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RETAIL CONCENTRATION: A COMPARISON OF SPATIAL CONVENIENCE IN PLANNED AND UN-PLANNED CENTRES.

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Abstract

The emergence of the internet and a more discerning consumer has created the need for traditional retail centres to provide a more convenient shopping environment. A retail centre offers convenience when it minimises the spatial, temporal and effort costs of shopping. Existing strategies for spatial convenience include controlling the size of the centre by restricting the number of businesses, creating a more compact physical design, limiting the entry of non-retail firms and creating compatible clusters. The authors' propose an alternative method; the degree of retail concentration. This study provides statistical insight into the degree of retail concentration offered by a sample of 9 planned centres and 9 unplanned centres. The findings yielded three important insights. Firstly, across the three tests for retail concentration, the planned centre was found to offer consumers' greater shopping convenience. Secondly, the findings add support to the notion that the demise of the unplanned centre could be linked to its inability to satisfy the needs of a convenience-oriented society. And thirdly, while the un-planned centre may be at a competitive disadvantage in terms of spatial convenience, market mechanisms such as Bid Rent Theory provided a better-than-expected spatial juxtapositioning of its businesses.

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INTRODUCTION

Minimising the walking distance between stores represents a key component of the spatial dimension of convenience (Gehrt, Yale and Lawson 1996). The ability to move from store to store with ease, the development of a concentrated shopping environment and minimising out-of-vehicle walk time, all serve as significant inputs into a retail centre's attraction (McCarthy 1980; Oppewal and Timmermans 1999).

There are several ways to minimise the distance a pedestrian must travel. The first option involves the physical size of the centre. The smaller the retail centre, the less distance the pedestrian must walk. In the case of the unplanned centre however, it is almost impossible to designate what the ideal size should be, and even harder to control it. Restricting the size of a centre usually means restricting the number of merchants and therefore merchandise variety. Hence, this option involves trading off the convenience of one stop shopping against spatial convenience. The physical design of the centre will also influence spatial convenience. For example, all things being equal, a consumer will have to travel further in a retail centre with a linear design, than one that is clustered. The centre can also be designed so that expansion occurs upwards rather than outwards. Unfortunately, such options rarely represent viable alternatives for the unplanned centre.

Alternatively, centre size and expansion can be controlled by limiting the entry of non-retail firms. This is a strategy typically employed by planned centres (West, Von Hohenbalken and Kroner 1985). Again, the viability of such a strategy may be limited in the unplanned centre. Our free market system means that creating barriers to entry may not fall within the powers of local government. This strategy also nullifies the use of business and entertainment services as a means of differentiating the unplanned centre from the planned centre. Compatibility offers another alternative for spatial convenience. However, while it facilitates comparison shopping, it only minimises distance for a limited set of purchases. In order to satisfy Cox's notion of *aggregate convenience* (1959), spatial convenience must apply to the shopping trip in its entirety.

Retail concentration offers a more encompassing and viable approach to spatial convenience for the unplanned centre. It involves segregating retail and non-retail firms, to create a dedicated, compact retail core. According to Thompson (1967), retailers can offer spatial convenience in two ways; through absolute location and through relative proximity to other retailers. The total benefit of any location for a retailer is the sum of all benefits derived from their proximity to all other retailers in space (Fujita and Smith 1990). Proximity is enhanced when retailers are concentrated in the centre's core. The greater the proportion of stores in the retail core, the greater its concentration. This not only offers greater spatial convenience, but also saves the consumer unnecessary expenditure of time and effort.

Our aging population (Oates, Schufeldt and Vaught 1996; Dychtwald 1997), the relatively high number of physically disabled shoppers (Kaufman 1995) and the importance of walking trips to shopping (Guy and Wrigley 1987) emphasise the need for a compact retail core. Even in the compact retail environment of a planned centre, at least 20% of total shopping time is consumed by such activities as walking between stores (Brown 1992).

RETAIL CONCENTRATION: MORE THAN JUST CONVENIENCE

Retail concentration also offers other advantages, although many are still linked to the notion of shopping convenience. These include;

1. it simplifies multi-purpose shopping;
2. it encourages more interstore comparisons and impulse buying;
3. it facilitates store compatibility;
4. it helps maximise pedestrian linkages;
5. by building shopper traffic in the one location, it serves to facilitate the social role of a retail centre;
6. for the unplanned centre in particular, a compact design facilitates its role as a comparison goods centre;
7. by concentrating consumers in the one area it minimises internal car-borne traffic;
8. it creates the opportunity for the collective management and maintenance of parking and landscaping;
9. the internal organisation of a retail centre can influence consumer perceptions towards it (Hanson 1980; Timmermans, Van Der Heidjen and Westerveld 1982; Bromley and Thomas 1989; Breslin 1992).

SPATIAL JUXTAPOSITIONING IN THE UNPLANNED CENTRE

According to the principles of Bid Rent Theory (Haig 1927), all economic activities seek the accessibility to customers and labour that centrality bestows. Because each function differs in its ability to earn profits from the use of a central location, a process of competitive bidding occurs in the form of the rent each is prepared to pay. This results in a hierarchy of rent paying precedence. All retail locations are therefore occupied by the function capable of paying the highest rent, and land is therefore put to its optimum use (Egan 1983). This will typically result in higher order functions occupying core locations and lower order functions locating on the periphery of a retail centre. Though many of its assumptions have been criticised, empirical studies conducted in a variety of retail environments confirm that the 'rental surface' does decline with distance from the CBD, and from the core to the fringe of retail centres (refer to Brown 1993 for a detailed summary of findings). Moreover, the proportion of retail use declines with increasing distance from the core (Murphy, Vance and Epstein 1955). However, in an urban area there will always be non-conforming or outmoded land uses that interfere with the logic of BRT (Richardson 1978), and it is these exceptions that often inhibit the unplanned centre's ability to provide spatial convenience.

A defining characteristic of the unplanned centre is that stores situate on the basis of what is best for them, not the centre (Berman and Evans 1992). The image of a shopping street is not only determined by retail characteristics but its other land uses as well (Davies and Bennison 1978). When service providers are intermingled amongst product retailers it creates dead shopping frontage and a scattering of retail outlets. A retail centre interspersed with numerous non-retail functions in its core complicates pedestrian management, and increases the time and physical effort involved in shopping. As a result, consumers will drive rather than walk due to the excessive distance between desired stores (Nelson 1958; Loukaitou-Sideris 1997). This reduces the likelihood of both impulse buying and comparison shopping, and deprives retailers of vital pedestrian traffic. With many retailers moving back to unplanned centres (Walker 1991), traffic manipulation has become an important issue for a generation of stores accustomed to planned centres (Reda 1997).

SPATIAL JUXTAPOSITIONING IN THE PLANNED CENTRE

In complete contrast, entry into the planned centre is controlled so that non-retail and single-purpose functions are typically precluded (West et al 1985). This creates a dedicated, compact retail environment. The success of a retail centre is dependant on the success of its retailers, which in turn rely on pedestrian volume. Although a good mix of tenants ensures adequate pedestrian flow, the placement of these tenants is the main factor affecting pedestrian circulation within the centre (Sim and Way 1989).

Pedestrian flow manipulation has long been the hallmark of the planned shopping centre (Brown 1991) and a key criterion for retail success (Breslin 1992). Planned centres separate major attractors to encourage

shoppers to visit smaller retailers located in-between. Retailers serving different market segments are also separated, while stores sharing customers are located together. Businesses that generate a low proportion of their business and are less reliant on traffic volume are located away from the centre of shopping activity. As a result, services are typically located at exit points. In short, retailers are located according to the peculiarities of consumer shopping behaviour and the need to maximise sales for the centre as a whole (Jones and Simmons 1990; Brown 1991; Brown 1992).

FOCUS OF THIS STUDY

Numerous studies have identified the need to create a dedicated and compact retail environment. And yet despite its importance, research has yet to offer measurable insight into the spatial convenience afforded by planned and unplanned centres. Research is therefore necessary to fill this void. The purpose of this paper is to provide quantitative insight into the spatial juxtapositioning of firms in planned and unplanned centres. In so doing, it hopes to confirm whether the planned centre does in fact offer consumers' greater spatial convenience.

METHODOLOGY

The sampling frame for the study was provided by the Australian Retailers Association, Victoria. Only community level centres were included in the sampling frame. To be classified as a community centre, planned centres had to contain at least 40 businesses, including at least two magnet stores (eg a supermarket and/or department store). Unplanned centres comprising at least 175 businesses were classified as community centres. In effect this provided a census of Melbourne's 55 most influential retail centres, yielding 38 planned centres and 17 unplanned centres. A sample of 18 centres (9 from each of the two subsets) was then randomly drawn.

A personal visit was made to each centre, and each business visually inspected; a methodology offering a high level of accuracy (Dawson and Sparks 1986). Each business was categorised into one of eleven categories based on an extensive literature review (for more detailed reference refer to the US Census of Retailing in Ghosh 1994, p. 29; Murphy, Vance and Epstein 1955; Berry 1963; Johnston 1966; Clark 1967; Johnston and Rimmer 1969; Shepherd and Rowley 1978; Abratt, Fourie and Pitt 1985; Morrill 1987; Brown 1988; Brown 1992; Kirkup and Rafiq 1994). The 11 categories are;

1. Department Stores;
2. Supermarkets;
3. Food Stores and Health (eg butchers, bakers, grocers, chemists);
4. Food Service (eg cafes, fast food outlets, hotels, restaurants);
5. Homeware (eg furniture, carpet, curtains, electrical goods);
6. Hardware, Industrial and Automotive supplies (eg paint, hardware, plumbing supplies, gardening supplies, cars, automotive accessories etc);
7. Fashion (eg men's, women's, and infants apparel, shoes, lingerie, wedding accessories, hats, socks and jewellery);
8. Leisure Products (eg books, photography, fabric, toys, music, giftware, pets, camping, bicycles, small variety stores etc);
9. Professional Services (eg banks, insurance, accountants, medical services);
10. Consumer Services (eg beauty salons, electrical repairs, locksmith etc);
11. Community Services (eg municipal offices, industrial sites, sport centres, and welfare services);

After plotting the location of each business on a map of the retail centre, the centre was divided into core, intermediate and peripheral zones. A similar method of division was utilised by Kelley (1955) in denoting the retail structure of the central business district. Scott (1959) suggested that such a structure applied, in at least some form, to all unplanned centres. The core was defined as that point where pedestrian and vehicle

volume reached its peak (Murphy et al 1955) and where the greatest concentration of specialised retail outlets occurred (Davies and Rogers 1984). The periphery was defined as the outer zone of the retail centre, with its borders determined by retail delimitation (see Murphy and Vance 1954; Clark 1967). The intermediate zone was defined according to its geographic positioning between the core and intermediate zones.

These zones apply equally to planned centres. While Melbourne's planned centres are dominated by retail stores, approximately one in four tenants is a service firm. Hence, the planned centre must also organise its tenants in a way that maximises spatial convenience. In fact, the deliberate spatial allocation of tenants to maximise consumer utility and retail synergy, is the hallmark of the planned centre. A typical division of unplanned and planned centres is shown in figures 1 and 2.

Figure 1: A typical division of zones in an unplanned centre

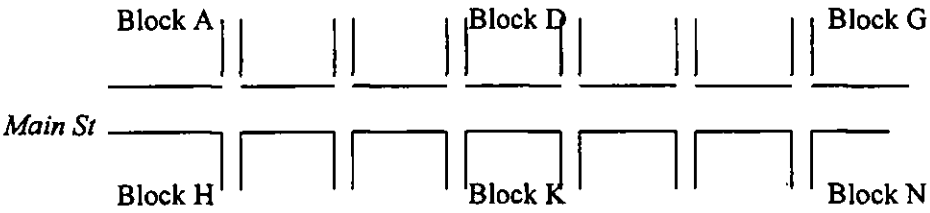
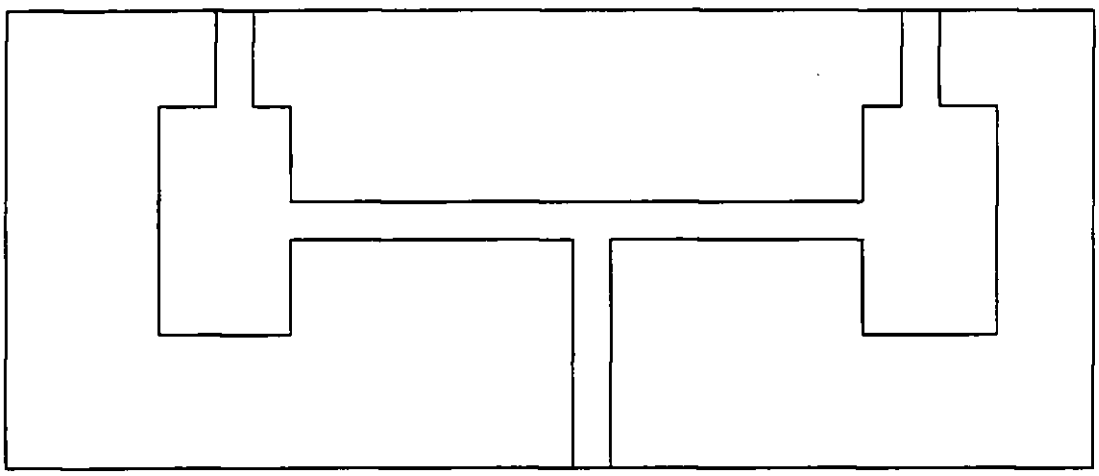


Figure 2. A typical division of zones in a planned centre



Key: _____ Core zone _____ Intermediate zone _____ Peripheral zone

The creation of a compact retail core dominated by stores, is an important prerequisite for spatial convenience. If however, the fringe of a retail centre also contains a high proportion of stores, the consumer may still be required to travel the length of the centre to complete their shopping. The level of intra-centre spatial convenience can therefore be measured in several ways. These include;

1. the proportion of firms in a retail centre that are located according to retail theory;

2. the spatial behaviour of firms. What proportion of each retail category is located according to retail theory?; and

3. the composition of the 3 zones. A high proportion of retailers in the core, implies spatial convenience, as does a low proportion on the periphery.

For the first measure a concentration score was used to indicate the proportion of firms located according to retail theory. In essence, this score represents the percentage of businesses that are located in their ideal zone. To determine this score, the location of each business was compared with its ideal location as set down by the concentration table (refer tables 1 and 2). The number of businesses that were "correctly" located were then expressed as a percentage of the total number of firms in a zone or centre. The higher the percentage, the greater the provision of spatial convenience afforded by the spatial juxtapositioning of businesses in a retail centre.

Table 1. Classification of categories for the unplanned centre

Core Zone	*Intermediate Zone*	*Peripheral Zone*
Department Stores Fashion Stores Leisure products (general) Supermarkets Food Sales and Health Food Service - cafe Prof.Serv (banks, travel agents, optometrists) Comm.Service (post office)	Supermarkets Food Sales and Health Food Service - fast food Leisure products (specialist) Homeware Professional services Consumer services (eg grooming)	Community services Professional services Hardware/Industrial/Garden Food Service - restaurant Consumer services (tattoos, repairs etc).

Table 2: Classification of categories for the planned centre

Core Zone	*Intermediate Zone*	*Peripheral Zone*
Department Stores Supermarkets Fashion Stores Leisure products (general)	Department Stores Supermarkets Food Sales and Health Food Service Leisure products (specialist) Homeware	Hardware/Industrial/Garden Professional services Community services Consumer services

The concentration table was based on an extensive review of literature (Hanson 1980; Warnes and Daniels 1980; Star and Massell 1981; Eaton and Lipsey 1982; Egan 1983; O'Kelly 1983; Davies and Rogers 1984; Houston and Stanton 1984; Mulligan 1984; Dawson and Lord 1985; Brown 1987; Berry and Parr 1988; Davidson, Sweeney and Stampfl 1988; Sim and Way 1989; Whysall 1989; Jones and Simmons 1990; Brown 1991; Bromley and Thomas 1991; Mason, Mayer and Ezell 1991; Miller 1991; Berman and Evans 1992; Brown 1992; Foxhall and Hackett 1992; Leistritz, Ayres and Stone 1992; Schiller 1994; Kirkup and Rafiq 1994; Oppewal, Timmermans and Louviere 1997). Due to differences in retail composition, separate tables were devised for planned and unplanned centres. Compared to the planned centre, Melbourne's unplanned centres possess fewer major attractors. Other categories therefore assume increased importance for the unplanned centre.

Slight variations were made to the categories used for planned and unplanned centres. For the planned centre, hardware/industrial stores were omitted from the analysis because there were only two such stores across the nine centres. For the unplanned centre, the original 11 categories used to conduct the audit, were expanded to 12. In a planned centre, the provision of food courts and uniform trading hours means that food service providers share spatial and temporal similarities. This is not the case in the unplanned centre, where cafes, fast food outlets and restaurants are dissimilar in both trading hours and location behaviour. For example, the evening trading hours of restaurants mean they act as dead shopping space during normal shopping times, and should therefore be located on the periphery. Conversely, the cafe is a core function because its business is spread evenly over normal trading hours, and its amenities serve as the unplanned centre's equivalent to the planned centre's food court. As such it plays an important social role. It also

minimises the effort in shopping by acting as a recuperative break for consumers. The three food service providers were therefore treated as separate categories. Department stores were also omitted from analysis of the unplanned centre. Across the nine centres, there was just one such major.

In calculating the concentration score, a distinction was drawn between those firms with ground floor locations and those occupying upper levels or off-street locations. For example, a travel agent occupying an upper level location in a core sector, was classified as a peripheral location as it did not infringe upon ground level, store frontage. If the travel agent was located in a shopping arcade running off a core sector, it was deemed an intermediate location. The table was also modified according to store characteristics and the size of the centre. For example, although a homeware store is classified as an intermediate function, if it were a category killer due to its size and/or brand name, it would be treated as a core function. Conversely, a small, discount fashion store would be classified as an intermediate function. In smaller community centres, where there is a distinct lack of magnet stores, retailers of specialist leisure products and homeware were often classified as core functions.

ANALYSIS

Test 1: The proportion of firms located according to retail theory

A comparison of concentration scores for each retail form suggests that market forces alone, are not capable of providing an optimal juxtapositioning of firms (refer table 3). Not one of the 9 unplanned centres had more than 65% of its businesses located according to retail theory. With non-retail firms locating in the core, and stores locating on the periphery, consumers are generally forced to travel greater distances to reach desired stores in unplanned centres.

Of the 5 unplanned centres facing competition from in-town planned centres (Boronia, Dandenong, Geelong, Oakleigh and Prahran), only 2 could boast a core where more than half of their businesses were true core functions. This adds weight to the notion that the introduction of a planned centre can often result in the exodus of higher order functions from the unplanned centre (Loukaitou-Sideris 1997), and that the vacancies left behind in the core are often filled by non-retail functions (Whysall 1995). Further support is provided by the fact, that of the 4 unplanned centres that did not have to compete with in-town planned centres, all recorded scores of 65% and above for their core. On average, 61% of firms located in the core of the unplanned centre, were core functions.

Table 3. Concentration scores for planned and unplanned centres.

Unplanned	**C**	**I**	**P**	**AV**
Bentleigh	65.5	62.4	67.2	**65.0**
Boronia	50.0	61.7	62.3	**58.0**
Camberwell	67.5	68.4	60.0	**65.3**
Croydon	70.3	58.1	64.2	**64.2**
Dandenong	48.4	63.3	67.4	**59.7**
Elsternwick	73.8	58.0	63.6	**65.1**
Geelong	63.0	60.9	62.1	**62.0**
Oakleigh	58.2	62.5	60.0	**60.2**
Prahran	50.0	59.4	67.9	**59.1**
Averages	**60.7**	**61.6**	**63.9**	

Planned	**C**	**I**	**P**	**AV**
Blackburn Nth	78.6	100.0	71.4	**83.3**
Boronia Mall	96.6	100.0	42.9	**79.8**
Malvern Cent.	91.3	90.9	N/A	**91.1**
Airport West	85.9	96.4	94.1	**92.1**
Market Square	82.0	77.8	75.0	**78.3**
Whitehorse	80.0	100.0	93.3	**91.1**
Doncaster	78.3	93.9	82.1	**84.8**
Eastland	96.4	91.5	94.7	**94.2**
Knox City	95.8	91.7	97.1	**94.9**
	87.2	**93.6**	**81.3**	

For the planned centre, 87% of businesses located in the core were 'true' core functions. Of the 13% of core businesses that were not core functions, 52 were service providers and 17 were retail stores. The 17 non-core stores were retailers of tobacco, gardening equipment, quilts, electric shavers and rugs. Doncaster

Shopping Centre recorded the lowest score of the 9 planned centres with 78%, due mainly to the high number of service providers in its core. This can be attributed to three factors. Firstly, all hair and beauty salons situated within its core are located within clusters of womens clothing stores, suggesting a deliberate effort to link them with fashion. This same reason would also account for the optometrists carrying deep lines of fashion sunglasses also being located in the core. There is also a cluster of 7 service providers (banks, travel agents, insurance) around the toilet amenities and centre management office. This would suggest that this central area does not enjoy the same level of exposure as other core areas.

Test 2: The spatial behaviour of retail categories

The Unplanned Centre; The findings from test 1 suggest that free market forces provide a less than perfect means of spatial allocation in unplanned centres. However, analysis of the spatial behaviour of retail categories suggests otherwise. For the unplanned centre, 9 of the 12 categories have the greater proportion of firms located in their ideal zone (refer table 4). These figures may also understate the effectiveness of principles such as Bid Rent Theory in providing a satisfactory layout. For example, of the 9.2% of fashion retailers located on the periphery, many were discount or second hand stores. And while one in four professional services are located in the core, a significant number of these were core services such as banks and travel agents.

Table 4. The spatial behaviour of unplanned businesses by core, intermediate and peripheral zones.

Category	Num	Core	Inter	Peri	Total
Supermarket	11	27.3	45.5	27.3	**100.0**
Food Sales	198	50.5	37.9	11.6	**100.0**
Cafes	79	32.9	50.6	16.5	**100.0**
Fast Food	90	25.6	48.9	25.6	**100.0**
Restaurant	135	17.0	43.7	39.3	**100.0**
Homeware	187	38.0	41.7	20.3	**100.0**
HW/Gar/Ind.	34	14.7	50.0	35.3	**100.0**
Fashion	284	58.5	32.4	9.2	**100.0**
Leisure	314	42.0	41.1	16.9	**100.0**
Prof Serv	422	24.6	27.0	48.3	**100.0**
Cons Serv	347	18.2	35.7	46.1	**100.0**
CommServ	124	19.4	36.3	44.4	**100.0**

* table indicates the percentage of each category located across the three zones.

The three exceptions were restaurants, cafes and hardware. The majority of restaurants (44%) are located in intermediate zones. This poses a problem because it accentuates the decline in shopper volume that characterises the transition from core to intermediate zones. Only 39% of restaurants are located on the periphery.

Despite their social importance, cafes are typically located away from the focus of shopping activity in the unplanned centre (only 1 in 3 cafes occupy a core location). Their potential to fill the role of the planned centre's food court is further undermined by the fact that they are widely dispersed throughout each centre.

Due to the lack of compatibility between hardware/industrial products and shopping, the former is best located away from the centre of shopping activity. In spite of this, half of all such stores occupy intermediate locations. Most importantly however, only 15% of hardware/industrial stores were located in the core of the unplanned centre.

Exploratory research had revealed that, in terms of major attractors, the unplanned centre is at a competitive disadvantage. This serves to accentuate the importance of fashion stores in attracting shoppers to the

unplanned centre. In general, the majority (59%) of fashion retailers are well located, drawing shoppers into the core.

Of equal significance is the spatial behaviour of service providers. Dead shopping space increases the distance a consumer must travel. One of the greatest causes of dead frontage in a retail centre are service providers. And yet across all 3 service categories (professional, consumer and community), almost half of all service firms occupy the ideal location, the fringe of the centre.

The planned centre; For the planned centre, 8 of the 10 retail categories are located according to what retail theory designates as the ideal location (refer table 5). The 2 exceptions were homeware and consumer services. The majority of homeware stores were located in the core. This had much to do with the fact that many of the homeware stores in planned centres are category killers and key attractors. Hence, they are allocated a core location by centre managers. As a result, only 24% of homeware stores were positioned in the intermediate zone of planned centres.

Consumer services were evenly spread across the 3 zones, with location varying according to the spatial strategies of individual centres. In centres such as Airport West and Doncaster, beauty salons are clustered with womens clothing stores in the core, presumably to link them to fashion. As a result, these 2 centres account for 20 of the 25 core locations occupied by consumer services. In fact across the 9 centres, hair salons account for almost half (48%) of all services located in the core. Similarly, locksmiths, shoe repairers and lottery tickets account for 72% of all services located in the intermediate zone.

Table 5. The spatial behaviour of businesses in planned centres.

Category	Num	Core	Inter	Peri	Total
Department Store	11	36.4	63.6	0.0	**100.0**
Supermarket	16	25.0	75.0	0.0	**100.0**
Food Sales	85	31.8	67.1	1.2	**100.0**
Food Service	125	9.6	82.4	8.0	**100.0**
Homeware	66	65.2	24.2	10.6	**100.0**
Fashion	324	91.4	7.7	0.9	**100.0**
Leisure	153	68.0	17.0	15.0	**100.0**
Prof Serv	88	29.5	6.8	63.6	**100.0**
Cons Serv	79	31.6	35.4	32.9	**100.0**
CommServ	15	0.0	0.0	100.0	**100.0**

The majority of department stores (64%) and supermarkets (75%) were located in intermediate positions. In effect this meant that these two major attractors were typically located at opposite ends of the centre's major thoroughfare. This encourages shoppers to travel the entire length of the centre, allowing the intermittent suscipient stores to benefit from the traffic these magnet stores generate. One factor accounted for all of the 8 exceptions where these key attractors were positioned in the core: the number of magnet stores. Where there were more than two magnets in the one centre, the remaining department stores or supermarkets were positioned in the core. Wherever this occurred for supermarkets, external access to carparks was always provided to simplify the carriage of bulky goods, and to facilitate their evening trading hours.

Analysis showed that the location of food stores was typically linked to the positioning of supermarkets. As with supermarkets, the majority of food stores (67%) were located in their ideal location; the intermediate zone. When supermarkets were located in the core, a cluster of food stores was also created to facilitate compatibility. On the whole however, food stores were most commonly found close to entrance points to simplify the task of transporting bulk purchases to the carpark.

The vast majority of food service outlets (82%) were located in intermediate locations. Such a high score can be attributed almost entirely to the concentration of food services in food courts. Of the 4 restaurants, all were located in peripheral areas with external access to facilitate their evening hours.

Fashion provided the most compelling evidence of the planned centre's deliberate effort to maximise pedestrian traffic in the core. Fashion stores serve as a major attractor for consumers (Roy 1994; Bruwer 1997). If fashion stores are concentrated in the core, it maximises the flow of traffic past suscipient retailers located along the limited access points of the centre. Of the 324 fashion stores across the 9 centres, 296 or 91% were located in the core.

The majority of leisure product stores (68%) were located in the core. The reason for this is the same as that for homeware: in general, the leisure stores found in planned centres are category killers and/or multiples. Unlike the unplanned centre where the core possesses both general and specialist leisure functions, those leisure products found in the core of the planned centre serve almost entirely as important attractors for the wider population. In essence, this translated into an inner zone possessing giftware, sporting goods, toys, music and books, and an outer zone comprising stationery, art supplies, pets and novelty stores.

Analysis also added support to the notion of retail segregation. Approximately two thirds of all professional services (64%) were located on the periphery of planned centres. Of the 26 professional services located in the core across the 9 centres, almost half (12) are found in Doncaster Shopping Centre, where many of its services were clustered in the core, rather than devolved to the periphery. Optometrists were amongst the most commonly found professional services in the core, presumably due to their deep lines of fashion sunglasses. All 15 community services were positioned on the periphery.

Test 3: The composition of the 3 zones

Planned and unplanned centres share several spatial similarities in terms of the proportion of units in each zone dedicated to each business category (refer table 6).

Core; The core of the planned centre is clearly dedicated to shopping, with just 2 of the 10 categories, fashion (54.7%) and leisure products (19.2%) making up almost three quarters of all core businesses. Analysis of the unplanned centre shows a similar, though less dominant, composition. Its fashion (21%) and leisure (16.5%) categories are also its most prominent, occupying 37% of core locations. These are followed closely by professional services (13%) and food sales (12.5%). Together these 4 categories comprise 63% of all core businesses in the unplanned centre. Although professional services are the core's third most common category, the overall intrusion of the 3 service categories is relatively slight, representing just 24% of all core businesses in the unplanned centre. The impact of services on the core of planned centres is even less, occupying just 9% of all potential sites.

Table 6. Comparison of planned and unplanned composition by zone.

Planned	**Core**		**Intermediate**		**Periphery**	
Category	**No**	**%**	**No**	**%**	**No**	**%**
Department	4	**0.7**	7	**2.5**	0	**0.0**
Supermarket	4	**0.7**	12	**4.3**	0	**0.0**
Food Sales	27	**5.0**	57	**20.4**	1	**0.7**
Food Service	12	**2.2**	103	**36.8**	10	**7.1**
Homeware	43	**7.9**	16	**5.7**	7	**5.0**
Fashion	296	**54.7**	25	**8.9**	3	**2.1**
Leisure and Gifts	104	**19.2**	26	**9.3**	23	**16.3**
Prof.Serv	26	**4.8**	6	**2.1**	56	**39.7**
Consumer Serv.	25	**4.6**	28	**10.0**	26	**18.4**
Comm.Serv	0	**0.0**	0	**0.0**	15	**10.6**
TOTAL	**541**	**100**	**280**	**100**	**141**	**100**

Unplanned	Core		Intermediate		Periphery	
Category	No	%	No	%	No	%
Supermarket	3	0.4	5	0.5	3	0.4
Food Sales	100	12.5	75	8.1	23	3.0
Food Service (C)	26	3.2	40	4.3	13	1.7
Food Service (F)	23	2.9	44	4.7	23	3.0
Food Service (R)	23	2.9	59	6.4	53	6.8
Homeware	71	8.9	78	8.4	38	4.9
HW/Garden/Ind.	5	0.6	17	1.8	12	1.5
Fashion	166	20.7	92	9.9	26	3.3
Leis.Prod and Gift	132	16.5	129	13.9	53	6.8
Prof.Serv.	104	13.0	114	12.3	204	26.3
Cons.Serv	63	7.9	124	13.4	160	20.6
Comm.Serv	24	3.0	45	4.8	55	7.1
Vacancies	61	7.6	106	11.4	114	14.7
TOTAL	**801**	**100**	**928**	**100**	**777**	**100**

Intermediate; The intermediate zone of planned centres is also dominated by just 2 categories. Together food sales (20%) and food service (37%) account for more than half of all intermediate locations. Leisure and fashion products which dominated the planned centre's core, account for just 18% of intermediate locations, ranking 4th and 5th respectively. The 3 service categories occupy only 12% of intermediate locations, although consumer services are the third largest category overall (10%).

The intermediate zone of the unplanned centre shares several commonalities with its planned counterpart. The three food service categories, in combination, serve as the unplanned centre's largest category (15%). Leisure products are also prominent in the unplanned centre's intermediate zone, occupying 14% of its sites. Consumer services (13%), as in the planned centre, are the third largest category. Of concern for the unplanned centre is the prominence of professional services (12%) and vacant businesses (11%). Vacant stores serve as the 4th largest intermediate category. Not only does this represent the ultimate in dead shopping space, it also indicates symptoms of economic blight (Berry 1963).

As with the planned centre, fashion fell from first to fifth in prominence, with the transition from core to intermediate zone. Leisure products are still prominent however, serving as the largest individual category (13.9%). Due to the prominence of consumer and professional services, the 3 service categories comprise almost one third (30.5%) of the unplanned centre's intermediate locations.

Periphery; The food, fashion and leisure categories that dominated the planned centre's inner zones are dwarfed by service categories on the periphery. In fact, fashion and the two food categories account for a combined total of just 10% of peripheral functions. In contrast, the service categories that represented just 9% of core positions, account for 69% of all peripheral businesses. This statistic is made all the more extraordinary by the fact that the 3 service categories account for only 18% of all businesses in the planned centre. In all, they represent 3 of the 4 most commonly found categories on the outer fringe of the planned centre. In short, the compact retail environment of the planned centre is made even more convenient by the spatial allocation of its retail resources.

An examination of the unplanned centre's periphery confirmed that the imperfections that might have been expected from a spatial system based on market forces, did not materialise. In fact, its spatial composition mirrored that of the planned centre in many ways. The three service categories, professional services (26%), consumer services (21%) and community services (7%) were the top three ranking categories amongst occupied businesses (15% of all peripheral sites are vacant). In combination, service categories account for more than half of all peripheral businesses (54%). Fashion, leisure products and food sales, which had dominated the inner zones, account for just 13% of businesses on the fringe. In fact, despite

representing approximately two-thirds of the unplanned centre's business mix, product categories account for just 31% of all peripheral locations.

Analysis then focused on the proportion of product providers to service providers across the 3 zones. Retail theory postulates that the ratio of product providers should be highest in the core, decreasing as one moves towards the outer reaches of the centre. While the unplanned centre's ratio of product providers to service providers did not reflect the same theoretical ideals as the planned centre, there was still definite evidence of a geographical division between its stores and services (refer table 7).

Just over three quarters (76%) of all core locations in unplanned centres are occupied by stores. The consistency across unplanned centres was also relatively high. All 9 centres had between 64% and 83% of their core businesses dedicated to product retailing; a range of just 19%. Somewhat surprisingly, Boronia (the 2nd smallest centre in the sample) had the highest ratio of product providers, and Dandenong (the 2nd largest centre in the sample) the lowest. In comparison, 92% of all core locations in planned centres are occupied by product providers. Planned centres showed similar consistency in their range, with all nine centres dedicating between 83% and 100% of their core locations to stores; a range of 17%.

Table 7. The ratio of products to services across the 3 zones in planned and unplanned centres.

PC core	**RP%**	**SP%**	**UC core**	**RP%**	**SP%**
Blackburn Nth	92.9	7.1	Bentleigh	79.3	20.7
Boronia Mall	96.6	3.4	Boronia	83.3	16.7
Malvern Central	91.3	8.7	Camberwell	80.0	20.0
Airport West	85.9	14.1	Prahran	79.2	20.8
Market Square	86.0	14.0	Croydon	67.2	32.8
Whitehorse Plaza	95.2	4.8	Dandenong	63.7	36.3
Doncaster	83.3	16.7	Elsternwick	78.6	21.4
Eastland	100.0	0.0	Geelong	71.3	28.7
Knox City	96.8	3.2	Oakleigh	81.0	19.0
AVERAGE	**92.0**	**8.0**	**AVERAGE**	**76.0**	**24.0**

PC intermediate	**RP%**	**SP%**	**Dt intermediate**	**RP%**	**SP%**
Blackburn Nth	78.9	21.1	Bentleigh	71.0	29.0
Boronia Mall	66.7	33.3	Boronia	73.3	26.7
Malvern Central	95.5	4.5	Camberwell	81.2	18.8
Airport West	85.7	14.3	Prahran	78.9	21.1
Market Square	88.9	11.1	Croydon	67.4	32.6
Whitehorse Plaza	95.0	5.0	Dandenong	68.3	31.7
Doncaster	84.8	15.2	Elsternwick	58.0	42.0
Eastland	88.1	11.9	Geelong	70.9	29.1
Knox City	87.5	12.5	Oakleigh	42.9	57.1
AVERAGE	**85.7**	**14.3**	**AVERAGE**	**68.0**	**32.0**

PC periphery	**RP%**	**SP%**	**DT periphery**	**RP%**	**SP%**
Blackburn Nth	28.6	71.4	Bentleigh	38.8	61.2
Boronia Mall	57.1	42.9	Boronia	21.1	78.9
Malvern Central	0.0	0.0	Camberwell	42.7	57.3
Airport West	29.4	70.6	Prahran	53.6	46.4
Market Square	31.3	68.8	Croydon	28.3	71.7
Whitehorse Plaza	13.3	86.7	Dandenong	36.4	63.6
Doncaster	39.3	60.7	Elsternwick	45.5	54.5
Eastland	31.6	68.4	Geelong	48.4	51.6
Knox City	35.3	64.7	Oakleigh	40.0	60.0
AVERAGE	**33.2**	**66.8**	**AVERAGE**	**39.4**	**60.6**

In the intermediate zone, the percentage of product providers was again higher in planned than unplanned centres. There was however, a similar decline in product retailing across both retail forms. The transition from core to intermediate zones saw the percentage of stores in the intermediate zone of planned centres fall 6% to 86%, and 8% in unplanned centres to 68%. Two factors stand out from the analysis of the intermediate zone. Firstly, the consistency that was evident in the core, disappeared in both planned and unplanned centres (ranges of 28% and 38% respectively). Secondly, and somewhat perplexing was the fact that in the case of both planned and unplanned centres, 3 of the 9 centres recorded a slight increase in product ratio (a maximum increase of 5%), with the transition from core to intermediate zone.

The spatial similarities between planned and unplanned centres were most evident on the periphery. In each case there was a dramatic shift in emphasis from products to services with the transition from intermediate to peripheral zone. The percentage of peripheral businesses dedicated to services jumped from 32% to 61% in the unplanned centre, and from 14% to 67% in the planned centre. Significantly, while the gap between the respective product percentages in the core and intermediate zones of both retail forms had been relatively high (16% and 18% respectively), it fell to just 6% on the periphery. On the periphery of the typical planned centre, 33% of businesses are stores. The fringe of unplanned centres show a similar emphasis on services, with just 39% of peripheral businesses serving as stores.

FURTHER RESEARCH

This study has identified several reasons why minimising walking distances represents a desirable outcome for retail planners. It also identified that segregating service providers from stores provides a means for retail centres to achieve this outcome. In this regard, Melbourne's planned centres enjoy an important advantage.

However, research has yet to confirm whether consumers distinguish between planned and unplanned centres in terms of their retail concentration. Nor has the importance attached to a compact, dedicated retail environment been determined. Future research must therefore move beyond statistical measures of concentration, and focus on how spatial convenience through retail segregation, is likely to influence consumer patronage behaviour.

SUMMARY

This paper offered three methods to measure the degree of retail concentration in retail centres. Across all three measures, the planned centre was found to offer the shopper greater spatial convenience. This means it lowers the spatial, temporal and effort costs of shopping to the consumer.

It also offers advantages to recreational shoppers. Given the finite nature of time, leisure-oriented shoppers are subject to the same temporal limitations as other consumers. By devolving businesses such as accountants, car repairs, solicitors and service stations to the periphery, it minimises the distance between actual stores, and maximises the time available for browsing.

The fact that the planned centre offers spatial benefits to both convenience- and recreationally-oriented shoppers is less than surprising. Managers of planned centres not only decide who their tenants will be, but also where they will be located. This results in an overall layout that benefits retailers and consumers alike. Market forces such as Bid Rent Theory however, provided a better than expected mechanism for the spatial juxtapositioning of businesses in the unplanned centre. While individual stores were often located in a less-than-ideal location, the proportion of stores to service providers does increase as one moves inwards from the fringe to the core of the unplanned centre. While such forces may not be as efficient or effective as the spatial system of the planned centre, it still provides consumers with a measure of spatial convenience.

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