assigned place name, of which 1.717 were named and the rest were summarily added at the end of the year.

Out of 75.756 people, no place name was recorded for 18.998 individuals, 16.675 of whom belonged to unnamed parties. Within the named individuals without place data, it would be possible to get more data on the Senior and Junior Officers⁵⁶¹ by taking where they were stationed into account. For example, an entry from 1851 lists a *k. k. Hauptmann im 7. Jägerbataillon* (Captain in the 7th Jäger Battalion). The *Militär-Schematismen* of the Imperial Austrian Army, which mapped out the military apparatus of the Empire, shows that the 7. *Oesterreichisches Jäger-Bataillon* was stationed in Korneuburg.⁵⁶² It should be noted that this location could be different in another year, and that the location information for some unit types, mainly the cavalry, is missing. In keeping with the conservative approach, the dataset at hand has not been expanded this way.

4.5 Storing Research Data

Ideally, not only research findings but also research data should be shared openly. This would allow reproducibility, and existing datasets could be used in further research as training or comparison data. A point of criticism regarding the previous work on Bad Homburg and Bad Ischl would be that the datasets have not been made publicly available. This means that any new research in the field cannot benefit from the already used data modelling practices, even though in all of the projects the source material was almost identical in format.

In recent years there has been increased advocacy for open research. One key element that came out of this movement is the FAIR principles, according to which the data should be findable, accessible, interoperable, and reusable.⁵⁶³ This involves providing adequate metadata and a persistent identifier for the dataset, storing it in an openly accessible

⁵⁶¹ In this group there are 160 Senior and 845 Junior Officers for a total of 1005, including retired ones who were of course not deployed at the time.

⁵⁶² Hungaricana, *Militär-Schematismus des österreichischen Kaiserthumes* (Vienna 1851) 359, online: https://library.hungaricana.hu/hu/view/MilitarAlmanachSchematismus_1851/?pg=382&layout=s (26.09.2025).

⁵⁶³ Mark D. *Wilkinson*, Michel *Dumontier*, IJsbrand Jan *Aalbersberg*, Gabrielle *Appleton*, et al., The FAIR Guiding Principles for Scientific Data Management and Stewardship. In: *Scientific Data* 3/1 (2016) 1–9, online: <https://doi.org/10.1038/sdata.2016.18> (25.09.2025).

repository, and applying a licence⁵⁶⁴ that clearly specifies how the data may be used. There are research infrastructures like ARCHE⁵⁶⁵ at the Austrian Academy of Sciences, PHAIDRA⁵⁶⁶ at the University of Vienna, or Zenodo⁵⁶⁷ operated by the European Organization for Nuclear Research (CERN), which assist researchers with these steps. The dataset⁵⁶⁸ and scripts⁵⁶⁹ developed for this thesis have been made publicly available.

4.6 Introducing “Aquae Europae”

The lack of a central platform for information on different spa towns became apparent during this thesis. Getting a visual overview of the existing spa towns was a challenge, let alone finding the scattered scans of the *Kurlisten*.

To solve this issue, a simple website was created with the help of ChatGPT. Aquae Europae⁵⁷⁰ is an online register of spa towns (see **Image 3**).⁵⁷¹ It is based on data⁵⁷² that was collected as part of The European Spa⁵⁷³ project, whose members kindly granted permission for reuse. The original dataset already contained data for over 400 spa towns. The version⁵⁷⁴ used for the website was created after several data-related tasks such as removing duplicate entries,

⁵⁶⁴ Creative Commons, About CC Licenses, online: <https://creativecommons.org/share-your-work/cclicenses/> (20.09.2025).

⁵⁶⁵ Austrian Academy of Sciences, A Resource Centre for Humanities Related Research in Austria (ARCHE), online: <https://arche.acdh.oeaw.ac.at/browser/> (26.09.2025).

⁵⁶⁶ University of Vienna, PHAIDRA, online: <https://phaidra.univie.ac.at/> (25.09.2025).

⁵⁶⁷ Zenodo, online: <https://zenodo.org/> (06.01.2026).

⁵⁶⁸ Burak Demirci, Badener Kurlisten Dataset (1850–1859) (v1.0.1) (20.02.2026), online: <https://doi.org/10.5281/zenodo.18716039> (20.02.2026).

⁵⁶⁹ Burak Demirci (icrimedkarub), kurlisten_masterarbeit (v1.0.0) (23.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit (23.02.2026).

⁵⁷⁰ Latin for “Waters of Europe”.

⁵⁷¹ Burak Demirci (icrimedkarub), Aquae Europae – Spa Towns of Europe (11.02.2026), online: https://icrimedkarub.github.io/aquae_europae/ (11.02.2026).

⁵⁷² Astrid Köhler, Kaitlin P. Ward, Henrike Schmidt, Anna Cabanel, et al., European Spa Dataset. Spa Towns and Resorts (18th–20th Centuries) (v20260204130407) (04.02.2026), <https://doi.org/10.5281/zenodo.18482816> (08.02.2026).

⁵⁷³ The European Spa as a Transnational Public Space and Social Metaphor, Crowdsourcing Project, online: <https://www.theeuropeanspa.eu/crowdsourcing/index.html> (26.09.2025).

⁵⁷⁴ Burak Demirci (icrimedkarub), towns.xlsx (09.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/towns.xlsx (09.02.2026).

extracting country names,⁵⁷⁵ and scraping coordinate data.⁵⁷⁶ After updating the Excel file, a script⁵⁷⁷ was used to convert the data into JavaScript Object Notation (JSON) format suitable for the website. The code related to the website has been placed in a separate GitHub repository.⁵⁷⁸ GitHub Pages was chosen as an open and sustainable solution for deployment.

Aquae Europae offers an interactive map and a searchable list of spa towns, including their alternative names, the country in which they are located, and their type. Visitors can gain an overview of European spa towns, filter results via the search bar, and submit suggestions that contribute to the dataset. The register is intended to be expanded not only with additional spa town entries but also with town-specific information on *Kurlisten*, such as their availability and chronological range.

⁵⁷⁵ Burak Demirci (icrimedkarub), country_names.py (10.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/country_names.py (10.02.2026).

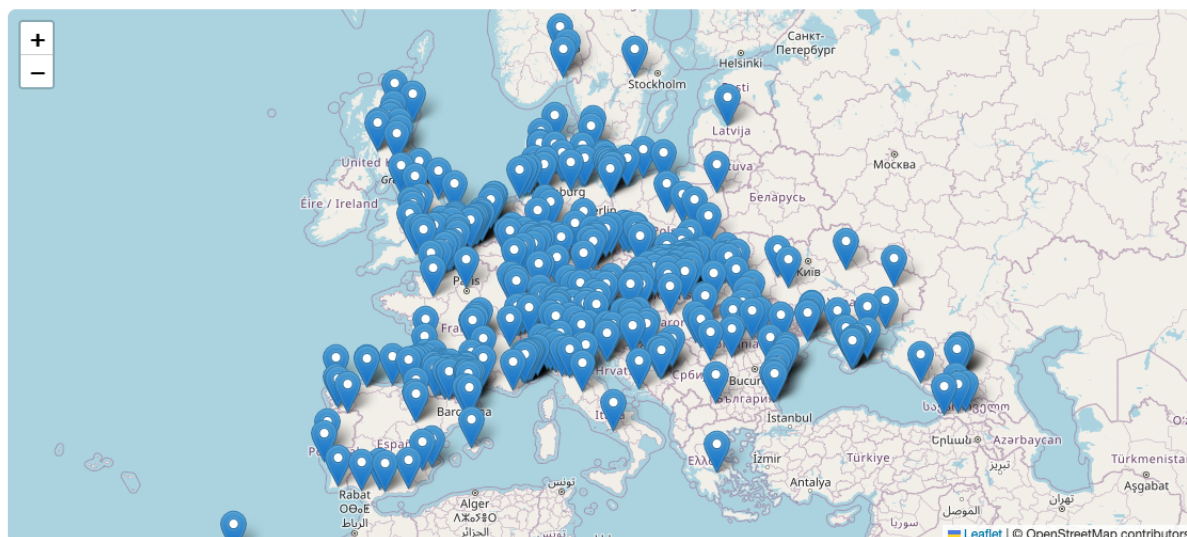
⁵⁷⁶ Burak Demirci (icrimedkarub), scrape_coordinates.py (10.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/scrape_coordinates.py (10.02.2026).

⁵⁷⁷ Burak Demirci (icrimedkarub), excel_to_json.py (09.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/excel_to_json.py (09.02.2026).

⁵⁷⁸ Burak Demirci (icrimedkarub), aquae_europae (v1.0.0) (11.02.2026), online: https://github.com/icrimedkarub/aquae_europae (11.02.2026).

Aquae Europae

Spa Towns of Europe



Showing 408 spa towns

Name	Alternative Names	Country	Type
A Coruña	La Coruña	Spain	Seaside Resort
Aachen	Aix-la-Chapelle, Aken	Germany	Mineral Spa (Hot)
Abano Terme	Abano Bagno	Italy	Mineral Spa (Hot)
Abastumani	Abbas-Tuman, Абастуман, აბასთუმანი	Georgia	Mineral Spa (Hot), Climatic Resort
Aberdeen		United Kingdom	Mineral Spa (Cold)
Acqui Terme		Italy	Mineral Spa (Hot)
Ahlbeck		Germany	Seaside Resort
Aix-les-Bains	Èx-én-Savouè	France	Mineral Spa (Hot)
Alassio		Italy	Seaside Resort, Climatic Resort
Albena	Албена	Bulgaria	Seaside Resort, Climatic Resort
Albufeira		Portugal	Seaside Resort
Alet-les-bains		France	Mineral Spa (Hot), Mineral Spa (Cold)
Alhama de Aragón	Aquae Bilbilitanae, Aquae Bilbilitanorum	Spain	Mineral Spa (Hot)
Alicante		Spain	Seaside Resort
Alupka		Ukraine	Seaside Resort
Alushta	Алушта, Aluşta	Ukraine	Seaside Resort

Image 3: Homepage of Aquae Europae (v1.0.0).

4.7 Future Outlook: Clustering and Reconciling with OpenRefine

The 18.545 unique names in the dataset do not correspond to 18.545 unique visitors. The number of non-unique names at the head of each visiting party was 26.469. Sorting the data by the “Name” column revealed a variation in spelling that was even richer than in the “Occupation” column. It was also far more difficult to determine the correct spelling of a

personal name than to normalise professional titles such as *Kommerzienrat*, *Commerzienrat*, *Kommerzienrath*, or *Commerzienrath*. As with the data in the “Occupation” column, without a semantic connection *Anton Bruno Graf Csaky*, *Anton Bruno Graf Csàky*, *Anton Bruno Graf Csáky*, and *Graf Anton Bruno Csaky* represent four distinct entities to a computer.

OpenRefine⁵⁷⁹ is a potential solution to this issue. It is a tool that clusters slightly different spelling variations. It also allows for some data manipulation tasks to be done such as column formatting, merging, or case changing. Every action is recorded visibly, and at any point in time the dataset can be returned to one of its past versions. The programme is open source and the data is kept only locally. While the tool was explored and tested in the context of this thesis, it was not applied to the full dataset due to time constraints. The demonstrated capabilities and ease of use justify the inclusion of this future outlook subchapter, as it may prove beneficial for future projects.

If the user decides that one variation is the correct one, all others can be merged into that version (see **Image 4**). If not, they remain separate. Different algorithms can be selected depending on the material and the degree of certainty.⁵⁸⁰ Combination of the *Key Collision* method and the *Fingerprint* keying function seemed to work well for the “Name” column. Because of this, it would be preferable not to split the “Name” column into separate “Name” and “Surname” columns. Similarly, spelling variations in the “Place” column can also be clustered.

Cluster size	Row count	Values in cluster	Merge?	New cell value
2	2	- Josef Graf Mailath - Josef Graf Mailáth Browse this cluster	☐	Josef Graf Mailath
2	2	- Michael von Karacson - Michael von Karácsn	☐	Michael von Karacson
2	2	- Josef Rudics von Almàs - Josef Rudics von Almás	☐	Josef Rudics von Almàs
2	2	- Florian Konde - Florian Kondé	☐	Florian Konde

Image 4: Clustering the “Name” column with OpenRefine.

⁵⁷⁹ OpenRefine, online: <https://openrefine.org/> (15.09.2025).

⁵⁸⁰ OpenRefine, Cell Editing (09.09.2025), online: <https://openrefine.org/docs/manual/cellediting> (15.09.2025).

If uncertainty remains as to whether variations refer to the same person, the *Browse this cluster* button allows the user to inspect only the relevant rows and compare information from other columns, such as occupation. An even more practical approach involves temporarily merging columns, for example “Name”, “Place”, and “Categorised_Occupation”, and then running the clustering algorithm on this composite column (see **Image 5**). Setting an asterisk or any other symbol as the separator makes it easy to normalise the composite column again.

Cluster size	Row count	Values in cluster	Merge?	New cell value
2	3	• Ignaz Furdek**Niederer Militär (2 rows) • Ignaz Fürdek**Niederer Militär	☐	Ignaz Furdek**
2	3	• Leopoldine von Nágý*Sopron*Besitzende (2 rows) • Leopoldine von Nagy*Sopron*Besitzende	☐	Leopoldine von
2	4	• Jakob Döringer*Wien*Niederer Militär (3 rows) • Jakob Döringer*Wien*Niederer Militär	☐	Jakob Döringe
2	4	• Josef von Gaál*Sopron*Hohe Beamte (3 rows) • Josef von Gaal*Sopron*Hohe Beamte	☐	Josef von Gaá

Image 5: Clustering a composite column with OpenRefine.

Another function of OpenRefine is reconciliation,⁵⁸¹ which provides a semi-automatic way of comparing the dataset to external sources, including LOD datasets such as Wikidata or the Gemeinsame Normdatei (GND).⁵⁸² Not only places, but also people can also be reconciled against LOD entities, with additional information such as occupation, sex, or place improving the quality of suggestions. Matches can be confirmed or rejected individually or in bulk, and reconciliation tends to work better with already clustered data (see **Image 6**). Once a match is made, additional data associated with the entity becomes accessible, such as coordinates, population, occupation, or date of birth. As with Wikipedia, the depth of available information varies considerably, with prominent figures being better represented than lesser-known individuals.

⁵⁸¹ OpenRefine, Reconciling (05.06.2024), online: <https://openrefine.org/docs/manual/reconciling> (20.09.2025).

⁵⁸² Reconciliation Service Test Bench, online: <https://reconciliation-api.github.io/testbench/#/> (26.09.2025).

Erzherzog Wilhelm

☒ ☒ [Archduke Wilhelm Franz of Austria](#) (100)

☒ ☒ [Archduke Leopold Wilhelm of Austria](#) (81)

☒ ☒ [Archduke Wilhelm of Austria](#) (67)

☒ ☒ Create new item

[See more](#) | [Search for match](#)

Adolf Ullmann

☒ ☒ [Adolf Ullmann](#) (100)

☒ ☒ [Adolf Ullmann](#) (100)

☒ ☒ [Adolf Ullmann](#) (100)

☒ ☒ Create new item

[See more](#) | [Search for match](#)

edit

Match this cell

Match all identical cells

Cancel



[Archduke Wilhelm Franz of Austria](#) (Q702090)

 Archduke of Austria (1827-1894)

Image 6: Reconciling with OpenRefine.

5. Data Analysis and Data Visualisation

Once the dataset is prepared, it can finally be analysed, visualised, and compared with other datasets. With the advent of the LLMs, it is no longer a must to use specialised tools or programming languages to complete these tasks.⁵⁸³ As was already mentioned in the data manipulation step, it is possible to upload the dataset to ChatGPT with an active subscription, after which it can be asked to visualise the data. Alternatively, the dataset can be described, paying special attention to the column names, and ChatGPT can be asked to generate code to run locally. It can be worthwhile to check out custom GPTs which are trained for specific tasks like data analysis.⁵⁸⁴

Besides Python, R is another programming language with rich libraries for statistical analysis and data visualisation.⁵⁸⁵ For the following plots, ChatGPT was asked to generate code in R, which was then compiled in the IDE RStudio.⁵⁸⁶ This was a personal choice based on previous experience, and similar results can also be achieved with Python. If a basic understanding of the language or the willingness to read documentation is present, making adjustments to the code when needed is faster than asking ChatGPT for new code every time. ChatGPT itself is also very good at explaining code. The resulting script has been made available on GitHub.⁵⁸⁷

It should be kept in mind that the data in *Kurlisten* can be faulty, especially when it comes to summed-up numerical values and official statistics. At least in some cases, these were corrected in the following versions after the initial print. In his diploma thesis, Clemens Andreasch finds that the official visitor numbers in the *Kurlisten* to the *Wohltätigkeitshaus*, a charitable bathhouse for the poor in Baden,⁵⁸⁸ differed from those found in the organisation's

⁵⁸³ For a meta-level overview, see: Wei Zhou, Jun Zhou, Haoyu Wang, Zhenghao Li, et al., Can LLMs Clean Up Your Mess? A Survey of Application-Ready Data Preparation with LLMs (2026), online: <https://doi.org/10.48550/arXiv.2601.17058> (29.01.2026). Also: Luyi Ma, Nikhil Thakurdesai, Jiao Chen, Jianpeng Xu, et al., LLMs with User-Defined Prompts as Generic Data Operators for Reliable Data Processing (2023), online: <https://doi.org/10.48550/arXiv.2312.16351> (29.01.2026).

⁵⁸⁴ ChatGPT, Data Analyst, online: <https://chatgpt.com/g/g-HMNcP6w7d-data-analyst> (26.09.2025).

⁵⁸⁵ R, online: <https://www.r-project.org/> (03.12.2024).

⁵⁸⁶ Posit, Rstudio Desktop, online: <https://posit.co/products/open-source/rstudio/?sid=1> (03.12.2024).

⁵⁸⁷ Burak Demirci (icrimedkarub), script_thesis.r (20.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/script_thesis.r (20.02.2026).

⁵⁸⁸ Clemens Andreasch, Das k. k. Wohltätigkeitshaus in Baden 1805–1918. Ein Sozialkurheim im 19. Jahrhundert (Diploma Thesis University of Vienna 2017) 7, online: <https://doi.org/10.25365/thesis.48680> (25.09.2025).

documents and annual reports.⁵⁸⁹ Another point to remember is that the origin data on the visitors did not reflect nationality or ethnicity, but simply referred to a place or territory from which the visitors travelled. As a result, one can find people with European names categorised under “Africans”⁵⁹⁰ in the official *Kurlisten* statistics, because they travelled from Alexandria in Egypt. The way these statistics have been compiled varied from year to year. Territorial changes, and the multi-ethnic nature of the states cause further issues with these categorisations. Sommer finds that among the visitors to Bad Ems in 1910, only two out of nine “Turks” were ethnically Turkish, and predicts a similar situation with the “Russians”.⁵⁹¹ Therefore, it is advisable to compare different sources and consult individual lists rather than relying on general statistics published with the *Kurlisten*.

5.1 Overview of Total Visitors

The first thing to look at is the overall change in the number of visitors throughout the decade. It makes sense to compare these numbers against the official *Kurlisten* statistics (see **Image 7**).⁵⁹² The data shows that while overall trends in the visitor numbers are the same, the numbers are not always identical. The official statistics count 478 more people overall. Two-thirds of the 75.756 visitors in the *Kurlisten* from this period were unnamed, a ratio which is similar to the sample from Bad Ischl,⁵⁹³ but as mentioned earlier, higher than in Bad Pyrmont.⁵⁹⁴

Two downward trends in 1850–1851 and in 1857–1859 suggest that there might have been external or local events which negatively affected tourism. Comparing the lists from 1850 and 1851, there is a decrease of 903 unnamed visitors below the rank of *Feldwebel* with an otherwise comparable number of parties and visitors. This might be due to the Revolutions of 1848 which lasted until November 1849 in the Austrian Empire, resulting in an increased demand for spa treatments for military personnel in Baden.

⁵⁸⁹ Ibid., 71–73.

⁵⁹⁰ Sommer, *Zur Kur nach Ems*, 143.

⁵⁹¹ Ibid.

⁵⁹² Burak Demirci (icrimedkarub), comparison_data.xlsx (09.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/comparison_data.xlsx (09.02.2026).

⁵⁹³ Streicher, *Ischler Kurlisten*, 35.

⁵⁹⁴ Kaspar, *Exklusive Kur*, 162.

For the latter trend, a possible explanation could be the financial crisis of 1857–1859, which, combined with the defeat of Austria in the Second Italian War of Independence in 1859, brought the country into a recession.⁵⁹⁵ A negative impact brought on by Austria's involvement in the Crimean War, where it did not actively fight but occupied Moldavia and Wallachia in 1854,⁵⁹⁶ is not visible in this plot.

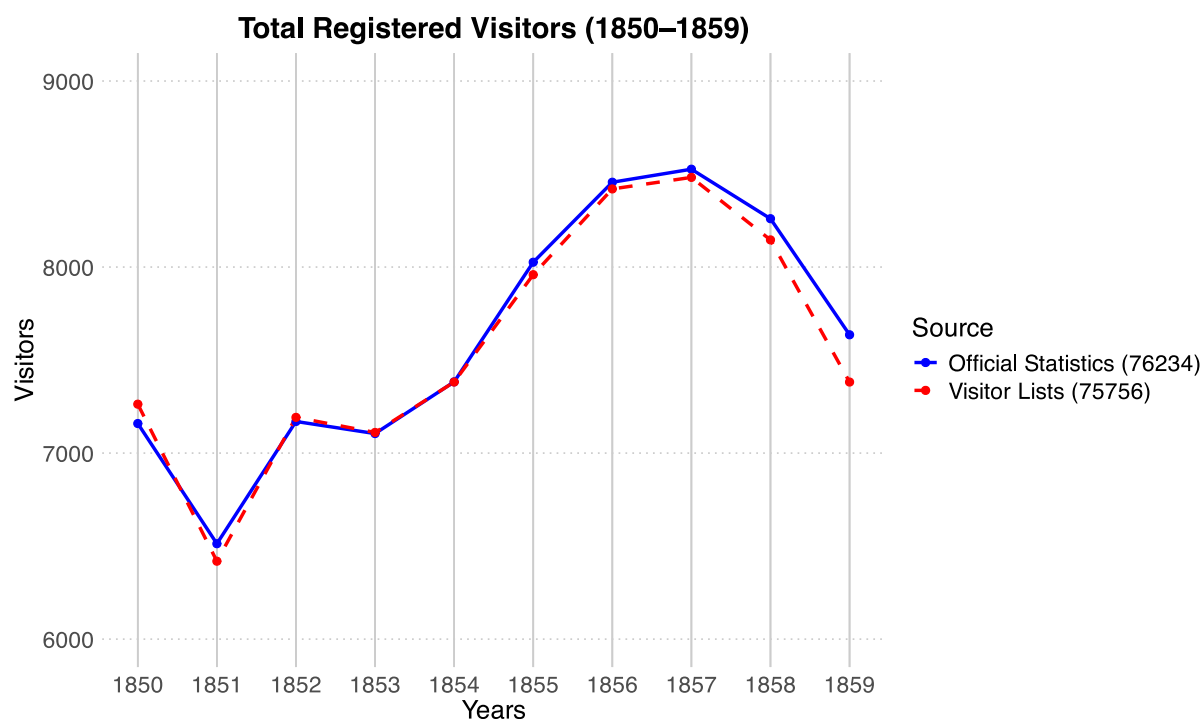


Image 7: Comparing total visitor numbers between two sources.

In order to put the number of visitors to Baden in perspective and validate the explanation for the trend, it makes sense to check the situation in other spa towns during the same period (see **Image 8**). From within the borders of the Austrian Empire at the time, Karlovy Vary (Karlsbad), Mariánské Lázně (Marienbad), Františkovy Lázně (Franzensbad), and Bad Ischl were chosen for this comparison. The three Bohemian spas make up the famous West Bohemian spa triangle, and Bad Ischl was rising as a spa town. From Germany, Bad Ems was added so that the influence of local events could also be compared. The numbers for the Bohemian spas were taken from their respective *Kurlisten*,⁵⁹⁷ whereby based on the general statistics provided, pages showing a total 144 parties from Františkovy Lázně were missing.

⁵⁹⁵ Roman Gusterer, *Wirtschaftskrisen im Vergleich. 1857 und 1873 in der neueren Forschung. Unter besonderer Berücksichtigung von Österreich* (Diploma Thesis University of Graz 2018) 66–67, online: <https://resolver.obvsg.at/urn:nbn:at:at-ubg:1-124066> (25.09.2025).

⁵⁹⁶ Gerhard Wurzinger, *Krimkrieg* (26.10.2024). In: Austria-Forum, online: <https://austria-forum.org/af/AEIOU/Krimkrieg> (10.02.2026).

⁵⁹⁷ Porta Fontium, *Kurliste*, online: <https://www.portafontium.eu/contents/kurliste/?language=de> (20.09.2025).

The data for Bad Ems and Bad Ischl have been taken from Sommer⁵⁹⁸ and Streicher⁵⁹⁹ respectively, based on their own calculations rather than the official statistics. The short-term visitors are excluded in all of them.⁶⁰⁰

For all of these towns except Bad Ischl, the trends, especially in the second half of the decade, are very similar. The drop between 1857–1859 is even sharper in most of them except Bad Ischl, where there is an increase in 1858 followed by a small decrease in 1859, and Františkovy Lázně where the trend is almost identical to Baden. As this downward trend is also visible in Bad Ems and began before hostilities in Italy even started, its main cause can be attributed to the financial crisis rather than the war.

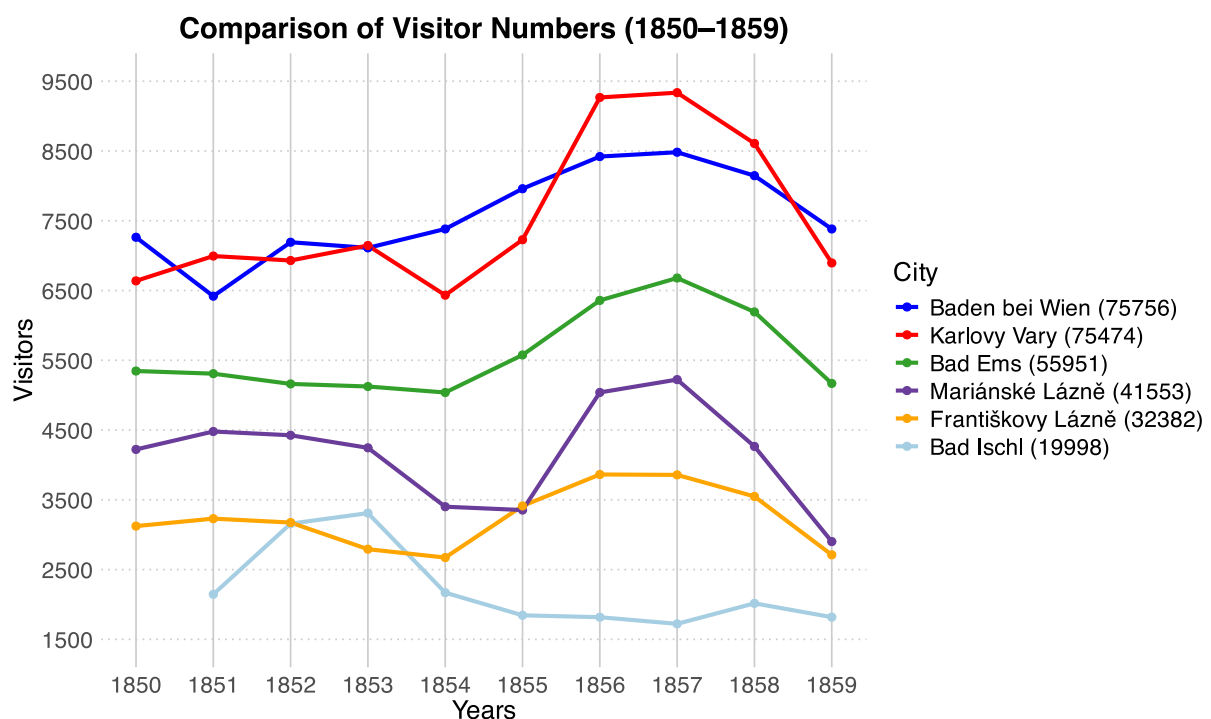


Image 8: Number of visitors in different spas 1850–1859.

5.2 Group Characteristics

Based on 26.469 parties over 10 years, the most common travel companions were, perhaps unsurprisingly, family members (see **Table 4**). Companions were present in 5.722 parties. In most cases they were not named in the *Kurlisten* but followed a named individual in the

⁵⁹⁸ Sommer, Zur Kur nach Ems, 711.

⁵⁹⁹ Data for 1850 is missing: Streicher, Ischler Kurlisten, 113.

⁶⁰⁰ Burak Demirci (icrimedkarub), kurfrequenz_vergleich.xlsx (09.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/kurfrequenz_vergleich.xlsx (09.02.2026).

listing. Around 10% of the time men travelled together with their wives. Around 4% of the time, visitors of both genders, 676 women and 336 men to be exact, travelled along with their families. As examples like “*Wife + Family*” and “*Wife + Daughter*” show, these categories were not mutually exclusive. Furthermore, the “With” column in the dataset, which contains this data, has not been fully normalised, as it was considered of secondary importance. The total size of the party could include other people who were not mentioned beyond these familial travel companions.

Wife	2517
Daughter(s)	1079
Family	1012
Wife + Family	276
Wife + Daughter	201

Table 4: Five most common types of companions.

The average group size provides an insight into the travel habits of different social groups. A look at the average group size by occupation category (see **Table 5**) shows that there is a correlation between social class, or perhaps financial strength, and the number of people travelling together. Members of the “Aristocrats” and the “Businesspeople”, had on average more people in their parties than the “Craftsmen” and “Artists”, who were probably less affluent in general. When creating visualisations, it should be mentioned whether the party size has been taken into account or not, as it can lead to very different results.

Aristocrats	3,31
Businesspeople	2,61
Lesser Nobles	2,49
Senior Officials	2,33
Merchants	2,24
Property Owners	2,23
Scholars	2,18
Junior Officials	2,00
Employees	1,97
Senior Officers	1,93
Privatiers	1,90
Others	1,86
Artists	1,84
Service Providers	1,84
Craftsmen	1,71
Farmers and Foresters	1,60
Junior Officers	1,37
Clergy	1,28
Unspecified	1,23

Table 5: Average group size by occupation category.

5.3 Visitors by Gender

Another general statistic to look at is the gender of the visitors over time, based on named visitors (see **Image 9**). Yearly trends here are not always similar. There is a small drop in both groups between 1852–1853, but it is sharper for men. The numbers continued to drop for men until 1854, while they increased for women in this period. The numbers rose more sharply for men between 1854–1856. The downward trend, which will last at least until 1859, starts a year earlier for men than women, but women in turn experienced a sharper drop between 1857–1859. Similar to Bad Ems,⁶⁰¹ there were more male visitors than females in Baden during this period. It should be noted that the numbers shown here do not include the

⁶⁰¹ *Sommer*, Zur Kur nach Ems, 265.

unnamed soldiers below the rank of *Feldwebel*, who, if included, would make the gap between genders even larger. This data, at least to some extent, could be expanded by including the unnamed yet gendered individuals mentioned in the previous subchapter on *Group Characteristics*.⁶⁰²

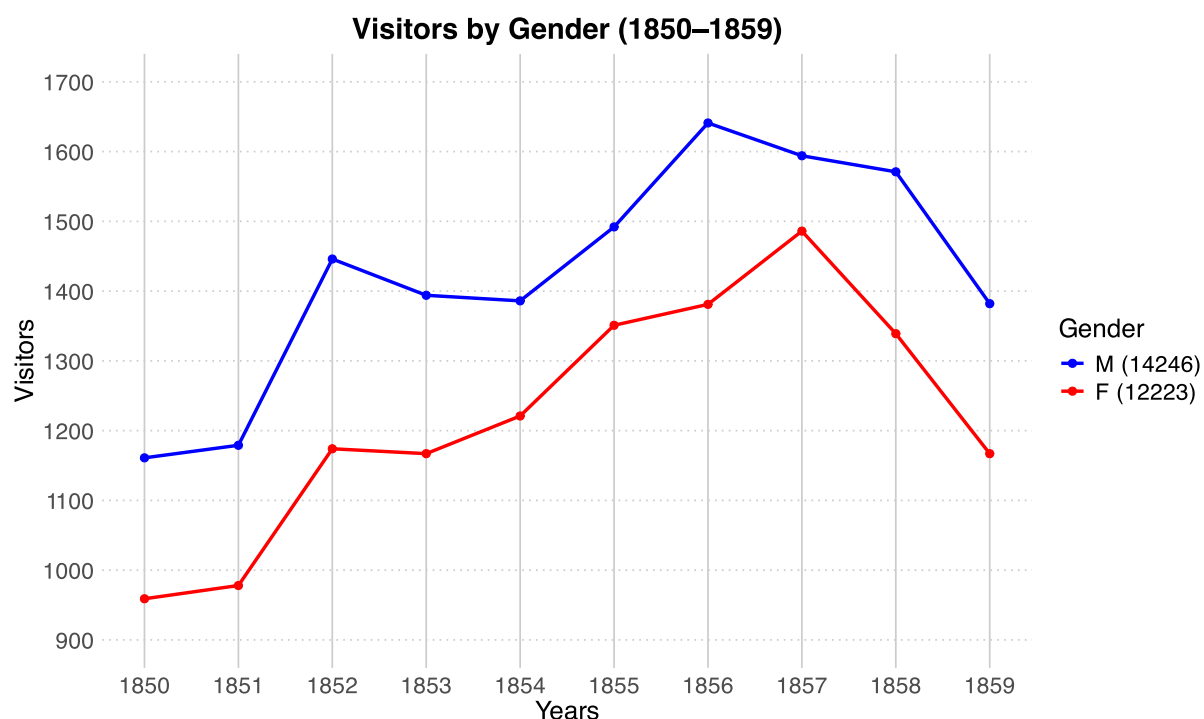


Image 9: Total number of visitors over the years by gender.

5.4 Monthly Visitors

The most popular months can also be visualised (see **Image 10**). Here, only the high season in Baden has been considered. The party size has been taken into account, but the unnamed visitors, summarily added at the end of the year, could not be included because their date of arrival, apart from year, is unknown. In this period, the overall height of summer tourism was clearly June. The jump in visitors from April to May, as the season begins, is remarkable, and the decline in numbers from June to August is almost linear.

⁶⁰² Pages 71–73.

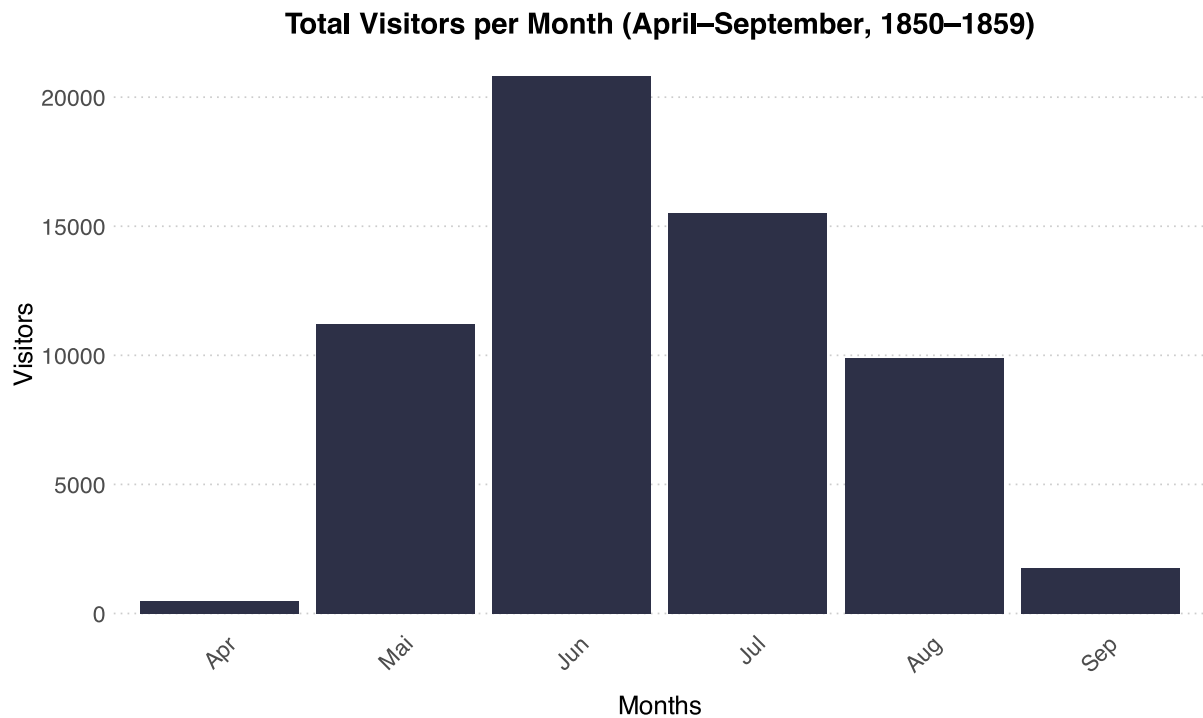


Image 10: Total number of visitors per month 1850–1859.

It is also possible to look into the same data in more detail by plotting the monthly percentages throughout the decade (see **Image 11**). The figure shows a relatively stable seasonal pattern in spa visits between 1850–1859. The first half of the season was more popular than the second half in every year, with 1858 showing the biggest difference and 1859 showing an even divide. In this period, May averaged around 20%, June was the most popular month in every year with around 35%, followed by July with around 25%. August averaged around 15%. More people visited in September than in April, but overall a very small percentage of visitors came to Baden in either of these months.

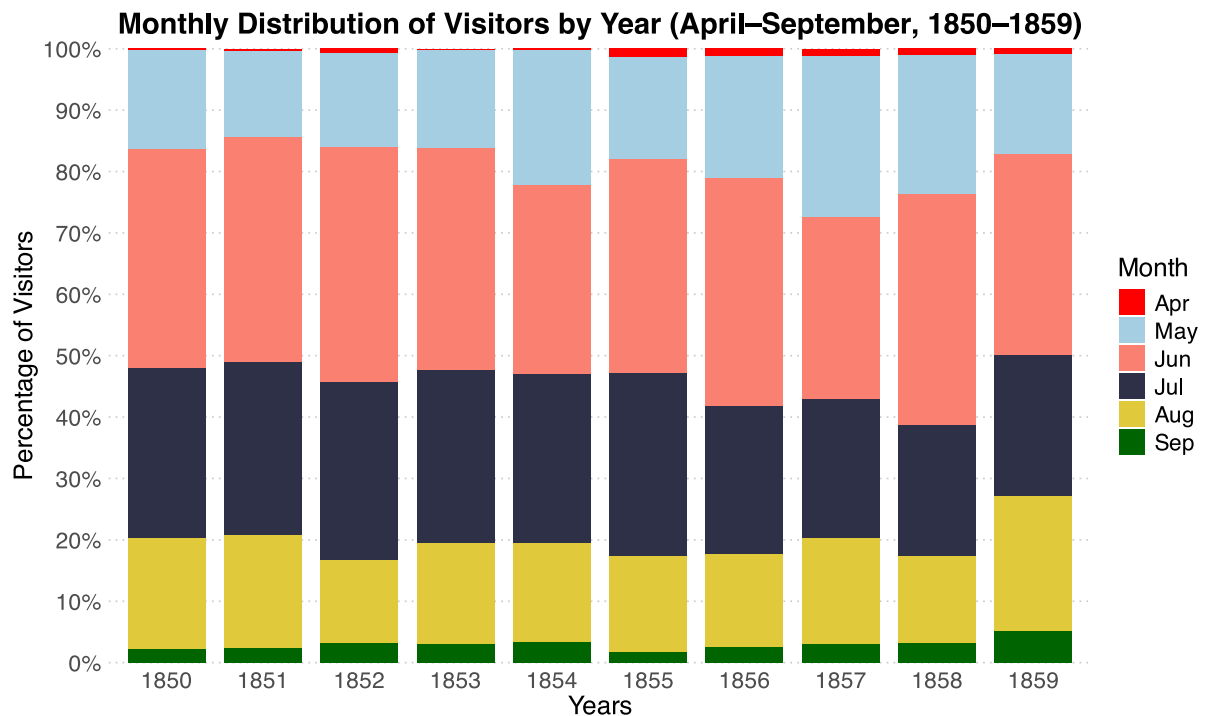


Image 11: Changes in monthly visitors over 1850–1859.

5.5 Visitors by Country

Despite the limitations mentioned, the place of origin still provides insight. The following chart shows the top 10 countries from which visitors came (see **Image 12**). Austria has been excluded because at least 42.810 of the 75.756 visitors came from localities which lie within its modern borders. Unsurprisingly, constituent lands in the Austrian Empire rank highly.

Looking at this graph three points should be kept in mind. The first is the conservative approach in assigning place names, as a result of which fewer locations and countries have been matched. The second is the fact that these countries reflect modern borders. Hungary is already at the top of this list but it can be assumed that the difference between Hungary and others would have been even larger considering its territorial losses following the First World War. The third point is that this graph does not necessarily mirror different nationalities or ethnic groups, as it is based on location information only. Considering the multi-ethnic structure of the Austrian Empire at the time,⁶⁰³ this point becomes even more important.

⁶⁰³ Karl von Czörnig, *Ethnographische Karte der Oesterreichischen Monarchie* (1856), online: <https://goobi-viewer.univie.ac.at/viewer/fullscreen/AC02644333/1/> (17.09.2025).



Image 12: Ten most popular countries of origin over 1850–1859, excluding Austria.

5.6 Visitors by City

The changing trends of the five most common cities of origin can also be examined (see **Image 13**).⁶⁰⁴ For this plot, Vienna has been excluded because out of 42.810 visitors from within Austria's borders, 38.525 came from Vienna. This means that more than half of all visitors for this decade came from Vienna. Again, this does not necessarily mean that they all lived in Vienna, but only that they came to Baden from Vienna. Similar to **Image 12**, cities under Austrian rule dominate the plot. However, all five cities showcase different trends. Visitor numbers from Bratislava in the second half of the decade follow the broader trend seen in the spa towns in **Image 8**. However, aside from Vienna, no single city could account for such a noticeable overall decline. The 622 visitors from Trieste, which was under Austrian control until 1918, made up the majority of visitors from Italy in **Image 12**.

⁶⁰⁴ As Buda, Pest, and Óbuda were not united until 1873, they were counted separately. Even after adding the 89 visitors from Buda to those from Pest, the ranking would remain unchanged.

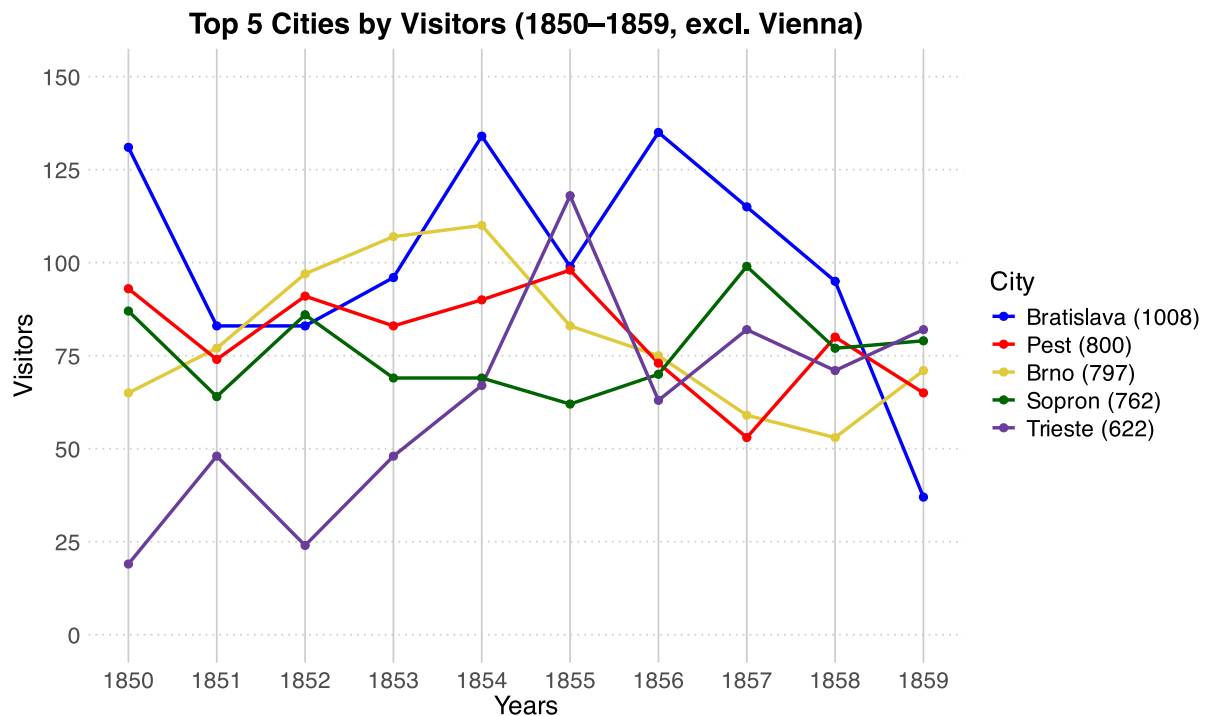


Image 13: Five most popular places of origin over 1850–1859, excluding Vienna.⁶⁰⁵

5.7 Occupation Categories

To understand the social structure of visitors, it is essential to examine the distribution of occupation categories (see **Image 14**). In this graph, only one occupation has been taken into account per named visitor, and party size has been ignored. It is clear that “Aristocrats”, while still sizeable, are not the largest group. “Businesspeople” formed the most populous category by a wide margin, followed by “Privatiers”. Beyond what is visible here, the only other identifiable group consists of unnamed soldiers who visited the military baths. These will be shown together with the officers in **Image 18**.

⁶⁰⁵ Regrettably, due to an error, a previous version of this plot was published showing a spike of visitors to Brno in 1854. See: Burak *Demirci*, Digital Humanities und die Kurlistenforschung am Beispiel von Baden bei Wien. In: Ulrike *Fritsch*, Martin *Scheutz*, Jacqueline *Schindler*, Ulrike *Scholda* (eds.), *Kurbäder als Spiegel der Gesellschaft in der Neuzeit* (St. Pölten 2025) 219–244, here 239–240, online: <https://doi.org/10.52035/noil.2025.stuf81.08>.

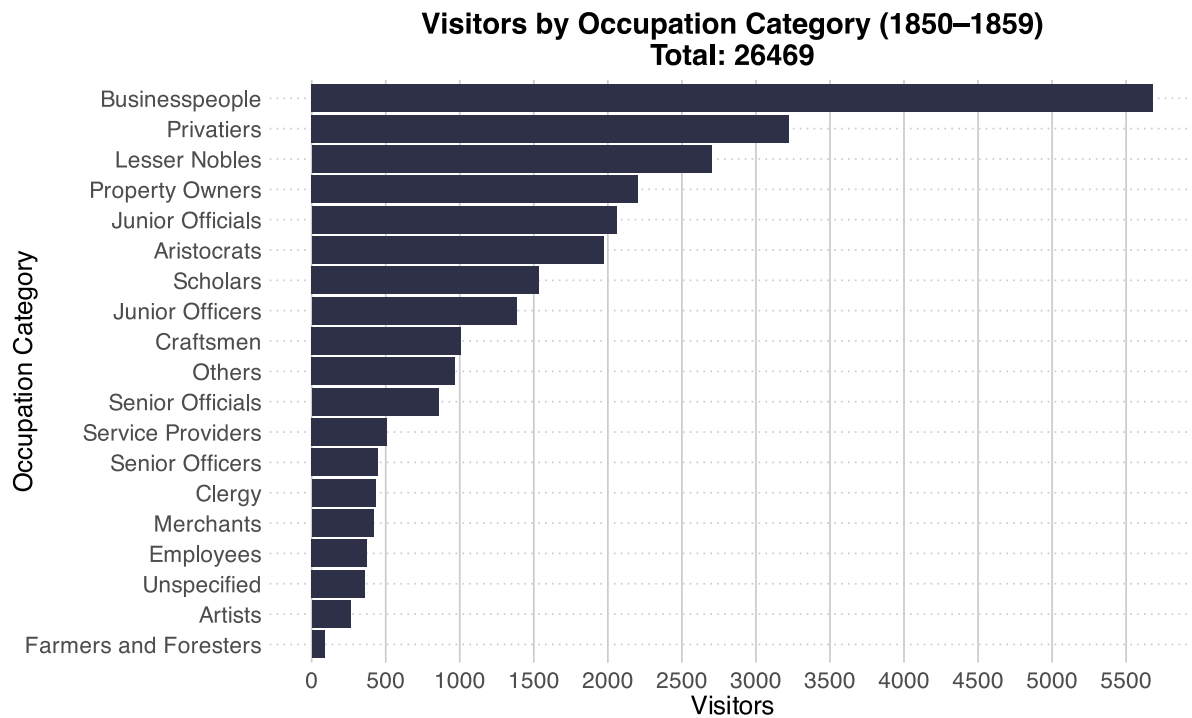


Image 14: Number of visitors by occupation category over 1850–1859.

How the occupation categories developed over the decade can also be shown (see **Table 6**), ignoring the party size as usual. Here, especially the percentages within brackets are informative. While most occupation categories remained stable, some changes stand out. The share of “Privatiers” doubled from 8,4% to 16,9%, while “Unspecified” dropped to a third of its earlier proportion.

Occupation Category	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859	Total
Aristocrats	185 (8,7)	188 (8,7)	208 (7,9)	197 (7,7)	168 (6,4)	208 (7,3)	215 (7,1)	225 (7,3)	189 (6,5)	188 (7,4)	1971
Artists	23 (1,1)	17 (0,8)	25 (1)	28 (1,1)	31 (1,2)	24 (0,8)	33 (1,1)	31 (1)	29 (1)	21 (0,8)	262
Businesspeople	432 (20,4)	423 (19,6)	573 (21,9)	536 (20,9)	596 (22,9)	674 (23,7)	694 (23)	655 (21,3)	606 (20,8)	492 (19,3)	5681
Clergy	31 (1,5)	39 (1,8)	45 (1,7)	56 (2,2)	40 (1,5)	49 (1,7)	45 (1,5)	40 (1,3)	53 (1,8)	34 (1,3)	432
Craftsmen	70 (3,3)	82 (3,8)	110 (4,2)	109 (4,3)	94 (3,6)	109 (3,8)	95 (3,1)	131 (4,3)	120 (4,1)	90 (3,5)	1010
Employees	23 (1,1)	28 (1,3)	34 (1,3)	38 (1,5)	40 (1,5)	48 (1,7)	40 (1,3)	42 (1,4)	48 (1,6)	31 (1,2)	372
Farmers and Foresters	4 (0,2)	4 (0,2)	6 (0,2)	11 (0,4)	18 (0,7)	8 (0,3)	11 (0,4)	8 (0,3)	8 (0,3)	8 (0,3)	86
Junior Officers	137 (6,5)	135 (6,3)	136 (5,2)	135 (5,3)	118 (4,5)	132 (4,6)	163 (5,4)	133 (4,3)	136 (4,7)	159 (6,2)	1384
Junior Officials	175 (8,3)	177 (8,2)	201 (7,7)	213 (8,3)	211 (8,1)	229 (8,1)	232 (7,7)	233 (7,6)	207 (7,1)	180 (7,1)	2058
Lesser Nobles	230 (10,8)	217 (10,1)	250 (9,5)	260 (10,2)	259 (9,9)	302 (10,6)	296 (9,8)	317 (10,3)	305 (10,5)	263 (10,3)	2699
Merchants	28 (1,3)	53 (2,5)	74 (2,8)	70 (2,7)	34 (1,3)	17 (0,6)	23 (0,8)	40 (1,3)	41 (1,4)	37 (1,5)	417
Others	89 (4,2)	100 (4,6)	117 (4,5)	108 (4,2)	97 (3,7)	101 (3,6)	92 (3)	110 (3,6)	86 (3)	68 (2,7)	968
Privatiers	178 (8,4)	190 (8,8)	224 (8,5)	208 (8,1)	314 (12)	369 (13)	458 (15,2)	417 (13,5)	435 (14,9)	431 (16,9)	3224
Property Owners	181 (8,5)	165 (7,6)	213 (8,1)	229 (8,9)	228 (8,7)	251 (8,8)	255 (8,4)	259 (8,4)	229 (7,9)	194 (7,6)	2204
Scholars	122 (5,8)	121 (5,6)	159 (6,1)	147 (5,7)	178 (6,8)	145 (5,1)	170 (5,6)	166 (5,4)	173 (5,9)	153 (6)	1534
Senior Officers	42 (2)	36 (1,7)	52 (2)	42 (1,6)	37 (1,4)	39 (1,4)	51 (1,7)	52 (1,7)	43 (1,5)	52 (2)	446
Senior Officials	75 (3,5)	83 (3,8)	82 (3,1)	80 (3,1)	79 (3)	83 (2,9)	91 (3)	103 (3,3)	103 (3,5)	76 (3)	855
Service Providers	35 (1,7)	37 (1,7)	46 (1,8)	50 (2)	53 (2)	49 (1,7)	49 (1,6)	72 (2,3)	66 (2,3)	51 (2)	508
Unspecified	60 (2,8)	62 (2,9)	65 (2,5)	44 (1,7)	12 (0,5)	6 (0,2)	9 (0,3)	46 (1,5)	33 (1,1)	21 (0,8)	358
Total	2120	2157	2620	2561	2607	2843	3022	3080	2910	2549	26469

Table 6: Distribution of occupation categories between 1850–1859. The values in brackets are percentages of each category in that year.

The Austrian society of the era could be divided into two simple categories: commoners and nobles. Combining “Aristocrats” and “Lesser Nobles” allows us to compare the nobles as a single group against the rest of society (see **Image 15**). Throughout the decade, the percentage of nobles among named visitors averaged around 18%, never reaching 20%. If unnamed visitors were also considered, the overall percentage of nobles would drop to under 6%.⁶⁰⁶ For comparison, the nobles made up around 36% of all visitors to Bad Ischl in 1857,⁶⁰⁷ and 18,2% of visitors to Bad Ems in 1858.⁶⁰⁸

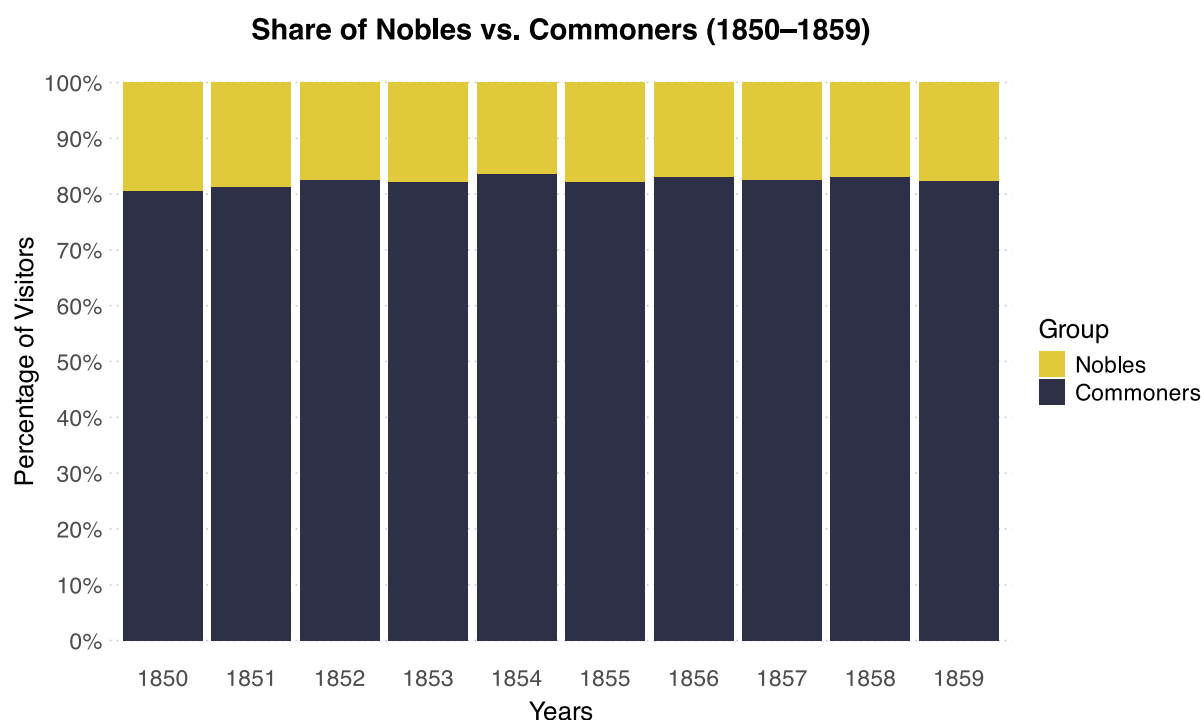


Image 15: Percentage of named visitors with titles of nobility over 1850–1859.

The *Upper Classes* subchapter⁶⁰⁹ highlighted the heterogeneity within the nobles, based on court access, rank, and the time of ennoblement. The recently ennobled were often considered lesser not only because of their generally lower ranks, but also because of their lack of ancestral prestige. While the data from *Kurlisten* does not allow for a more intricate analysis of these ranks, their distribution is still useful (see **Image 16**). The titles of nobility⁶¹⁰ have

⁶⁰⁶ 4.469 titled visitors out of 75.756 visitors in total.

⁶⁰⁷ *Streicher*, *Ischler Kurlisten*, 65.

⁶⁰⁸ *Sommer*, *Zur Kur Nach Ems*, 726.

⁶⁰⁹ Pages 36–39.

⁶¹⁰ Burak *Demirci* (icrimedkarub), nobles_without_ranks.xlsx (09.02.2026), online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/nobles_without_ranks.xlsx (09.02.2026).

been categorised in the “Rank” column with a script based on the “Name” column.⁶¹¹ The script was able to successfully categorise most titles,⁶¹² still some manual correction and certain simplifications were necessary. The few *Marquess*, *Burgrave*, and *Boyar* were counted as *Count*, while *Chevalier* was counted as *Knight*. If a person held multiple titles, the higher-ranking one was taken into account. For consistency, the titles have been translated into English,⁶¹³ and feminine versions were omitted for readability. With the exception of *Knight* and *Duke*, the number of titles negatively correlates with how high a title ranks. Each year, a similar number of *Barons* and *Counts* visited Baden, while the numbers for *Edler*, *Knight*, *Prince*, and *Archduke* fluctuated more. *Duke* was by far the rarest title.⁶¹⁴ Baden had once served as the summer residence of Emperor Francis II (r. 1792–1835), but Franz Joseph’s decision to spend his summers in Bad Ischl likely reduced the presence of high-ranking noble visitors. A targeted comparison between the relevant years may yield further insight.

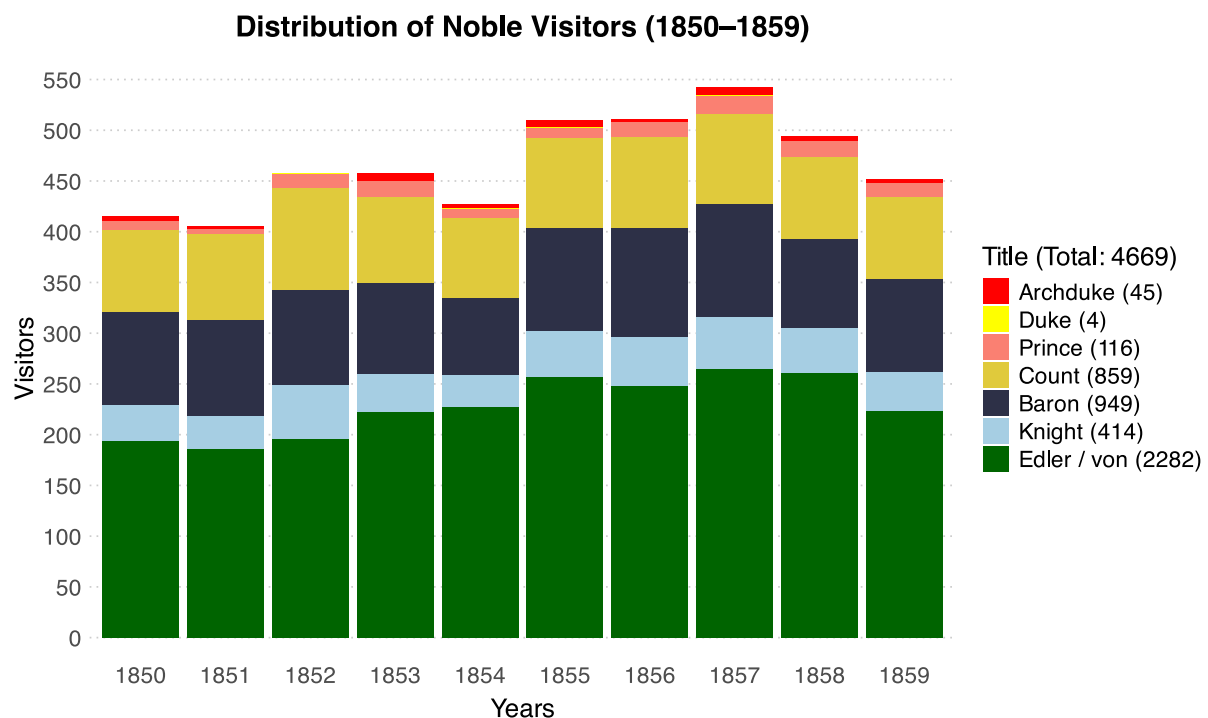


Image 16: Distribution of noble visitors by title over 1850–1859.

⁶¹¹ Burak Demirci (icrimedkarub), nobles_extract.r (09.02.2026), online:

https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/nobles_extract.r (09.02.2026).

⁶¹² Burak Demirci (icrimedkarub), nobles_with_ranks.xlsx (09.02.2026), online:

https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/nobles_with_ranks.xlsx (09.02.2026).

⁶¹³ The German versions are: Erzherzog, Herzog, Fürst, Graf, Freiherr, Ritter, Edler.

⁶¹⁴ This can probably be attributed to the fact that since the Middle Ages, Habsburgs fashioned themselves the *Archduke* title instead. In all four cases the individuals belonged to other Houses.

Once the ranks are set, the gender distribution among noble visitors can also be examined (see **Image 17**). Keeping the difference in absolute numbers shown in **Image 16** in mind, it can be said that apart from *Knights* and *Dukes*, nobles of both genders visited Baden in fairly equal numbers within each rank. Between 50% and 60% of all *Edlers*, *Barons*, *Counts*, and *Archdukes* were male. Almost all *Knights* were male. The only rank with a female majority was *Prince*.

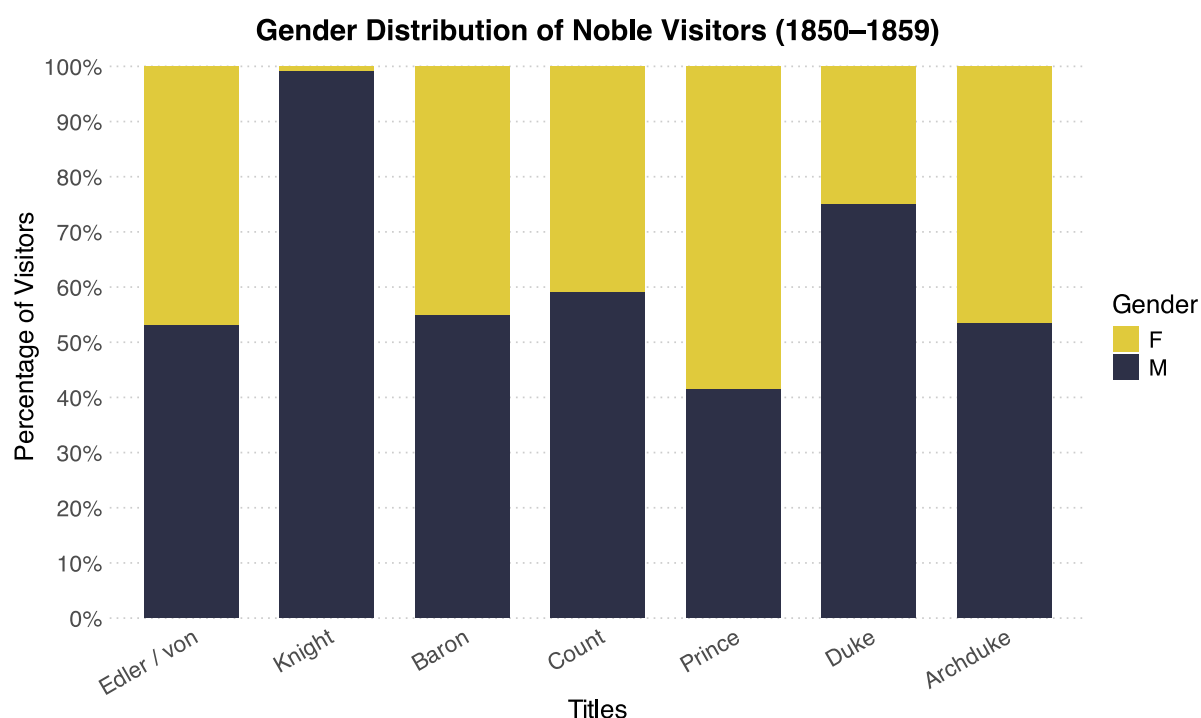


Image 17: Gender distribution among noble ranks over 1850–1859.

A comparison between unnamed soldiers and officers reveals the extent to which *Kurlisten* lack information. Numerically, unnamed soldiers outnumbered officers three to one, yet their names, exact ranks, dates of arrival, and places of origin remain unknown (see **Image 18**). In each year, lower-ranking soldiers outnumbered higher-ranking ones. It is important to note that the party size has been taken into account and that the family members, such as wives or widows of officers are also included here. All of these unnamed soldiers, but only 46% of the Junior Officers and 13% of the Senior Officers stayed at the *Militärbadehaus*.

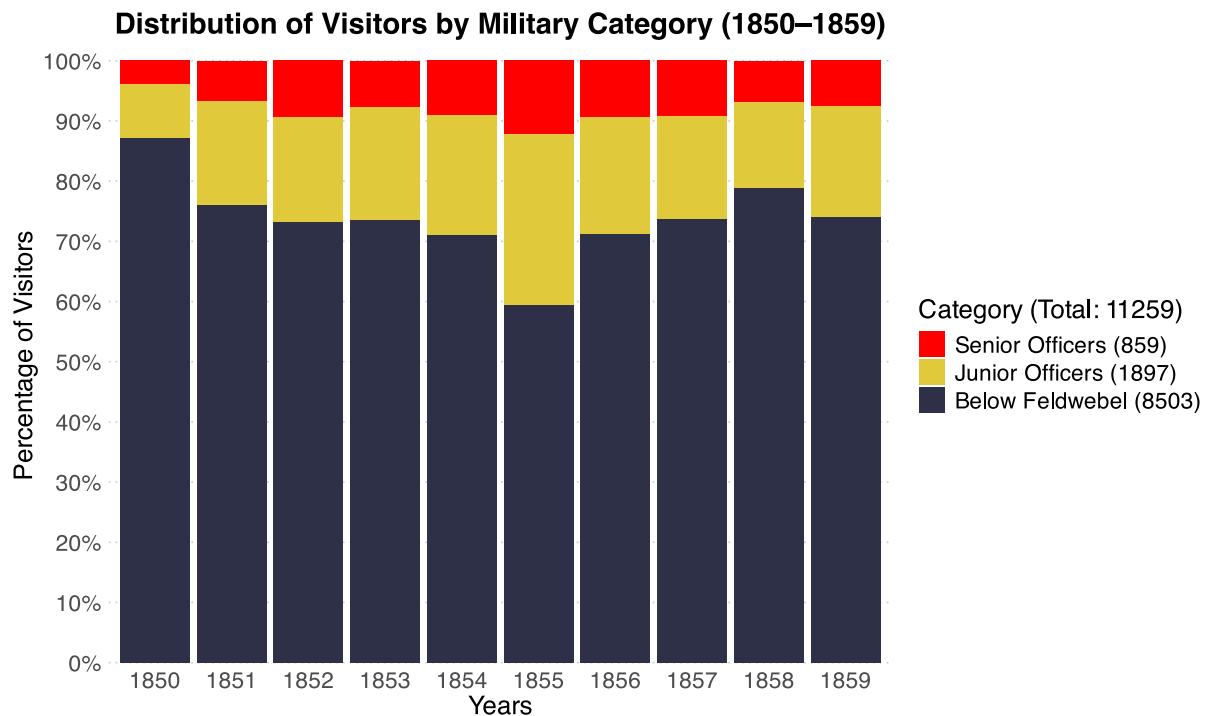


Image 18: Distribution of members of the military by rank over 1850–1859.

5.8 Places of Accommodation

The final category to be analysed is the accommodation. The addresses in Baden were categorised in the “Establishment_Type” column of the dataset. However, the categorisation was not always straightforward. Blurred distinctions between hotels and guesthouses mentioned earlier⁶¹⁵ were also present in Baden. For example, a guidebook from 1866 lists *Gasthof zur Schäferin* under the section “Hôtels”, using *inn* and *hotel* interchangeably.⁶¹⁶ In another example from 1897, the establishment is firmly listed under *hotels*, along with other former *inns*.⁶¹⁷ The situation was further complicated by the parallel usage of different address formats. Yearly fluctuations in total visitor numbers should also be kept in mind when interpreting these graphs.

When categorising addresses, *Schloss Weilburg* and *Schloss Weikersdorf* were counted under *Palace*; *Sauerhof*, *Redoutengebäude*, and *Schloss Gutenbrunn* under *Hotel*; *Kinderspital*, *Marienspital*, *Wohltätigkeitshaus*, and *Todescosches Hospital* under *Charitable Institution*; *Militärbadehaus*, *Johannesbad*, *Karolinenbad*, and *Herzoghof* under *Spa*; guesthouses under *Inn*; and all remaining visitors with a known address, including those staying at *Palais*

⁶¹⁵ Page 13.

⁶¹⁶ Josef Bersch, *Der Curort Baden in Nieder-Oesterreich*, 27.

⁶¹⁷ Lutter, *Führer durch den Curort Baden Bei Wien*, 59.

Erzherzog Anton, under *Private*.⁶¹⁸ There were a total of 9 visitors from 3 parties without an address.

Two of the places where people stayed the most were the *Militärbadehaus* with 9.829 and the *Wohltätigkeitshaus* with 5.618 visitors. These have been ignored in the next plot for better readability (see **Image 19**). The remaining establishments were grouped by type, and in this case party size has been taken into account. The most popular hotel was *Sauerhof*, which hosted on average 287 people per year. Visitors to *Schloss Weilburg*, the imperial residence in Baden, included not only nobles but also their entourage. Interestingly, the top-ranked inn, *Gasthof zum goldenen Hirsch*, hosted just over 620 visitors across the decade. Taken together with 1.063 unique addresses in Baden, these figures suggest that private accommodation played a central role, which was also the case in Bad Ischl.⁶¹⁹

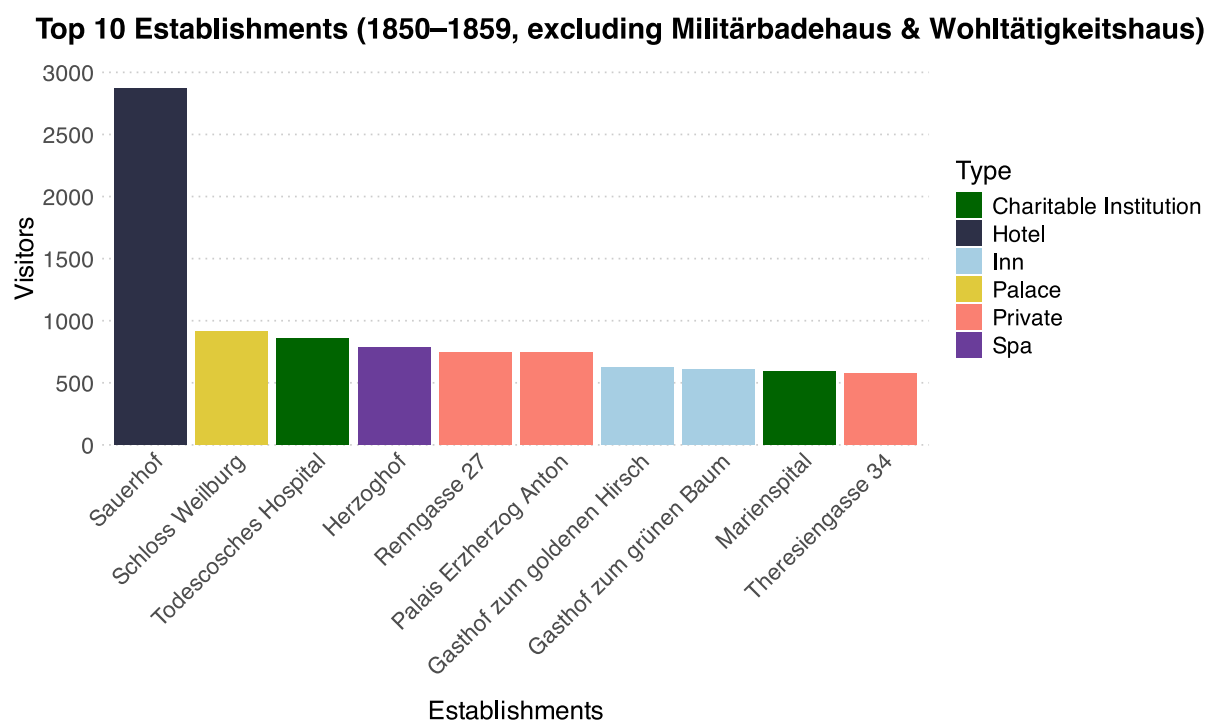


Image 19: Ten most popular places to stay in Baden by type after *Militärbadehaus* and *Wohltätigkeitshaus* over 1850–1859.

The prominent role of private accommodation in Baden becomes clear in the following plot (see **Image 20**). It shows that around two thirds of the visitors stayed at *Private* addresses throughout the decade. The proportion of visitors staying at *Spas* reached its lowest point in

⁶¹⁸ Ideally, changing situations should be taken into account when categorising. According to my private correspondence with Hans Hornyik on 19.02.2026, *Schloss Gutenbrunn* was used as a hotel since 1786, *Palais Erzherzog Anton* came to be used as private accommodation after 1834, and *Herzoghof* should be considered a spa until its renovation in 1908.

⁶¹⁹ *Streicher*, *Ischler Kurlisten*, 76.

the middle of the decade, before increasing again, though without reaching the level of 1850. Almost 90% of these stayed at the *Militärbadehaus*. The percentage of visitors to the *Charitable Institutions* remained relatively constant at around 10% of the total. Both *Inns* and *Hotels* hosted a similar number of visitors, with stable levels throughout the period. Visitors to *Palaces* made up the smallest group.

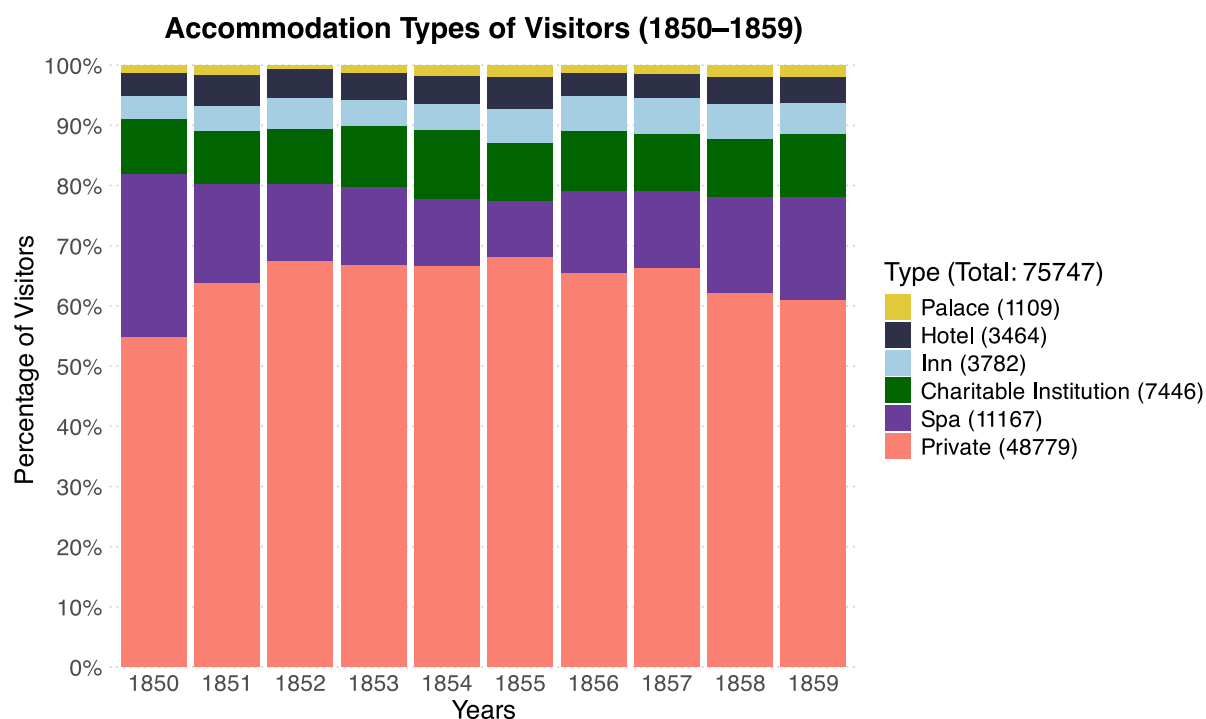


Image 20: Accommodation types over 1850–1859.

Next, the establishments hosting unnamed visitors are shown (see **Image 21**). The visitors to these organisations were recorded in bulk at the end of each season. This plot includes all of them, divided by establishment. While both *Militärbadehaus* and *Schloss Weilburg* also accommodated named visitors, these cases were excluded here.⁶²⁰ With the exceptions of *Militärbadehaus* and *Schloss Weilburg*, these were charitable organisations catering to specific groups: *Marienspital* opened in 1813 to assist those in need regardless of origin or religion;⁶²¹ *Todescosches Hospital* opened in 1846 with 20 beds each for Jews and Christians;⁶²² and *Wohltätigkeitshaus* opened in 1805 to serve the poor people of Vienna and Lower Austria.⁶²³ *Kinderspital*, the children’s hospital, had opened its gates in 1852,⁶²⁴ which is why there is no data from the first two years.

⁶²⁰ There were 1.326 named visitors to the *Militärbadehaus*, including three were women.

⁶²¹ *Fritsch*, Vom Armenbad zum Theater am Steg, 97–98.

⁶²² *Ibid.*, 98.

⁶²³ *Ibid.*, 97.

⁶²⁴ *Mikoletzky*, Schattenseiten der Sommerfrische, 60.

Both of the establishments which have been excluded in **Image 19** are prevalent in this instance, whereby capacities of other establishments were comparatively small. As mentioned earlier, the number of visitors to *Militärbadehaus* was indeed much higher in 1850 than in following years due to the tumultuous events of the preceding two years, which were part of the *Spa* category in **Image 20**. Visitors to *Schloss Weilburg* were part of the imperial entourage, and their absence in 1852 likely related to the absence of any *Archdukes* in **Image 16** in the same year.

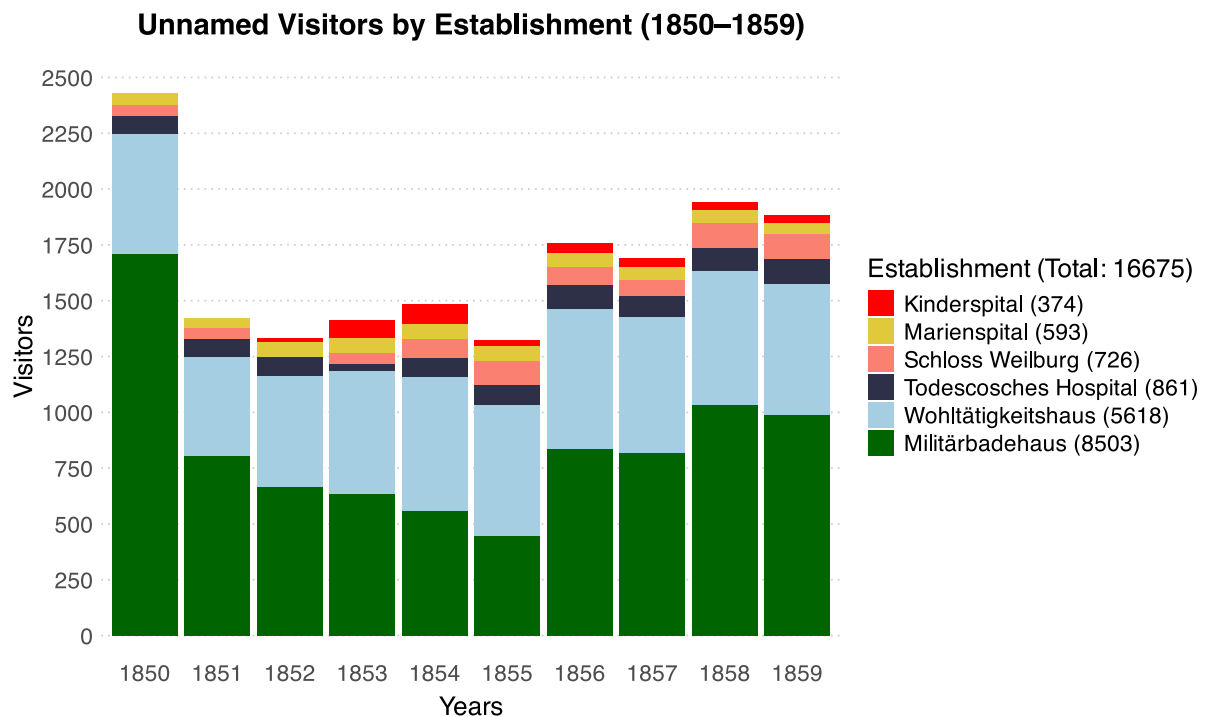


Image 21: Establishments unnamed visitors stayed at over 1850–1859.

Comparing the charitable establishments between Baden and another spa town with very similar number of visitors like Karlovy Vary, it can be observed that Baden had not only more of these institutions but also more visitors staying in them. As shown in **Image 8**, both cities recorded almost identical visitor numbers in 1853, when Karlovy Vary had 7.145 visitors and Baden 7.111, excluding passers-by. In Karlovy Vary only 228 visitors stayed at two hospitals, one for Christians and Jews each;⁶²⁵ whereas Baden had 550 visitors in *Wohltätigkeitshaus*, 84 in *Kinderspital*, 63 in *Marienspital*, and 27 in *Todescosches Hospital*. In 1855, Karlovy Vary hosted 6.968 visitors, supplemented by 48 soldiers in *Militärbadehaus* and 212 patients

⁶²⁵ Porta Fontium, Carlsbader Kurliste (06.10.1853) 119^r, online: https://www.portafontium.eu/iipimage/30380118/soap-kv_knihovna_karlsbader-kurliste-1853_1250?language=de&x=240&y=193&w=891&h=426 (10.02.2026).

in two hospitals, for a total of 7.228 people.⁶²⁶ In the same year, Baden received 6.747 visitors, joined by 446 in *Militärbadehaus*, 585 in *Wohltätigkeitshaus*, 65 in *Marienspital*, 90 in *Todescosches Hospital*, and 26 in *Kinderspital* for a total of 7.959. This means that the proportion of such visitors in Baden was higher despite similar visitor numbers.

Finally, a heat map was generated to visualise the addresses within the city (see **Image 22a** & **Image 22b**). For this step, the modern versions of the original addresses⁶²⁷ were matched with coordinates from OpenStreetMap⁶²⁸ with the help of a Python script.⁶²⁹ It was essential that the street names in the dataset matched the exact version on OpenStreetMap.⁶³⁰ Then, reference points⁶³¹ were aligned between the actual coordinates and the pixel coordinates on the base map. An 1870 map of Baden was used as the base layer and digitally cropped to better fit the heat map data.⁶³² The heat map itself was also generated with a script.⁶³³

The visualisation is based on 26.488 parties with 75.680 people, including unnamed visitors. It highlights the centres of accommodation. Perhaps unsurprisingly, the city centre (1) shows a particularly high concentration of addresses. Other highly concentrated areas, already identified in previous plots, include the *Wohltätigkeitshaus* (2), *Todescosches Hospital* (3), *Sauerhof* (4), and *Militärbadehaus* (5). The physical separation of *Schloss Weilburg* (6) from the rest of the town is clearly visible. Beyond these major clusters, the widespread red hue and

⁶²⁶ Ibid., Carlsbader Kurliste (08.10.1855) 120', online:

https://www.portafontium.eu/iipimage/30380120/soap-kv_knihovna_karlsbader-kurliste-1855_1400?language=de&x=103&y=-108&w=1444&h=691 (20.09.2025).

⁶²⁷ Burak Demirci (icrimedkarub), addresses_clean.xlsx (09.02.2026), online:

https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/addresses_clean.xlsx (09.02.2026).

⁶²⁸ OpenStreetMap, online: <https://www.openstreetmap.org/> (24.09.2025).

⁶²⁹ Burak Demirci (icrimedkarub), unique_coordinates.py (09.02.2026), online:

https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/unique_coordinates.py (09.02.2026).

⁶³⁰ Burak Demirci (icrimedkarub), addresses_with_coords.xlsx (09.02.2026), online:

https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/addresses_with_coords.xlsx (09.02.2026).

⁶³¹ Burak Demirci (icrimedkarub), ref_points.xlsx (09.02.2026), online:

https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/ref_points.xlsx (09.02.2026).

⁶³² Carl Steinhöffer, Baden und Umgebung (Vienna 1870), Stadtarchiv Baden KA 192c, online:

https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/baden_1870.png (09.02.2026).

⁶³³ Burak Demirci (icrimedkarub), heatmap.py (12.02.2026), online:

https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/heatmap.py (12.02.2026).

numerous smaller clusters across many streets indicate the broader spatial distribution of visitors throughout the city, in line with **Image 20**.

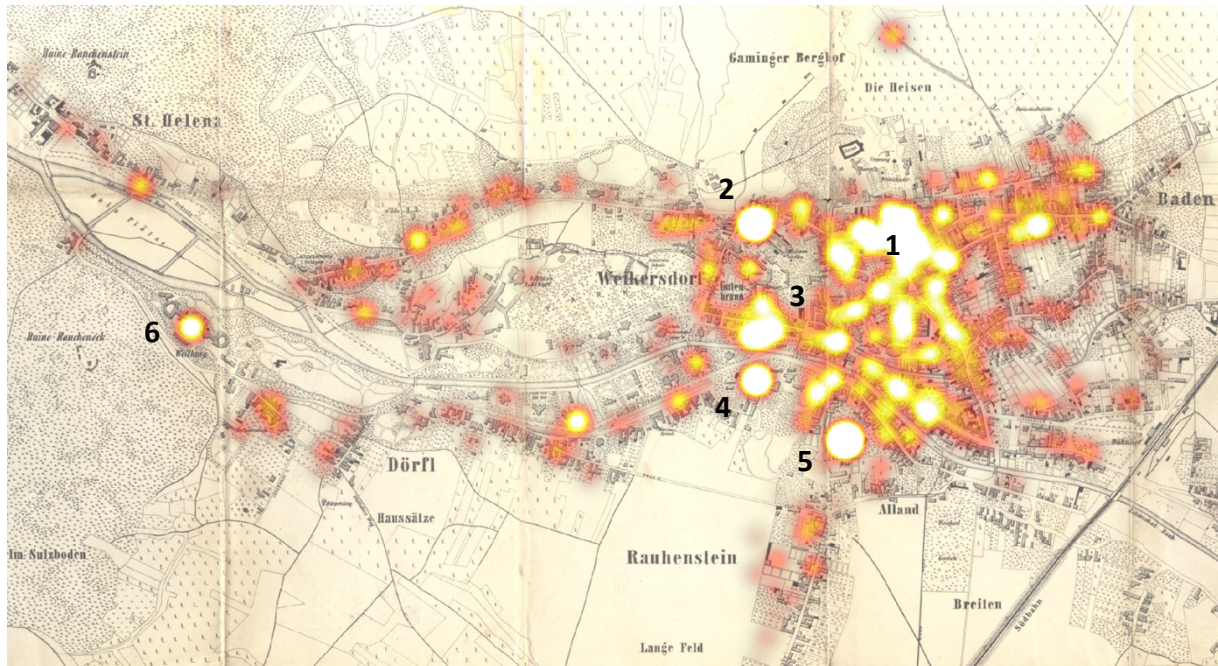


Image 22a: Heat map of total visitors over 1850–1859. For increased readability, the places mentioned in text have been numbered.

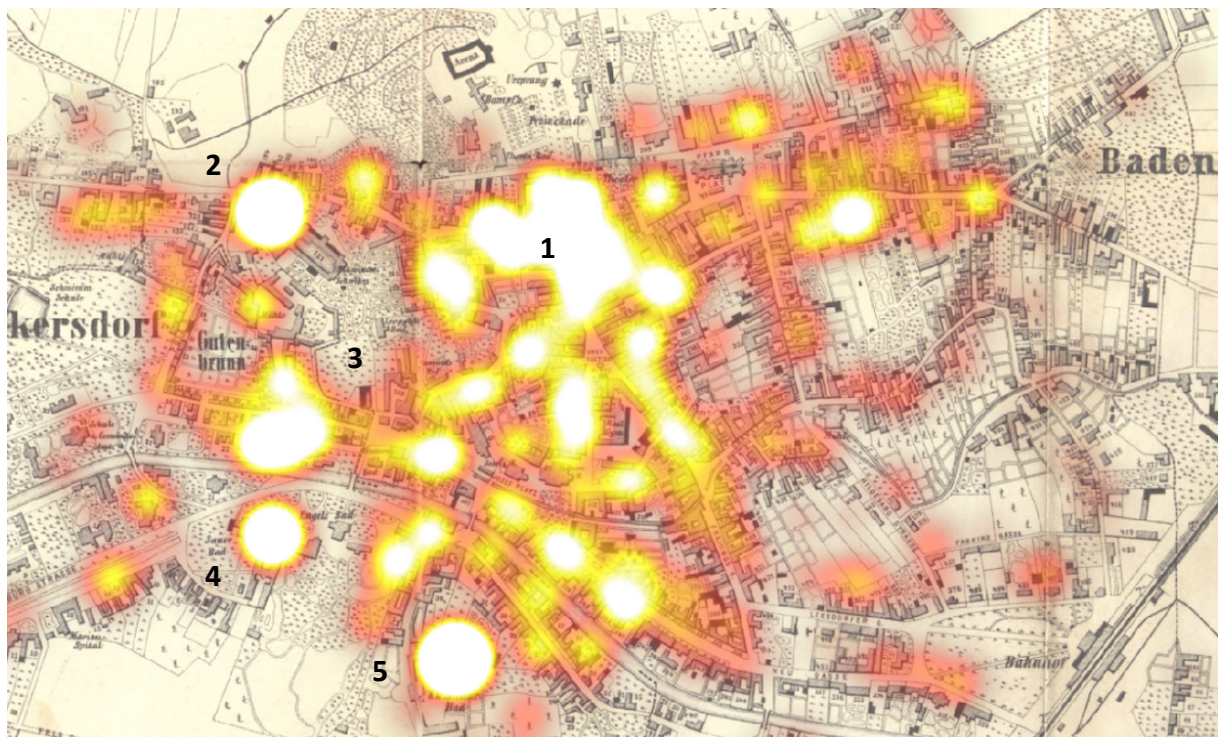


Image 22b: Heat map of total visitors over 1850–1859 (zoomed in). For increased readability, the places mentioned in the text have been numbered.

Although the process was technically straightforward, the use of specialised mapping software such as QGIS⁶³⁴ would have provided more advanced visualisation options. would offer more display options. Minor distortions are visible at the *Wohltätigkeitshaus* (2) and the *Militärbadehaus* (5), resulting from the use of a historical base map.

With this exploratory analysis using sample data, the visitors to Baden have been studied in this manner for the first time. Once the data is extracted and cleaned, the scope of the analysis is determined primarily by the research questions posed and the availability of comparable material.

For the decade under consideration, the analysis has shown that the number of visitors often deviated slightly between the actual entries in the lists and the official statistics; Baden hosted more visitors than other, equally fashionable Austrian spas; among the named visitors, men outnumbered women; June was the most popular month of arrival; after Austria, most visitors came from locations within the modern borders of Hungary; the majority of visitors travelled from Vienna, followed by those from Bratislava in considerably smaller numbers; *Businesspeople* accounted for around 20% of named visitors with a known occupation category; nobles of all ranks consistently made up around 18% of named visitors each year; with the exception of *Knights* and *Dukes*, lower ranked nobles were generally more numerous; the gender distribution among nobles was similar across most ranks, except for *Knights* and to a lesser extent *Dukes*; only 25% of all soldiers were named individually; *Sauerhof* was the most frequented hotel, while private apartments were widely used throughout the city; and 22% of all visitors were part of unnamed groups, half of whom were soldiers below the rank of *Feldwebel*, with most of the remainder visiting charitable establishments.

Although comparable datasets from other spa towns were not available, several contextual comparisons can nevertheless be drawn for this period: the ratio of named vs. unnamed visitors was similar in Bad Ischl and Baden; like in Bad Ems, Baden recorded more male than female visitors; the proportion of nobles was comparable to that of Bad Ems but only about half of that in Bad Ischl; private accommodation played an important role in both Bad Ischl and in Baden; and in comparison with Karlovy Vary, a spa town of similar popularity, Baden accommodated a higher proportion of visitors in charitable institutions.

⁶³⁴ QGIS, online: <https://qgis.org/> (24.09.2025).

6. Conclusion

The aim of this thesis was to bring attention to the capabilities of digital tools in regard to *Kurlisten* by applying a selection of these tools to the *Badener Kurlisten* of the 1850s and undertaking an exploratory data analysis of the resulting data. While there have been studies based on this widely available medium, these have been limited in scope, did not propose a standardised methodology for further use, and did not publish the underlying data, which has made comparative research more difficult. To support further research, the resulting dataset and scripts have therefore been made publicly available.

After a general introduction to spa towns and society of the era, the thesis demonstrated the current capabilities of AI-based tools for different stages of the research process. Tools such as Transkribus proved essential for transcription, without which the labour cost would have been significantly higher. While ChatGPT assisted with data cleaning, analysis, visualisation, and technical problem-solving, potential of OpenRefine was explored for normalisation and LOD tasks. All of these tools are accessible to users without a technical background.

At the same time, the thesis has shown the limitations of both the source material and the tools. Humanities data can be vague, inconsistent, or incomplete, and digital tools cannot resolve all ambiguities automatically. Manual verification remained necessary throughout the workflow, and interpretative decisions had to be made that shaped the data model. The human element in collecting, cleaning, and interpreting data remains central despite the use of digital methods.

Given the many corpora of *Kurlisten* spanning long time periods, digitally supported analysis offers significant potential for future research. Once data is extracted and prepared in a standardised way, *Kurlisten* from different locations can be compared statistically, and patterns of tourism and social networks can be reconstructed. To this end, *Aquae Europae* has been deployed as a register of European spa towns, providing an overview. It is hoped that this thesis encourages continued exploration of *Kurlisten* using digital tools and further data-driven research.

7. Sources

7.1 Online Resources

Amalthea Verlag, Wenn Häuser Geschichten erzählen, online:

https://amalthea.at/?s=Wenn+H%C3%A4user+Geschichten+erz%C3%A4hlen&post_type=product (28.08.2025).

Arcanum, Europa im 19. Jahrhundert, online: <https://maps.arcanum.com/de/map/europe-19century-secondsurvey/?layers=158%2C164&bbox=2103929.2658336638%2C5590073.554273671%2C3095776.1448621107%2C6200346.788102517> (26.09.2025).

—, Magyarország Geográfiai Szótára, online: <https://www.arcanum.com/en/online-kiadvanyok/Lexikonok-magyarorszag-geografiai-szotara-fenyeselek-BABC3/> (26.09.2025).

Arena, Leaderboard, online: <https://arena.ai/leaderboard> (20.01.2026).

Artificial Analysis, LLM Leaderboard, online: <https://artificialanalysis.ai/leaderboards/models> (20.01.2026).

Austrian Academy of Sciences, A Resource Centre for Humanities Related Research in Austria (ARCHE), online: <https://arche.acdh.oeaw.ac.at/browser/> (26.09.2025).

Lee Boonstra, Prompt Engineering, online: <https://www.kaggle.com/whitepaper-prompt-engineering> (14.12.2025).

Creative Commons, About CC Licenses, online: <https://creativecommons.org/share-your-work/cclicenses/> (20.09.2025).

Burak Demirci (icrimedkarub), addresses_clean.xlsx (09.02.2026), online:

https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/addresses_clean.xlsx (09.02.2026).

—, addresses_with_coords.xlsx (09.02.2026), online:

https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/addresses_with_coords.xlsx (09.02.2026).

—, aquae_europae (v1.0.0) (11.02.2026), online:

https://github.com/icrimedkarub/aquae_europae (11.02.2026).

—, Aquae Europae – Spa Towns of Europe (11.02.2026), online:

https://icrimedkarub.github.io/aquae_europae/ (11.02.2026).

- , Badener Kurlisten Dataset (1850–1859) (v1.0.1) (20.02.2026), online:
<https://doi.org/10.5281/zenodo.18716039> (20.02.2026).
- , comparison_data.xlsx (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/comparison_data.xlsx (09.02.2026).
- , country_names.py (10.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/country_names.py (10.02.2026).
- , excel_to_json.py (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/excel_to_json.py (09.02.2026).
- , heatmap.py (12.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/heatmap.py (12.02.2026).
- , kurfrequenz_vergleich.xlsx (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/kurfrequenz_vergleich.xlsx (09.02.2026).
- , kurlisten_masterarbeit (v1.0.0) (23.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit (23.02.2026).
- , nobles_extract.r, (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/nobles_extract.r (09.02.2026).
- , nobles_with_ranks.xlsx (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/nobles_with_ranks.xlsx (09.02.2026).
- , nobles_without_ranks.xlsx (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/nobles_without_ranks.xlsx (09.02.2026).
- , ortsnamen.xlsx (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/ortsnamen.xlsx (09.02.2026).

- , *ref_points.xlsx* (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/ref_points.xlsx (09.02.2026).
- , *scrape_QID.py* (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/scrape_QID.py (09.02.2026).
- , *scrape_coordinates.py* (10.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/scrape_coordinates.py (10.02.2026).
- , *scrape_country.py* (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/scrape_country.py (09.02.2026).
- , *script_thesis.r* (20.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/script_thesis.r (20.02.2026).
- , *spadata.xlsx* (20.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/spadata.xlsx (20.02.2026).
- , *towns.xlsx* (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/towns.xlsx (09.02.2026).
- , *unique_coordinates.py* (09.02.2026), online:
https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/scripts/unique_coordinates.py (09.02.2026).
- eScriptorium, online: <https://escriptorium.inria.fr/> (25.09.2025).
- Christian *Fastl*, Baden (bei Wien) (26.11.2024). In: Barbara *Boisits* (ed.), Oesterreichisches Musiklexikon online, online:
https://musiklexikon.ac.at/ml/musik_B/Baden_bei_Wien.xml (08.07.2025).
- GeoNames, online: <https://www.geonames.org/> (26.09.2025).
- Astrid *Köhler*, Kaitlin P. *Ward*, Henrike *Schmidt*, Anna *Cabanel*, et al., European Spa Dataset. Spa Towns and Resorts (18th–20th Centuries) (v20260204130407) (04.02.2026),
<https://doi.org/10.5281/zenodo.18482816> (08.02.2026).

Homburger Kur- und Badelisten, online: <https://www.lagis-hessen.de/de/klhg> (20.11.2024).

Hungaricana, Militär-Schematismus des österreichischen Kaiserthumes (Vienna 1851) 359,
online:
https://library.hungaricana.hu/hu/view/MilitarAlmanachSchematismus_1851/?pg=382&layout=s (26.09.2025).

OCR4all, online: <https://www.ocr4all.org/> (25.09.2025).

OpenAI, ChatGPT, online: <https://chatgpt.com> (25.09.2025).

———, Data Analyst, online: <https://chatgpt.com/g/g-HMNcP6w7d-data-analyst>
(26.09.2025).

OpenRefine, online: <https://openrefine.org/> (15.09.2025)

———, Cell Editing (09.09.2025), online: <https://openrefine.org/docs/manual/cellediting>
(15.09.2025).

———, Reconciling (05.06.2024), online: <https://openrefine.org/docs/manual/reconciling>
(20.09.2025).

OpenStreetMap, online: <https://www.openstreetmap.org/> (24.09.2025).

PDF24, online: <https://www.pdf24.org/en/> (25.09.2025).

Porta Fontium, Carlsbader Kurliste (06.10.1853) 119^r, online:
https://www.portafontium.eu/iipimage/30380118/soap-kv_knihovna_karlsbader-kurliste-1853_1250?language=de&x=240&y=193&w=891&h=426 (10.02.2026).

———, Carlsbader Kurliste (08.10.1855) 120^r, online:
https://www.portafontium.eu/iipimage/30380120/soap-kv_knihovna_karlsbader-kurliste-1855_1400?language=de&x=103&y=-108&w=1444&h=691 (20.09.2025).

———, Kurliste, online: <https://www.portafontium.eu/contents/kurliste/?language=de>
(20.09.2025).

Posit, Rstudio Desktop, online: <https://posit.co/download/rstudio-desktop> (03.12.2024).

Python, online: <https://www.python.org/> (25.09.2025).

QGIS, online: <https://qgis.org/> (24.09.2025).

R, online: <https://www.r-project.org/> (03.12.2024).

Reconciliation Service Test Bench, online: <https://reconciliation-api.github.io/testbench/#/> (26.09.2025).

Anand Subramanian (sanand0), LLM Pricing (02.11.2025), online: <https://sanand0.github.io/llmpricing/?quality=overall> (21.01.2026).

Andreas Schweiger, Der Hofstaat in der Datenbank. Uni Graz erschließt mit KI die kaiserliche Verwaltung (12.03.2025), online: <https://www.uni-graz.at/de/neuigkeiten/der-hofstaat-in-der-datenbank-uni-graz-erschliesst-mit-ki-die-kaiserliche-verwaltung/> (22.09.2025).

The European Spa as a Transnational Public Space and Social Metaphor, Crowdsourcing Project, online: <https://www.theeuropeanspa.eu/crowdsourcing/index.html> (26.09.2025).

———, List of Digital Resources, online: <https://www.theeuropeanspa.eu/materials/digital-resources/> (26.09.2025).

Transkribus, online: <https://www.transkribus.org> (26.09.2025).

———, Advanced Layout Configuration Settings, online: <https://help.transkribus.org/advanced-layout-configuration-settings> (15.09.2025).

———, Automatic Layout Recognition, online: <https://help.transkribus.org/automatic-layout-recognition> (25.09.2025).

———, Baselines Models, online: <https://help.transkribus.org/baselines-models> (25.09.2025).

———, Plans & Pricing, online: <https://www.transkribus.org/plans> (25.09.2025)

———, ScanTent, online: <https://www.transkribus.org/en/scantent> (25.09.2025).

———, Scholarship, online: <https://www.transkribus.org/scholarship> (25.09.2025).

———, Table Models, online: <https://help.transkribus.org/tables> (25.09.2025).

United Nations Educational, Scientific and Cultural Organization (UNESCO), World Heritage Centre, The Great Spa Towns of Europe, online: <https://whc.unesco.org/en/list/1613/> (07.09.2025).

University of Vienna, PHAIDRA, online: <https://phaidra.univie.ac.at/> (25.09.2025).

Wikidata, online: <https://www.wikidata.org/> (22.09.2025).

- , Austria (23.09.2025), online: <https://www.wikidata.org/wiki/Q40> (23.09.2025).
- , Baden (06.11.2025), online <https://www.wikidata.org/wiki/Q63939> (22.12.2025).
- , Baden (11.08.2025), online: <https://www.wikidata.org/wiki/Q486450> (23.09.2025).
- , Country (25.09.2025), online: <https://www.wikidata.org/wiki/Property:P17> (25.09.2025).
- , List of all properties (15.09.2025), online: https://www.wikidata.org/wiki/Wikidata:Database_reports/List_of_properties/all (20.09.2025).
- , Lviv (22.01.2026), online: <https://www.wikidata.org/wiki/Q36036> (26.01.2026).
- , Search Results for “Himberg”, online: <https://www.wikidata.org/w/index.php?search=Himberg&title=Special%3ASearch&profile=advanced&fulltext=1&ns0=1&ns120=1&searchToken=7qfnlib709gcms5axxj9o5ot7> (25.09.2025).
- Wikipedia, List of Spa Towns (12.08.2025), online: https://en.wikipedia.org/w/index.php?title=List_of_spa_towns&oldid=1305545772 (20.08.2025).
- , Lists of German Exonyms (17.09.2017), online: https://en.wikipedia.org/w/index.php?title=Category:Lists_of_German_exonyms&oldid=801089459 (25.09.2025).
- Gerhard Wurzinger, Krimkrieg (26.10.2024). In: Austria-Forum, online: <https://austria-forum.org/af/AEIOU/Krimkrieg> (10.02.2026).
- Zenodo, online: <https://zenodo.org/> (06.01.2026).

7.2 Primary Sources

- Austrian National Library, AustriaN Newspapers Online (ANNO), Badener Curliste, online: https://anno.onb.ac.at/static_tables/bad.htm (26.09.2025).
- Josef Bersch, Der Curort Baden in Nieder-Oesterreich. Seine Heilquellen und Umgebungen (Baden bei Wien 1866).

Karl von Czörnig, Ethnographische Karte der Oesterreichischen Monarchie (1856), online: <https://goobi-viewer.univie.ac.at/viewer/fullscreen/AC02644333/1/> (17.09.2025).

Franz Habel, Baden und seine Heilquellen (Vienna 1852).

Hans Lutter, Führer durch den Curort Baden bei Wien und seine Umgebungen (Baden [bei Wien] 1897).

Carl Rollett, Baden in Österreich, seine reichlichen Quellen und deren heilende Kräfte, seine vorzüglichen Merkwürdigkeiten und malerischen Umgebungen (Vienna 1838).

Carl Steinhöffer, Baden und Umgebung (Vienna 1870), Stadtarchiv Baden KA 192c, online: https://github.com/icrimedkarub/kurlisten_masterarbeit/blob/main/data/baden_1870.png (09.02.2026).

7.3 Secondary Literature

Clemens Andreasch, Das k. k. Wohltätigkeitshaus in Baden 1805–1918. Ein Sozialkurheim im 19. Jahrhundert (Diploma Thesis University of Vienna 2017), online: <https://doi.org/10.25365/thesis.48680> (25.09.2025).

Renate Basch-Ritter, Die k.u.k. Riviera. Nostalgische Erinnerungen an die altösterreichischen Küstenländer, an idyllische Seebäder und mondänes Strandleben, an die Winterstationen und Sommerparadiese an der Adria (Vienna 2002).

Josef Bauer, Kur & Unterhaltung im alten Baden. Wohltätigkeits- & Militäranstalten, Theater & Kino (Berndorf 2016).

Klaus Bergdolt, Gesundheit als Ausrede? Gesellschaftlicher Glanz und politische Bedeutung der Kurorte im 19. und frühen 20. Jahrhundert. In: Peter Weidisch, Fred Kaspar (eds.), Kurort und Modernität (Würzburg 2017) 83–97.

Martina Bleymehl-Eiler, Luxus am Kurort. Ausdruck der Modernität? In: Peter Weidisch, Fred Kaspar (eds.), Kurort und Modernität (Würzburg 2017) 269–283.

Julius Böheimer, Straßen & Gassen in Baden bei Wien. Lexikon der Straßen, Gassen, Plätze, Wege, Stege, Brücken (Baden bei Wien 1997).

Ursula Butz, Habsburg als Touristenmagnet. Monarchie und Fremdenverkehr in den Ostalpen 1820–1910 (Vienna 2021).

Josef Charvát, Die Kurtaxe. Geschichtliche Entwicklung und derzeitiger Stand (Prag 1967).

- Burak *Demirci*, Digital Humanities und die Kurlistenforschung am Beispiel von Baden bei Wien. In: Ulrike *Fritsch*, Martin *Scheutz*, Jacqueline *Schindler*, Ulrike *Scholda* (eds.), *Kurbäder als Spiegel der Gesellschaft in der Neuzeit* (St. Pölten 2025) 219–244, online: <https://doi.org/10.52035/noil.2025.stuf81.08>.
- Silke *Ebster*, „...Ein treuer und dankbarer Freund Vöslaus...“. Mietvillen, Ihre Besitzer und Gäste im Kur- und Sommerfrischeort Bad Vöslau während der franzisko-josephinischen Epoche (1852–1914) (Dissertation University of Vienna 1996).
- Volkmar *Eidloth*, Kleine historische Geographie europäischer Kurstädte und Badeorte im 19. Jahrhundert. In: Volkmar *Eidloth* (ed.), *Europäische Kurstädte und Modebäder des 19. Jahrhunderts* (Stuttgart 2012) 15–39.
- Julia *Flanders*, Fotis *Jannidis*, Data Modeling. In: Susan *Schreibman*, Ray *Siemens*, John *Unsworth* (eds.), *A New Companion to Digital Humanities* (2015) 229–237, online: <https://doi.org/10.1002/9781118680605.ch16> (14.12.2025).
- David *Fleischhacker*, Roman *Kern*, Wolfgang *Göderle*, Improving OCR Quality in 19th Century Historical Documents Using a Combined Machine Learning Based Approach (2024), online: <https://doi.org/10.48550/arXiv.2401.07787> (20.12.2025).
- Andreas *Förderer*, *Playgrounds of Europe. Europäische Kurstädte und Modebäder des 19. Jahrhunderts* (Baden-Baden 2010).
- Alison F. *Frank*, The Air Cure Town: Commodifying Mountain Air in Alpine Central Europe. In: *Central European History* 45/2 (2012) 185–207, online: <https://doi.org/10.1017/S0008938912000027> (28.12.2025).
- Ulrike *Fritsch*, Vom Armenbad zum Theater am Steg. Ein Badener Schwefelbad im Wandel der Zeit. In: Ulrike *Fritsch*, Martin *Scheutz*, Jacqueline *Schindler*, Ulrike *Scholda* (eds.), *Kurbäder als Spiegel der Gesellschaft in der Neuzeit* (St. Pölten 2025) 91–112, online: <https://doi.org/10.52035/noil.2025.stuf81.03>.
- Burkhard *Fuhs*, *Mondäne Orte einer vornehmen Gesellschaft. Kultur und Geschichte der Kurstädte 1700–1900* (Hildesheim/Zurich/New York 1992).
- Selina *Galka*, Georg *Vogeler*, Annotating, Projecting, and Interpreting Named Entities in Digital Scholarly Editions with LLMs. In: *International Journal of Digital Humanities* (2026), online: <https://doi.org/10.1007/s42803-025-00114-8> (29.01.2026).
- Alex *Ghiriti*, Wolfgang *Göderle*, Roman *Kern*, Exploring the Capabilities of GPT4-Vision as OCR Engine. In: Apostolos *Antonacopoulos*, Annika *Hinze*, Benjamin *Piwowarski*, Mickaël

- Coustaty, et al. (eds.)*, Linking Theory and Practice of Digital Libraries 15178 (2024) 3–12, online: https://doi.org/10.1007/978-3-031-72440-4_1 (25.09.2025).
- Roman *Gusterer*, Wirtschaftskrisen im Vergleich. 1857 und 1873 in der neueren Forschung. Unter besonderer Berücksichtigung von Österreich (Diploma Thesis University of Graz 2018), online: <https://resolver.obvsg.at/urn:nbn:at:at-ubg:1-124066> (25.09.2025).
- Michael *Hascher*, Kurorte als “Hotspots” der Technikgeschichte? Wechselwirkungen zwischen Heilbädern, Eisenbahn und Technikentwicklung im “langen” 19. Jahrhundert. In: Andrea *Pühringer*, Martin *Scheutz* (eds.), Die Kurstadt als urbanes Phänomen. Konsum, Idylle und Moderne (Vienna/Cologne 2023) 419–458, online: <https://doi.org/10.7788/9783412525903.419> (10.01.2026).
- , Modebäder und Eisenbahn. Zur Frage des Beitrages der Technikgeschichte zum möglichen Welterbestatus europäischer Kurstädte. In: Volkmar *Eidloth* (ed.) Europäische Kurstädte und Modebäder des 19. Jahrhunderts (Stuttgart 2012) 159–172.
- Gerhard J. *Hickel*, Zur Kur im Alten Österreich (Vienna 1996).
- Hans *Hornyik*, Baden bei Wien. Historische Entwicklung als Kur- und Badestadt und Teil des geplanten UNESCO-Weltkulturerbes “Great Spas of Europe”. In: Bade- und Kuranstalten (St. Pölten 2017) 17–21.
- Mark *Humphries*, Lianne C. *Leddy*, Quinn *Downton*, Meredith *Legace*, et al., Unlocking the Archives: Using Large Language Models to Transcribe Handwritten Historical Documents. In: Historical Methods. A Journal of Quantitative and Interdisciplinary History (2025) 1–19, online: <http://https://doi.org/10.1080/01615440.2025.2500309> (25.09.2025).
- Alexander *Jendorff*, Tanzende Kongresse? – Die Kurstadt als Ort der Diplomatie und ihrer Akteure. In: Andrea *Pühringer*, Martin *Scheutz* (eds.), Die Kurstadt als urbanes Phänomen. Konsum, Idylle und Moderne (Vienna/Cologne 2023) 99–126, online: <https://doi.org/10.7788/9783412525903.99> (10.01.2026).
- Fred *Kaspar*, Exklusive Kur? – ein Mythos! Bauern als Kurgäste. In: Lu *Seegers*, Matthias *Frese*, Malte *Thießen* (eds.), Kurorte in der Region. Gesellschaftliche Praxis, kulturelle Repräsentationen und Gesundheitskonzepte vom 18. bis zum 21. Jahrhundert (Göttingen 2024) 151–176.
- , Kurort im Umbruch oder Kurort und Modernität. In: Peter *Weidisch*, Fred *Kaspar* (eds.), Kurort und Modernität (Würzburg 2017) 13–29.

- , Wohnen an informellen Treffpunkten der Gesellschaft. Auf der Suche nach der besten Unterkunft im Kurort zwischen Spätmittelalter und Ende des 19. Jahrhunderts. In: Peter *Weidisch*, Fred *Kaspar* (eds.), *Kurort und Modernität* (Würzburg 2017) 159–232.
- Seorin *Kim*, Julien *Baudru*, Wouter *Ryckbosch*, Hugues *Bersini*, et al., Early Evidence of How LLMs Outperform Traditional Systems on OCR/HTR Tasks for Historical Records (2025) 1–15, online: <https://doi.org/10.48550/arXiv.2501.11623> (25.09.2025).
- Reinhold P. *Kuhnert*, *Urbanität auf dem Lande. Badereisen nach Pyrmont im 18. Jahrhundert* (Göttingen 1984).
- Oliver *Kühsehelm*, *Der Kurort Vöslau und seine Bürger. Bürgertum und Kommunalpolitik in einer Kleinstadt 1850–1914* (Diploma Thesis University of Vienna 1996).
- László *Kósa*, *Badeleben und Kurorte in Österreich-Ungarn* (Budapest 1999).
- Vladimír *Křížek*, *Kulturgeschichte des Heilbades* (Leipzig/Stuttgart 1990).
- Jeannette *van Laak*, Scheu vor Fremden? Zur Wahrnehmung ausländischer Kurgäste in deutschen Kurbädern des 19. Jahrhunderts In: Lu *Seegers*, Matthias *Frese*, Malte *Thießen* (eds.), *Kurorte in der Region. Gesellschaftliche Praxis, kulturelle Repräsentationen und Gesundheitskonzepte vom 18. bis zum 21. Jahrhundert* (Göttingen 2024) 111–128.
- Heikki *Lempa*, The Spa. Emotional Economy and Social Classes in Nineteenth-Century Pyrmont. In: *Central European History* 35/1 (2002) 37–73.
- Andrea *Leonardi*, Der Aufstieg der österreichischen Kurorte im 19. Jahrhundert. Ein Interpretationsmodell. In: Harald *Pechlaner* (ed.), *Destinations-Management. Führung und Vermarktung von touristischen Zielgebieten* (Vienna 1999) 261–285.
- , Entrepreneurial Mobility in the Development of the Austrian Kurorte in the Nineteenth Century. In: *Journal of Tourism History* 2/2 (2010) 99–116.
- Ute *Lotz-Heumann*, *The German Spa in the Long Eighteenth Century. A Cultural History* (New York 2022).
- Luyi *Ma*, Nikhil *Thakurdesai*, Jiao *Chen*, Jianpeng *Xu*, et al., LLMs with User-Defined Prompts as Generic Data Operators for Reliable Data Processing (2023), online: <https://doi.org/10.48550/arXiv.2312.16351> (29.01.2026).
- Laura *Manrique-Gómez*, Tony *Montes*, Arturo *Rodríguez-Herrera*, Rubén *Manrique*, Historical Ink. 19th Century Latin American Spanish Newspaper Corpus with LLM OCR

- Correction. In: Proceedings of the 4th International Conference on Natural Language Processing for Digital Humanities (2024) 132–139, online: <https://aclanthology.org/2024.nlp4dh-1.13.pdf> (25.09.2025).
- Matthias *Marschik*, Kurstädte – Sportstädte? Die Entwicklungen einer ambivalenten Beziehung. In: Andrea *Pühringer*, Martin *Scheutz* (eds.), Die Kurstadt als urbanes Phänomen. Konsum, Idylle und Moderne (Vienna/Cologne 2023) 351–383, online: <https://doi.org/10.7788/9783412525903.351> (10.01.2026).
- Rudolf *Maurer*, „...zu besserer erkenntnis“. Hausnamen, Hauszeichen und Adreßangaben im alten Baden (Baden bei Wien 2012), online: [https://rollettmuseum.at/wp-content/uploads/2017/12/Katalogblatt_Nr. 5 Hausnamen.pdf](https://rollettmuseum.at/wp-content/uploads/2017/12/Katalogblatt_Nr._5_Hausnamen.pdf) (20.12.2025).
- Juliane *Mikoletzky*, Die Schattenseiten der Sommerfrische. Armenbäder und Armenpolitik österreichischer Kurorte im 19. Jahrhundert am Beispiel Baden bei Wien. In: Willibald *Rosner*, Silvia *Petrin* (eds.), Sommerfrische. Aspekte eines Phänomens (Vienna 1994) 53–62.
- , Zur Sozialgeschichte des österreichischen Kurorts im 19. Jahrhundert. Kurlisten und Kurtaxordnungen als sozialhistorische Quelle. In: Mitteilungen des Instituts für österreichische Geschichtsforschung (MIÖG) 99/3–4 (1991) 393–433, online: <https://doi.org/10.7767/miog.1991.99.jg.393> (20.12.2025).
- Ansgar *Molzberger*, Pferderennen, Tennis, Golf und Rudern. Kurorte als frühe Zentren des Sports. In: Peter *Weidisch*, Fred *Kaspar* (eds.), Kurort und Modernität (Würzburg 2017) 285–297.
- Rudolf *Müllner*, Sport and Social Difference in Vienna around 1900. On the Historical Significance of Otto Herschmann. In: The International Journal of the History of Sport 40/2–3 (2023) 190–203, online: <https://doi.org/10.1080/09523367.2022.2157405> (25.09.2025).
- Patricia *Murrieta-Flores*, Rodrigo *Vega-Sánchez*, Alexander *Sánchez-Díaz*, Héctor Francisco *Cruz-Ríos*, Unlocking Colonial Records with Artificial Intelligence. Achieving the Automated Transcription of Large-Scale 16th and 17th-Century Latin American Historical Collections. In: Science & Technology of Archaeological Research 11/1 (2025) 1–13, online: <https://doi.org/10.1080/20548923.2025.2484828> (25.09.2025).
- Bettina *Nezval*, Villen der Kaiserzeit. Sommerresidenzen in Baden (Horn/Vienna 1993).
- Alfred *Niel*, Die grossen k.u.k. Kurbäder und Gesundbrunnen (Graz 1984).

- Peter *Payer*, Sommerfrische. Ein bürgerliches Ritual als Sehnsucht nach antiurbanen Sinnesreizen. In: Ferdinand *Opll*, Martin *Scheutz* (eds.), Fernweh und Stadt. Tourismus als städtisches Phänomen (Innsbruck 2018) 77–107.
- Andrea *Penz*, Inseln der Seligen. Fremdenverkehr in Österreich und Irland von 1900 bis 1938 (Cologne/Weimar/Vienna 2005).
- Christopher *Pollin*, Franz *Fischer*, Patrick *Sahle*, Martina *Scholger*, et al., When It Was 2024 – Generative AI in the Field of Digital Scholarly Editions. In: Zeitschrift für Digitale Geisteswissenschaften 10 (2025), online: https://doi.org/10.17175/2025_008 (29.01.2026).
- Angelika *Pozdena-Tomberger*, Die historische Entwicklung des Fremdenverkehrs im Allgemeinen und die Entwicklung einzelner Fremdenverkehrsorte im ehemaligen österreichischen Küstenland. In: Willibald *Rosner*, Silvia *Petrin* (eds.), Sommerfrische. Aspekte eines Phänomens (Vienna 1994) 29–51.
- Andrea *Pühringer*, Zu klein, zu jung, zu unbedeutend – die Kurstadt in der Stadtgeschichtsforschung. In: Andrea *Pühringer*, Martin *Scheutz* (eds.), Die Kurstadt als urbanes Phänomen. Konsum, Idylle und Moderne (Vienna/Cologne 2023) 63–97, online: <https://doi.org/10.7788/9783412525903.63> (10.01.2026).
- Nina C. *Rastinger*, Re-Reading Lists in Historical Newspapers. Digital Insights into an Overlooked Text Type (2024) 1–15, online: <https://doi.org/10.3384/ecp210016> (25.09.2025).
- Claudia *Resch*, Nina C. *Rastinger*, Thomas *Kirchmair*, From Semi-Structured Text to Tangible Categories. Analysing and Annotating Death Lists in 18th Century Newspaper Issues. In: Digital Humanities Quarterly 17/3 (2023) 1–15, online: <https://dhq-static.digitalhumanities.org/pdf/000711.pdf> (25.09.2025).
- Martin *Scheutz*, Kurstädte im Kontext interdisziplinär Forschungen. In: Andrea *Pühringer*, Martin *Scheutz* (eds.), Die Kurstadt als urbanes Phänomen. Konsum, Idylle und Moderne (Vienna/Cologne 2023) 15–62, online: <https://doi.org/10.7788/9783412525903.15> (10.01.2026).
- Erika *Schmidt*, Kuranlagen des 19. Jahrhunderts in Deutschland. Landschaftsarchitektur, Nutzungsangebot, Beitrag zur Stadtstruktur. In: Volkmar *Eidloth* (ed.), Europäische Kurstädte und Modebäder des 19. Jahrhunderts (Stuttgart 2012) 173–185.
- Ulrike *Scholda*, Einblicke in die Anfänge der Kurtaxe und Kurkommission in der Kurstadt Baden bei Wien. In: Ulrike *Fritsch*, Martin *Scheutz*, Jacqueline *Schindler*, Ulrike

- Scholda* (eds.), *Kurbäder als Spiegel der Gesellschaft in der Neuzeit* (St. Pölten 2025) 163–189, online: <https://doi.org/10.52035/noil.2025.stuf81.06>.
- Hermann *Sommer*, *Zur Kur nach Ems. Ein Beitrag zur Geschichte der Badereise von 1830 bis 1914* (Stuttgart 1999).
- Marina *Soroka*, *The Summer Capitals of Europe 1814–1919* (London 2017).
- Hannes *Stekl*, *Adel und Bürgertum in der Habsburgermonarchie. 18. bis 20. Jahrhundert* (Vienna 2004).
- Jill R. *Steward*, *Moral Economies and Commercial Imperatives. Food, Diets and Spas in Central Europe 1800–1914*. In: *Journal of Tourism History* 4/2 (2012) 181–203, online: <https://doi.org/10.1080/1755182X.2012.697487> (25.09.2025).
- , *The Spa Towns of the Austro-Hungarian Empire and the Growth of Tourist Culture 1860–1914*. In: Peter *Borsay*, Gunther *Hirschfelder*, Ruth-Elisabeth *Mohrmann* (eds.), *New Directions in Urban History. Aspects of European Art, Health, Tourism and Leisure since the Enlightenment* (Münster/New York/Munich/Berlin 2000) 87–125.
- , *Travel to the Spas. The Growth of Health Tourism in Central Europe 1850–1914*. In: Gemma *Blackshaw*, Sabine *Wieber* (eds.), *Journeys into Madness. Mapping Mental Illness in the Austro-Hungarian Empire* (New York/Oxford 2022) 72–89.
- Spencer Dean *Stewart*, Sanskriti *Sinha*, *Retrieving Information from Unstructured Historical Sources Using Large Language Models*. In: *Computational Humanities Research* (2025), online: <https://doi.org/10.1017/chr.2025.10019> (29.01.2026).
- Heiko *Stoff*, *Wissen, Erfahrung und Menschenkenntnis. Indikationen für Kuren vom 18. bis zum frühen 20. Jahrhundert*. In: Lu *Seegers*, Matthias *Frese*, Malte *Thießen* (eds.), *Kurorte in der Region. Gesellschaftliche Praxis, kulturelle Repräsentationen und Gesundheitskonzepte vom 18. bis zum 21. Jahrhundert* (Göttingen 2024) 33–46.
- Barbara *Stollberg-Rilinger*, *Zur Verrechtlichung sozialer Rangkonflikte in der frühen Neuzeit*. In: *Zeitschrift für historische Forschung* 28/3 (2001) 385–418, online: <https://www.jstor.org/stable/43569553> (20.12.2025).
- Kristian *Streicher*, *Die Ischler Kurlisten des 19. Jahrhunderts als sozialgeschichtliche Quellen* (Diploma Thesis University of Vienna 2019), online: <https://doi.org/10.25365/thesis.60596> (25.09.2025).
- , *Kurlisten als neue sozialgeschichtliche Quellen und deren Auswertungsmöglichkeiten am Beispiel Bad Ischl*. In: *Jahrbuch des Oberösterreichischen Musealvereines* 165

(2020) 381–402, online: https://www.zobodat.at/pdf/JOM_165_0381-0402.pdf (20.12.2025).

Elisabeth *Ulsperger*, Baden. Eine Kurstadt nahe der Residenz. In: Peter *Urbanitsch*, Hannes *Stekl* (eds.), Kleinstadtbürgertum in der Habsburgermonarchie 1862–1914 (Vienna 2000) 79–135.

Christina *Vanja*, Arme und Frauen im alten Kurbad. In: Peter *Weidisch*, Fred *Kaspar* (eds.), Kurort und Modernität (Würzburg 2017) 67–81.

Sigrid *Wadauer*, Sorting, Reporting and Ways to Use Registration: Habsburg Austria from the Late Nineteenth to the Early Twentieth Century. In: Immigrants & Minorities (2025) 1–30, online: <https://doi.org/10.1080/02619288.2025.2492497> (14.01.2026).

Haoran *Wei*, Yaofeng *Sun*, Yukun *Li*, DeepSeek-OCR 2: Visual Causal Flow (2026), online: <https://doi.org/10.48550/arXiv.2601.20552> (30.01.2026).

Mark D. *Wilkinson*, Michel *Dumontier*, IJsbrand Jan *Aalbersberg*, Gabrielle *Appleton*, et al., The FAIR Guiding Principles for Scientific Data Management and Stewardship. In: Scientific Data 3/1 (2016) 1–9, online: <https://doi.org/10.1038/sdata.2016.18> (25.09.2025).

Wei *Zhou*, Jun *Zhou*, Haoyu *Wang*, Zhenghao *Li*, et al., Can LLMs Clean Up Your Mess? A Survey of Application-Ready Data Preparation with LLMs (2026), online: <https://doi.org/10.48550/arXiv.2601.17058> (29.01.2026).

Jan *Županič*, Die Umwandlung des österreichischen Adels im 19. Jahrhundert. In: Ivo *Budil*, Gabriele *Clemens* (eds.), West Bohemian Historical Review 1 (2011) 99–109.

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8.2 Declaration on the Use of Artificial Intelligence

The thesis encourages the use of AI-based tools to make working with the *Kurlisten* more accessible and efficient. Each of these tools are and their use cases have been explicitly mentioned as part of the methodology.

In addition to these, a custom GPT called Scientific Writing Assistant (v5.2) by Bastian Jakobi has been used for improving the readability of the text in a way that did not alter its fabric too much. This was the exact prompt: “I wrote a master’s thesis in (British) English, with some German terminology in it. I would like to have it checked by you, especially in regard to the natural flow of the language and the usage of the word ‘the’, which might be over- or underused. I don’t want you to change the text too much, keep changes limited to article usage and wording. Keep the format of numbers like ‘28.500’ for thousands. Keep italic words as they are. Keep the Oxford commas I’ve used. Don’t add any ‘–’, or use the word ‘delve’, or create bullet points. I will send you the text in parts, and you will return the improved version.”.