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Retail revitalization and small town centres: the contribution of shopping linkages

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Abstract

Change has been a continuous feature of retailing in Britain since the mid-1960s. New types of shopping facilities have been developed, usually in decentralized locations, while the largest town and city centres have retained their commercial dominance. These changes have had significant negative competitive effects on all types of smaller traditional centres, especially middle-order centres (small towns, district centres and small market towns), where a 'spiral of decline' has been widely evident. Many communities face the prospect of losing their commercial and social focuses. Government activity has attempted to contain this problem by constraining retail decentralization and promoting redevelopment in the traditional centres. Limited evidence suggests that the revitalization process is strongly dependent on the scale, quality and location of the food shopping facilities of such centres and the associated 'spin-off' shopping linkages. This article aims to provide additional insight into this by investigating the shopping linkages between a closely integrated new shopping precinct, incorporating an edge-of-centre superstore, in the small town centre of Llanelli in South Wales. Redevelopment, which retained a compact structure based upon spatial proximity, was found to encourage high levels of linkage between the component parts of the centre and generated favourable attitudes to the shopping environment. However, the successful spatial integration of the superstore with the centre needed a site that approximated to an in-town/edge-of-centre site rather than to a more peripheral edge-of-centre or out-of-centre site. Clearly, considerable care is required to define edge-of-centre locations for new developments if they are to assist in regenerating a declining centre. This study strongly supports governmental caution on this issue. The advantages of undertaking shopping linkage analyses for the formulation of planning strategies designed to revitalize declining town centres is also demonstrated.

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Continuous change has characterized the British retail scene since the mid-1960s. A series of 'waves' of retail innovation have added considerable variety to the range of shopping opportunities available to consumers, while presenting increasingly formidable competition to the traditional shopping opportunities provided by the city centres, small and market town centres, district centres and local neighbourhood facilities. However, regulatory constraint has been imposed with varying degrees of commitment by successive governments throughout this period in order to retain the presumed commercial and social advantages of the traditional system. Constraint upon new developments has been strengthened steadily since the late 1980s, and particularly by the introduction of the 'sequential test' in 1996 (Department of the Environment, 1996; Welsh Office, 1996). Such constraints have been complemented by a series of measures designed to positively promote the range of traditional facilities.

Analyses of the effects of the new facilities on the traditional centres suggest that they have impacted most adversely upon the middle-order centres. This has been exacerbated by the larger town and city centres retaining their commercial primacy. Those centres most adversely affected comprise small town and district centres in urban situations, and small market towns in rural areas. Evidence suggests that a 'spiral of decline' is an increasingly common feature of such centres. Limited investigations of the effects of revitalization strategies in such centres suggest that the scale, quality and location of their food-shopping opportunities are critical to their continuing success (Bromley & Thomas, 2002). These centres, it appears, are strongly reliant upon a combination of the attraction of such facilities along with associated 'spin-off' shopping linkages that they generate. However, while there is a general agreement on the importance of the nature and location of food shopping opportunities and their associated linkages for the redevelopment of declining centres, there is scant evidence on the details of such strategies. Of central significance in this respect are likely to be the specifics of the spatial configuration necessary to optimize the functional linkages between the improvements and the older facilities. To redress this deficiency, this study investigates the shopping linkages between a closely integrated new shopping precinct incorporating an edge-of-centre superstore in a small town centre.

The paper begins by briefly recounting changes in the retail environment and the associated planning situation in the UK. This is followed by a review of existing research findings relating to the impact of retail change upon middle-order shopping centres, along with some recent studies of revitalization strategies. The limited literature exploring the significance of shopping linkages in such situations is also examined, before developing the empirical case study based upon the experiences of the small town centre of Llanelli in South Wales.

The changing retail environment

Shopping opportunities in British cities have expanded in a steady progression since the mid-1960s. By the mid-1980s, the first three 'waves' of retail innovation had begun to transform the traditional retail environment (Schiller, 1986). Superstores had emerged to dominate convenience-goods shopping. Retail warehouses and retail parks had made substantial inroads into the sales of an ever-widening range of the non-food products formerly confined to the middle-order and larger shopping centres (Guy, 1998a). Similarly, the new comprehensively planned regional and subregional centres were beginning to threaten the trading position of the largest central business districts in their vicinity (Thomas & Bromley, 1993), while the largest developments are now in the process of creating new 'edge-city' forms (Lowe, 1998, 2000). More recently, the emergence of outlet shopping villages (Fernie, 1995, 1996), the development of limited-line discounters in the convenience sector (Wrigley, 1993; Marsden & Wrigley, 1996), and the contemporary expansion of internet shopping (Jones & Biasiotto, 1999) have together served to broaden further the range of new shopping opportunities.

The planning environment

Inevitably, the traditional larger city centres, smaller town centres, district, neighbourhood and local facilities have been subject to steadily growing competitive pressures on their vitality and viability. However, the process of change has not swept away the former retail system. Throughout the whole period of change, successive governments have attempted with varying degrees of vigour to avoid the decline of city centres and other traditional shopping centres. There has been an underlying commitment to retain city centres as the focuses of the commercial and social identity of British cities, and smaller centres as the focuses of community life of small towns, districts and neighbourhoods. Consequently, planning policy has become progressively more restrictive as the commercial pressures for the new forms of retail decentralization have become stronger. The negative trading impact of the new facilities on nearby town and city centres has consistently been the principal factor considered when determining planning applications by central and local government for new out-of-centre retailing (Guy, 1998b).

This culminated in the successive versions of *Planning Policy Guidance Note 6* (Department of the Environment, 1988, 1993). Subsequently, following the suggestion of the House of Commons Committee on the Environment in 1994 (House of Commons, 1994), the 'sequential test' was introduced in 1996 (Department of the Environment, 1996; Welsh Office, 1996; Wrigley, 1998). The latter directed developers successively to town-centre or edge-of-town-centre sites for new retail development in order to retain the vitality and viability of the existing centre. Only if such sites were either unsuitable or unavailable would out-of-centre sites be considered. This cautious attitude to retail decentralization has been retained and reaffirmed by the Labour government since 1997.

The problematic of the 'sequential test'

However, the 'sequential test' has not resulted in a moratorium on out-of-centre development, since significant elements of ambiguity in definition and inconsistency in its application have emerged. How the definition of the edge-of-centre sites should be interpreted has been particularly problematic. This is substantially the same in the English and Welsh documentation (Department of the Environment, 1996; Welsh Office, 1996):

> Edge-of–centre: a location within easy walking distance of the centre normally not more than 200–300 metres from existing town centre shops, providing parking facilities that serve the centre as well as the store, thus enabling one trip to serve several purposes. Lesser distances may be appropriate for smaller town centres and local circumstances such as topography will also determine appropriate distances. (Welsh Office, 1996: Appendix A)

The specification of 200–300 m is inherently ambiguous since for shopping purposes a variation of as little as 100 m can be critical to the level of functional linkages generated between two sites (Department of the Environment, Transport and the Regions, 1998; Hass-Klau, Mobbs, & Crampton, 1998). Equally, it is unclear from where the distances should be measured, while the definition itself allows local variations in relation to both centre size and topographic circumstances. Thus, it is not surprising that the national report of the National Retail Planning Forum (2000: 69–70), on the operation of the 'sequential approach' could discern no clear pattern as to the criteria being applied by inspectors in deciding whether sites were allowable as edge-of-centre.

Additional inconsistencies reflect a great variety of factors (National Retail Planning Forum, 2000). There is, for example, some evidence to suggest that the interpretation of the test has been varied 'constructively' by some local authorities to suit local planning or commercial considerations, while others have been more rigid in their interpretation of the guidelines. Similarly, the determination of proposals at public inquiries appears to reflect equally two different considerations (Guy, 1998b; National Retail Planning Forum, 2000). Many proposals for out-of-centre development have been decided on the basis of whether the 'built form' of the proposed superstore or retail warehousing and integral car park could be accommodated in or at the edge of an existing centre. If no such site exists, and the development is considered unlikely to impact adversely on the existing centre, then the proposal might gain approval. Equally, however, the determining factor has been whether the 'class of goods' to be provided at the out-of-centre site could trade successfully in or at the edge of the existing centre, irrespective of whether a site for a typical out-of-centre development with attached car park is available. If this were considered to be the case, then an application for an edge-of-centre or out-of-centre fully fledged superstore or retail warehouse would not be allowed. In these combined circumstances it has become progressively more difficult for consent for off-centre retail developments to be obtained. Nevertheless, a substantial degree of decentralization

has continued, reflecting significant amounts of outstanding permissions in the developmental pipeline (Guy, 1998b, 2000), a situation persisting to the present day.

In effect, a highly complex and sometimes ambiguous situation with respect to edge-of-centre retailing appears to have developed since 1996. However, irrespective of the imprecision of the application of the 'sequential test', it nevertheless appears to have constrained the scale of retail decentralization of all types in recent years. Local authorities have greater confidence that local plans posited on limiting out-of-centre development, designed to achieve a balance between central and decentralized development, will find stronger support both at public inquiries and in cases adjudicated by the Secretary of State.

At the same time, governmental regulation and constraint on the new retail forms has been complemented by a degree of positive promotion of the traditional shopping centres by providing advice and support for the regeneration process (Urban and Economic Development Group, 1994, 1997; Department of the Environment, Transport and the Regions, 1997, 1998). Since the early 1980s this has been supplemented by the introduction of town centre management in most major town and city centres (House of Commons, 1994; Warnaby, Alexander, & Medway, 1998). In fact, it is now widely recognized that the regeneration and revitalization of many of the older town and city centres requires a combination of active redevelopment, firm management and positive promotion if they are to flourish in the contemporary retail environment (Urban and Economic Development Group, 1994).

Thus, while considerable amounts of new retail developments have occurred in off-centre locations over the last 35 years, the constraints imposed by governmental planning controls, combined with the positive promotion of the traditional centres, have served to curtail the full impact of a freer-market competitive situation.

The impact of retail change

Nevertheless, the many new retail forms have often impacted adversely on the traditional retail hierarchy, and there remains widespread concern for the future economic health of older centres of all types (Department of the Environment, 1992; Thomas & Bromley, 1995; British Council of Shopping Centres, 1996; Ravenscroft, 2000). However, the development of a relatively small number of the planned regional shopping centres, in response to central government caution, combined with central and local government activities designed to retain the commercial centrality of the largest regional centres, has reduced the concerns for their future. This is particularly the case in the more economically buoyant parts of the country. By contrast, opinion in the studies noted above suggests that the middle-order centres — small towns, district centres and small market towns — have been particularly affected adversely by a combination of the new facilities and the continued strength of the larger town and city centres. In many smaller centres the potential for 'a spiral of decline' to develop has been suggested, with the contingent likelihood that many smaller communities face the prospect of losing their commercial and social focuses.

In the circumstances, it is surprising that there are only a limited number of

detailed studies of the impact of the newer out-of-centre facilities on the smaller traditional centres. Thomas and Bromley (1995) and Bromley and Thomas (1995), for example, demonstrated the rapid decline of a small district shopping centre on the outer edge of the greater Swansea urban area to 'residual' neighbourhood status associated with out-shopping to more distant superstores. Similarly, Whysall (1995) indicated the problems of physical and functional deterioration of an inner-city shopping centre in Nottingham associated with the competition of out-of-town superstores and retail warehouses, even after the development of an Asda superstore. The small market town of Atherstone in north Warwickshire was also shown to be experiencing considerable difficulty in offsetting the competitive effects of superstores in the larger nearby centres of Tamworth, Hinckley and Nuneaton (Collis, Berkeley, & Fletcher, 2000). Despite a potential local trade area with a population of around 12 500 and 160 existing retail and service outlets, surveys of local residents in 1969 and 1993 indicated a marked decline from 89% to 23% for those using the centre as their regular grocery-shopping venue.

Similarly, a more recent government-sponsored report indicated the difficulties imposed upon small market towns by the proliferation of the 'wave' of development of smaller 'country town' superstores (c. 2325–2790 m^2 gross) in their vicinities (Department of the Environment, Transport and the Regions, 1998). The research examined the impact of edge-of-town and out-of-town superstores on a number of small and medium- to large-scale market towns and district centres in England. It incorporated the general problems of 'snapshot' impact assessment in 'post-opening' situations. These were exacerbated by the 'particularities' of local circumstances, which either promoted or disadvantaged their 'competitive edge'. Likewise, variations in the sizes of the centres under investigation created difficulties for drawing general countrywide conclusions. However, it was evident that food stores in the traditional centres had experienced losses of between 13% and 50% of their former trade. This had had the most significant adverse effects, primarily on the smaller centres with populations of between 6 000–10 000, such as Fakenham in Norfolk and Leominster in Hereford and Worcester. The larger district centres, such as Cirencester (c. 15 000 population) in Gloucestershire and Northfield (c. 54 000 population) in Birmingham, had experienced less marked negative impacts, although their future prospects were not portrayed in a strongly positive light.

A similar situation was noted in the second-tier, small town centre of Llanelli in the greater Swansea area (Thomas & Bromley, 2002). The centre has an immediate district population in excess of 70 000. Nevertheless, the closure of a town-centre Tesco superstore (2790 m^2 gross) in 1989 and the opening of a larger unit (6280 m^2 gross) on a nearby retail park (overall, 24 180 m^2 gross), precipitated a major decline in the convenience-shopping status of the centre. This was accompanied by widespread deterioration in the physical fabric of the centre and the emergence of significantly adverse attitudes to many aspects of the convenience-shopping opportunities and associated environmental quality of the centre amongst the remaining customer base.

Further evidence of a more anecdotal level observed by the authors working in the greater Swansea area is also strongly indicative of the continuing decline of many

of the former district centres throughout the area, primarily associated with strong competition from the large out-of-centre superstores and edge-of-centre discount supermarkets. This is particularly apparent in a wide range of centres towards the periphery of the built-up area and in the valley communities in the wider orbit of Swansea (Fig. 1). Evidence of decline is notable on the western periphery in Pontarddulais, Gorseinon and Gowerton, along with a string of settlements in the Tawe valley at Morriston, Clydach, Pontardawe, Ystalyfera and Ystradgynlais. A similar situation occurs in the vicinity of the Neath valley at Skewen, Resolven and Glyn-Neath, while Cwmafan, Cymer and Glyncorrwg in the Afan valley appear to be suffering from the same malaise. For all these centres a 'council of commercial despair' is being presented regularly in a plethora of local newspaper reports from retailers, community leaders and residents alike. It is also interesting to note that in some of these centres substantial amounts of public sector investment has been used to improve the overall environment and amenity of the centres. This has been particularly apparent in Ystalyfera (Thomas & Bromley, 1995), Ystradgynlais, Pontarddulais and Pontardawe. In each case the 'amenity' of the centre has been improved, but the lack of private sector investment in improved retail attractions appears to have limited the degree of retail revitalization achieved.

A general conclusion emerging from all these studies indicates that the scale and quality of food stores available in the traditional centres is critical to their functioning, since it is these that generate large numbers of shoppers, many of whom are also likely to frequent the other stores. In effect, the necessity for caution on the issue of further out-of-centre superstore developments was strongly reiterated in most instances.

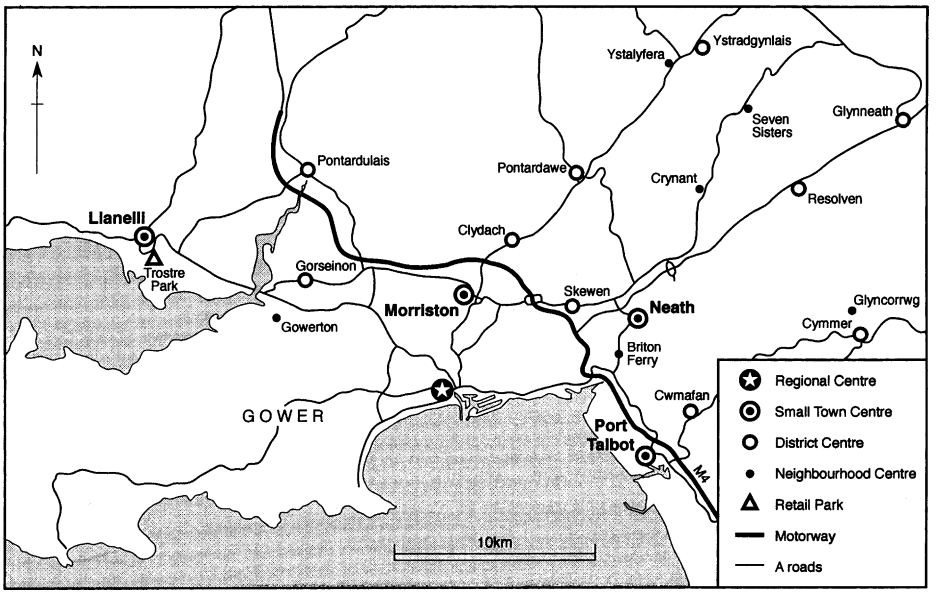


Fig. 1. Shopping facilities in the greater Swansea area.

Retail revitalization

There was also strong evidence to support the corollary of this conclusion: that the regeneration and revitalization of declining medium-sized shopping centres requires a similar (or at least a sufficiently strong) retail attraction to present serious competition to the out-of-centre superstores or discount supermarket chains. A study of the decline of the small district centre of Ystalyfera in the Swansea valley to residual neighbourhood status, for example, stressed the central requirement of a much improved food store if its problems were to begin to be resolved (Thomas & Bromley, 1995). A similar situation was recorded for Atherstone in the West Midlands. The limited degree of success achieved by the activities of the public sector and business interests, represented in the 'Town Centre Forum', was considered to reflect the opening of a 1860-m^2 gross Co-operative store in the centre in 1998 (Collis, Berkeley, & Fletcher, 2000). This was even more marked in the revitalization of Llanelli, in southwest Wales. In this case the addition of a new shopping precinct and closely integrated superstore resulted in a substantial revitalization of the food-shopping dimension of the centre and of the general levels of satisfaction with the wider shopping environment (Thomas & Bromley, 2002).

In fact, the evidence from the limited number of studies on the regeneration and revitalization of medium-sized, traditional shopping centres suggests that the so-called '4As' strategy for the promotion of a 'vital and viable' town centres has enduring significance (Urban and Economic Development Group, 1994). In each case the primary importance of an enhanced shopping *attraction*, closely integrated with ease of *access*, particularly for car-borne shoppers, is evident. The complementary importance of improved environmental *amenity*, and the overriding need for a concerted *action* plan, combining public- and private-sector partnerships, is also stressed. By contrast, novel local responses, characterized by the well-documented introduction of the 'Loyalty Card' scheme in Leominster and similar 'environmental' and 'events' initiatives, have proved to be largely transitory or ineffective in the medium term (Worthington, 1998; Hallsworth & Worthington, 2000).

Shopping linkages

However, while there is a high degree of agreement on the *general strategies* required for the regeneration and revitalization of declining shopping centres, there is less evidence on some of the more *specific elements* of such strategies. Foremost amongst the latter are the details of spatial design required to maximize the strength of the functional shopping linkages between the regenerative improvements and the existing facilities. In fact, there is an established literature that indicates that the manner in which shoppers use a centre can have a significant influence upon the commercial viability of particular sites (Bennison & Davies, 1980; Bromley & Thomas, 1989; Brown, 1991, 1992; Lorch & Smith, 1993). The lack of integration of shopping attractions, pedestrian flows and transport termini has been shown to result in 'dead space', unlettable units, and associated unattractive environmental

problems. In effect, it is evident that the closer the degree of spatial integration between the component elements of a shopping centre, the greater the shopping interaction between the parts, and the greater the vitality of the shopping environment. This is a critical issue since *Planning Policy Guidance Note 6* and *TAN 4* (Technical Advice Note) allow the possibility of edge-of-centre sites for new retail development if suitable in-town-centre sites are unavailable (Department of the Environment, 1996; Welsh Office, 1996). In practice, the distance guideline used for 'edge-of-centre' sites has been 200–300 m, based upon the general contention that a maximum distance of 300 m is both an easy walking distance to a store and is not too far to carry the shopping afterwards (Hass-Klau et al., 1998). However, it has not always been clear from where this distance should be measured. Nevertheless, it is evident that many superstores have been developed on the edge of small town and district shopping centres in Britain in recent years. In these situations it remains disputed whether such developments enhance the attractions of the centre, compete with the existing facilities, or are competitively neutral.

Recent evidence on the levels of linked shopping trips between food stores and other shopping facilities for town centre and edge-of-centre food stores is limited. A literature review by Hass-Klau et al. (1998), for example, indicated that for eight town centres an average of 46% of food shoppers also intended to purchase durable goods, while 38% of those making purchases of durable goods intended to undertake food shopping. A similar survey at three town-centre Safeway supermarkets indicated even higher levels of linkage with other facilities. Between 39% and 70% of respondents undertook linked shopping trips, although it was suggested that the database was insufficiently strong to draw firm conclusions. Similarly, moderate levels of linked trips of 22–50% were displayed for six Sainsbury's town-centre stores; the levels did not vary significantly between car-based and non-car-based respondents. However, for six edge-of-centre stores the overall linkage levels were substantially lower, and they were lower still for car-based shoppers (5–14%) than for those without cars (15–26%). Clearly, the evidence to date suggests that while linked shopping trips within town-centre situations can reach moderate levels, those with edge-of-centre stores are of a much lower order. This appears to reduce the potential for 'spin-off' shopping associated with the 'peripheral' sites.

Similarly, there is only limited evidence relating to the regenerative or revitalizing effects of new superstores on medium-sized shopping centres, even in cases where the redevelopment is in close proximity to, or even within, the traditional centre. Ideally, the judicious location of a new facility would promote 'spin-off' trade to the pre-existing shops, while enhancing the access of less mobile consumers to superstore shopping. However, a study in Camden suggested that while a new superstore was well patronised by pedestrian and public-transport-borne shoppers, it generated an uncomfortable increase in traffic congestion for the car-borne trade (Warren & Taylor, 1991). More recently, Whysall (1995) examined whether the addition of a 6045-m^2 gross Asda superstore to the declining district shopping centre (6230 m^2 gross) of Hyson Green in Nottingham acted as a 'spin-off' trigger for the regeneration of the centre or caused increased competition with the remaining facilities. The new store is located close to the established centre, albeit separated by the physical barrier

of the car park from the primary retail sites. However, the shopper survey was confined to respondents in the traditional centre. The vast majority of these walked to the centre, and the availability of the Asda store was not a major factor in their shopping behaviour. The linkage analysis was confined to those respondents attracted from outside who used both the traditional centre and the superstore, since these were considered to be the true test of the 'regeneration hypothesis'. These amounted to only 5% of the respondents. Together these facts were presented as a refutation of the 'regeneration hypothesis'. Thus, the development of a superstore in this sort of situation was characterized as a high-risk strategy, which marginalized further the situation of local traders by diverting convenience shopping to the new superstore.

However, the Nottingham study did not explore whether respondents at either location used the other on the same trip. This would seem to be a better indicator of the degree of integration of the old and new, as it would offer the opportunity of gauging the degree of potential for 'spin-off' shopping between the different components of the centre. Thus, the evidence presented is of limited value to the current discussion. The study of the regeneration of the market town of Atherstone in Warwickshire is equally imprecise on this issue. The need for a large food store to anchor the process is stressed at a number of points and the detailed location of such a unit was considered critical to the success of the revitalization process (Collis, Berkeley, & Fletcher, 2000). Apart from the implication that the new attraction should be central, little further discussion is developed.

However, the report by the Department of the Environment, Transport and the Regions (1998) on *The impact of large foodstores on market towns and district centres* is rather more instructive, albeit tending to ambiguity in detail. The relationship between edge-of-centre superstores (c. 2325 m^2 gross) and the small market towns of Warminster and Cirencester was investigated. In each case, the superstore was located approximately 300 m from the prime retail sites of the centres. In Warminster, the Safeway store was within easy walking distance, although the store has its back turned physically to the town centre. In Cirencester, the Waitrose store was far less accessible for walking trips due to intervening road barriers. Relatively high levels of 'linked' shopping trips between the centres and superstores were noted, 58% for Warminster and 47% for Cirencester. However, in neither case were the linkages considered to significantly benefit the town centres, presumably because the majority of the flows were from the centres to the superstores rather than vice versa, although no precise figures were provided on this point. In effect, it was considered that the 'spin-off' linkages were more likely to be benefiting the superstores.

On the basis of these findings, it was suggested that consideration should be given to reducing the parameters for the pre-permission evaluation of edge-of-centre stores under the sequential test. It was proposed that the size of stores to be considered should be reduced from 2500 m^2 to 1000 m^2, and the distance to below the 200–300-m guideline (Department of the Environment, 1996; Welsh Office, 1996). However, in recognition of the relatively limited evidence on this issue, it was suggested that 'a more thorough assessment of the linkages between edge-of-centre stores and town centres/district centres is necessary' (Department of the Environment, Transport and the Regions, 1998: 10).

Clearly, little precise evidence is available on the nature of shopping linkages between edge-of-centre superstores and medium-sized shopping centres of small-town, market-town or district-centre status. The nature of such linkages has potentially important implications for the relationship between the old and new facilities. Such linkages, for example, might mutually enhance the various elements of the centre in accordance with a 'regeneration hypothesis' (Whysall, 1995). Equally, however, the superstore might present an additional strong competitive threat to the convenience trade of the existing centre and its associated vitality. It is likely, however, that the distance between the two will fundamentally affect the propensity for shoppers to undertake linked trips and generate mutually beneficial 'spin-off' trade.

Currently, it appears that the 200–300-m guideline for the maximum distance between the centre and edge is considered too far to benefit the traditional centre (Department of the Environment, Transport and the Regions, 1998). Consequently, in order to provide some additional insight into the scale and nature of shopping linkages in medium-sized centres, this study examines the relationship between a much more closely integrated new development comprising a small precinct and an edge-of-centre superstore. This differs from the cases noted above, which explored evidence from superstores located at the outer limit of the 'edge-of-centre' definition. In fact, given the element of ambiguity associated with 'edge-of-centre' noted above, *'in-town/edge-of-centre'* is perhaps a better description of the superstore examined here.

The case study: Llanelli, South Wales

Llanelli is located at the western margin of the greater Swansea area, 12 miles from the sub-regional shopping centre of Swansea (119 970 m^2 net, 1995) (Welsh Development Agency and Swansea City Council, 1995) (see Fig. 1). Swansea is the dominant specialist shopping centre within a radius of 15 miles, which includes the whole of the former county of West Glamorgan (population, 358 600 in 1991) and the adjacent Llanelli District of Dyfed (population, 73 672 in 1991) (Office of Population Censuses & Surveys, 1994). Llanelli is medium-sized shopping centre, and contained 29 270 m^2 net of retail floor space in 1995 (Welsh Development Agency and Swansea City Council, 1995). Traditionally, it has served as the principal convenience-shopping centre for the population of the district, while the presence of a number of national retailers such as Marks and Spencer, Boots, W. H. Smith, and Woolworth retained a notable comparison-goods shopping function.

Like most other British cities, the greater Swansea area has over the years attracted a considerable amount of retail decentralization, which has done much to transform the retail environment and offer a wide range of competitive new shopping opportunities (Thomas & Bromley, 2002). However, of more immediate concern for Llanelli was the development of the Trostre Retail Park in 1989, located barely 2 miles to the east of the town centre (overall 24 180 m^2 gross). Tesco took the key unit in the development (6280 m^2 gross) and closed their town-centre store (2790 m^2 gross) shortly after the opening of the Trostre Park store. The superstore had

been one of the principal attractions of the town centre, which was closely linked with the other major stores and with 560 spaces in an integral multi-storey car park. Thus, its relocation seriously undermined the convenience-shopping component of the town centre and lost the associated 'spin-off' trade. This had negative consequences for the retail vitality of the nearby stores. Consequently, the loss of the major attraction of the in-town superstore, along with the contemporaneous growth of a major competitor at Trostre Park, was a major setback for the town centre. By the early 1990s this had precipitated a spiral of decline in parts of the town centre, and was strongly reflected in the weakness of the food-shopping dimension of the town centre trade (Thomas & Bromley, 2002).

However, the borough council, in association with the Welsh Development Agency, initiated a regeneration strategy in 1992, designed to retain the vitality of the town centre as a commercial and social focus for the community (Welsh Development Agency and Llanelli Borough Council, 1998). This aimed to improve and restructure the town centre by initiating environmental enhancement and the planning of a new southern road loop to assist the possible development of a major shopping scheme. This encouraged Redrow Construction to proceed with a development that attracted funding of £20 million from Sun Life Properties and was completed in the autumn of 1997. It involved the large-scale restructuring of the town centre, including a new shopping precinct (St Elli Centre), an improved traffic circulation pattern, and the close integration of the three major car-parking areas with the main shopping facilities (Fig. 2). The development was a substantial addition to the town centre (overall 12 090 m^2 gross); it is closely integrated with the existing stores and is linked with a new bus terminus and 150 improved car-parking spaces (Fig. 2). More particularly, however, the scheme was anchored on the southern edge by a 6325-m^2 Asda superstore, including 450 integral car-parking spaces; hence, the in-town/edge-of-centre notation. This more than compensated for the earlier loss of a major food retailer, while providing a counterbalancing attraction at the opposite end of the centre from the existing principal anchor stores located along Vaughan Street (Fig. 2).

This development transformed the food shopping opportunities, as well as substantially adding to the accessibility and environment of the centre and helping to reverse the decline of the grocery-shopping dimension of the town centre (Thomas & Bromley, 2002). The significant minority (31%) of those using Llanelli as their principal grocery-shopping venue in 1997 had increased to a small majority (54%) by 1999, largely at the expense of the nearby out-of-centre facilities. This was also reflected in a decline in the level of dissatisfaction with the grocery-shopping opportunities in the town centre from a substantial 54% to a residual 18%. The influence of the Asda store was fundamental to this change.

However, the redevelopment did not substantially increase the competitive position of the centre for non-food products, although it was argued that a firm base for further improvement had been established. The strength of clothing shopping in the town centre, for example, had been retained for the majority of shoppers (56%), and there was no evidence to suggest that this position was likely to be eroded in the immediate future. For DIY and furniture shopping, however, a slight decline towards

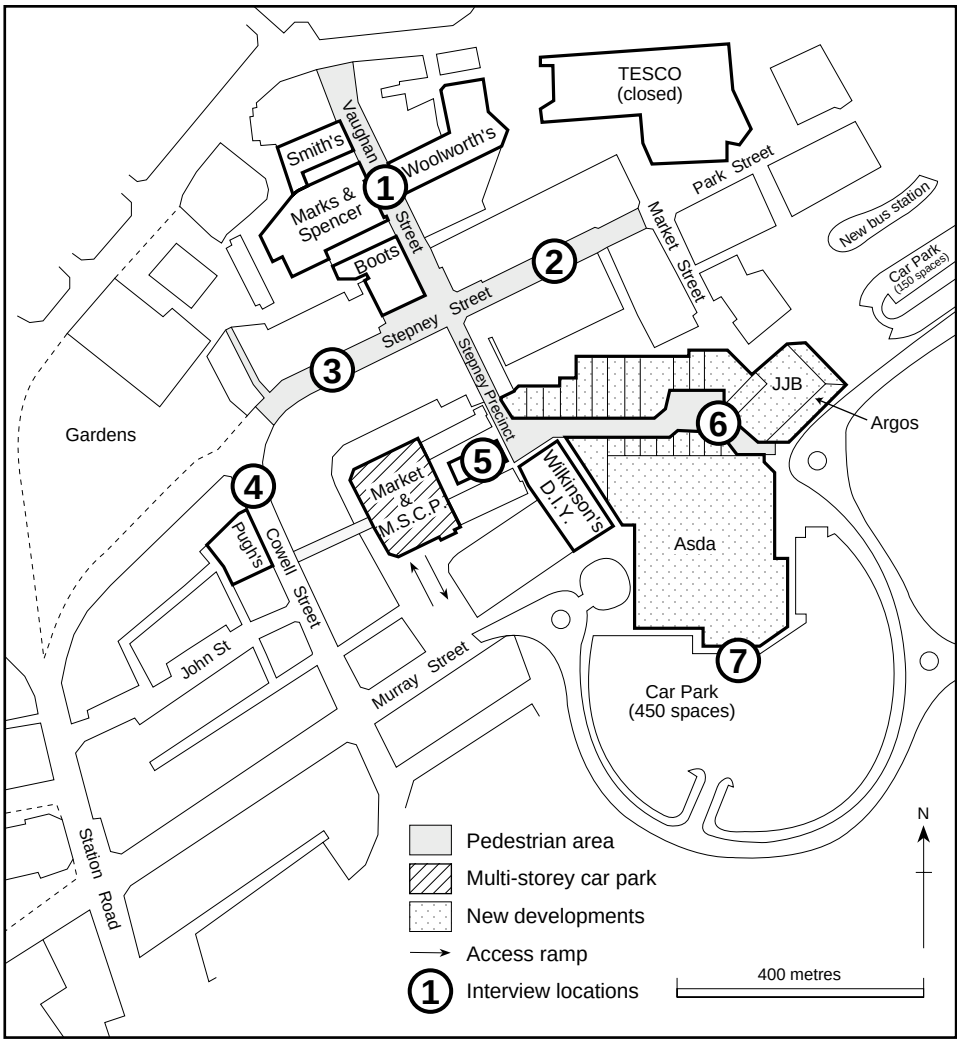


Fig. 2. Redevelopment in Llanelli town centre.

a ‘residual’ situation (19%) was demonstrated. This suggested the need to retain this dimension of shopping if the centre was to continue to offer a wide enough spectrum of functions to retain its attraction. Thus, it was apparent that there was no room for complacency, and further action to enhance a wider range of retail functions was necessary if the centre was to hold its own against future competition in the sub-region.

However, the redevelopment also created significantly more positive attitudes to many other aspects of the shopping environment of the town centre. Increases in satisfaction were expressed in relation to both the increased attractions of the shop-

ping environment (55–83%) and of the range of goods on offer (51–82%). Stronger positive responses were also recorded for an array of additional features such as price competitiveness, the indoor market, car parking and ease of access by car.

Thus, the experience of Llanelli suggests that a reinvestment programme large enough to significantly improve the shopping attractions of a small town centre is sufficient to at least initiate a reversal of its commercial fortunes. It was also evident that the new superstore was a key component in improving the food-shopping dimension of the town centre and in the wider revitalization process. Thus, an investigation of the shopping linkages between the superstore and the other component parts of the town centre was considered capable of providing important insights into the functional relationship between an in-town/edge-of-centre superstore and a traditional centre.

The Asda store occupies an edge-of-centre location, albeit closely integrated physically with the other parts of the town centre (see Fig. 2). Nevertheless, its nearest entrance is 280 m distant from the prime retail core of Llanelli at Marks and Spencer on Vaughan Street, while the main entrance at the Asda car park is 370 m away. However, the traditional covered market is closer to the Asda store, 130 m from the nearest and 220 m from the furthest entrances, respectively. Clearly, the Asda store is located in a position consistent with the edge-of-centre guideline noted in *TAN 4* (Welsh Office, 1996; cf. Department of the Environment, 1996), albeit apparently much more strongly integrated physically with the existing centre than was the case in the existing studies of shopping linkages (Department of the Environment, Transport and the Regions, 1998).

The survey of shopping linkages

A questionnaire survey of shoppers was undertaken in Llanelli town centre during peak trading hours on a Friday and Saturday in February 2001. Information was obtained from 642 respondents relating to their social characteristics, the nature of their current shopping trip, and their principal patterns of shopping behaviour for an array of goods (groceries, DIY goods, clothing and furniture). Analysis of these data was consistent with the findings from earlier surveys in 1997 and 1999 reported elsewhere (Thomas & Bromley, 2002). The age structure and social class characteristics of the respondents were broadly distributed and reflected the characteristics of the population of the local trade area. A similar situation was recorded for the car ownership of respondents (87%). The patterns of shopping behaviour were also consistent with the earlier surveys. A substantial majority of respondents travelled by car (65%), with significant minorities arriving on foot (18%) or by bus (16%). Likewise, the great majority of shoppers (72%) visited at least at weekly intervals, with 75% travelling less than 7 miles. It was also evident that the strength of the centre demonstrated for a range of goods in 1999 had been maintained in 2001.

However, the 2001 survey focused more directly on the shopping linkages between the component parts of the centre. Thus, interviewers were deployed simultaneously at seven locations throughout the centre, although for purposes of analysis respon-

dents interviewed at Stepney Street east and west were combined, due to the relatively low numbers of completed schedules from each site (see Fig. 2). Location 1 is situated at the traditional retail core, adjacent to the principal anchor stores on Vaughan Street. Locations 6 and 7 are at the opposite end of the centre, respectively close to the nearest and furthest entrances to the Asda store from the core area. Location 5 is sited at the indoor market, mid-way between the previous focuses. The remaining three locations are slightly more peripheral to the main north–south axis of the centre.

At each location respondents were asked whether they *usually* shopped at any of the original seven locations, and these data were used as the basis of the linkage analysis. The emphasis on the *usual pattern* of behaviour was designed to explore the likely recurrent shopping linkages through the centre from a sample drawn from each of the principal component parts of the shopping centre. This focus was considered preferable to exploring the particular patterns of behaviour or purchasing undertaken on the day of the survey. While it is recognized that the latter approach is potentially capable of providing rather more precise linkage data, it is not without its problems; such methodology is likely to be imprecise unless respondents are interviewed after the completion of their shopping trip, since the data are likely to reflect an element of unfulfilled intentions along with actual shopping patterns. This is not likely to be achieved in circumstances where the intention was to interview respondents on-street at all the principal parts of the centre on their usual patterns of behaviour. Also, interviews undertaken after the completion of a shopping trip can yield imprecise information, reflecting a combination of impatience and poor recall. Equally, focusing on the specific pattern of behaviour or purchasing on a particular day can result in idiosyncratic data, reflecting the particularities of the weather or other extraneous local or national events on the day of the survey. Clearly, each method has its particular strengths and weaknesses, and ideally both methods used in a complementary fashion are capable of providing more precise information than a single method. However, available resources were insufficient to develop this approach. Therefore, as the intention was to initiate an exploration of general patterns of shopping linkages, past experience suggested that with the available resources a focus on the usual patterns of shopping behaviour of on-street respondents would provide the most useful results.

In the event, a relatively large number of respondents completed interviews at each of the sites, ranging from 161 at the retail core on Vaughan Street to 78 at the Asda car park entrance (Table 1). This was considered a large enough sample to indicate typical patterns of behaviour of Llanelli shoppers and to provide a firm indication of the nature of shopping linkages in the centre.

Shopping nodes

Initially it was interesting to note the relative importance of the principal shopping nodes in the centre. This is indicated by the overall percentage of respondents who claimed that they usually shopped at each of the locations during a visit to Llanelli

Table 1
Interview locations and shopping nodes: Llanelli 2001

Interview location	Respondents[a]	Shopping venue	Percentage of all respondents shopping here	Percentage of respondents shopping here (excluding interviewees at site)
1. Vaughan St.	161 (25.1)	1. Vaughan St.	80.2	73.3
2. Stepney St. E.	50 (7.8)	2. Stepney St. E.	42.6	37.7
3. Stepney St. W.	50 (7.8)	3. Stepney St. W.	42.9	38.8
4. Cowell St.	82 (12.8)	4. Cowell St.	31.6	21.3
5. Indoor Market	105 (16.4)	5. Indoor Market	64.0	56.8
6. St Elli Centre (Asda entrance)	116 (18.1)	6. St Elli Centre	76.4	71.1
7. Asda Car Park	78 (12.1)	7. Asda store	61.0	55.5
Total	642 (100)			Variable

[a] Percentages are given in parentheses.

(Table 1). However, due to the varying number of respondents interviewed at each site, a second figure was calculated, which indicated the percentage of respondents who usually shopped at each site, excluding those interviewed at that site. Both display similar patterns (Table 1). A clear bi-nodal pattern of shopping trips is displayed, focusing on the northern and southern margins of the centre, respectively. Of these, the stronger node is that around the traditional core area near the Marks and Spencer store at Vaughan Street (80% and 73%), while the other focuses are on the southern margin at the St Elli Centre (76% and 71%). Little can be read into the minor difference in popularity between these two locations due to an inbuilt bias in the numbers interviewed in the vicinity of the respective sites. Due to the spatial form of the centre, 70% of the interviews were conducted at sites to the north and centre of the shopping concentration, so it may well be that the significance of the northern node is somewhat inflated. Nevertheless, the basic bi-nodal structure remains, focusing on the opposite northern and southern margins of the centre. The somewhat lower figures noted for those usually shopping at the Asda store (61% and 56%), suggests that the town centre itself remains the fundamental attraction as a shopping venue, irrespective of the opportunity for superstore shopping. Nevertheless, it is evident that the Asda store is a major, albeit secondary, shopping focus in the town centre, although it seems likely from the figures that a significant element of its trade is one-stop grocery shopping. This contention is examined in greater detail later.

The indoor market is also an important secondary node of shopping activity (64% and 57%); due to its intermediate position between the north and south nodes, it probably serves to strengthen any potential shopping linkages along the principal north–south axis. This issue is also examined more closely in the ensuing analysis.

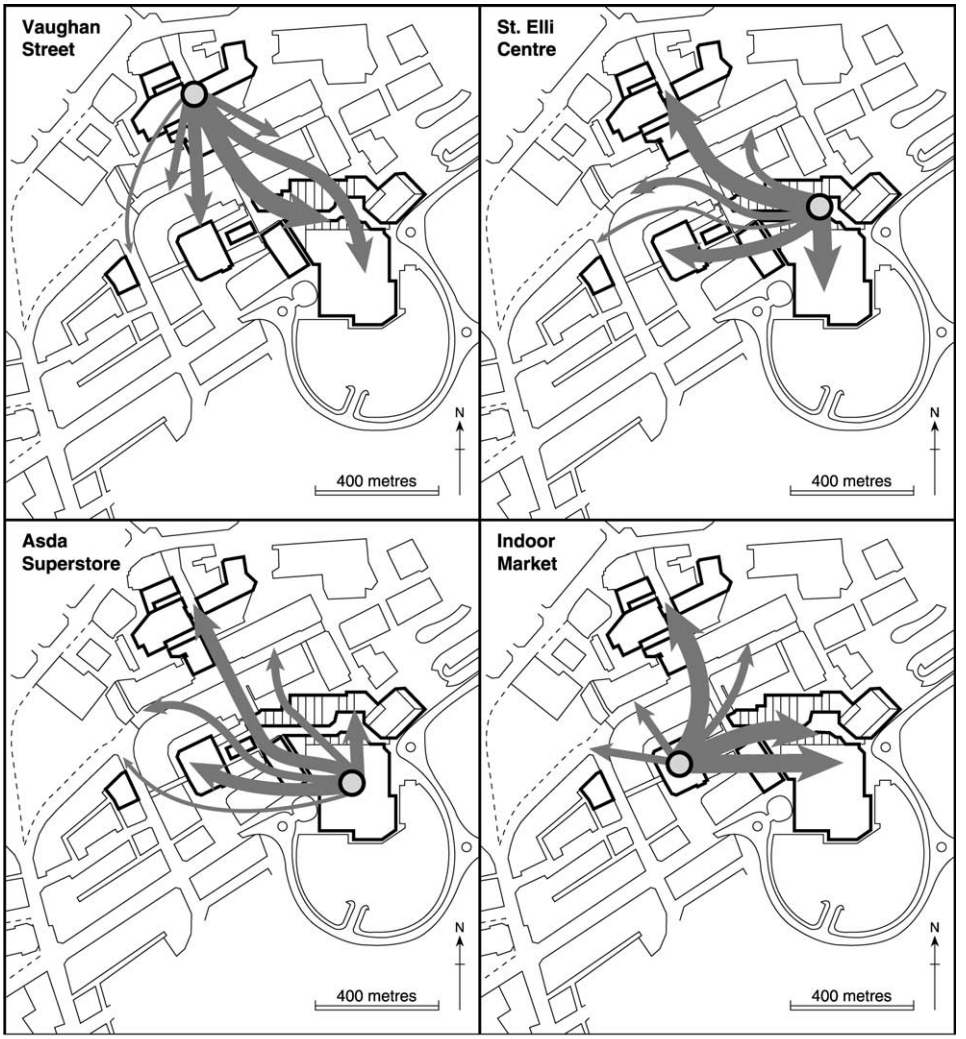
It is notable, however, that even in a relatively small and compact centre such as Llanelli, locations off the principal axes of pedestrian flows attract substantially fewer shoppers. Stepney Street east and west, for example, display much lower levels of attraction (43% and 38%, respectively), despite the fact that the principal shops in these locations are less than 50 m from the main axis. This highlights the importance of the relationship between the strength of anchor shopping attractions and the micro-spatiality of store location. Evidently, the smaller shops in these locations are not strong enough attractions to generate the high levels of shopping activity noted elsewhere. Similarly, the even more peripheral site of Cowell Street displays significantly lower levels of attraction (32% and 21%), despite being the location of one of the most prestigious furniture stores in the sub-region (Pugh's). Apparently, even a large store, if orientated towards a particular market segment (high status), is not in itself solely capable of generating high levels of shopping activity if it is located off the principal shopping axis.

Shopping linkages in Llanelli

Clearly, the Asda store was not the principal focus of shopping activity amongst the visitors to Llanelli, despite its central role in the improvement of the food-shopping element of the town centre revitalization process. The primary nodal position continued to be occupied by the major anchor stores on Vaughan Street and the newly developed St Elli Centre. Nevertheless, along with the indoor market, the Asda superstore constituted a major secondary shopping attraction for a majority of shoppers. Thus, in terms of shopping linkages within the town centre, the superstore has to be viewed in the context of the contribution of the wider redevelopment of which it is part, rather than as a separate entity.

To investigate the pattern of shopping linkages in the centre, data were extracted for each of the six main interview sites. For each site, the percentage of respondents claiming that they usually shopped in the other six potential shopping locations identified in the questionnaire was extracted. Fig. 3 and Table 2 illustrate the resulting shopping linkages, from which it is possible to identify the patterns of activity relevant to the current analysis.

It is immediately apparent that the two principal shopping nodes are also those most strongly integrated into the overall pattern of shopping linkages (Fig. 3(a)). Of those interviewed at the northern extremity in the vicinity of Vaughan Street, as many as 74% claim to shop in the St Elli Centre in the south. Strong linkages of a lower order also occur with the market (63%) and the Asda superstore (53%). This indicates a strong degree of functional integration within the centre generally, of which the Asda superstore is a significant component. This situation is closely replicated for those interviewed in the St Elli Centre. As many as 78% also shop at Vaughan Street, with strong secondary linkages to the market (66%) and the nearby Asda superstore (71%). By contrast, for those interviewed at both Vaughan Street and the St Elli Centre, significantly fewer claim to shop in the more peripheral locations. In each case, between 34% and 41% visit the Stepney Street sites, while

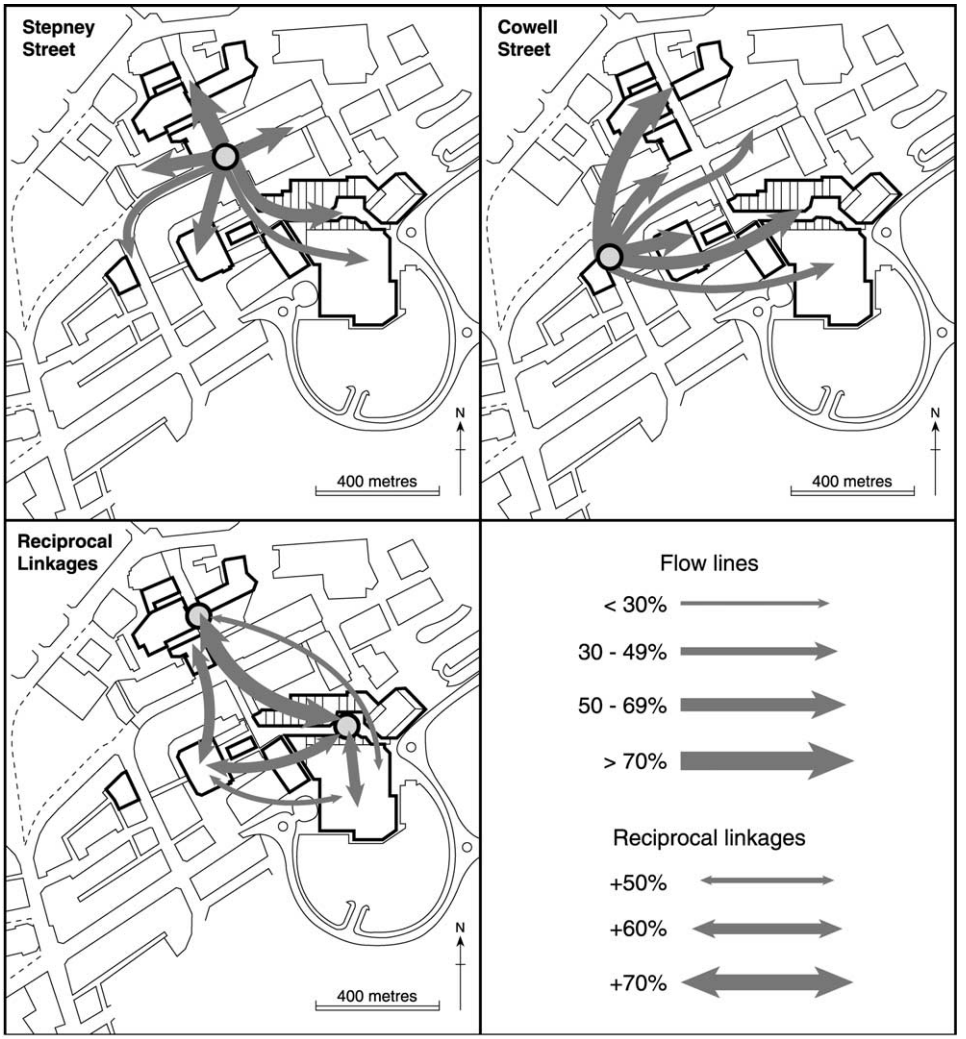


(a)

Fig. 3. (a,b) Shopping linkages in Llanelli town centre, 2001.

this declines to 20% and 24% for Cowell Street. Clearly, the peripheral locations are far more weakly integrated into the general pattern of shopping interaction in the centre, despite the relatively short distances involved.

Strongly consistent findings emerge from those interviewed at the secondary shopping nodes of the Asda superstore and the market (Fig. 3(a)). A substantial majority of regular Asda shoppers also usually shop at the St Elli Centre (63%) and at Vaughan Street (60%), while 50% also visit the market. This pattern is closely replicated, but at a distinctly higher level, for those interviewed at the market. In excess



(b)

Fig. 3. (a,b) *Continued*

of 83% also visit Vaughan Street and the adjacent St Elli Centre (91%), while 70% also use the Asda superstore.

Evidently, the primary and secondary shopping nodes in the town centre demonstrate high levels of shopping linkages, indicative of a strongly spatially integrated centre. However, while it is apparent that the Asda superstore is an important component part of the shopping interaction pattern, its generally lower levels of linkage with the other nodes suggests that the superstore operates as a one-stop shopping venue to a significant degree. This should not be too surprising, considering the nationwide functional characteristics of stores of this type. Nevertheless, the level

Table 2
Shopping linkages: Llanelli 2001

Interview site	Percentage also shopping at:					
	1. Vaughan St. (*n*=161)	2. Stepney St. (*n*=100)	4. Cowell St. (*n*=82)	5. Indoor market (*n*=105)	6. St Elli Centre (*n*=116)	7. Asda store (*n*=78)
1. Vaughan St.	**95.6**	71.8	81.7	82.9	77.6	60.3
2. Stepney St. E.	34.4	**60.8**	45.1	38.1	41.4	42.3
3. Stepney St. W.	34.4	**62.9**	57.3	45.7	33.6	30.8
4. Cowell St.	23.8	39.8	**65.9**	31.4	19.8	20.5
5. Indoor Market	63.1	50.6	56.1	**90.5**	66.4	50.0
6. St Elli Centre	73.8	69.0	67.1	90.5	**88.8**	62.8
7. Asda car park	53.1	44.8	40.2	69.3	70.7	**91.0**

Note: Figures in **bold** indicate % of respondents interviewed at a location who also usually shop at that location.

of linkage with the other shopping nodes indicates that the superstore generates a valuable element of 'spin-off' shopping activity, while enhancing the shopping opportunities for those visiting the other sites. In effect, a significant degree of *functional complementarity* is suggested between the traditional centre and the superstore.

Again, however, the secondary nodes are far more weakly integrated with the peripheral locations. Both the Asda superstore and the market display linkages of the order of 31–46% with the Stepney Street sites, while the linkages for Cowell Street are even lower (respectively 21% and 31%; see Fig. 3(a)). This finding is confirmed by the shopping-linkage pattern of those interviewed at the two peripheral sites. For those at Stepney Street east and west, for example, there are extremely strong linkages of around 70% *inward* towards the principal shopping nodes, and moderate linkages of 45–51% to the secondary nodes of the Asda superstore and the market (Fig. 3(b)). This pattern is similar, but even stronger, for those interviewed at Cowell Street. As many as 82% claim to shop at the Vaughan Street stores, and 67% at the St Elli Centre, while moderately high linkages also occur to all the other locations. It is also noteworthy that relatively low percentages of those interviewed at the peripheral locations actually claim to shop in these locations (61% for Stepney Street and 66% for Cowell Street). Evidently significant percentages of shoppers interviewed at these sites are in transit to the stronger shopping nodes rather than actually shopping there. This is added confirmation of their peripheral functional status within the centre.

At the same time, the shopping linkages between the peripheral locations are of a relatively lower order, although, due to the relative proximity of the peripheral locations to each other, even these linkages are of a moderate order. Over 60% of those shopping at one of the Stepney Street sites regularly visit the other, while 40% of those interviewed at Stepney Street also visit Cowell Street. Similarly, Cowell Street displays moderate linkages with both Stepney Street sites (57% and 45%).

Evidently, while the three peripheral shopping locations display lower levels of shopping linkage, the data suggest that they are nevertheless integrated into the pattern of shopping activities to a moderate degree.

A further examination of the *reciprocal* shopping linkages between the interview sites also proved instructive (Fig. 3(b)). For the purposes of this study a reciprocal linkage is defined as a linkage of respondents interviewed at location A who also usually visit location B, which is replicated by a linkage at a similar level by those interviewed at location B who also usually shop at location A. There is only one such linkage of greater than 70%: that between Vaughan Street and the St Elli Centre, located at the opposite extremities of the town centre. This highlights the strength of the functional integration of the centre between the two principal shopping nodes along the prime north–south shopping axis. This is complemented by strong reciprocal linkages (over 60%) between Vaughan Street and the market, the market and the St Elli Centre, and between the St Elli Centre and the Asda superstore. Clearly, both the market and the Asda superstore are strong integral elements of the overall pattern of shopping activity in the centre. At a slightly lower level, reciprocal shopping linkages of greater than 50% are recorded between the northern extremity of Vaughan Street and the Asda superstore, and between the market and Asda. This confirms the significance of Asda to the functional integration of the centre, albeit of a secondary order.

Conclusions

The paper has demonstrated the value of an approach that explores shopping linkages, and the manner in which they reveal the functioning of a town centre at a micro-spatial scale. It is evident that the principal shopping attractions ‘anchor’ the nodes of shopping activity and largely determine the major patterns of pedestrian flows throughout a centre. Maximum pedestrian activity occurs along the axes between the principal nodes. In addition, the development of secondary nodes, located in close proximity to the principal axes, are evidently capable of strongly supplementing the overall functional integration of the component parts of a centre. By contrast, locations that are no more than 50 m from the principal pedestrian axes, if they lack an ‘anchor’ shopping attraction with broad customer appeal, draw far fewer shoppers. Even the presence of a large specialist store in such locations, if orientated towards an exclusive/high-status market, appears to be able to do little to redress the deficiency. Premises in such locations tend to be more difficult to let, and the associated areas often display signs of commercial blight (Thomas & Bromley, 2002).

This paper has also illustrated how the analysis of shopping linkages can elucidate the disputed competitive relationship between a new superstore and an existing town centre. Previous work has been ambiguous about the advantages and disadvantages of in-town, edge-of-centre and out-of-town new superstores for the continuing economic health of traditional town centres, without presenting any clear distinctions between the three situations. Shopping linkage analysis is capable of revealing the extent to

which, and the circumstances in which, a superstore in these types of situation can function as a component part of a town centre. This study focused on an edge-of-town site that is sufficiently closely integrated with the town centre for the in-town/edge-of-centre notation to be an appropriate description of the situation.

This analysis revealed that the superstore was strongly *functionally integrated* with the other parts of the centre. This reflects the close *spatial integration* of the store and its associated precinct with both the other parts of the centre and with the principal car parks and the public transport facilities. In fact, the levels of shopping linkages between the Asda superstore and the other primary shopping nodes were of the order of 60–70%. This appeared to be far more consistent with the levels of linked trips displayed between in-town food stores in market towns and district centres (64–79%) than with even marginally more peripheral edge-of-centre or out-of-centre stores (Department of the Environment, Transport and the Regions, 1998; Hass-Klau et al., 1998). Thus, the superstore did not function solely as a 'one-stop' food-shopping opportunity, uneasily welded onto an existing centre, and having little functional relationship with the other facilities offered in the centre. However, even in the context of close spatial proximity and associated functional integration noted in this case, a significant element of 'one-stop' shopping at the superstore was apparent. Given the nature of superstore trading, this can be anticipated in virtually any location. However, the positive revitalization potential of the development of an in-town/edge-of-centre superstore in a middle-order shopping centre is suggested by the evidence presented here.

This case study suggests that the edge-of-centre sites that are most likely to maintain or help to revitalize the commercial status of traditional medium-sized shopping centres require a high degree of physical integration with the existing shopping opportunities and associated infrastructure, if they are to be effective. In practice, they should operate as in-town sites. This suggests that great care must be exercised in the micro-spatial choice of an edge-of-centre site if it is to serve the purpose of assisting the fortunes of a declining shopping centre. To confirm this contention, it would be of considerable value to compare the findings of this study with similar evidence from additional 'edge-of-centre' sites, which are progressively less well linked with existing town centre facilities. In the absence of such evidence, and in the light of the tentative findings of the DETR report (Department of the Environment, Transport and the Regions, 1998), it may well be that the edge-of-centre definition and the associated 200–300-m criterion recommended in the 'sequential test' is insufficiently precise to best serve the purposes of commercial revitalization in middle-order centres. Thus, this study strongly supports the caution expressed on this issue in both the DETR report (Department of the Environment, Transport and the Regions, 1998) and the National Retail Planning Forum report (2000).

Shopping linkage studies, if combined with the investigation of deficiencies in the shopping opportunities of a centre, can also assist in the identification of sites for potential new attractions. In the case of Llanelli, the linkage analysis suggested that sites in the east and west peripheries of the centre are already partially integrated into the pattern of shopping interaction in the centre. At the same time, the distances between them and the principal shopping nodes are small. Consequently, the siting

of a 'significant' additional shopping attraction in either location appears capable of attracting sufficient trade to be viable, while at the same time increasing the propensity for shopping interaction and the potential for linked 'spin-off' shopping trips in the centre. In effect, such a development could initiate an east-west commercial axis to complement the strength of the existing north-south component. Thus, such linkage studies are capable of providing additional insights for formulating commercial planning strategies designed to enhance the competitive status of medium-sized traditional shopping centres.

In summary, the investigation of Llanelli in South Wales reveals how shopping linkage analysis can contribute to town centre revitalization by clarifying the extent to which new superstores and other developments are functionally integrated with the existing town centre. Such studies provide evidence useful for the formulation of planning strategies for revitalizing other town centres. Effectively, the dominant axis approach, anchored by key stores at either extremity, is as appropriate for the traditional town centre as it is for the planned mall. Usually, there is also scope for developing the attractions of the cross-axis to improve the overall functional integration of the centre. As a first stage, however, the micro-spatial location of edge-of-centre superstores is likely to be critical to the success of such schemes.

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