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The service sector in the classical world: focus on entertainment and well-being

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Abstract

Purpose – Predicting effects of artificial intelligence on service occupations can be supported by a long historical perspective. Historical databases and archaeology help reconstructing the service sector in ancient societies. Here, the purpose of this paper is to analyse occupational specialization within services in cities of ancient Greece and the Roman Empire, as well as how the service sector is reflected in architectural remains, to identify differences and similarities with today's Europe.

Design/methodology/approach – Occupational titles are traced in epigraphical and literary sources, sorted according to ISCO-08. Secondary sources are used for the architectural evidence of service activities, as well as for the role of contests and entertainment in antiquity.

Findings – Compared to current European service employment, professionals were fewer in classical Athens and imperial Rome, which had a greater proportion of specialized salespersons. There were few office buildings and no civic hospitals, but heavy investment in facilities for entertainment and well-being. Quality assessments for goods were little developed; contests for cultural and sports activities assessed entertainment service quality.

Research limitations/implications – This study covers two periods in classical antiquity and is restricted to Mediterranean cultures, although findings may help understanding the service sector in poor countries with informal employment.

Originality/value – While particular services provided in ancient cities have been studied, there has been no broad comparative overview of their service occupations. Services in earlier societies with primitive information and communication technologies can provide clues for current developments.

Keywords Service quality, Service occupations, Service experience, Entertainment servitization, Greece, Rome

Paper type Research paper

1. Introduction

The recent emergence of advanced text-based conversation agents, chatbots based on large language models, raises questions concerning the future of a number of service occupations. Earlier attempts to assess the impact of applications of artificial intelligence to occupations in the service sector (Huang and Rust, 2018; Reis *et al.*, 2020) have not dealt with the potential effects of a more fundamental shift in means for text production. Instead of breaking down artificial intelligence effects on tasks of specific occupations and performing

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a detailed bottom-up analysis such as Huang and Rust did to identify potential job replacements, there is the alternative of a top-down view of the sector. An overall view of the service sector in ancient societies that depended on weak information and communication technologies should allow us to find more permanent underlying patterns of service employment that reflect more invariant human needs for services. Services in ancient cities include examples of catering to invariant needs that are more than what is essential for survival, and this can be brought into the current debate on the experience economy (Sundbo, 2021) and the entertainment economy (Wolf, 1999).

It is possible that there is little change in the importance of service employment when we compare current EU averages with those of ancient cities. If this is so, two reasons could be that manufacturing employment has declined in Europe, and it is long ago that agrarian activities dominated; urbanization is widespread on the continent today. A majority of ancient service occupations can be seen to still exist.

Economic historians long neglected the role of services, but an attempt to focus on services in ancient cities was made by Engels (1990) in his study of Roman Corinth, during that period the largest city in Greece, overshadowing Athens. He singled out Corinth as a service city, presenting a third historical type in addition to the ideal types of consumption and production cities, where production was understood as resulting only in tangible goods. For Finley (1973), ancient cities were primarily consumption cities, using a terminology derived from Weber (Descat, 2000). Engels (1990, p. 43) distinguished between two types of services: primary, or attractive, services, and secondary services such as food, temporary lodging, or the use of a public bath or latrine. Corinth provided a large number of religious services such as festivals and processions, as well as administrative services to the whole province. There were judicial services, reflected in its South Stoa and other buildings. Tax collection for the whole province was managed. There were educational services, philosophers and rhetoricians lived there or came as temporary visitors; also, there was book trade. Physicians practiced, and baths and other recreational services were provided. For entertainment purposes, the old Greek theatre had been transformed into an arena for wild-beast fights. Gladiatorial combats were held in the amphitheatre. Furthermore, there were jugglers, storytellers and street musicians. The city provided a market for the purchase of goods not manufactured in local villages.

Service activities on a large scale in Corinth may have been something of an exception, but Engels managed to influence the general debate of the nature of differences between ancient and present-day economies (Whittaker, 1995, p. 12). Subsequently, the variety of specialized occupations, including the large service sector, in ancient Greece came into focus (Harris, 2002), and there has been a shift towards recognizing the importance of specialized occupations in ancient cities (Flohr and Wilson, 2016). In classical Athens only, a great number of occupations have been identified (Harris, 2002; Lewis, 2020), and it appears that more than 100 of these are related to the service sector. A broad overview of city services in the Roman Empire was offered by Drexhage *et al.* (2002), who highlighted banking, entertainment, prostitution, education and the medical and legal professions. Furthermore, they mentioned that account should also be taken of public administration, transport and storage, childcare and catering. It is only recently, however, that the division of labour in Roman cities has been studied more closely and quantitatively (Groen-Vallinga, 2022; Kaše *et al.*, 2022; Ruffing, 2008; Varga, 2020).

Many service providers operated in the free market, and others were associated with large households, often as enslaved and freedmen (Broekaert and Zuiderhoek, 2013). Public slaves in ancient Greece fulfilled many skilled service functions (Ismard, 2015). When discussing the Roman market economy and slave labour, Temin (2013, p. 121) emphasized

that unlike the enslaved in America, many Roman slaves could participate in the urban labour market in almost the same way as free labourers. Those who were enslaved received or provided education, they could be deployed in highly skilled business operations, and the prospect of manumission created incentives. In her study of professionalism, Larson (1977, p. 3) noted that "although architects in Rome were often drawn from the class of slaves, architecture, whether private or official, was considered 'one of the learned professions'".

Against this background, the aim of this paper is to look at occupational specialization within services in cities of ancient Greece and the Roman Empire in a modern perspective. Here, by ancient Greece is meant mostly classical Athens; focus is then on the fifth and fourth centuries BC. The Greek city societies and their use of buildings were partly similar, partly different from conditions in the Roman Empire, about 500 years later. More precisely, there are three research questions:

- *RQ1.* How can the distribution of service occupations in ancient Greece and the Roman Empire be compared to current EU data?
- *RQ2.* Which are the main shifts between occupational groups since ancient times?
- *RQ3.* How is an ancient emphasis on entertainment and well-being reflected in material remains?

In the following, the method for gathering and comparing occupational data is explained before presenting the outcome of a comparison based on occupational titles. Next, the architectural remains of service activities are discussed, leading to a focus on facilities for entertainment and well-being, ultimately with a consideration of the role of contests for assessing service qualities. Among the concluding remarks, it is again brought up that current breakthroughs in artificial intelligence may transform the service sector, an argument for investigating services in earlier societies with primitive information and communication technologies.

2. Method

Even for more recent periods, the study of long-term changes in the pattern of occupations within the service sector is hampered by a general lack of comparable figures. Gershuny and Miles (1983, pp. 57–65) analysed 1960s and 1970s occupational data from four European countries, but international comparisons proved difficult. Data from the European Labour Force Survey (EU LFS) became available starting 1983, although they were not coordinated before 1995 (Abrantes, 2014).

No master lists of occupations have survived from Greece and Rome. Much earlier, the Sumerians had a Standard List of Occupations, used by generations of scribes for training (Nissen *et al.*, 1993, p. 110f), but considering the advantages of later alphabetic writing systems such as those for Greek and Latin, no similar lists were needed for scribal purposes and available in classical times. Instead, when studying the tertiary sector in classical Athens and in the Roman Empire, the sources are inscriptions (often funerary), papyrus documents (almost only from Roman Egypt), literary (drama, novels, poems) and archaeology (ruins, objects and other remains). Literary sources for classical Athens are primarily comedies, mostly those written by Aristophanes, and preserved court speeches. Literary treatments useful for understanding services in the Roman world include novels by Apuleius and Petronius, together with satirical poems by Juvenal and Martial. There are also Roman legal texts that concern services, but it is inscriptions that provide most of the information needed for studying the range of occupations.

Turning to current international classifications used for producing occupational statistics, it appears that the distribution of employment over Major Groups classified according to the International Standard Classification of Occupations (ISCO-08), as used in the EU LFS, at least partly corresponds to the number of Unit Groups within each Major Group (see Table 1). ISCO, produced by the International Labour Organization, is a tool for organizing jobs into a clearly defined set of groups according to the tasks and duties undertaken in the job. One of its main aims is to provide a basis for the international reporting, comparison and exchange of statistical and administrative data about occupations. The division of labour within a branch of services appears as roughly proportional to the number of people working in that branch. By classifying ancient occupational titles within services according to ISCO-08, a basis for comparisons can be established. With a few exceptions, there is little difficulty in assigning ancient occupational titles to ISCO Unit Groups. As EU countries are heavily urbanized today, it makes sense to compare modern data with conditions in ancient cities, because only between 10% and 20% of the population in the Roman Empire are thought to have lived in cities (Woolf, 2020, p. 371). The rest were mostly to be found in agricultural occupations.

Reliability of classifying ancient workforces according to ISCO is affected by a few issues. ISCO associates occupations with various skill levels, but in societies lacking formal education or training requirements for particular occupations, there is some uncertainty involved. Not much hierarchy of managers is evident in the ancient world. Cities were dominated by the informal sector and informal employment (Hussmanns, 2004), except for government, public administration, the military, as well as temple and cult officials. Just as in current developing and transition economies, informality causes statistical problems. The same person may hold more than one informal job, and this may change seasonally. Unpaid family workers may contribute in the production of services. It is possible, however, to classify a few large *societates* as service producers' cooperatives, emerging as formal sector enterprises in the late Roman republic, collecting taxes and customs duties (Badian, 1996, p. 88).

Harris (2002) created a list of about 170 occupational terms for the Athenian economy (500–250 BC) to study the impact of specialization on the economy. As he was interested in "those occupations that produced goods and services to be exchanged for cash in the agora

Table 1. Occupations sorted according to the ISCO-08 major groups

ISCO-08 Major group	Greek service occupations (Lewis) [N]	Roman service occupations (Varga) [N]	ISCO-08 unit groups [N]	EU employees (LFS 2021) [% of total employment]
1 Managers	2	12	31	5
2 Professionals	27	28	92	22
3 Technicians and associate professionals	18	69	84	16
4 Clerical support workers	4	12	29	10
5 Services and sales workers	86	25	40	16
6 Elementary occupations	9	3	22	8

Sources: Lewis (2020) and Varga (2020). For elementary occupations, groups 92, 931 and 932 have been considered as not being services and thus excluded, but not from the EU data, taken from Eurostat (Employed people and job starters by economic activity and occupation; EU Labour Force Survey, aged 20–64, Q3 2021)

or elsewhere than the Athenian marketplace", he excluded "public officials, religious officials, and military officers". Both literary and epigraphic sources were used in compiling this list. Harris eliminated synonyms and general terms for occupations when compiling the list. He also noted that individuals could combine part-time occupations (including public offices and priesthoods; also, military operations were seasonal). Analysing this list, about 100 occupations can be said to concern services if we define service occupations as those in the ISCO-08 Major Groups 1–5, 9 (excluding the non-service groups 92, 931 and 932 from Major Group 9 of Elementary Occupations).

Lewis (2020) expanded and consolidated the Harris (2002) list of occupations. Again, there are reliability concerns. Out of about 270 occupational titles identified by Lewis in his Consolidated Brief List, 162 were left by him as "genuine", although he explains why this figure nevertheless underestimates the full range of specialized occupations. There are particular uncertainties for titles that refer to retail sellers who might also be craftsmen/producers, selling goods that they themselves have produced.

Two recent studies of occupations in ancient Roman cities (Varga, 2020; Kaše *et al.*, 2022) rely primarily on large epigraphical databases such as the Epigraphik-Datenbank Clauss/Slaby (which now covers more than 500,000 Latin inscriptions) and Epigraphic Database Heidelberg. Note that there are additionally perhaps 100,000 inscriptions from Roman times in Greek and other local languages in the eastern Mediterranean area (Beltrán Lloris, 2015), many of which can be accessed through the Packard Humanities Institute Greek Inscriptions database (more than 200,000 inscriptions). Occupational titles in Greek inscriptions from the eastern provinces of the Roman Empire, together with contemporaneous Greek papyri from Egypt, have been analysed for crafts and trade by Ruffing (2008).

For Latin inscriptions from the Roman Empire and relying on data for 690 individuals, belonging to 213 occupations, Varga (2020) applied the Historical International Standard Classification of Occupations (HISCO) (van Leeuwen *et al.*, 2004), which was intended for the period from Early Modernity to the present, rather than for antiquity. HISCO was developed from the now superseded ISCO-88 version. Occupational titles in her Table 1 (pp. 17–20) are now recoded here in Table 1, which uses ISCO-08 throughout for comparative purposes.

3. Comparing occupational data

Table 1 indicates for classical Athens about 146 service occupations, more than half of all occupations that were identified in the Consolidated Brief List prepared by Lewis (2020). Service occupations weigh even more heavily in Varga's (2020) Roman list of 213 occupations, where no less than 70% (149 occupations) appear to have a services character. Comparing employment percentages to the number of ISCO-08 Unit Groups within each of its six Major Groups that contain service occupations, it can be seen that there is greater division of occupations within the two Major Groups of Managers and of Technicians and Associate Professionals than in the other four groups.

Judging by the figures in Table 1, the major historical difference in the profiles of service occupations is the considerably higher proportion of professionals today, reflecting both more persons per profession and a vastly increased number of specialized professions, beginning in the 19th century with education-based credentials and regulated professional associations. In the classical Greek case, there is a high number of differentiated sales occupations (dominating Major Group 5). In Imperial Rome, it is Major Group 3 (Technicians and Associate Professionals) that stands out.

The validity of the textual evidence can be questioned. During antiquity, the distribution of inscriptions in time and space was uneven. There was a peak in the second century AD, and there were regional differences; the "epigraphic habit" varied (Beltrán Lloris, 2015).

Relying on Latin epigraphical data for studying the division of labour in the cities of the Western Roman Empire, from the first century BC to the fourth century AD, Kaše *et al.* (2022) saw a decrease in the frequency of occupational terms between the first and second half of the third century AD; also, the maximum frequency of occupational terms shifted over time, from large cities to medium and small towns and finally to rural areas. Furthermore, the apparent Greek/Roman difference in Table 1 may arise from the dominance of inscriptions as sources of Roman occupational titles, whereas our knowledge of classical Greek occupations depends more on literary sources than epitaphs. The relatively few titles recorded for elementary occupations may be ascribed to "epigraphic habit": poor families were probably less able to afford informative epitaphs, and perhaps there was less need felt for distinctive occupational titles within this Major Group.

The gender distribution within service occupations can be estimated from Roman epitaphs (Joshel, 1992, p. 69): administration (men 97%), professional (men 84%), banking (men 100%), skilled service (53%), transportation (100%), sales (92%) and domestic service (73%). For EU15 in 2010, professionals were 53% men and "domestic and related helpers, cleaners and launderers" 15% men (Abrantes, 2014).

A more detailed discussion now follows, structured according to the ISCO Major Groups and their Sub-Major Groups, concerning which ancient occupations should be included in the six Major Groups.

3.1 Managers

Under managers, we find ancient examples of chief executives, administrative and commercial managers; production and specialized services managers; and hospitality, retail and other services managers. It is difficult to be certain when assigning a classical Greek occupational title to Major Group 1 or rather to groups 2 or 5. Which was the extent of operations managed by an individual, and was there really an organizational hierarchy? It is likely that the two Greek managers in Table 1 form a bare minimum and that more managers are hidden among occupations assigned here to Major Groups 2 and 5. In Roman legal sources, most business managers are known as *institores* who were appointed to head an economic unit and negotiated contracts with suppliers of material, labour and services, as well as with customers (Aubert, 2001). Their principals had unrestricted control over their managers' activities. In real life and in inscriptions, the *institores* went under a variety of occupational designations, frequently as *vilici*. There is epigraphical evidence for a diversity of managerial posts in bath establishments, although some of the occupations possibly belong to associate and support occupations: *balneator; aracarius thermarum* (financial officer), *curator balnei*; *vilicus thermarum*, *exactor thermarum* (=?) and *adiutor thermarum* (Fagan, 1999, pp. 321–323).

3.2 Professionals

Characterizing a profession as having "a professional association, cognitive base, institutionalized training, licensing, work autonomy, colleague control and code of ethics, with high standards of ethics as well as of professional and intellectual excellence, and special power and prestige", Harris (2020) discussed four areas in the ancient Greek world where occupations to some extent became professions. These are in the performing arts, in the philosophical schools, in medicine and in sculpture. Professional is a contested concept (Larson, 1977; Adams, 2010), and although it can be argued that the term is an anachronism in ancient societies (McArthur, 2021, p. 20), it is nevertheless possible to apply the list of professionals in ISCO-08, identifying architects, surveyors, designers, health professionals, teaching professionals, business and finance professionals. Numerous occupations include

legal, social and cultural professionals: advocate, philosopher, priest, philologist; unit groups under creative and performance artists include visual artists; musicians, singers and composers; dancers and choreographers; actors; acrobats and magicians.

3.3 Technicians and associate professionals

Among the science and engineering associate professionals, there are quantity surveying technicians, construction supervisors, ship controllers and technicians, health associate professionals, sales and purchasing agents and brokers, legal secretaries. Here, we also have athletes and sports players, where gladiators can be included.

3.4 Clerical support workers

Clerical support was provided by secretaries and other general clerks, customer services clerks (which includes pawnbrokers and moneylenders, debt collectors and related workers), numerical and material recording clerks; also, library clerks, scribes and related workers.

3.5 Services and sales workers

There were many occupational titles for personal services workers, including travel guides. Cooks were often hired for the occasion, working at clients' homes; waiters and bartenders, hairdressers, bath attendants, building and housekeeping supervisors and building caretakers. There were astrologers, undertakers and embalmers and animal care workers. Among other occupations there were also prostitutes. Sales workers include street and market salespersons and shop salespersons.

It should be noted that no less than 74 out of 86 of the classical Athens occupations in Major Group 5 are sales workers, dominated by numerous specialized retailers of agricultural products. Still in the Eastern Roman Empire, the number of occupational titles for traders was dominated by those who sold food, followed by textiles (Ruffing, 2008, p. 125). The major issue when allocating occupations to Group 5 is that in many cases, it is challenging to decide whether a specific term denotes a craft or a trade, just as mentioned by Lewis (2020); craftsmen would sell their products in their shops (Ruffing, 2016). Major Group 5 also includes personal care workers, childcare as well as protective services workers, such as firefighters. Moreover, as McArthur (2021, p. 83) points out, we should distinguish between "subordinate vendors and their superiors", who constituted an elite class of retailers within Athens and could well be classified as managers in Group 1.

3.6 Elementary occupations

Among the elementary service occupations, there were cleaners and helpers, labourers in transport and storage, food preparation assistants, street and related sales and service workers, refuse workers and other elementary workers, including messengers, package deliverers and luggage porters, odd-job persons, water and firewood collectors, and also those assigning locker space in bathing establishments and clotheswatchers (*capsarii)* in baths (Fagan, 1999, p. 38).

4. Architectural evidence of the service sector in ancient cities

The importance of entertainment and human well-being is evident when considering the remains of the physical infrastructure for delivering the associated services. This is in contrast to the absence of office buildings (except for city administrations), banks, educational facilities, department stores and civic hospitals.

Successively, creative, arts and entertainment activities obtained more permanent facilities; the Theatre of Dionysos in classical Athens had only wooden seats when the major tragedies were first enacted in the fifth century BC (Di Napoli, 2021). The first more permanent structures were located on the southern slopes of the Acropolis. Drama was a competitive element of religious festivals, and co-creation of cultural services has left visible traces in Athens, where the Panathenaic Way diagonally across the agora is an example of permanent remains of procession routes followed during festivals (Parker, 1997, pp. 89–101). Later, and in Roman times, theatres were sometimes also used for political gatherings or again for religious ceremonies. In some cities, a *bouleuterion* or *curia* for the governing civic body could double as an entertainment space. There would be specialized *odea*, covered halls smaller than theatres for listening to music or perhaps poetic performances. Furthermore, the infrastructure for sports activities and amusement and recreation activities: the three famous *gymnasia* of classical Athens, all outside the city walls, were actually public sanctuaries, originally open spaces being used for physical training and military exercise (Hendrickson, 2014). Two of these were used by major philosophical schools (Bakewell, 2021). It was only in the fourth century BC that monumental gymnasium structures were built.

In Roman times, there was a marked increase in expense on permanent buildings for leisure and entertainment. Hanson and Ortman (2020) recognized 783 theatres and 330 amphitheatres. The Romans also had their circuses (a Roman invention, typically designed for horseraces), stadia (inherited from the Greek, for footraces and other athletic activities) and artificial lakes for aquatic spectacles (Dodge, 2014).

Ancient writers mention bathhouses in Athens (Lewis, 2021). For Fagan (1999, p. 76) the "central difference between Greek gymnasia and Roman baths is that the latter subordinate facilities for sport and education to those for bathing and socializing [. . .] the Romans' conception and use of their baths appears to have been primarily as centers for relaxation and pleasure, not education and exercise". Bathing was part of an afternoon routine (Fagan, 1999, pp. 51, 199), and people from all social backgrounds, sometimes including slaves, came to the baths. In or adjacent to baths, there could be add-on services: snacks being sold and medical masseurs working (Fagan, 1999, pp. 33, 90).

Ultimately, Christianity which became the state religion (in 380 AD) transformed the service imprint on urban structures. Entertainment was curtailed, gladiatorial games were phased out around 400 AD, and pantomime dancers outlawed about a century later, although not with full success (Webb, 2008, p. 222). Chariot races and shows with wild animals would continue longer as categories of spectacles, but public entertainment was successively replaced by church festivals commemorating martyrs and by Christian rituals in general. The slow desertion of public baths, some of which operated until the fifth or sixth centuries, cannot be attributed to a single cause, and Pickett (2021) identified religious, environmental and financial causes together with emergent social conflicts.

5. Assessing experiential qualities in preindustrial economies

In the late 1990s, it was proposed to understand the service economy as being replaced by an evolving experience economy (Pine and Gilmore, 1999) or even by an entertainment economy (Wolf, 1999). Given the impressive architectural remains of specialized structures for entertainment and well-being, it is worth asking whether such concepts are relevant for ancient cities. Pine and Gilmore (2011, pp. 69, 224) do mention the Forum Shops in Las Vegas, a shopping mall styled as an ancient Roman marketplace (Malamud and McGuire, 2001), constituting a physical environment as part of the servicescape for customers.

The experience economy is defined by Sundbo (2021, p. 4) as that part of the economy that is attributed to payment for experiencing. There were experiences in ancient Rome, fully covered by customer fees: tourism, as in Augustan society (Lominé, 2005), street musicians, jugglers, conjurers (Coleman, 2000), astrologers (sometimes expelled from the City) (Ripat, 2011) and prostitutes (McGinn, 2006), to mention a few examples. These fully user-paid services failed to leave architectural traces; investment in permanent support facilities required government financing or wealthy private benefactors.

The individual user is not always the one who pays for the experience. Sundbo (2021, p. 35) noted that "some experiences are produced and distributed by the public sector". This is part of the formal economy but "not market-based", and sometimes these public experiences are free. If we rely on a strictly market-oriented definition of an experience economy, it will have the consequence that ancient Greek drama belonged to an experience economy, while comedies in republican Rome fall outside the definition, as they were not financed by theatregoers paying fees. The cost of great Athenian festivals such as the City Dionysia (Wilson, 2008), where drama was performed, and of the Panathenaea (Pritchard, 2015) is believed to have been shared between the city, Attic farmers and wealthy liturgists. Fees were paid cash by the audience, although state subsidies for poorer citizens were available so that they could participate (Roselli, 2011, p. 81f). Roman comedies were financed entirely by public funds and individual magistrates, *aediles* (Marshall, 2006, p. 21ff). Admission fees for baths were usually low or none (Fagan, 1999, pp. 160ff, 196–206), regardless of whether they had been built using public funds or by private benefactors.

Service research in general has changed from emphasizing quality to emphasizing experience, as outlined by Sundbo (2015), who also argued that "producing and selling experiences are the interesting things to understand *per se*, and not only experience as a marketing means to sell goods and services". There remains the challenge of studying qualities of experiences as a special type of service qualities where the experience itself is the core service, and there are not many studies following that approach.

Modern empirical studies of what satisfies theatregoers in a services perspective are few. Garbarino and Johnson (1999), who conducted a survey of Broadway theatre company customers, relied on four exogenous constructs when relating to overall satisfaction: actor satisfaction, preference for familiar actor, play attitudes and theatre facility attitudes. Studying German theatregoers, Jobst and Boerner (2015) found that factors associated with the perceived servicescape (seating and view; other customers' behaviour) were only of minor relevance for customer satisfaction. Five significant factors were, on the other hand, the play; stage direction; fidelity to the work (*Werktreue*); actors; and stage design, costumes and props. Similarly, Tontini *et al.* (2022) identified a strong influence of the satisfaction with the movie itself in the intention of customers to return and recommend a movie theatre. Analysing quality as reflected in modern music contests, Budzinski *et al.* (2021) found that "generally neglected in the literature is the quality of the artistic performance". They think that one of the reasons why the literature has been reluctant to analyse quality directly "lies in the difficulty to operationalise (and measure) concepts of 'quality', especially when it comes to cultural goods".

In antiquity, there were few technologies that allowed determining tangible product qualities, except for the use of standard weights and measures in marketplaces (Lang and Crosby, 1964) and for assaying metal composition of coins and other objects made of precious metals, relying on three methods still in use (Oddy, 1983). Nevertheless, ancient Athens and Rome did develop relative measures of quality of experiences. The strong Greek tradition of competitive events involved quality assessments. Already around 700 BC, Hesiod writes that he won a poetry-singing competition in Chalcis, receiving a tripod as his prize

(West, 1978, p. 320f). Agonistic festivals included contests which could be gymnastic and/or of the Muses. There was a system with ten judges selected for assessing dramatic performances in Athens (Marshall and van Willigenburg, 2004; Roselli, 2011, pp. 27–31): drama at the Dionysia with three competitors, as well as comedies at the Lenaia with five competitors. With other recurrent games such as footraces, chariot races and wrestling at Olympia, it would be easier to recognize who was the winner, but in time, even there, music and poetry contests were developed. Among the Romans, games also there connected to religious festivals, came to include formalized competitions, especially chariot racing (*ludi circenses*). Nero included poetry contests in his Greek-inspired Neronia festivals held in 60 and 65 AD, deplored by Tacitus in his *Annals* (xiv.20) and by other Roman historians.

Recently, it has been proposed to redefine services more narrowly than in official statistics for occupations and economic activities (Sundbo *et al.*, 2022). If services are understood as instrumental, essentially just problem solving, the creative and cultural industries, centred on producing experiences, should be treated apart from the service sector, the reasoning goes. Consequently, it is proposed that there is a process of servitization in the creative and cultural industries when "service elements such as toilets in festivals" are introduced. Without redefining the service sector, it is a question of bundling of services, and as we have seen, additional service elements were already present in thermal establishments of ancient cities and probably also food could be served in brothels (McGinn, 2006).

6. Concluding remarks

There appears to be little change in the importance of service employment when we compare current EU averages with those of ancient cities. Many ancient service occupations can be seen to still exist. Here, corresponding to *RQ1*, ancient occupational titles have formed the basis for comparing the distribution of service occupations in ancient Greece and the Roman Empire with current EU data. Occupational shifts within the sector, the topic of *RQ2*, is evidenced by a much higher proportion and variety of professionals today, although there were already actors, musicians, philosophers, doctors, seers, sculptors and architects who can be thought of as professionals in ancient cities. On the other hand, a higher degree of occupational specialization in the case of retail trades in antiquity can be noted, although a comparison between Greek and Roman numbers of titles reveals a problem ("the epigraphic habit") with the validity of underlying data. As to *RQ3* and considering the extensive remains of ancient baths and facilities supporting performances, the question arises whether the modern concept of an experience economy is applicable in retrospect or is to be seen as an anachronism. This raises current issues of payment for services and the nature of entertainment services. The difference between ancient urban societies and modern should not be exaggerated; government was involved then as now in providing for entertainment and human well-being. Studying antiquity acts as a reminder of cultural bias: the close relation between religion and entertaining performances in Classical Athens (including co-creation of cultural experiences during festivals) is alien to Western modernity.

After all, what can be learnt from ancient informal economies with primitive information and communication technologies as well as very low energy use per capita (Malanima, 2013)? Holleran's (2021) study of mechanisms used for dealing with information asymmetry in the ancient Roman labour market is an important but rare analysis of how labour market intermediaries, apprenticeships and personal recommendations functioned. Current breakthroughs in artificial intelligence may transform employment in the service sector, an argument for investigating services in earlier societies. Predicting the effects of automation on service occupations is admittedly difficult; Aristotle (*Politics* I.25 1253b35) suggested that

automated musical instruments would make musicians extinct and reasoned in a similar vein for catering services.

Other related fields where further research is needed include geographical coverage. This study concerns two periods in classical antiquity and is restricted to Mediterranean cultures, although findings may help understanding the service sector in poor countries with a high degree of informal employment. Reconstructing the history of the service sector in early cultures depends on access to data. To take just one example of emerging possibilities, from a later period of Imperial China, Yang (2022) traced occupational patterns working from official records of homicide cases. More research on service quality contests and of the nature of service qualities associated with entertainment, not just entertainment as an adjunct to other services, also appears desirable in a modern context.

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