

Online or Offline Services for Urban Neighbourhoods? Conceptualisation of Research Problems

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ABSTRACT

Services originally developed as natural concentrations of human activity, reflecting the Christallerian hierarchy of central places. Today, those natural mechanisms are challenged by strong competition from online facilities. More and more services are offered by the internet and this affects the traditional ‘bricks-and-mortar’ urban development. In this article, the main research problems of the inter-relatedness of real and virtual environments are defined in the context of urban neighbourhood service centres. The process of conversion from offline services into online ones is treated as a canvas for building a comprehensive research model for studying the development of the contemporary urban services sector in the local scale. Particular research questions and hypotheses are formulated and followed by a set of methods for further empirical research.

KEYWORDS

Conceptualisation, Local Service Centre, Neighbourhood Service Centre, Offline Services, Online Services, Urban Neighbourhood

1. INTRODUCTION

1.1. Scope of the Paper

Services are one of the core functions of urban areas. They determine the unique specialisation of a city, they define its position in the hierarchical urban network, they induce its competitiveness and finally contribute to the citizens’ quality of life. In this paper we present the state-of-the-art for the urban service sector in the context of the recent ICT developments and ask questions about the relationships between online and offline channels in providing everyday services.

Services in urban areas had originally developed as natural concentrations of human activity, reflecting the ‘least effort’ principle: on one hand service clusters were supposed to satisfy various needs of citizens in one place and on the other hand they guaranteed the economic efficiency for service providers. But today those natural mechanisms are challenged (disturbed?) by the rapid

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development of online services. More and more facilities are offered by the Internet and this affects the traditional 'bricks-and-mortar' patterns of urban development.

To be properly studied, this vibrant research subject requires a systematic and comprehensive approach. In this paper we try to define the main problems of the inter-relatedness of real and virtual environments in the local (neighbourhood) service centres. We highlight the process of conversion of offline services towards online ones, we point on the changing needs and expectations of customers and present the reasoning for building a combined 'online+offline' research model. The main benchmark in this work will be Europe (and where examples of particular data are required – Poland as a representative country of stable economic and technological development in the recent decades). We believe however that the problems raised are somehow universal and may be observed in other parts of the world as well.

1.2. Objectives and Approaches

This paper is a theoretical, cross-sectional desk-research study, based on a critical literature review. The state-of-the-art in the field of urban services sector is drawn upon the online-offline dichotomy. Within this framework some of the observed phenomena turn out to be contradictory (e.g. spatial concentration as an effect of reducing travel costs versus remote access to services), some support each other (e.g. development of online services as an emanation of the 'least effort' principle) and some are doubtful or simply unrecognised (e.g. spatial behaviours in relation to online services provision). The confrontation of those trends enables extracting particular research problems that have not been addressed by the literature yet and opens new perspectives to urban studies. A research model addressing the interrelatedness of 'real' and 'virtual' factors in the development of local service centres in urban areas is needed to fill this important gap in our knowledge.

The structure of the paper is multifocal. Firstly, we try to address the most important aspects of the service sector development in order to produce a wide, comprehensive picture of the subject. Three main strands of the current knowledge are discussed here:

1. The role of services in urban development (including concentration and agglomeration mechanisms, time-space compression, suburbanisation, urban shrinkage, availability of services);
2. Local (neighbourhood) service centres as the clusters for satisfying essential (everyday) needs of citizens;
3. Online and offline channels in the service sector (including patterns of using online services and virtual territoriality).

We then turn to the conceptualisation procedure that aims at defining the research problems of local service centres and their relations, it also seeks to clarify the abstract terms necessary for description of those problems (see Górny, 2008; Dobrodziej, 2016). Eventually it enables distinguishing particular research components (to be studied in empirical research) and some wider developmental contexts (forming the background for the studied issues). The paper ends up with several research questions and a hypothesis for further studies.

2. SERVICE SECTOR IN URBAN AREAS: WHAT WE KNOW AND WHAT WE DON'T

2.1. Servicisation and Its Impact on Urban Development

The term 'service' can be defined as a process of providing particular material or non-material goods to the customers (see Kachniarz, 2012). The range and diversity of services offered in a given territory changes over time and the dynamics of this process depend on several factors:

- General economic factors (national income, effectiveness in production sector, market balance, public policy);
- Demand factors (users' needs and their structure, the affluence of clients, prices);
- Supply factors (availability of services, competences of service staff, conditions for service provision, development of online channels);
- Social factors (lifestyle, free time consumption, demographic situation) (see Flejterski et al., 2005).

Since the mid-20th century we have been witnessing the growing role of services in economy and in social life all over the world. The so-called servicisation process is particularly visible in urban areas where traditional manufacturing functions are replaced by more and more specialised services (both for the citizens and for businesses).

As it was mentioned above, the spatial distribution of services is shaped by the concentration mechanism: services are localised in places where they reach the optimal number of customers and where clients may optimise (reduce) the need for travelling (Zipser, 1983). This rule observed commonly all over the world is in line with the principle of least effort (developed by G. K. Zipf in 1949) which postulates that animals, people and even well-designed machines naturally choose the path of least resistance. When applied to services, the final result is a spatial zone in which the total operating profits most exceed the total costs both for the customers and for the service providers.

Agglomeration economies explain this natural concentration mechanism by measuring the benefits that come when firms and people locate near one another together. These benefits come from lower transport costs interpreted as the difficulties in exchanging goods, people, and ideas (Glaeser, 2010). Clustering of services is the main source of the success of large urban areas (including global ones), where agglomeration permits the reduction in transactions costs, fosters face-to-face contact and stimulates the exchange of tacit knowledge. As a result, a hierarchy of human settlements emerges, reflecting two parallel, overlapping factors: a) the preference for higher population density near central places, b) the network of diverse centres offering various central functions (Zipser, 1983).

Probably the best known theory that describes the location of service sectors is W. Christaller's originating in 1930's southern Germany. Christaller points that there is a services' hierarchy in urban structures. Based on the medieval towns localisation, he assumes that they create a hexagonal system with the biggest unit in the middle, some medium-sized cities around the centre and the highest quantity of the smallest units surrounding all bigger ones. Consequently, there are services of different orders, ranging from low-order ones through intermediate ones to high-order ones. Clients will only travel a short distance to access low-order services: this is because they are used frequently, the services offered are of relatively low value and require little skill to produce (there can thus be many suppliers). Clients will potentially travel longer distances in order to access intermediate services: they are used less frequently and are of higher value. Finally, very long distances will be considered in order to have access to the high-order services that are very specialised and used sporadically by clients (Shearmur, 2010).

This classification of services can be translated into a spatial logic: banal services are located relatively homogeneously across space, intermediate services are concentrated in more central areas covering wider geographic areas (in order to include enough clients in the area) and high-order services tend to concentrate in one central place (a large city) which offers maximum accessibility to all potential clients. Thus, cities provide goods and services of various levels to their hinterlands and thus become distribution centres for wider communities. The centrality of goods and services offered in a city defines its position in the hierarchy of settlements and allocates an appropriate market area to it. The centres of lower level offer basic goods and services whereas the centres of higher level offer both basic and specialised goods and services.

As a consequence, service centres in a city can be divided on various levels, starting from the huge multi-functional downtown (or CBD) offering specialised facilities to the citizens and incoming people through the middle-sized district centres to the local service nodes in the neighbourhoods

satisfying the essential everyday needs of the residents. A modified version of the Central Places Theory presented by Lösch says that settlements of the same size need not have same function and that larger places need not necessarily have all the functions of the smaller places (Haggett, 1965).

However, the idea that land-uses cluster around central places, where people come together to engage in social and economic activities, where they produce and consume goods, is now considerably more complex than in the cities of the industrial era and before. The economic relations between the central hub and its immediate hinterland are weakened (or even broken) and replaced with the ties with other metropolises competing in a global scale and exchanging signs (information, symbols, images) and social subjects (financiers, tourists) over ever greater distances and at ever greater speeds (Lash & Urry 1994, Frysztański, 1997). As a result, the hierarchical structure of central places is being ousted by a “space of flows” with nodes in global cities (Castells, 1998).

Moreover, the interactions with and within urban centres become more and more virtual. Populations no longer need to visit them to engage, and consequently the activities and land uses that define them become essentially footloose. Space and distance are now so confounding to this process, and these activities so globally structured, that we are unable to explain location in the definite way we were able to in the past (Batty, 2014). In order to position the online-offline dichotomy in a wider civilizational context, we need to refer to various theories describing the relationship between the development of the Internet and human settlement processes.

2.2. Time-Space Compression and the Death of Distance

In 1989 D. Harvey introduced the concept of ‘time-space compression’ describing the links between time and space, and in particular with the so called telematics (telecommunication, transportation, informatics and electronics) – new phenomena that reduce the need for travelling (Harvey, 1989; Sassen, 2010). He observed that today almost every human activity (work, retail, entertainment, healthcare, education, administration etc.) can be performed remotely and that the only constraint in this development is the access to appropriate transmission networks.

From the geographical perspective the digitalisation of economy makes the prestigious geographical localisation of businesses less important than it used to be in the past, and replaces it with citizens’ human capital (knowledge and qualifications), as well as access to high quality transport and communication infrastructure (Sassen, 2001; Llewelyn-Davies et al., 2004). Most of the contemporary cities are not places of material production anymore (or at least material production is not its main function), and new forms of non-material production emerge, dealing with knowledge, information, ideas, innovation, business, organisation, politics, culture and leisure (see Batty, 2014).

Hence contemporary cities exist simultaneously offline and online. For example, the analyses of ‘visibility’ of urban areas in cyber-space prove that their virtual positions and links fairly represent their real counterparts (Janc, 2014). Thus, urban space becomes a hybrid of two parallel constructions: material (embedded in the physical, geographical structure) and non-material (comprising of virtual phenomena and electronic flows). The forthcoming years will bring one of the biggest challenges in urban policy since the deindustrialisation era: finding the proper balance between what is real and what is virtual (Palej, 2006).

A more unequivocal and strict vision of the online-offline relationships has been presented by F. Cairncross (1997) who proclaimed the ‘death of distance’. According to this author the growing ease and speed of communication is creating a world where the miles have little to do with our ability to work or interact together. As a consequence, the development of the ICT may threaten the very existence of the city as a concentration of human activity (Hall, 2002). As the Internet takes over some historically grounded urban functions such as retail, banking or public administration we should expect an inevitable collapse of the city or at least of urbanity in the form we have known for centuries (see Castells, 1998).

2.3. Agglomeration Effects Unthreatened?

This argumentation, however, is opposed by the concept of ‘e-topia’ (Mitchell, 2000, 2005) dealing with the spatial consequences of the ICT development. According to this theory we cannot treat new technologies as a threat to urbanisation. First, the recent investments in wire telecommunication result in diversification of urban space as they allow joining various functions in one place (one building, one neighbourhood, one district), reducing the distance between home and work like it used to be in the pre-industrial era. Second, the widespread wireless standard in the ICT makes actually every space (a hotel room, a waiting room, a table in a restaurant, a bench in a park) a potential workplace. Those processes may bring a decrease in the demand for office space of course, but simultaneously they remain substantially urban in their very nature.

Finally, as transportation and communication costs have fallen, spatial concentration and agglomeration mechanisms seem to become less important. Yet, a central paradox of our time is that urban agglomerations remain remarkably vital, despite ever easier movement of goods and knowledge across space (Glaeser, 2010). Even if they are characterised by nonlinearities (such that agglomeration economies get stronger as cities grow), agglomeration economies arise because of the advantages of physical proximity. Small distance to other firms, workers and consumers may help firms in their day-to-day business in effective producing and delivering goods and services (McKillop et al., 2009).

Moreover, information and communications technologies and face-to-face contact are not necessarily substitutes for each other, but often complement each other. The growing usage of the ICT leads to an increase in the quantity, variety and complexity of the information produced, which itself leads to an increased need for spatial proximity which facilitates face-to-face contact, enhances information exchange and learning, and hence innovation and growth in certain local contexts (McCann, 2003; Shearmur, 2010). Thus the agglomeration effects described above seem to be unthreatened, at least in the near future.

2.4. Suburbanisation and Urban Shrinkage

Yet, the arguments of the various location theories with regards to the concentration or diffusion of the service sector have to be confronted with another two interrelated phenomena: suburbanisation and urban shrinkage. Due to the fragmentation of housing (suburbanization, urban sprawl) the Christallerian model of service centres described above is hardly applicable in the today’s urban areas. “Because of the slow development of social infrastructure and services in the suburbs, and also because of the lack of jobs in those areas, the residents are forced to work and satisfy their needs in urban cores (centres). This makes them permanent commuters endlessly travelling between home and central urban areas” (*Koncepcja...* 2012, p. 76). The disperse suburbs bear particular tasks for urban planning: it is necessary to create public spaces in order to integrate complementary residential and service functions and to reduce the demand for transport.

Simultaneously we are witnessing the decrease of population in many well-established cities. Ageing communities with low fertility rates, suburbanisation and limited inward migration result in lower incomes to municipality budgets but higher demand for services (in particular healthcare and social care). Therefore the shrinking cities phenomenon requires a new approach in managing urban space, aiming at optimisation of services’ and infrastructures’ spatial distribution. A shift from ‘planning for growth’ to ‘planning for shrinkage’ is a must. It may include various actions adapting urban space to the decreasing number of residents, such as conversion of buildings’ functions, attracting new clients, cooperation with surrounding territorial units, introducing social economy (Schlappa, 2013; Adamski, 2013).

And for both suburbanisation and urban shrinkage online services seem to bring a reasonable alternative, enabling easy access to (at least some of) the services for citizens and thus improving the quality of life. Even if they do not foster re-concentration of bricks-and-mortar facilities, they follow, support and strengthen the original function of urban areas: availability of services.

2.5. Availability, Accessibility and Affordability of Services

Notwithstanding particular settlement contexts, provision of services can be considered from various perspectives (e.g. social, geographical, economic, administrative etc.) (see Neutens et al., 2010). Each of them uses its own methods and brings different information. This multiplicity of approaches may be summarised with three terms: *availability*, *accessibility*, and *affordability*, describing various aspects of the process of providing services to citizens in urban areas.

The concept of availability deals with the range and diversity of services offered in a particular location. It embraces the typology (branches) of service sector and their spatial and organisational forms. Availability is modulated by the market conditions existing *in situ* (including the competition processes), by the customers' needs and expectations and is usually characterised by big dynamics.

The second term – accessibility – is strictly connected with travelling between 'sources' and 'targets' in the neighbourhood. Accessibility may be considered as real (based on the full, comprehensive data which is difficult to obtain in practice) or potential (commonly used in research, based on an assumption that the target will be reached under particular conditions) (see Wojtyszyn, 2010). Accessibility studies produce maps with time-space zones (isochrones) for certain facilities which are determined by the particular means of transport (by foot, by bike, by car, by public transport – see for example the Two Step Floating Catchment Area Method proposed by L. Mao & D. Nekorchuk, 2013). Such maps may help to evaluate the number of residents within selected time zone and thus to define the level of accessibility of various services.

Eventually the term affordability is used within the economic approach and describes the probability of using particular services by the customers in the perspective of their affluence. It is used to answer the question whether the services offered in a given neighbourhood are not too expensive to the clients.

Those original characteristics of availability, accessibility and affordability of services are now questioned by the ICT development. Online services are available in great amounts and in great variety to every internaut, they can be accessed with one simple 'click', and usually are cheaper than the offline ones (which makes them more affordable). All of those features challenge the material structures of urban services and require a revision of the to-date knowledge described above. In the following section of the paper we will focus on the local level of urban structures. By presenting the idea of the neighbourhood service centre, its genesis and development throughout urban history we approach the core question of this paper: the role of the Internet in shaping the local services sector in urban areas.

3. THE CONCEPT OF THE LOCAL (NEIGHBOURHOOD) SERVICE CENTRE

When applied to the local scale, the natural mechanisms of concentration and agglomeration are expressed by specific architecture and particular spatial solutions. This local perspective cannot be limited to material and economic issues and should be complemented by the social aspects, emphasising that a neighbourhood service centre is socially constructed, created by human interaction. As an outcome of a social action it reflects particular needs of a particular community, its power relations, lifestyle and aspirations. Within this approach we may look back into human history in order to observe the changes in the citizens' needs and in the functions played by the neighbourhood service centres.

The origins of the idea of an urban service centre stem back to the ancient Greek *polis* (e.g. Athens) with its *agora* as a place gathering and cumulating social activities, citizen power and variety of facilities (such as library, *stoas*, temples, arsenal etc.). Then, in the medieval times, despite the different social, religious, political and economic context, a small city with its well-organised market square performed similar functions. Continued through the subsequent epochs when cities got bigger, the centres grew and became more specialised, high-order spaces. But the smaller units retained

their local service centres featuring as multi-functional public spaces (a square or a street) providing particular range of services (retail, administration, finance, religion, culture, leisure etc.) to the citizens.

Only the industrial age with its mass-scale urban development lost the original value of a neighbourhood as a concentration of various everyday functions for residents. Trying to answer this problem, the modernists introduced a comprehensive approach in planning urban areas, including their hierarchical structure. A core concept of those times was the 'neighbourhood unit' proposed in 1920's by C. Perry for designing functional, self-contained and desirable neighbourhoods. Its characteristic feature was a school placed in the centre of the residential area so that a child's walk to school was only about one-quarter of a mile and no more than one half mile and could be achieved without crossing a major arterial street. The neighbourhood was sized between 5000 and 9000 residents and provided also some local shopping areas restricted to the main entrance of the neighbourhood (Perry, 1998).

The concept of the neighbourhood unit was a starting point for contemporary models of the hierarchy of service centres in a city, determining the spatial ranges (service zones) for certain settlement entities (neighbourhood, district, city). The number of the levels of hierarchy depended on the number of residents and the stage of development of a particular service node (see for example Nowakowski, 1984).

In the 1980's the concept of the local service centre was perceived as a means for reviving the weakened social relations in post-modern neighbourhoods. When a city is described as a 'constellation' of districts, each of which is a self-contained, enclosed urban entity, we must agree that local public spaces play an important psychological and social role in social integration and form a primary sphere of everyday existence, where the space-time relationships are most natural to the users because they can walk around on foot (see Jałowiecki & Szczepański, 2002).

Within this approach the ancient *agora* was reconceptualised, adapted to the neighbourhood scale and renamed to 'contemporary agora', an idea promoted by F. V. Klinger (Kowicki, 2004). According to this concept the local service centre should be a place of integration, should enable knowledge and cultural exchange, acceptance, tolerance, cultivating a variety of activities and interests. It does not have to be targeted to specific groups. Its structure should be flexible and should allow the implementation of various initiatives by functional adaptation on a daily, weekly or annual basis.

The local service centres should be also supplemented by well-designed public spaces. As noted by J. Gehl (2009), streets and squares are the key elements organising urban space in the entire history of human settlement, reflecting the natural perception and penetration abilities. Therefore, local service centres should be surrounded by many different daily functions and events, with facades divided into narrow passages, with many doors and sites that provide views of the most interesting activities. What's more, public spaces should be available from one level and should ensure the integration of different groups of people - only then they will be attractive to users (Gehl, 2009).

This description of the neighbourhood centres features brings us to the list of the shortages in the state-of-the-art on urban services. One of them is the relationship between online and offline channels in providing the services for urban neighbourhoods.

4. ONLINE AND OFFLINE CHANNELS FOR URBAN SERVICES

4.1. Conversion, Hybridization and Their Consequences

As we have mentioned above, the material (on-site) forms of providing services are now complemented by virtual (remote) forms. Depending on the relationship between offline and online channels this process is referred as conversion (when the whole facility is transferred to the Internet) or hybridization (when some components of a facility are offered online but others remain available offline). This lively and rapid process brings some new, sometimes confusing vocabulary: online services, e-services, digital services, virtual services, smart services... In this paper we examine online services in general, defined as all the activities of doing work for someone using remote technologies, with special attention to services at the neighbourhood level (addressed to local communities).

We do acknowledge the division for private (market) services and public services (also known as services of general interest). This dichotomy does not actually affect the objectives of the paper though. Both market and non-market services undergo deep changes resulting in new phenomena such as e-commerce, e-government, e-administration, e-healthcare, e-learning and many other “e-‘s”. All of them present similar features in terms of establishing, management, maintenance and development and thus require a similar research approach.

The emergence of online channels in the services sector can bring substantial changes to the market’s economic fundamentals and affect outcomes at both the market level and for individual firms (Lieber & Syverson, 2012). The potential of a particular supplier to become a multi-channel retailer by adding the Internet as an additional channel depends on various relationships between online and offline markets and differs based on product class due to the advantages as well as disadvantages that the consumer perceives (Levin et al., 2003). In order to develop the optimal mix of online and offline services both the incumbent offline sellers and new pure-play online entrants must determine which components of their products will be delivered better face-to-face and which *via* the Internet (Levin et. al., 2005). Yet online channels have to establish themselves in some markets. In those where they have been already developed, online services are typically growing faster than in bricks-and-mortar channels (Lieber & Syverson, 2012).

In multi-channel (hybrid) services delivery is performed simultaneously through conventional and technology-enabled environments, each of which is complementary and non-interchangeable. Generally in a service format, in which interpersonal and computer-mediated services coexist, there is a positive influence of e-service quality on in-person service quality (Wang et. al. 2016). For R. Barrera Barrera and G. Cepeda Carrión (2014) electronic service quality consists of four dimensions: design, functionality, privacy, reliability, access, contact and responsiveness. Poor online service may lead customers to suspend consumption in a company’s offline channels (Piercy & Archer-Brown, 2014).

However, consumers’ preferences for online and offline services differ for different products at different stages of the service provision process. “High-touch” products are those that the consumer requires the ability to touch or inspect at each stage of the shopping experience (e.g. clothing). In contrast, “low-touch” products are those that are standardized and do not require inspection to evaluate quality before buying (e.g. airline tickets) (Lynch, Kent, and Srinivasan, 2001). Other products may fall at different points on the continuum.

The recent exponential growth in online shopping is a good reference point for outlining the advantages and disadvantages of online services as compared to offline facilities. Among the advantages are rapid and extensive display of information, and ease of comparison between the attributes of different brands. Consumers see online shopping sources as better for shopping quickly and having a large number of selections. Consumers believe that it is quicker to shop online than it is to visit a physical retailer and that they have access to more products with a greater range of features online. In addition, online shopping is perceived to be the source for the best prices (Levin et al., 2003).

On the other hand, lack of personal service, inability to inspect or handle the product, and concern about delivery and exchange processes including giving out credit card numbers over the Internet have been perceived as disadvantages. Therefore, offline shopping sources rated higher for enjoying the shopping experience, being able to see-touch-handle the product, personal service, no-hassle exchange, and receiving speedy delivery. This emphasizes the importance of the physical aspects of the shopping experience and the strengths of offline retailers in providing these services (Levin et al., 2003).

A research conducted in 2003, when the era of online services was just starting, suggested that whereas the levels of customer satisfaction for a service chosen online is the same as when it is chosen offline, loyalty to the service provider was higher when the service is chosen online than offline (Shankar et. al., 2003). Today this trend is even stronger – for example in the retail segment the indicators showing the clients’ satisfaction and their willingness to recommend a particular shop to others are on average 5 times higher for online shopping than for offline outlets (Nowicki &

Wojnarowicz, 2015). Simultaneously the relationship between the quality of service and the loyalty of clients is very similar for online and offline channels (Walsh et. al., 2010). In other words: satisfaction is the crucial factor determining the loyalty of customers both in bricks-and-mortar facilities and in virtual ones which proves that indeed the two channels have a lot in common.

Another important point may be illustrated by grocery delivery: it is not necessarily clients who travel to service providers but the providers who travel to clients. From a spatial perspective this does not modify Christaller's insights, although it does have repercussions on how service sectors function (Shearmur, 2010).

Finally we need to consider the anonymization of online transactions. The online clients have no direct face-to-face contact with the service providers, but at the same time the contents of services are increasingly personalised, aiming at offering dedicated, unique, comprehensive and complex products for particular citizens according to their needs and preferences (Plesko & Świdorski, 2015). Such approach gives a new perspective for urban planning and announces a shift from the massive, collective thinking about urban functions towards an individualised response to specific demands and preferences (Liu et. al., 2015).

4.2. Apparent Online-Offline Dichotomy

Hence the systematisation of differences and similarities between services delivered in traditional forms and those delivered remotely can be drawn upon the following three distinctive criteria:

1. **Space:** Each of the bricks-and-mortar facilities requires a particular place enabling direct contact with service providers (e.g. an office, a studio, a shop etc.). Online services reduce (or even eliminate) this need – the product can be delivered almost anywhere and the clients can use it almost anywhere, if only they have access to appropriate transmission networks (at home, at work, in public spaces etc.). This spatial dimension affects also the social aspect of services' distribution: the footloose, a-spatial online ones do not require the direct face-to-face interaction between the supplier and the client which results in progressive anonymization of social relations in this sector;
2. **Time:** Traditional services are open on weekdays in particular hours, usually from the morning till late afternoon. This makes them hardly available to those who work or travel a lot. The obvious advantage of online services is that they can be ordered any time and the service provider can perform it in the time that is suitable for her/him. Moreover some of the online services can also be performed automatically. On the other hand offline outlets gain a clear advantage in the instant delivery of a product and in supporting the client in choosing the most suitable product;
3. **Range of the services offered:** Originally customers looking for a particular good or service considered the offers that were available closest to their location. This natural behaviour paved the way for the concentration mechanism described above (people use local service nodes for basic everyday needs and travel further to more specialised centres for more specific needs). Today customers are more mobile and have online access to the information on all the facilities all over the world. They look for the offer that matches best their needs and are willing to travel further to reach it or to order it for a door-to-door delivery. The Internet offers an unprecedented availability of services and thus changes the patterns of customers' behaviours.

Despite the formal differences described above, paradoxically selling and purchasing services online does not really differ from what we have known for ages. First, it fully complies with the 'least effort principle' described above: online channels reduce the cost and time necessary for using certain services. Second, just like in performing traditional services, the main goal remains the same: reaching the optimal relationship between the price and the quality, providing clients' satisfaction and retaining her/his loyalty to the service supplier (Schmidt, 2015).

As a conclusion we may note that the growing number of multi-channel (hybrid) services will continue to change both the online and offline urban environments, as companies move to provide customers with the ultimate shopping experience (Levin et al., 2003). It may thus be increasingly necessary to think in terms of 'service components', some of which may indeed be footloose while others continue to meet Christallerian criteria (Shearmur, 2010).

4.3. Access to the Internet and the Patterns of Using Online Services

People more and more often work and consume services at home, thus contributing to the *homing* trend (Castells, 1998). The key condition of using online services is the access to appropriate technologies. In Europe personal computers (PCs) and the Internet have become really common since the beginning of the 21st century, when the electronic devices got smaller and more affordable for average users. For example, in Poland in 2003 only 34% of households declared to have a computer and only 17% had access to the Internet. Now about two thirds of adults have their own PC and spent more and more time surfing the world-wide-web. The recent years brought another innovative turn in this field: mobile devices and mobile Internet access have become a new standard in everyday human communication (Batorski, 2015).

It seems that there are two general patterns of using the web. To the first group of users the Internet is an instrument supporting their work, school, shopping and creative activities. For the others it is mainly a mean of entertainment (Batorski, 2015). Shopping online becomes more and more popular among the more 'instrumented' users, however we are also witnessing a growing role of social media as a communication channel that enables the development and nurturing of brand-consumer relationships as well as a strategic means of mitigating consumer perceptions of risk and building mutual trust (Mills & Plangger, 2015).

Let us now focus on buying food as an symptomatic example of wider offline-online tensions, potentially affecting the common range of services offered in urban neighbourhoods. This segment is characterised by relatively low online conversion indicators (compared for example to clothes, books or electronics) which means that it is still mostly realised by traditional offline channels. In Poland in 2014 only 12% of online customers bought food online (Plesko & Świdorski, 2015). It seems however, that food still has a big potential for growth, for example by local providers distributing fresh food on a regional scale. As R. Shearmur (2010, p. 46) notes, "even groceries can now be ordered online: the local grocer no longer needs to be local!". This observation matches a more general trend and affects the everyday customs of urban residents.

4.4. Virtual Territoriality?

The territoriality of human behaviour is a strategy to use resources and influence people by controlling a particular area. Territoriality is connected with establishing various types of borders and zones in order to modulate social relations. It is a form of spatial behaviour intimately related to how people use the land, how they organise themselves in space, and how they give meaning to place (Sack, 1986). It can be also defined as an association with a certain geographical area and loyalty to it.

Territorial references play an instrumental, symbolic or emotional role in human spatial behaviours. The place of residence, its surroundings and public spaces are treated by humans in their everyday practices as their 'own' (despite its varied formal ownership), necessary to satisfy basic needs (Jałowiecki & Szczepański, 2002). This applies both to individuals and to groups: neighbours, local communities, cities, regions and even nations (countries).

According to S. Skolik (2015) the concept of human territoriality may be adopted to the 'virtual' world, where particular websites and services are assimilated by online communities as their own. Taking this perspective we may observe some characteristic behaviours, deriving from a material world, such as appropriating some 'online places', establishing access criteria, creating borders and defending them. This observation bears important consequences to the local service centres. It

confirms once again that we should reconsider the to-date knowledge on socio-spatial relations in urban neighbourhoods taking into account the digitalisation of social life.

5. CONCLUSION

5.1. The Demand for a Combined ‘Online+Offline’ Research Model

The growing role of online human activity brings us to a conclusion that we cannot study urban neighbourhoods without their virtual layer. The results of the MANDIE project for urban district centre management (City of Stuttgart, 2011) showed the growing importance of the internet websites and online promotion (including retailing of goods and services) in the development and re-development of neighbourhood centres. The conversion of some traditional services into online ones and the emerging new directions in the digital market affect the composition, availability, accessibility and affordability of particular facilities in urban neighbourhoods.

But how challenging are those processes to the ‘bricks-and-mortar’ sector? This question should be asked within a particular, systematised conceptual framework for empirical research on the online-offline channels in urban services. One of the aims of the conceptualisation process is to define and clarify the abstract terms in the field under scrutiny. Taking into account the interdisciplinary character of the online-offline links we elaborated the following catalogue of the most important concepts related to this subject. The proposed definitions are not the only possible ones but have been selected as the best representation of the studied phenomena:

- **Service:** A process of providing particular material or non-material goods to the customers. It can be performed in particular physical space (offline) or remotely (online). It can be divided into market (private) services and non-market (public) services (or services of general interest);
- **Online services:** Services performed remotely (by the Internet); synonym of e-services, digital services, virtual services, smart services. They include both public and private suppliers;
- **Local service centre:** A multi-function public space providing access to everyday services, distinguishable from the surrounding area by different land-use;
- **Attractiveness of a service cluster:** A widely understood „catchment force” of a service cluster. It is a combination of several factors: diversity of functions giving the opportunity to realise many tasks in one place; quality of services offered in the cluster, i. e. the user’s conviction of meeting his/her needs on a satisfactory level; the degree of spatial concentration, affecting the travels inside the cluster; spatial form, i.e. aesthetics, ergonomics and social climate (see Nowakowski, 1984);
- **Accessibility of a service cluster:** This term defines the ‘difficulty’ of accessing the service by residents, expressed with travel time or spatial distance. It is different from *availability* (the presence of certain facilities, their quality and form) and *affordability* (inexpensiveness, the price-to-quality ratio).

5.2. Contexts to be Considered and Questions to be Asked

When studying the online-offline relationships in the urban service sector, we need to take into account the following issues:

1. Limited effects of the natural mechanisms of spatial concentration, which are being replaced by dispersion of human activity in the ‘virtual reality’ and nonlinearities of agglomeration economies;
2. Conversion of traditionally offline services into online ones and the growing role of multi-channel (hybrid) suppliers;
3. Redefining the concepts of availability, accessibility and affordability which now will have to include not only physical (spatial) distribution of services but also their online counterparts;

4. Relational approach to 'space' which presents territory as a fluid concept, based on functional relations rather than its geographical features;
5. Apparent contradiction of the indirect (anonymous, not face-to-face) contact between the customer and the service provider *versus* personalisation of online services.

The success of each research strongly relies upon asking proper questions (Bryman, 2016). The reasoning presented in this paper brings us to the concept of a combined 'online+offline' research model for studying urban neighbourhoods. It links the existing physical (spatial) forms of human activity (territorial behaviours) with their 'virtual' representations (patterns of online choices). This idea bears particular consequences for urban planning: planners will have to internalise the twofold nature of urban service sector if they really want to implement the idea of 'smart urban growth'. When taking decisions and designing spatial solutions they will have to develop combined 'online+offline' strategies for urban neighbourhoods.

The following research questions need to be addressed in the current research agenda for urban services:

1. Which of the services currently offered in the neighbourhoods are determinative for local service centres? How do they match the concept of multi-functional public space offering essential, everyday facilities for residents?
2. What are the relationships between the traditional 'bricks and mortar' services and the online services for urban neighbourhoods: is it mostly competition or complementation?
3. Which of the services offered offline in the neighbourhoods are likely to converse to online ones? What new types of services are introduced in the Internet that have never existed offline?
4. How does the availability of services in the Internet influence the users' spatial behaviours? What are the users' expectations towards the performance of local service centres offline and online?

And here we approach the main hypothesis to be tested in the foreseen empirical research. It says that local service centres, providing appropriate range of everyday services and attractive outdoor activities are (and will be in the predictable future) dominated by offline facilities, offering mainly the 'high-touch' products. The online channel plays a complementary role in satisfying consumers' needs by allowing remote ordering of goods or services that eventually are willingly absorbed in the bricks-and-mortar local service centre. Suburban settlements and in revitalised urban neighbourhoods are thus particularly challenged by the online-offline relationship as a crucial factor of shaping the quality of life of their citizens.

5.3. An Approach to Operationalisation

The conceptualisation of research problems is just a starting point of the research process. It should be followed by the operationalisation procedure, enabling the empirical observation by assigning particular methods and tools to each of the research components.

Due to the high complexity of the online-offline relationships the methodological framework should adopt the 'mixed methods research' strategy: it should include both quantitative and qualitative data and take advantage of many, complementary research techniques. Such approach is called 'triangulation' and allows to overcome the deficiencies of single methods and provides more comprehensive results (see Flyvbjerg, 2004; Gray, 2004). In the case of offline-online channels the mixed method research should apply to:

- **Sources:** Comparing the information from different people and different documents;
- **Methods:** Comparing the data collected within different methods (quantitative and qualitative);
- **Disciplines:** Comparing the findings of scholars representing different disciplines.

The quantitative part of the research should involve for example spatial distribution and accessibility analysis (maps and cartograms), it should adopt PAPI (Paper and Pencil Interview) or CAWI (Computer-Assisted Web Interview) as well as statistical data analysis. The qualitative part of the study should be based on a critical analysis of the website contents (desk research) (Table 1). Moreover, the local service centre issues have to be considered both from the users' perspective (residents, customers, service providers) and from the stakeholders' perspective (local authorities, developers, urban movements). Below we propose a comprehensive research model comprising of several components, including those two perspectives and complying with all the principles set above.

This research model is flexible and adaptable to particular local (spatial, social, economic and technological) contexts. Some of the methods will probably have to be redefined but the 4 research components should be firmly followed in order to provide comprehensive and thorough knowledge on the offline-online relationships in services for urban neighbourhoods.

5.4. Limitations of the Study and Recommendations for Further Research

As it has been already stated, this paper is a theoretical study offering a conceptual framework for empirical research on the contemporary trends in services sector development in urban areas. Its main contribution to the field of urban studies is formulating research hypothesis on the online-offline relationships in local (neighbourhood) service centres and building a comprehensive research model for conducting effective and informative empirical research on this subject.

Implementation of this research model in scientific practice will probably reveal its weaknesses and limitations. Despite their intended universal character, the proposed concepts and definitions will presumably have to be revised in order to better reflect the empirical data collected in particular

Table 1. Research components and research methods for studying online-offline relationships in urban neighbourhoods

Research Components	Research Methods
<p>Availability and affordability (the range, typology, forms and prices of services offered offline and online; the level of satisfying customers' everyday needs; patterns of customers' online and offline behaviours; the level of loyalty to the local service providers; the quality-to-price ratio)</p>	<ul style="list-style-type: none"> - Inventory of the existing offline services, their architectural forms, size etc. - Interviews and surveys with the clients of online and offline services - Interviews and surveys with the online and offline service providers - Tracking the consumers' choices and observing their paths in accessing services - Inventory of the existing online services using content analysis of websites of online shops - Comparative statistical data analysis of online and offline shops performance (sales, incomes and the dynamics of those factors in subsequent years)
<p>Accessibility (for offline services: the conditions of accessing services such as time, costs and means of transport; for online services: the quality of internet connections, ICT skills, devices etc.)</p>	<ul style="list-style-type: none"> - Inventory of the existing offline services, their architectural forms, size etc. - Mapping of offline services accessibility and evaluating the number of residents within certain zones - Interviews and surveys with the clients of online and offline services - Interviews and surveys with the online and offline service providers - Content analysis of websites of online shops and their providers
<p>Conversion, competition and complementation (the complementarity and competition between offline and online service providers; spatial consequences of those processes; impact on planning and policy priorities)</p>	<ul style="list-style-type: none"> - Inventory of the existing offline services, their architectural forms, size etc. - Interviews and surveys with the online and offline service providers - Interviews and surveys with the neighbourhood authorities
<p>Territoriality (the role of online platforms in shaping local communities; social behaviours in public spaces; the role of online and offline services in building territorial identity of the neighbourhood)</p>	<ul style="list-style-type: none"> - Interviews and surveys with the clients of online and offline services - Tracking the consumers' choices and observing their paths in accessing services - Behavioural mapping (observation sheets) in public spaces - Inventory of the existing online services using content analysis of websites of online shops

Source: Authors' own research

neighbourhoods. Also the set of suggested research methods will need to be enhanced and adopted to concrete case studies and their contexts. And finally the presented overview of the contemporary knowledge on online and offline services will soon get outdated, just like the virtual reality is developing at an ever-increasing pace. This will require constant monitoring, revision and update of the state-of-the-art undertaken in subsequent cross-sectional publications.

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