

GIS

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Geomarketing

***Methods and Strategies
in Spatial Marketing***

Edited by Gérard Cliquet

ISTE

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Chapter 1

Spatial Marketing

Introduction

According to many philosophers [BEN 01] following Foucault [FOU 94], space characterizes our era. This would seem quite paradoxical when compared to Moscovici's [MOS 83, p. 262] remark which asserts, throughout the 20th century, nothing less than "the disappearance of geography", a logical continuation from the author of the "temporalization of space." Yet, if this temporalization of space can lead to inevitable selections, not to say exclusions, the "spatialization of time", on the other hand, opens up more generous perspectives [BEN 01] and leads to a different philosophical understanding of history.

What is good for history is also good for other social science disciplines. Marketing, in its allacticological¹ understanding [CLI 99] or its dimension of exchange, commercial or not, is not an exception. The importance of the dimension of space increases inversely with market expansion. It should be noted in passing that considering the arrival of the internet as a new form of the disappearance of the geography of markets would no doubt be committing a serious error. Consumers remain very precisely localized in geographic space, which explains that the difficulties met by certain internet distribution companies in delivering to their clients [CLI 01], and the companies themselves, although present on the web, still originate from very precise geographic zones from which they cannot easily escape [VOL 00].

1. Adjective taken from the Greek word *αλλακτικωσ*, which signifies things concerning exchange.

Chapter written by Gérard CLIQUET.

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We have denounced the lack of interest amongst researchers in spatial analysis in marketing [GRE 83]. Marketing researchers have instead turned more towards behavioral science. However, spatial aspects have returned to the forefront with the enlargement of the horizon of firms, particularly in the retailing industry, on the one hand and with the development of geomarketing techniques on the other. The geography of markets constitutes an ensemble of important elements in the realm of marketing for at least four reasons [JON 99]:

- demand varies according to available space and can be measured just as easily in terms of revenue, number of households, budgetary structures of spending, and lifestyles;
- supply also varies according to available space in that prices, services, the products and available stores vary with location;
- supply and demand are generally separate, which justifies the role of the retailer, whose job is to overcome this separation by studying the spatial behavior of both consumers and shopping centers, as well as the logistic chain of supplies at regional, national and international levels;
- the majority of economic activities use space and space has a cost. In order to control it better, this space must be decomposed into units of analysis: this division can rest just as easily on politico-administrative considerations as on census units or even zip/postal codes.

The title of this book makes reference, as indicated by the overall theme of the area of study to which it belongs (*Information Géographique et Aménagement du Territoire*²), to geographic information. Defining geographic information is not so simple when it deals with “a very widespread type of information” or in other words, “objects or physical phenomena, or living beings or societies, from the moment that they are linked to a territory” [DEN 96]. Yet if geographic information is at the heart of the approach followed in this book, it will not be possible to ignore the other real and potential benefits of geography to marketing, from both the conceptual and methodological points of view.

The introduction of geography into marketing cannot be limited to a simple division of space and to the utilization of geographic software destined to process large quantities of localized data. There have been publications since the 1970s that have shown the importance of mapping in marketing decisions [BEL 78]. It is true that these studies have considerably improved our knowledge of market spheres, but they do not constitute in any way a foundation for marketing strategy. That is why this book, after describing what is happening in marketing thanks to the introduction of geographic information, will set out to open up the research perspectives, not as far as geomarketing is concerned, which represents above all a collection of

2. Geographical Information and Territory Planning.

techniques, but with the admittedly ambitious objective of developing true spatial marketing.

We will therefore begin by examining the links between marketing and geography by showing, on the one hand, the importance of space in decisions made by companies today and, on the other hand, that beyond geomarketing, it is actually a true spatial marketing that organizations need. We will then tackle the applications of geography, starting with the most classic, retail location, followed by the current and future utilization possibilities at the very heart of the other elements of the marketing mix.

1.1. Marketing and geography

Some authors define geomarketing as a “*specific application of the spatial economy*” [LAT 01, p. 37]. This affirmation, coming from a consultant, is close to the wish expressed by Grether [GRE 83]. The fact remains that studies in geomarketing confine themselves to the description of coding techniques and geographical division, together with some associated statistical functions. If the applications are mentioned, they are generally not well developed, except in rare cases [BEN 98]. However, the spatial aspects and the geographic information that characterizes them make it possible to go further than these technical aspects and provide elements indispensable to the definition of strategies, both in retail companies and in industrial and service companies. This leads towards true spatial marketing. Before getting to the details of this domain, however, both the restraints and the stakes of its implementation should be mentioned.

1.1.1. Space and decisions in organizations

Space is a theme that is rarely dealt with in research in management sciences, except for the work on retail location (with industrial location often being left to economists and operations researchers) and on international management and marketing, which is more commonly qualified today as intercultural. The dissociation sometimes made between “the work space” of the firm and “the international space” [JOF 85] no longer has much weight and often the two merge, regardless of the size of the company. It is precisely because of this confusion that the spatial aspects of organizational decisions currently take on a vital significance.

Here we will refer only to decisions concerning the marketing of organizations, and more specifically to the marketing of companies. An admittedly traditional distinction must be made here between industrial companies and retail and service companies. This distinction loses its pertinence concerning certain aspects when large distributors are pushed towards investing in increasingly more sophisticated equipment and when industrial companies are obliged to propose increasingly

numerous services to their clients. The distinction justifies itself, however, when limited to marketing decisions. In fact, for the industrial company, generally, the choice of a location for an establishment is more a decision concerned with the restrictions of production than one concerned with market restrictions: relocations to certain countries because lower salaries can be paid there should be classified in this category. On the other hand, outlet location decisions for a retail company are about marketing. The reason for this is simple: the retail outlet is the product of the retail company [DIC 92]. Another reason must also be brought to the fore: the networking of retail and service activities. Today, this phenomenon is taking on major importance [BRA 98]. It began during the middle of the 19th century (in about 1860) in France with Félix Potin [CAM 97], followed by the development of department stores, discount stores in the USA with Woolworths and then self-service supermarkets with Piggly Wiggly, again in the USA, at the beginning of the 20th century [CLI 92]. However, it is the second half of the 20th century that has been marked by the boom of store chain networks and this has happened in every sector of the retail and service industries.

Territorial conquest has become the primary issue for all companies and especially retail companies. Territorial coverage, both from region to region and on an international level, is at least as important as sales in determining the strength of a store chain network. Of course, the American company Wal-Mart is the world's largest retailer in terms of turnover, far outdistancing the French Carrefour. Yet with over 3,000 stores and its presence in less than a dozen countries, Wal-Mart does not equal Carrefour in coverage, whose 9,600 retail outlets are scattered over 27 different countries. Less than 5% of Wal-Mart's sales came from outside the USA in 1997, compared to Carrefour which, after the merger with Promodès, saw its international sales above 20% [LHE 01], even though Wal-Mart plans to open 500 new stores in the coming years. Internal development has become too slow a process for success to be achieved in such a quest. Acquisitions aimed at expanding territorial coverage are ever-increasing, whether to improve a company's presence or in order to decrease costs. This is exactly how groups like Carrefour, again after its merger with Promodès, continue to grow. Alliances amongst airline companies, such as Skyteam, which includes Air France, Delta Airlines, Korean Air, AeroMexico, Czech Airlines, and most recently Alitalia, also reflect this idea. This presence, with a worldwide aim, is evident in industry with agreements between European, American and Japanese car manufacturers in order to obtain a foothold in all markets. By covering the world with its products or its stores, a company guarantees itself purchasing power, protection against local recessions, access to the international media and a better logistical efficiency.

This conquest of space is not only planet-wide. It also occurs at the national and local levels. This is not about leaving "holes" in the mesh of territories: sometimes it is better to be completely absent rather than to be present in an insufficient manner. The notion of critical size must not be considered in a global manner, but by family of products by family of products, store type by store type, territory by territory [FIL

98]. At the national level, insufficient coverage can lead to great difficulties in terms of access to the national media, this time for reasons of decline in audience and in terms of logistical costs [CLI 98a]. The Auchan store chain was thus very poorly established until 1996 before the buy-back of the Docks de France group and its Mammouth hypermarkets, this despite having a respectable number of stores. The Raffarin law forced the Auchan group to react very quickly by taking over another network [CLI 00], in order to cover French territory better and thus to gain access to television by sponsoring broadcasts in non-commercial spots since French law prohibits large distributors from advertising on television in order to protect the PQR (*presse quotidienne régionale*³). The problem is different in terms of logistics. A spatial incoherence with “holes in the coverage” is to be avoided, because this would involve higher transport costs and frequent stock shortages [RUL 00]. Finally, it cannot be forgotten that proper territorial coverage for the distributor ensures the manufacturer a good distribution of products under the same trade-name: this is unquestionably an element of the distributor’s service.

At a strictly local level, or at the store outlet level, the preoccupations of the distributors and the producers come together: coordinating prices (or not) throughout the products/stores, proper targeting of clientele in terms of communication, proposing a supply adapted to the local geography of the consumers. This will be seen in the last part of this book.

1.1.2. *From geomarketing to spatial marketing*

When faced with the strategic and operational considerations mentioned in the preceding section, what can geomarketing do? Defined as a collection of techniques enabling the manipulation of geo-coded data, it can help in analysis more than in the conception of strategies and even less in decision-making. In order to do this, the contribution of geographic information has to be pushed to the fore in the different domains of marketing that are likely to be affected by this type of localized data. Furthermore, beyond geographic information, it is the geographers’ methods of understanding space that interest the marketer. The approach of this book will therefore be directed more towards the way or ways in which to integrate geography, with its information, its concepts and its methods, into the traditions of marketing research as well as in its strategic and operational aspects, rather than simply towards geographic information. This is an ambitious objective, which will certainly not be met in all its dimensions. We will therefore be concentrating more on following trails than giving lessons in a domain that is yet to be fully developed.

The introduction of space into marketing decisions concerns at least three large domains of marketing:

3. Daily regional press.

- consumer behavior,
- retail location,
- marketing management.

These three important domains structure this book, which is composed of three parts:

- Part I: *Consumer Behavior and Geographic Information*
- Part II: *Retail Location and Geographic Information*
- Part III: *Marketing Management and Geographic Information*

The consumer behavior mentioned here deals more precisely with spatial behavior and will be the subject of Chapter 2. The consumer behavior domain is especially highly regarded amongst marketing researchers and, without great fear of error, one can say that close to 50% of all marketing research deals with this domain: the percentage was 25% in the *Recherche et Applications en Marketing*⁴ (RAM) review before 1992 [DUB 92] and made up 41% of PhD dissertations in France [LAU 92]. This phenomenon also exists in the USA, which is the leading nation in the amount of marketing research carried out, a trend that shows no signs of abating. On the other hand, it is surprising to learn that, among the numerous research studies on consumer behavior, only a small number, to say the least, deal with spatial behavior and particularly spatial behavior in France. Bringing together marketing and geography should truly put spatial behavior on the agenda of the laboratories affected! What is known of this domain essentially comes from geography [GOL 97] and from economics [EYM 95].

Marketing researchers have only been interested in work modeling the spatial behavior of the consumer [ACH 82, CLI 95, HUF 64, NAK 74, REI 31]. The development of gravitational and spatial interaction models, along with models in the realm of geography proper, have resulted in numerous publications in the USA, although very few in France and even this source seems to have dried up. In Chapter 2, we will attempt to present an explanation in terms of consumer spatial behavior. In fact, the ever-increasing mobility of consumers [DES 01] throws doubt on the polar character of the commercial attraction of certain retail outlets. Spatial modeling founded on the geo-coding of places of residence is therefore no longer as pertinent.

The study of the values and lifestyles of consumers is another aspect of consumer behavior research that has taken on considerable importance since the 1980s. Numerous specialized companies have embarked upon such studies, both in the USA and in Europe. In France, the CCA (*Centre de Communication Avancé du*

4. Research and Applications in Marketing.

*groupe Havas*⁵), the Confremca and Risc are the most well-known. The enlargement of the markets and especially the opening up of the EU with its common currency will bring particular importance to geographic information as it relates to consumer values. Chapter 3 shows the importance of this information and how it must be measured. The Rokeach [ROK 79] and Kahle [KAH 86] scales are presented. The author also mentions how to process geographical information according to consumer values in intercultural marketing problems. The concepts of values, styles and culture are compared, as well as the quantitative and qualitative methods associated with them, such as means–ends chains [AUR 92] and the APT (association pattern technique) [HOF 99]. These elements have arrived just in time to allow the present author to show that spatial marketing is not solely limited to computerized bases as data sources, while field studies have not yet been buried like prehistoric objects. If geomarketing normally nourishes itself with databases, spatial marketing should attempt to make the behavior results of these databases and the attitudinal results of surveys coincide.

Chapter 4 reveals the importance of geomarketing in the study of consumer behavior and in particular the importance of the analysis of the flow of clientele, thus showing that this collection of techniques is not simply static and that some information on the flows can be extracted from the databases. A concrete example is developed and allows the development of the connection between consumer spatial behavior analysis in its dynamic dimension and location problems. This chapter provides a perfect transition between Part I, on consumer behavior, and Part II, on retail outlet location applications [DOU 02]. In summary, this first part devoted to consumer behavior and geographic information is composed of three chapters: Chapter 2 *Consumer Spatial Behavior*, Chapter 3 *Consumer Values, Lifestyles and Geographic Information* and Chapter 4 *Geomarketing and Consumer Behavior*.

1.2. Spatial marketing applications

New consumer behavior, particularly greater consumer mobility, coupled with the successive openings of borders, leading to what some call globalization, has required organizations and especially companies to better integrate geographic information in order to situate the consumer properly in his or her dimensions, both topographical and cultural. Two principal applications can immediately be recognized. One deals more with retail companies and has been a subject of research for more than 60 years: retail location. The other concerns marketing management or, in other words, the fundamental elements of the marketing mix (product, price, place and promotion), but excluding place, which we will discuss under the heading “retail location”.

5. The Havas Group Advanced Center of Communication.

1.2.1. *Retail location*

Retail location, which will serve as the central theme for the second part of this book, constitutes an extremely old category of marketing decisions. It is part of the very general approach to location of economic activities, as Von Thünen [THÜ 95] had already tried to describe it. When seen from the commercial business angle, it assumes very precise characteristics. If great economists [EAT 82, HOT 29] have looked into this question in order to understand where retail locations should be placed and why, others have often regretted the negligence suffered by the spatial variable in economic theories simply because the distance variable is not taken into account [ISA 52], because there is a lack of economic explanation of the presence of economic activities in centers [TIN 64], or because of the aspatial aspect of the neoclassical model [EAT 78]. A large number of publications have since appeared to fill this gap. Marketing researchers, better known for empirical considerations, have hardly been more attentive and it is often geographers dabbling in marketing who have attempted to develop methods for facilitating retail outlet establishment. Part II of this book will develop all of the spatial aspects linked to store chain location on the one hand and the management of store chain networks on the other. The title of this second Part is *Retail Location and Geographic Information* and includes four chapters: Chapter 5 *Geographic information in retail location studies: a managerial perspective*, Chapter 6 *Retail Location Models*, Chapter 7 *GIS and Retail Location Models* and Chapter 8 *Spatial Strategies in Retail and Service Activities*.

This decision is crucial in retail. The Americans have a retailing adage that shows just how much the success of a business depends on its geographic location. As Jones [JON 90] reiterates, three essential points govern the success of a point of sale, whether a store or a hotel: “Location, location and location.” Retail location is a domain where geographic information has penetrated for quite some time, and whose specialists have often been geographers by trade, whether it be Reilly and his law of retail gravitation [REI 31], Huff and his probabilistic gravitation model [HUF 64], or even Applebaum and his concentric circles separating shopping center trade areas into primary, secondary, tertiary or marginal zones [APP 66].

Location studies are often completed without the necessary precautions and are often too succinct to produce analyzed data that is useful in decision-making. Too many conflicts still exist between retailers, whether between the franchiser and his franchisees, between a retailer’s association and its members, or even between cooperative and cooperative member. Despite ever more sophisticated models being created for decades, intuition continues to play, as in any decision, a very important role. Attempts have been made to take intuition into account and Chapter 5, which deals with location studies, presents a method that associates intuitive aspects with the implementation of a methodological approach founded on cognitive maps [CLA 01].

Chapter 6 develops location models, most of which are mentioned above. Starting from gravitational and determinist, these models have become probabilistic, and then gradually left the orbit of gravitation to come closer to spatial interaction [CLI 88]. But the absence of real studies dealing with passing attraction (see Chapters 2 and 7), which respond more to the increase in consumer mobility, hinders the improvement of this type of approach, which has however seen great success in the USA and has now begun to entice many European distribution companies, especially thanks to the cartographic benefits of geomarketing software and geographic information systems (GIS).

A GIS can be defined in two ways [DEN 96]. In 1998, the Federal Inter-agency Committee for Coordination of Digital Cartography, or FICCDC, stated that a GIS is a “*computer system of materials, software and processes conceived to allow the collection, management, manipulation, analysis, modeling and display of spatial data in order to resolve complex management and development problems.*” In France, the National Geographic Information Council (CNIG⁶) proposed the following definition: “*Collection of data located in space, structured in a way that is able to conveniently extract syntheses useful in decision making*” [DID 90]. It is not surprising that the French definition is more general, both in the form of the GIS and in its aims, while the American definition insists more on the computer aspects and the different operations that a GIS should be capable of accomplishing. It can be added that the American definition is more precise concerning the objectives and allows a better comprehension of the advantage of a connection between geographers and marketers, at both research and applications levels, in the sense that territorial planning and development relate back more to geographers’ dilemmas, with management referring back to the works of marketers. A large part of Chapter 7 deals with an application realized in the UK concerning the automobile market and shows how to use a GIS in researching a marketing network. The authors are researchers and practitioners. Certain researchers, including one of the above authors, have learned to be wary of the limits of GIS, particularly in retail location operations [BEN 97]. The integration of spatial interaction models provides, in his opinion, a quality superior to the results of traditional GIS.

The reticulation of the retail trade is an essential phenomenon of the economy of the end of the 20th century. Chapter 8 discusses the different spatial strategies of retail outlet establishments [CLI 02] on the one hand, and a method for measuring territorial coverage [CLI 98a], based on the notion of relative entropy already used in geography to measure the phenomenon of rural depopulation, on the other. During an acquisition, one can thus evaluate the gain in spatial value brought by the buyout of a certain store chain network compared to others [CLI 98b].

Thus, Part II of this book essentially deals with place problems and more specifically with retailing, one of the four elements of the marketing mix along with

6. *Conseil national de l'information géographique.*

product, price and communication, also known as the 4 Ps (Product, Price, Place, Promotion) [BOR 64, MCC 60]. The other three elements of the marketing mix are tackled in Part III and will be described in the following section.

1.2.2. *Marketing management*

A very widespread idea is that geographic information only provides benefits in market studies and, as has just been seen, in retail outlet location studies. Thus, the Chamber of Commerce and Industry of Nice (France) uses computerized cartography to evaluate in real time shopping centers, trade areas and sales of businesses located by GPS (Global Positioning System) [DUR 01]. Marketing, in its managerial aspects, can therefore also wittingly utilize geographic information. This will be the object of Part III of this book entitled *Marketing Management and Geographic Information*. Four chapters make up this section: Chapter 9 *Price and Geographic Information*, Chapter 10 *Advertising Policy and Geographic Information*, Chapter 11 *Direct Marketing and Geographic Information* and Chapter 12 *Products and Geographic Information: Geo-Merchandizing*.

With marketing management, we are right in the middle of the marketing action: setting prices, communicating with customers, choosing products adapted to them. Three of the principal elements of what can be called the marketing mix are thus found here [KOT 00]. The following paragraphs succinctly present what will be further developed concerning price, communication and products, from the knowledge and applications in the chapters of Part III. It is very evident that the key point of rapid and intelligent utilization of geographic data in terms of marketing management thus becomes the database, where all the elements likely to help the decision-maker in his understanding of the localized markets that he confronts are assembled [BER 96]. The utilization of GIS software is, of course, essential, but the quality of the results will depend most of all on the geographic data that feeds them.

Chapter 9 develops the relationship between price and geographic information. This connection does not seem natural *a priori*. However, it exists even if the works in this domain remain restricted to the international level. It must also be admitted that price is far from being the major preoccupation of marketing researchers, despite very interesting and different studies on their conception of the traditional approach of economists [DES 97]. The authors of this chapter describe the geography of costs, from demand to competition, before tackling geographic price policy in international trade. The problems of transfer pricing and gray markets are discussed in depth. Let us imagine a company that manufactures products in both France and Germany. In Germany, a powerful competitor is the national market leader, while in France our company is the sales leader. The price strategies are normally different in the two countries, with prices being higher in France than in Germany. What do the French distributors do? They will get their supplies in

Germany, causing problems for the group's French factories. This is exactly the misfortune experienced by the multinational company 3M at the beginning of the 1990s, and to this type of misadventure the name gray or parallel markets is given. What will become of these dilemmas following the opening of borders and the globalization of the marketing of companies? This is a fundamental question for the economic world. In fact, price is the only variable of the marketing mix that brings in money, with all of the others bringing a cost, which is at times rather high.

Chapters 10 and 11 deal with communication, with Chapter 10 taking a closer look at advertising while Chapter 11 concentrates on direct marketing and special offers. Once again, it may seem strange to link advertising policies to geography. However, this connection is fundamental as media are increasingly destined to reach a target audience in specific regions. Whether through outdoor advertising, the cinema or the press, specialized companies and agencies have developed very sophisticated geomarketing systems that marketing researchers seem to have failed to integrate, or have simply ignored. Published work in this domain is extremely rare [BEN 98]. This is why the author of this chapter has opted for a very interesting description of the geomarketing practices associated with advertising practices. That this work could serve as a starting point for other research in this field would be a heartening perspective. Both radio and television are discussed but more as part of a vision of development potential. In its corner, direct marketing is perfectly tailored for geomarketing and its techniques [DES 01]. Once the analysis is accomplished, one of the essential dilemmas resides in the choice of direct marketing techniques adapted to the territories studied. Moreover, an important question arises in the analysis of these territories, which geomarketing is capable of answering: in how sophisticated a way can the analysis of territories be carried out? Legal considerations, linked to the French Act *Computer uses and individual freedom* of January 6, 1978, are not necessarily absent from this debate.

Geo-merchandizing is a very practical neologism for distinguishing the clear, but difficult to realize, link outside of databases currently available, between the product line of an industrial or retail company and customers, whether local or just passing through, of a point of sale. In fact, studies in this field remain inadequate, despite their rapid development. The stakes are extremely high [GRE 99]. Driven by the near oligopoly of today's markets, large retail and distribution companies are orienting themselves more and more towards differentiation strategies. Yet, this differentiation is communicated only if it is felt by the consumer in what is offered in the aisles of a store. This is exactly the dilemma of attracting the consumer by an assortment of items adapted to the needs of either the local or the passing clientele. On the basis of this statement, the range on which evaluation is based is the entire sales space of the store involved and negotiations between manufacturers and retailers change what is thought to be important. Online internet business must not be forgotten either, because the merchandizing of products presented in electronic catalogues is a primary element in the attraction of internet users [VOL 00]. The premises of geo-merchandizing are thus described in Chapter 12 and open up

towards perspectives involving consumer behavior, strategic marketing and marketing management, which mean that this final chapter can definitely be described as last but not least.

1.3. Conclusion

This chapter has shown, on the one hand, the importance of space in marketing decisions and, on the other hand, the stakes of geomarketing and, beyond that, the contribution that marketing can expect from geography, as long as it does not wait too long.

Geographic data, as well as a certain number of concepts and methods used in geography for years would, and already do, allow the resolution of problems posed by the increasing spatial dispersion of markets from companies and even amongst the companies themselves.

Of course, the most common of geographical techniques remains connected to retail location decisions and marketing researchers have significantly contributed to the advance of knowledge in this domain. However, there has been a definite delay in the implementation of these techniques, especially in continental Europe, and especially in the business world. Nevertheless, the contributions of geomarketing techniques and the software devoted to them have at least made decision-makers cognizant of the vast realm of possibilities at their disposal.

Other applications are, however, already underway with some, including advertising and direct marketing applications, being the product of companies themselves. Price remains a delicate subject and its spatializing will probably have to wait, except on the international level where the opening of borders is more likely to smooth tariff policies. Finally, one can sense the dawning of a geo-merchandizing that is likely to revolutionize both the range and nature of the negotiations between manufacturer and retailer. The reader may be surprised at not finding a chapter on using geomarketing in managing the sales force. A certain number of companies have launched themselves into this adventure, as reported in certain professional reviews [PAC 97], but researchers have carried out few observations of this development, making it a rather rich field for research and applications.

1.4. References

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PART I

Consumer Behavior and Geographic Information

