THE URBAN HOUSING MARKET:

an investigation of turnover rates in different types of dwelling with reference to a sample of towns in southern England

by

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ABSTRACT

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THE URBAN HOUSING MARKET: AN INVESTIGATION OF TURNOVER RATES IN DIFFERENT TYPES OF DWELLING WITH REFERENCE TO A SAMPLE OF TOWNS IN SOUTHERN ENGLAND

Every year, between seven and eight per cent of households in England and Wales change their address. Many reasons account for this movement but the most important relate to a household's desire to adjust their housing to changing family circumstances. The majority of these moves are highly localised and thus the operations of the local housing market are critical in conditioning both the volume and pattern of movement in an area. Previous geographical studies of intra-urban mobility have adopted a case-study approach and examined the pattern of movement within large cities experiencing rapid in-migration. In most of these studies, little attempt has been made to relate the patterns to the housing markets of those cities.

The present investigation aims to extend the current interest in population mobility by examining the pattern of movement in a sample of seven small, slow-growing towns in southern England. The private housing stock of these towns and the turnover in private housing during a single year are analysed in terms of the type, age, rateable value and location of dwellings.

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CHAPTER 1 Population mobility - a review

The present concern within the social sciences regarding the impact of planning on communities has stimulated research into the problems of accurately predicting the future behaviour of populations. With the necessity of including dynamic processes into these predictions, patterns of change and the mechanisms by which these changes take place are being investigated. Central to an understanding of population change in an area is the analysis of fluctuations not only in the birth rate but also in the volume of population migration. Literature dealing with migration is mushrooming and scattered throughout the many academic disciplines. Difficulties arise in dovetailing all the published information into a coherent picture, for not only is the emphasis of individual studies related to the particular discipline of the researcher - economics, geography, psychology, sociology - but the scale at which movements are analysed and the degree of population aggregation vary considerably. For instance, within the overall field of migration are encompassed analyses of international migration, regional shifts in manpower, and the relocation of the inhabitants of slum clearance schemes. Furthermore, many investigations are individual descriptive studies of particular situations, providing neither a methodology that is easily transferable to another context nor hypotheses that may be usefully tested.

Anyone attempting a comprehensive review of the literature on population movement is, therefore, presented with a mammoth task. In the hope of providing a background to a programme of research in the field, only the most important themes emerging from the published material are emphasised in the ensuing review. To simplify the discussion, the literature is divided into two major sections. The first examines

those studies concentrating on the people involved in movement, including their household characteristics, attitudes, reasons for moving, and experiences of moving; they can, for convenience, be labelled 'behavioural' studies. The second section embraces studies concerned with the results of the many decisions to move, that is the spatial pattern of population movement.

1.1 'Behavioural' studies of population movement

The classical explanations of population movement regard migration as the mechanism by which readjustments occur in the short-run supply of labour in a particular area[1]. Population may be seen as moving in response to spatial differentials in terms of unemployment, wages and job opportunities, such a view being based on the assumption that the population desires to maximise its economic satisfaction. Although it has been recognised that only a proportion of the population responds to these stimuli, until recently little attempt was made either to analyse this proportion in terms of their occupation or income or to discover how far the movements are in fact related to stimuli external to a family's individual situation. With the recognition that migration is the result of different people's different reaction to a variety of circumstances, greater emphasis is being placed on the need to examine the migration process in more detail. Thus Simmons is able to suggest that "economic opportunity, the mainstay of migration theory at the inter-state and international level, is largely irrelevant to movement within a commuting area, or to gross flows"[2].

The distinction between short-and long-distance moves is well documented in the literature. The various studies commissioned by the Rowntree Trust indicate the importance of short distance movement, with 72% of all moves taking place within the same administrative boundaries[3].

The Government Social Survey of labour mobility found that of all movers in Great Britain, 64% remained with the same town, and a further 15% moved less than 10 miles[4]. In a study of the United States, Rossi found that inter-city migration accounted for only 8% of all moves, and Simmons, also studying American data, revealed that two-thirds of all moves within a year were within the same county[5]. Although there is some slight variation in the exact figures quoted by these studies, the trend suggests that the majority of moves occur within the local area.

This contrast in volume between long-distance migration and intra-regional mobility is closely related to the groups of people who move and their reasons for doing so. The distance of move is associated with the socio-economic characteristics of the mover, with long-distance moves being particularly significant for professional and managerial households. Friedlander and Roshier found that of those people in England and Wales moving over 50 miles, 30% were managerial workers[6]. Confirming this pattern, House and Willis found a higher than expected level of movement amongst professional and managerial grades living in Northeast England, and lower than expected rates of mobility in manual and lower clerical grades[7]. Movement over long distances is strongly associated with employment, and about 50% of professional and managerial households move for 'job reasons', as opposed to about 10% of all other types of households. Watson suggests that migration is part of the social norm for high socio-economic groups, dictated specifically by the requirements of their employment[8]. For other groups, long-distance migration is perhaps atypical behaviour. Some evidence of this is supplied by Taylor in a study of miners in a West Durham village[9]. Those households with close family ties to the area and who conformed to the traditional working class way of life were reluctant to move elsewhere in the country for work, despite the risk of remaining unemployed.

A far more important reason than employment for the average household to move is the desire to change their accommodation. Rossi, in his pioneer study of the United States, indicates that "mobility is the mechanism by which a family's housing is brought into adjustment with its housing needs"[10]. Sixty per cent of moves are attributable to such re-adjustments including, for example, the desire for a better and bigger home, forced relocation from slum clearance and the desire to change tenure arrangements. Much of this movement is associated with changes in the life cycle, through marriage and the birth of children.

The most documented aspect of housing and mobility in Great Britain concerns the tenure arrangements of moving households[11]. Greatest movement occurs within the private rented furnished sector of the housing market, with council tenants, owner-occupiers, and tenants in private unfurnished accommodation moving to an equal degree. Some of the movement is connected with changes in tenure, the most important flow being from the private rented sector to either owner-occupation or council tenancy. The ability of any household to carry out these changes in accommodation depends, however, on both the supply constraints on, and the demand conditions for, housing. Thus the volume of movement in an area and the directions in which it is channelled are strongly influenced by conditions operating in the local housing market.

The operation of the housing market differs from the market in other commodities in that the supply of dwellings remains inflexible to immediate changes in demand conditions. New additions to the housing stock account for only about 3% of total stock in any year, and short-term demand must be met from existing dwellings. At any given moment, only a small proportion of this stock is available on the market and, as Donnison indicates, "people's opportunities of getting ... (a secondhand dwelling) ... depend on the supply of alternative accommodation available

to other people now occupying the accommodation they want, and partly on the demand for their own homes"[12]. The extent to which demand for their current accommodation will affect the mobility of a household depends upon which sector of the market is involved. Under normal circumstances, an owner-occupier must sell his present home when buying another. On the other hand, a tenant in private rented accommodation with no lease obligations is free to leave without searching for anyone to take his place. All households may, however, find difficulties in attaining another dwelling, for barriers exist, both formal and informal, which affect the ability of any household to achieve its housing aspirations.

The complexity of constraints affecting the competitive powers of households to secure housing considered suitable has been formulated into a system of 'housing classes'. The choice of accommodation may be limited by the type of tenure arrangement, by the method of payment, by the physical characteristics of the dwelling and by its location. Rex and Moore distinguish a series of classes existing within the zone of transition in Birmingham, and Pahl reveals a similar division of classes in the commuter village[13]. The number and type of classes vary from area to area. For example, in Birmingham, two of the classes were 'council tenants in council-built houses', and 'owners of houses bought with short-term loans, compelled to let rooms to repay'.

Certain groups of households, distinguished by income or job status, family characteristics, etc., may be found in a variety of housing classes depending on the local housing market conditions. Entry into owner-occupation is restricted by the policies of building societies. For example, in one study of households moving out of London to new housing estates in Kent, job status rather than actual income was used to select mortgagees from within socio-economic group III[14]. Where housing pressures are not so great, manual groups may find mortgages more easily attainable. Personal evidence, also gathered in Kent,

suggests that different building societies have differing attitudes towards manual groups, and some may make a particular effort to accommodate them[15]. In the public housing sector, the variety of qualifications introduced by individual local authorities for determining access to council housing results in many types of households becoming council tenants. The private rented sector also includes instances of arbitrary discrimination affecting the composition of households in that sector. For example, the need to provide a deposit together with one month's rent in advance means that private rented accommodation is no longer exclusively occupied by lower income groups.

The conditions operating within a local housing market can force households into housing classes which do not equate with their housing aspirations. There are a few studies examining the degree to which aspirations towards housing have been satisfied by moving. Woolf found in 1964 that of those households trying to move in 1960, between 60% and 70% had managed to do so; whether or not all these households obtained the type of housing they wanted is not revealed[16]. Cullingworth discovered that 80% of movers in his sample acquired the tenure arrangements they preferred[17]. It can be suggested, however, that aspirations towards housing are strongly influenced by a household's knowledge of constraints operating in the market, and that potential movers will not aspire to housing they feel unable to attain. Thus it is difficult to ascertain how far those institutions controlling the supply of housing influence the amount and type of housing demand.

An examination of the behaviour of households searching for new accommodation that equates with their aspirations may provide some insight into the modifications of these aspirations over the search period due to external constraints in the market. Researchers are

beginning to investigate these problems. Michelson suggests that the areas in which people look for new accommodation is chosen by them in accordance with their preconceptions of their own social class and life style rather than simply to remedy weaknesses in their old housing[18]. In searching for their 'ideal' dwelling, however, the relationship between the area of search and the speed of search is critical in assessing the probability of their detecting such a dwelling. Having specified their limits to housing costs, the longer the time available to cover as wide an area as possible, the more likely it is that a household will achieve its housing aspirations[19]. In conditions of short supply and high demand for housing, the first available dwelling is usually chosen; a household's action under these circumstances is seen as 'satisficing behaviour'. Adams indicates that 33% of owner-occupiers in the United States buy the first house they look at, and that 45% of renters only view one dwelling[20]. If a household has more time for searching, it may select one of a number of suitable dwellings. Since there is always the possibility that a better one could be found, the household has only chosen under 'sub-optimal' conditions. In the rare cases where time and effort are almost limitless, housing choice may approach 'optimal behaviour'. It is, however, questionable that the searching behaviour of households is influenced most strongly by circumstances within the households, for example, the time they have available and their knowledge of the search area. The eventual choice of housing may, for some households at least, be conditioned solely by exogenous factors in the housing market. Thus, households only 'satisficing' their housing needs may perhaps have been forced into a particular housing class by constraints operating in the market, whereas those households in 'sub-optimal' or 'optimal' accommodation may have attained the class of their choice.

From this brief discussion of the literature, population movement is seen as the result of complex behaviour patterns, conditioned both by the internal characteristics of households and by the external 'milieu' in which they are placed. In summary, the following points emerge:

(i) The movement of population takes place for a variety of reasons, with the largest volume of migration occurring over short distances and connected either with the housing need or housing aspirations of households. The operation of the housing market is crucial in determining the degree and pattern of mobility in an area.

(ii) The operation of the housing market produces barriers to housing access for particular households, due to competition for scarce housing resources. A system of housing classes can be recognised, related to the specific conditions in a local area. There may be little similarity in the housing classes of different areas, and between areas there may be little similarity in the housing class position of particular types of household.

(iii) Within each housing class, certain households consider their housing position as optimal or near optimal in relation to their aspirations, whereas others view their accommodation as sub-optimal or merely satisficing. Such attitudes occur both at the time of their entry into a particular housing class, and at any period after entry as the characteristics and aspirations of households change.

1.2 Spatial patterns of population movement

An important element in population projections is the forecasting of future migration. To provide data for these forecasts, research is being undertaken into the present volume and direction of population movement. The analysis of flow patterns has been concerned less with the individual household than with the aggregative pattern of movements.

As Moore indicates, "in so far as emphasis is placed on the systematic nature of area specific phenomena, one is not concerned directly with the individual"[21]. This aggregative approach has been undertaken at scales ranging from the international to the intra-urban. The examination of flow patterns has attempted to reveal not only the non-random nature of movement, but also to explain these flows in terms of aggregate measures of the characteristics of both movers and areas. Some guide to the most appropriate variables to include in these explanations has, however, been gleaned from "consideration of the dominant features of individual behaviour"[22].

The obvious relationship between individual behaviour and patterns of aggregative movement results in a distinction being made between studies of long-distance inter-regional flow patterns and those of short-distance intra-urban flow patterns. The analysis of inter-regional flows has been concerned particularly with the application of descriptive mathematical models. Ravenstein was the first to use the gravity model, by assuming that the probability of movement between areas decreases with distance from the area of origin[23]. The basic distance-decay function has been modified to include the relative population sizes of origin and destination areas[24]. A further sophistication of the model attempts to include a measure of the opportunities available to migrants that intervene between origin and suggested destination[25]. Population size is used as a surrogate for economic opportunity. Despite the model's remarkable degree of fit to empirical data, it has added little to the understanding of inter-regional migration. There has, for example, been little attempt to relate patterns of long-distance movement to information flows or to family networks.

Arising from the classic view of migration, explanations of movement between regions concentrate on the importance of regional

differentials, particularly in the level of employment. Oliver considered that the unemployment rate influences out-migration from an area. Using doubtful empirical data, he found a 1.0% upward change in the unemployment rate was associated with an increase in emigration to another region of as little as 0.17%[26]. Pursuing the idea of regional differentials, Pickett correlated migration rates with the rate of unemployment, the rate of new building and the socio-economic structure of the population in several areas, and found the last two variables more significant than the first[27]. Unemployment, average earnings and the rate of industrial building were used by Hart to explain inter-regional flows, but he discovered that the largest movement occurred between similar regions, particularly between the most prosperous ones[28].

At the present time, much effort is being expended on improving the goodness of fit of both gravity models and push-pull regression models, but with little real progress being made in attaining the accuracy required for predictive purposes. Closer attention to the behavioural aspects of long-distance movement is, however, beginning to influence research in this field. One welcome step forward is the recognition that various socio-economic groups may act differently in response to differing sets of standards and motives. Patterns of movement within a group may be the response to rational decisions which do not apply to the total population, and the modelling of sub-systems of inter-regional movement within the total population may be feasible. One study attempting to follow this approach is Waugh's examination of the migration pattern of professional and executive groups, but further research awaits the availability of more accurate and detailed sources of data[29].

The earliest investigation of the spatial pattern of short-distance or intra-urban movement is found in studies adopting an ecological approach to city structure. Models of the spatial arrangement of urban phenomena

developed by Burgess and Park, and later by Hoyt, assume that population is distributed throughout the urban area as a result of the deterministic forces of competition[30]. Through this process, using an analogy from the natural sciences, the strongest groups (in this case, the richest and most powerful families) gain the most favoured location away from the industrial areas and towards the city periphery. Conversely, the weakest groups are forced to live in the less favourable central city areas. Both the zonal and sectoral models allow for the continuous change of this urban structure through the process of invasion and succession. The growth of new suburbs at the periphery creates a centrifugal force pulling the population from the centre. As the more powerful groups adjacent to these suburbs take over the new dwellings, those groups living nearer the city centre are able to shift their location by gradually moving into the vacated accommodation, eventually becoming the dominant group in that area. Over time, therefore, the location of various types of residential area - for example, high status, middle class, working class - move further and further from the city centre. Dwellings vacated in the central city by this movement are occupied by in-migrants from rural areas and abroad, and also by the growth of central business and other non-residential functions.

Many criticisms have been levelled at the underlying assumptions of both the zonal and sectoral models, particularly regarding the emphasis on the forces of competition as being the crucial determinant of urban spatial structure[31]. The most serious omission concerns the influence that culture and tradition, together with the psychological characteristics of households, may have on the attitudes and decisions affecting residential location. In dealing with the pattern of intra-urban movement, both models assume that groups move out from the city centre to the area adjacent to their origin. The character of the area to which they move is altered by their in-movement; the zonal model assumes a change from a middle-class status to a working-class status, and the

sectoral model envisages a change from high-status residences to rooming-houses. On the other hand, the social class position of those groups moving into an area is considered to be unaffected; thus movement to another area is not recognised as one method by which an aspiring working-class household gains access to the middle class. The amount of movement is conditioned by the availability of new dwellings on the urban fringe, and takes no account of redevelopment or the building of additional dwellings in established residential areas. Despite these and other limitations, the pattern of decentralisation suggested by the models is taken as the hypothesis against which to test observed patterns of intra-urban movement.

Empirical research into intra-urban movement patterns is almost exclusively confined to United States or Australasian situations. These particular locations provide a rigorous framework in which to examine the models, for the two aspects of urbanisation on which they depend - rapid suburban growth and a continuing influx of rural or international migrants - are experienced in these two continents to a far greater degree than in Western Europe. An early attempt to investigate the direction of residential mobility was undertaken by Caplow in Minneapolis for the period 1940 to 1948[32]. Although decentralisation was the major pattern identified, large counter-currents were detected; only one move in every sixteen contributed to outward displacement of the population. Of far greater significance to the overall mobility pattern was the small amount of population redistribution which took place between various segments of the city; only 18% of mobile families moved to a different area. These trends are confirmed by Johnston in a study of Melbourne[33]. Outward movement was stronger than the backflow, but 40% of moving families remained in the census division of origin. Movements originating in areas close to the city centre were more likely to cross sector boundaries, and suburban growth occurred by households hopping over the intermediate areas of the

city rather than moving in a simple stepwise outward progression. This pattern was encouraged by the location of government housing schemes on the outskirts of the city. Adams' investigation of the movement of student families indicated that 50% of moves were in an outward direction as against 25% who moved towards the centre of the city[34].

Further pointers to the limitations of the decentralisation hypothesis for describing patterns of intra-urban mobility is found in Boyce's analysis of Seattle[35]. Only 9% of residential moves were destined for the suburbs, and 40% of moves were within the same housing area. The suburbs were not the destination for the established residents of the city, but made a major contribution towards housing newcomers. The impact of arterial roads on the level of population turnover was also highlighted. Regardless of the type of housing area - Negro, White, low value, high value - dwelling turnover was between 4% and 10% higher in areas adjacent to important roads. In his study of Auckland, Whitelaw was concerned with the residential location of immigrants to the city[36]. Of those Maori and Islander children resident in the suburbs, only 35% had previously lived in the central city. A further 35% had come from non-metropolitan areas. The evidence indicates, therefore, that patterns of intra-urban movement are more complex than the decentralisation hypothesis suggests, and that the majority of moves in a city are over extremely small distances, such that the mover does not enter an unfamiliar environment.

In attempting to explain this concentration of short-distance movement within cities, attention is being increasingly focused on the 'information field' or 'mental map' of the urban area acquired by households during their period of residence in the city. Simmons suggests that a household's present address is the most significant factor in predicting the location of its future home, for based on this address each household has a 'migration field' in which it is most likely to operate[37]. This field results from three separate elements in the spatial

distribution of information concerning housing - the decline in knowledge with distance from the present address, the specific knowledge of the suitability or otherwise of various sectors of the city, and the information available concerning new building at the suburbs. The spatial co-ordination of this information by a household conditions the areas of the city in which new accommodation is sought. Clark, studying Christchurch, New Zealand, examined the 'neighbourhood effect', whereby the tendency for contacts over short distances to be repeated and reinforced resulted in only a small sector of the urban area being familiar to households[38]. Residents possessed an image of the city based on experiences gained from journey-to-work, commercial activities and personal contacts. Using a simulation model, he was able to predict the pattern of household movement by plotting the spatial distribution of commercial and banking activities used by these households. For those whose experience of the city is far-reaching and whose contacts are scattered, the potential area of search is far wider than for those households whose experience is essentially local.

These conclusions are reinforced in a recent study by Herbert into the search behaviour of moving households in Swansea[39]. He, however, discovered that journey-to-work was not a method whereby households gained knowledge of parts of the town. Formal channels for acquiring housing information were also little utilized, compared to the use of local newspapers and personal contacts. He concluded "that decision-making may be much less efficient than the models suppose. The apparent reliance on personal contacts and disregard of the formal agencies would suggest a very limited search and minimal information base".

Coupled with the examination and explanation of directional flows of intra-urban movement is the detailed analysis of population mobility within various areas of the city. The area-specific nature of turnover-

rates is suggested in Boyce's study by the patterns of mobility recorded along arterial roads. In a study of Brisbane based on 193 census tracts, Moore discovered a variation in turnover rates of between 3% and 33%[40]. In attempting to explain this variation, he considered that "movement characteristic of an area depended on the environmental conditions within the area, and on the social, economic and demographic attributes of the population which reacts to that environment"[41]. Taking the results of Rossi's survey in the U.S.A. as a guideline to possible attributes of population and environment associated with mobility, he undertook a series of regressions between turnover rates and the characteristics of the census tracts. Significant negative associations were found between turnover and three of the six variables - the proportion of single family units, the proportion of the population Australian or British-born and the distance from the C.B.D. Highest population turnover occurred in areas with a high proportion of flats, with large non-Australian or non-British born populations and with a location near the C.B.D.

The research by Cave represents an extension of this study into area-specific turnover rates[42]. In attempting to connect population mobility in Toronto with the functional change in residential areas, he plotted the duration of stay of a sample of households for every census tract of the city and computed the average mobility curve for each area. Certain tracts appeared to encourage a minimum period of residence, after which the longer a household remained, the more likely it was to move (it can be suggested that areas of owner-occupation are of this type, in that households need time to recoup the costs of moving before moving again). In contrast, other areas experienced a steady or declining turnover of population with increasing duration of stay. Cave considered that this behaviour might occur in areas where households went through an initial period of unhappiness, for example, in new suburbs, but that once having decided to stay, they were unlikely to consider moving again.

In linking these mobility curves with changes in the functional character of residential areas, Cave postulated that in areas typified by high mobility rates, for example, the zone in transition, the higher the turnover, the less likely was any change in function to occur. On the other hand, in very stable areas, the slighest increase in turnover rates could be indicative of the beginnings of a change in character. Furthermore, Cave hypothesised that in areas of the city in which dwelling turnover was clustered, some defects in the environment might be suggested, whereas in areas in which dwelling turnover was isolated and spasmodic, some problems associated with the particular accommodation were more likely.

It is perhaps unfortunate that these suggestions were not discussed in relation to the attitudes towards these areas and dwellings held by the inhabitants. Rather than assume that high turnover rates indicate some dissatisfaction concerning the housing, it is possible that the residents of the areas of high mobility represent the more mobile groups within the population. For example, single persons living in flats tend to cluster together and to move frequently as part of their life style, as well as in response to accommodation problems. This particular study highlights the dangers of divorcing the physical urban structures from the people who live in them, and of analysing aggregate patterns of population movement without sufficient consideration of the behavioural characteristics of the households involved.

The literature examining the spatial patterns of movement may, therefore, be summarised as follows:

(i) Descriptive models of the spatial pattern of movement concentrate on the relationship between movement and distance. The distance-decay function embraces both long-distance and intra-urban movement, with the majority of destinations being close to the area of origin. The model of intra-urban mobility is uni-directional, with movement resulting from a process of decentralisation towards the suburbs. Empirical evidence

suggests this view is too simplistic.

(ii) Research into long-distance movement has made little attempt to elucidate the reasons for movement to decrease with distance from origin. Intra-urban mobility patterns have been related to the perception of the environment which households hold at different locations. Patterns of movement are conditioned not only by the supply and demand for dwellings, but also by the amount and type of information about housing which each household acquires. Since the area with which people are most familiar is usually that with which they have the greatest contact, the part of the city closest to a household's present home is the area in which it is most likely to relocate.

(iii) Recent studies of mobility analyse the volume of flows in relation to the characteristics of the areas and people involved. Long-distance flows have been disaggregated according to the socio-economic composition of the movers. Intra-urban studies have concentrated on the rates of population turnover in different sectors of the city. Associations have been suggested between these rates and the distribution of different types of people and different types of dwellings. Defects in housing or environment are hypothesised as encouraging high rates of population turnover.

1.3 Some comments and proposals

Any literature review highlights not only the research which has been undertaken but also the deficiencies in existing knowledge which still await clarification. The inadequate material on some aspects of intra-urban movement is particularly to be regretted, since short-distance moves account for by far the largest proportion of moves in any one year. A number of these deficiencies are mentioned below.

Many surveys have been conducted into the 'behavioural' aspects of mobility in Great Britain, but there is almost no published material on

the spatial pattern of intra-urban mobility in this country. The process of urbanisation in the U.S.A. and Australasia during the 20th century is very different from that in Great Britain or Western Europe. Analyses have concentrated on movements in State or Provincial capitals undergoing rapid growth and in-migration. To assess how far patterns of movement recorded in these continents are 'universal', an examination of intra-urban mobility under a variety of cultural conditions is essential.

Although a number of hypotheses for predicting patterns of intra-urban mobility have been proposed, there has as yet been little attempt to test them systematically using a series of comparable studies. Moore suggests that ..." Together with experimental design, replication would constitute a major advance in inductive strategies in migration research"[43]. Even with the adoption of identical methodologies, difficulties remain in achieving replication. Data collected by questionnaire survey may lack comparability due to variations in response rate and the different ways in which the same question can be asked. Census data, the main source of information on aggregate patterns of movement, varies between countries in the comprehensiveness of its coverage. Statistics are published for individual census tracts which may differ in size, in terms of area, population, or both. Thus cross-boundary flows in one city can be equivalent or shorter than within-boundary flows in another. The analysis of any spatial pattern would be advanced by the standardisation of areal units both within and between countries.

Research into intra-urban mobility has concentrated on either the behavioural aspects or the spatial aspects of the problem, and there has been little attempt to link mobility patterns to the types of people who are moving or to the institutional framework controlling access to housing. Greater progress in this field should make it possible to assess how far variations in the level of movement in a city results from choices made

by households as opposed to constraints imposed on them by the housing environment. Only then can some conclusions be drawn concerning the impact of population mobility on the social structure of the city.

The research discussed in the following chapters was devised in response to the criticisms outlined above. In contrast to previous studies, patterns of movement were investigated in small towns characterised by slow rates of growth over the past hundred years. Such towns can perhaps be considered typical of the West European urban environment. In order to test the generality of the patterns identified, a case-study approach was rejected in favour of identical analyses in a number of towns using comparable sources of data. In the project patterns of turnover were related to the housing market by examining the characteristics and location of dwellings for which moves were recorded. In conclusion, appropriate methods were suggested for linking the results of the investigation to the households who were moving.

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CHAPTER 2 The selection of towns to be studied

The aim of the research programme was to focus on the possible relationships between patterns of population movement and the characteristics of dwellings in small, slow-growing towns in Great Britain. Since it was impractical to include in the analysis all urban communities of the desired size and rate of growth, the initial stage of the investigation was the selection of a manageable sample of suitable towns. Both 'small' and 'slow' are relative characteristics and some method was required whereby they could be quantified. A two-stage sampling procedure was adopted in which relative measures of size and growth rate were incorporated. The first stage of sampling eliminated all those towns which were unsuitable for a variety of practical reasons, including size. Having arrived at a sample of possible towns, a comparison of their growth rates identified those with similar growth patterns. The group with the slowest rate of growth was then selected.

2.1 The selection of the preliminary sample

A number of practical considerations affected the selection of the preliminary sample. They were the location of the towns within Great Britain; the type of data source available; and the maximum size of urban area that could be examined. Each is discussed in turn.

(i) The location of the sample

Since little research has been undertaken into patterns of intra-urban mobility for any part of Great Britain, all urban areas could have been included in the analysis. A sample giving national coverage could have provided comparisons of mobility patterns between towns in the different regions. However, since the research base was to be Southampton, the outlay in time and money for travelling around the country would have been prohibitive. The research had, therefore, to

be confined to towns within relatively easy reach of Southampton.

To minimise both the costs and distances involved, a sample of towns located in central southern England would have been preferable. The small number of towns in this area, however, which fulfilled the other sampling criteria seriously reduced the chances of the final sample including several towns with similar growth characteristics. It was decided, therefore, to select the preliminary sample from within a loose regional area encompassing the whole of southern England south of the Rivers Avon and Thames. The characteristic function of small towns within this area was as service centres, with a little light industry and an important residential sector[1]. Very few of the towns were engaged in specialist activities; only the seaside resorts could be so designated. Thus, although functional homogeneity was not a prerequisite of the sample selection procedure, by restricting the location of the sample to southern England, some control was provided over the numerous conditions influencing the volume and pattern of population movement.

(ii) The type of data source

The possible data sources which could be used in the investigation are more fully discussed in Chapter 3. The sampling procedure was, however, affected by the nature of these sources, and they must be mentioned briefly. The two major sources of data recording individual movement of households are the List 'B' of the Electoral Register and the Rating Records. Both are published for local government areas. As the research was particularly concerned with patterns of movement within an urban area, the location of the local authority boundary vis-a-vis the extent of the built-up area was critical. The data on population movement had to relate to the 'effective' urban area of any town, and achieving this was least complicated if the limit of the built-up area closely coincided with the local authority boundary. The large-scale 'under-bounding' of a town would have seriously distorted the pattern of intra-urban mobility

(unless data for a part of at least one neighbouring authority was also collected), since the newest housing estates are often on the periphery of the town. If the opposite situation occurred, with farms and villages separated from the town proper included within the same local authority, as for example in the case of most urban district councils, aspects of the housing market little connected with the urban scene would also have obscured the investigation.

To simplify the problems of data collection which could arise from these circumstances, it was decided to avoid those local authorities where the administrative boundary was not almost coincidental with the actual urban area. Furthermore, any towns forming parts of conurbations or ribbon development were also excluded, such towns being encountered particularly along the south coast. The sample was ultimately selected, therefore, from 'free-standing' municipal boroughs meeting the afore-mentioned boundary requirement.

(iii) The size of the urban area

The decision to select only municipal boroughs for the preliminary sample limited the size of the urban areas to approximately 100,000 persons or 44,000 dwellings[2]. A small-scale study undertaken in Horsham, Sussex, in 1967 had investigated turnover in 6,000 private dwellings and from this experience, an upper limit of approximately 20,000 dwellings per town was proposed[3]. Up to this figure, it was feasible for one individual to undertake any necessary street surveys within a reasonable period of time.

Using the criteria of location in southern England, municipal borough status, and a maximum size of 20,000 dwellings, seventeen towns were selected as the preliminary sample (Table 2.1). The definition of a 'small' town emerged from the imposed limit of 20,000 dwellings. Although this figure did not represent a decisive threshold between small

and medium or large towns, it was considered that a town with less than 20,000 dwellings (i.e. with a population of around 60,000), would have been found at the lower end of any size ranking of urban areas in Great Britain.

TABLE 2.1 The preliminary sample of municipal boroughs, indicating their total dwelling stock in 1966.

Municipal Borough.	Total Dwellings, 1966.
Abingdon	4,720
Aylesbury	10,220
Barnstaple	5,150
Bridgwater	8,200
Chichester	6,300
Chippenham	5,770
Falmouth	5,440
Gloucester	20,970
Godalming	5,600
Guilford	17,670
Newbury	7,040
Salisbury	11,160
Taunton	11,620
Tonbridge Wells	13,160
Weston-super-mare	15,150
Winchester	9,380
Yeovil	8,170

Source: Sample Census 1966. England and Wales. County Report. HMSO 1967. Table 5. Dwellings and Household Spaces by Type of Building.

2.2 The rates of dwelling-stock increase in the towns

The second stage of the sampling procedure involved a comparison of the growth rates of the seventeen towns. These growth rates could be measured by either the rate of population increase or the rate of additions to dwelling-stock. The latter was considered more useful, since a time-lag often occurs between population increase and the necessary increase in the number of available dwellings. Temporary accommodation must be sought in the interim, often in the form of a 'doubling up' of households. The variation in the size of households over time also affects the relationship between the size of the population and the number of dwellings needed to house them. At any given period, therefore, a perfect correlation between population growth and increase in dwelling stock cannot be achieved. Furthermore, slow-growing towns should contain a variety of dwelling types, since the different building technologies and styles adopted at various periods, and the gradual subdivision and adaptation of the standing stock, would create a highly individual as opposed to a homogeneous housing stock. To gain an index of the degree of variety resulting from this slow, steady growth, it seemed more appropriate to measure growth rate in terms of dwellings rather than population.

Growth rates could be measured using either a series of periods of equal duration (for example, 20 years), or those periods adopted by the local planning departments when compiling their 'Age of Building' maps. Although the first approach has the advantage of simplicity, the choice of time interval would be subjective and possibly disregard the dates of significant alterations in building technology. By adopting the time intervals of the age of building classification, an estimation of the amount of standing stock built in styles recognised as typical of these periods could be incorporated into the measurement of growth rate[4].

The most usual dates chosen to limit the various building age groups result in a four-fold classification of dwellings:

(i) dwellings built before 1875, that is prior to the passing of the Artisans and Labourers Dwellings Improvement Act,

(ii) dwellings built between 1875 and 1914,

(iii) dwellings built between 1914 and 1950, almost all of which were inter-war,

(iv) dwellings built after 1950.

These groups could not be exactly reproduced from census data, but the figures of dwelling stock recorded in the censuses of 1871, 1911 and 1951 provided an acceptable approximation. As the research into dwelling turnover was undertaken from 1968 onwards, it was decided to introduce one further time interval - dwellings built between 1961 and 1966. This indicated the rate of recent building, which was of importance to the investigation. If recent additions to stock were large in proportion to standing stock, the mobility patterns recorded in the analysis could have been strongly influenced by this phenomenon. A slow rate of growth over all four periods was required as a characteristic of the selected towns.

From the censuses of 1871, 1911, 1951, 1961 and 1966, the number of units by which the dwelling stock in the towns had increased or decreased between 1871 and 1911, 1911 and 1951, 1951 and 1961, and 1961 and 1966 were calculated (Table 2.2)[5]. These figures were turned into rates of growth for each time interval by considering the increase or decrease as a percentage of the number of dwellings comprising the stock at the beginning of the appropriate period (Table 2.3). The growth rates indicated that for at least one of the earlier periods, certain local authorities recorded a doubling of their dwelling stock, whereas other increased their stock by less than half. Between 1951 and 1961 the growth rates appeared similar for all towns except Barnstaple and Falmouth, but fluctuations once more occurred in the most recent period.

TABLE 2.2 The number of units by which dwelling stock increased or decreased in each local authority during the chosen periods.

Local Authority	Pre-1871	1871-1911	1911-1951	1951-1961	1961-1966
Abingdon	1243	94	1520	1459	404
Aylesbury	1489	745	2429	2312	2445
Barnstaple	2318	679	1615	424	114
Bridgwater	2393	740	2927	1687	253
Chichester	1580	676	2722	1231	101
Chippenham	290	799	3154	1305	222
Falmouth	655	1522	2296	195	752
Gloucester	3093	6718	7077	3707	377
Godalming	500	1178	2495	1012	415
Guilford	1675	2819	8878	3885	463
Newbury	1448	1126	2538	1497	431
Salisbury	2588	1524	4864	2120	64
Taunton	2951	1561	4723	2078	307
Tonbridge Wells	3444	3206	4325	2367	- 182
Weston-super-mare	1589	2558	6740	3132	1131
Winchester	2720	1380	2940	2148	262
Yeovil	1584	1153	3969	1359	115

Source: See reference 5.

TABLE 2.3 Rate of dwelling stock increase or decrease in each local authority during the chosen periods.

Local Authority	1871-1911 %	1911-1951 %	1951-1961 %	1961-1966 %
Abingdon	7.5	113.6	51.0	9.3
Aylesbury	50.0	153.0	40.8	30.6
Barnstaple	29.2	53.8	9.1	2.0
Bridgwater	30.8	93.4	27.8	3.2
Chichester	42.7	120.6	24.7	1.6
Chippenham	275.5	289.6	30.7	4.0
Falmouth	236.9	104.0	4.3	16.0
Gloucester	217.2	72.1	21.9	1.8
Godalming	235.6	148.6	24.2	8.0
Guilford	168.3	197.5	28.6	2.6
Newbury	77.4	98.6	29.2	6.5
Salisbury	58.8	118.2	23.6	0.5
Taunton	52.9	104.6	22.5	2.7
Tonbridge Wells	93.0	65.0	21.5	- 1.3
Weston-super-mare	160.9	162.5	28.7	8.0
Winchester	50.7	71.7	30.5	2.8
Yeovil	72.7	144.6	20.3	1.4

2.3 Multivariate classification procedures

Having calculated the rate of dwelling stock increase over time, a method was required whereby the towns were grouped according to the similarity in their rates of growth over the four periods. A multivariate classification procedure was used for this purpose and, since a number of such procedures were available, a brief examination was undertaken of their relative merits and disadvantages. Two methodological problems arose concerning the use of a multivariate classification technique[6]. First, a measure of similarity was required that would indicate the closeness of the relationship between every pair of individuals (i.e. towns), in terms of the chosen attributes (i.e. growth rates). Secondly, a grouping strategy was needed that would produce the most efficient and significant grouping of similar individuals.

The similarity of two distributions can be quantified by measuring the shape of the distributions using correlation, and by the size of the distributions using a distance measure[7]. A comparison of growth rates at the different periods using a correlation coefficient might have revealed a pattern of similar increases and decreases in the rate of development. The size of these increases and decreases varied, however, and a distance measure reflecting the size differences was thought likely to yield a more useful index of similarity. The most frequently used distance measure is 'squared euclidean distance', where each attribute is considered orthogonal and carries equal weight in the classification. Each town would be represented by a point (i.e. the centroid) in four-dimensional space. The distance between the centroids of every pair of individuals produces the similarity matrix for the seventeen towns.

To group the towns on the basis of this similarity matrix, two approaches to multivariate classification were available, non-hierarchical

and hierarchical. For both, computer facilities are desirable. Non-hierarchical procedures require a method of initiating clusters and, before commencement of the classification, the specification of a desired level of within-group homogeneity. Although these methods would produce tight clusters of homogeneous individuals, they are extremely inefficient in computer time. By defining too rigorous a threshold for group homogeneity, a number of individuals might remain ungrouped, resulting in an unsatisfactory classification. Several attempts might be necessary before a more efficient within-group similarity threshold was achieved.

When all individuals must be allocated to a group, hierarchical methods are more useful. The advantage of this type of procedure is that the choice of cut-off point in the classification can be decided after the grouping is completed. The threshold level can be altered to include a fewer or greater number of individuals without rerunning the programme; thus, defining more or less homogeneous groups is relatively simple. Since the prior definition of a suitable level of within-group homogeneity could not be easily achieved, the hierarchical classification procedure was considered to be a more appropriate method of grouping the towns on the basis of similar growth rate characteristics.

Hierarchical strategies attempt to optimise the route by which all the individuals are included in one group, through minimising the number of steps and calculations involved. Once the closest pair of individuals is joined, however, the procedures vary in the method by which further groups are formed at each level of the hierarchy. A perfect grouping procedure does not exist, but the most satisfactory strategies should overcome two difficulties. First, the grouping may involve loss of information concerning the characteristics of all but one individual within a group, resulting in groups identified by an unrepresentative individual. Secondly, a procedure may encourage chaining, which is the

addition of individuals to a few groups defined early in the classification as opposed to the formation of new groups. These points are clarified by examining three simple methods of hierarchical classification.

(i) Simple linkage

The simple linkage or nearest-neighbour strategy is initiated by the pair of individuals with the most similar characteristics joining together. The similarity of this first group to all the remaining individuals is then calculated from the attributes of that unit of the pair most similar, or nearest, to any of the other individuals. If this distance is the closest of all those remaining, this next individual will join the group. If not, a second group will be formed by the two closest individuals. This procedure occurs at every stage of the classification, and the grouping strategy is not affected by the overall structure of each group in terms of the attributes of all the individuals included in it. After the first few groups have formed, the method is particularly susceptible to chaining, since all the remaining units, together with the groups already formed, need be close to only an extreme value at one or other end of an existing group. The classification resulting from a cut-off point chosen in the closing stages of the grouping comprises a few large groups, with low internal homogeneity. Due to these problems its use is declining.

(ii) Complete linkage

Complete linkage or furthest-neighbour strategy is initiated, as previously, by the joining together of the pair of individuals with the most similar characteristics. The similarity of this group to all the remaining individuals is, however, measured from the attributes of that unit of the pair least similar, or furthest, from any of the other individuals. Once again, the classification relies only on extreme values to measure the similarity of groups to each other and to the unclassified individuals, but, by using the attributes of the least

similar unit in the group as the indicator of group structure, a higher level of within-group homogeneity is achieved. Thus, chaining is discouraged, since individuals tend to be closer to each other than to the furthest unit in an established group. Unfortunately, freak units tend to initiate groups towards the end of the classification, as the overall group structure still does not influence the grouping strategy.

(iii) Average linkage

With the average linkage or group averaging method, once the pair of individuals having the most similar attributes are joined, this group assumes a new identity. It is assigned its own attributes, calculated as the average values of the attributes of the two individuals. The distance matrix is then recalculated to include this new group. At each stage of the classification, every group is characterised by the average values for the attributes of all the individuals included in the group, and the similarity of a group to any other or to any individual is calculated from these average attributes. Less information is lost concerning the character of a group and unlike the two previous methods, extreme values do not strongly influence the path of the hierarchy. This method represents an intermediate procedure between single and complete linkage strategies, and some chaining does occur. A high-degree or within-group homogeneity is preserved, however, as the majority of individuals lie close to the average of the attributes in the group.

2.4 The similarity of growth rates

Of the three methods discussed, average linkage was chosen as the most useful strategy for classifying the seventeen towns. A computer programme developed by Taylor contained the option of using squared euclidean distance as the similarity measure, with average linkage as the grouping strategy[8]. Using this programme, the data for the seventeen

towns were analysed. It was unnecessary to transform the growth rates into unit variance, since they were all calculated on the same percentage scale. The resulting linkage tree indicated the route followed by the classification in producing a hierarchical ordering of similar towns (Figure 2.1).

Two major groups of towns could be distinguished, with Barnstaple, which was the last town to be linked in the classification, being the one town most unlike any of the others. The first, Group A, comprised Newbury, Yeovil, Taunton, Salisbury, Chichester, Winchester, Bridgwater, Tunbridge Wells, Gloucester and Falmouth. The second, Group B, included Weston-super-Mare, Godalming, Guilford, Chippenham, Aylesbury and Abingdon. An examination of the average characteristics of these two groups indicates that in all four periods, Group A towns had a lower rate of dwelling stock increase than Group B (Table 2.4).

TABLE 2.4 Average rate of dwelling stock increase for selected periods - Group A and Group B.

	1871-1911	1911-1951	1951-1961	1961-1966
Group A	93.3	99.2	22.6	3.5
Group B	149.5	177.4	34.0	10.4

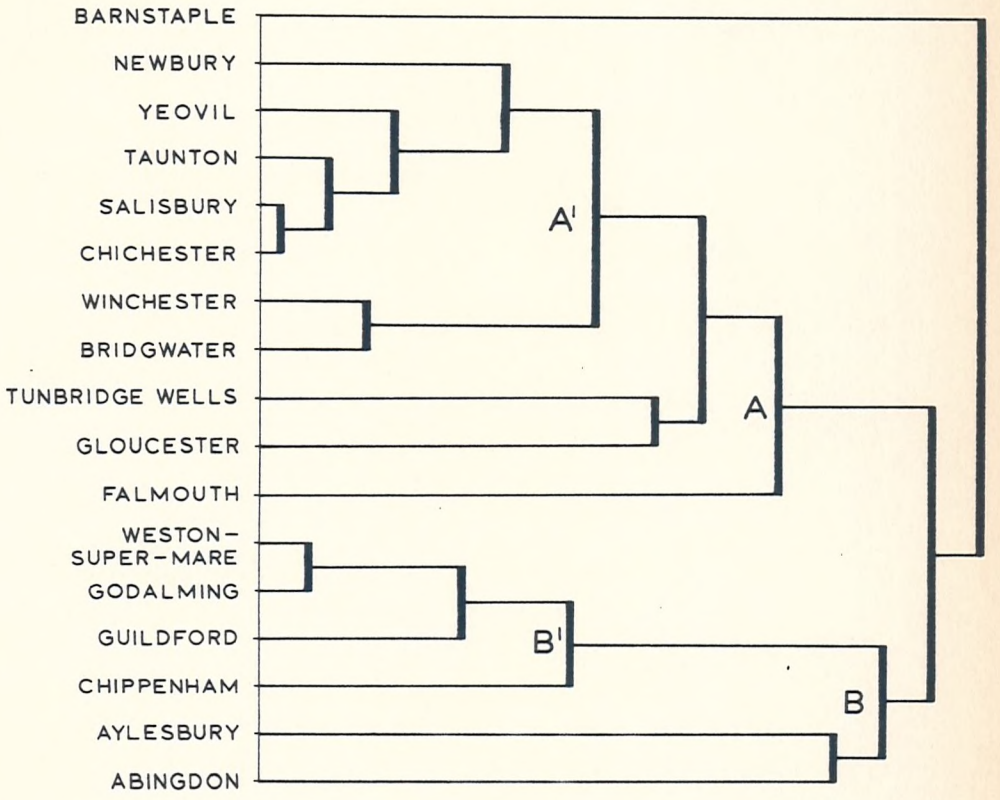

FIGURE 2.1 The hierarchical classification of similar towns

Housing stock was less than doubled during the periods 1871 to 1911 and 1911 to 1951, and increased only one-third that of B for the period 1961 to 1966.

Compared with the towns in Group B, the ten towns comprising Group A had the required characteristic of slow, steady growth, and could, therefore, have provided a suitable sample. Two points arose, however, to prompt a lowering of the number of towns actually investigated. The first concerned the degree of difference between the two groups. As the classification proceeded, Groups A and B became more similar, through the addition of some individuals to one of the groups which also had attributes similar to towns in the other group. The cut-off point was chosen at the stage before the two groups were amalgamated. To eliminate the less homogeneous units in Group A which were included in the classification at the later stages, it was thought advisable to lower the point at which the groups were distinguished. A second reason for decreasing the number of towns in the sample was the practical difficulties involved, given the limited time available, in undertaking detailed analysis of ten towns with a total of 101,440 dwellings.

The classification was reviewed and a cut-off point between the ninth and tenth stages of the linkage was selected. Any choice of threshold was subjective, and this point appeared to coincide with the nuclei of Groups A and B, identified as A' and B' (Figure 2.1). Group A' comprised seven towns, Newbury, Yeovil, Taunton, Salisbury, Chichester, Winchester and Bridgwater. All of these had a dwelling stock of less than 12,000, thereby lowering by one-third the total number of dwelling to be investigated. An examination of the rates of dwelling stock increase for the towns in Group A' compared with those in Group B' indicated the rise in within-group homogeneity achieved by altering the point of cut-off (Table 2.5).

TABLE 2.5 Rates of increase in the dwelling stock of towns in Groups A' and B'

	1871-1911	1911-1951	1951-1961	1961-1966
Group A'.				
Bridgwater	30.8	93.4	27.8	3.2
Chichester	42.7	120.6	24.7	1.6
Newbury	77.6	98.6	29.6	6.5
Salisbury	58.8	118.2	23.6	0.5
Taunton	52.9	104.6	22.5	2.7
Winchester	50.7	71.7	30.5	2.8
Yeovil	72.7	144.6	20.3	1.4
Average	55.1	107.3	25.5	2.6
Group B'.				
Chippenham	160.9	162.5	28.7	8.0
Godalming	168.3	197.5	28.6	2.6
Guilford	235.6	148.6	24.2	8.0
Weston-super-mare	275.5	289.6	30.7	4.0
Average	210.0	199.5	28.0	5.6

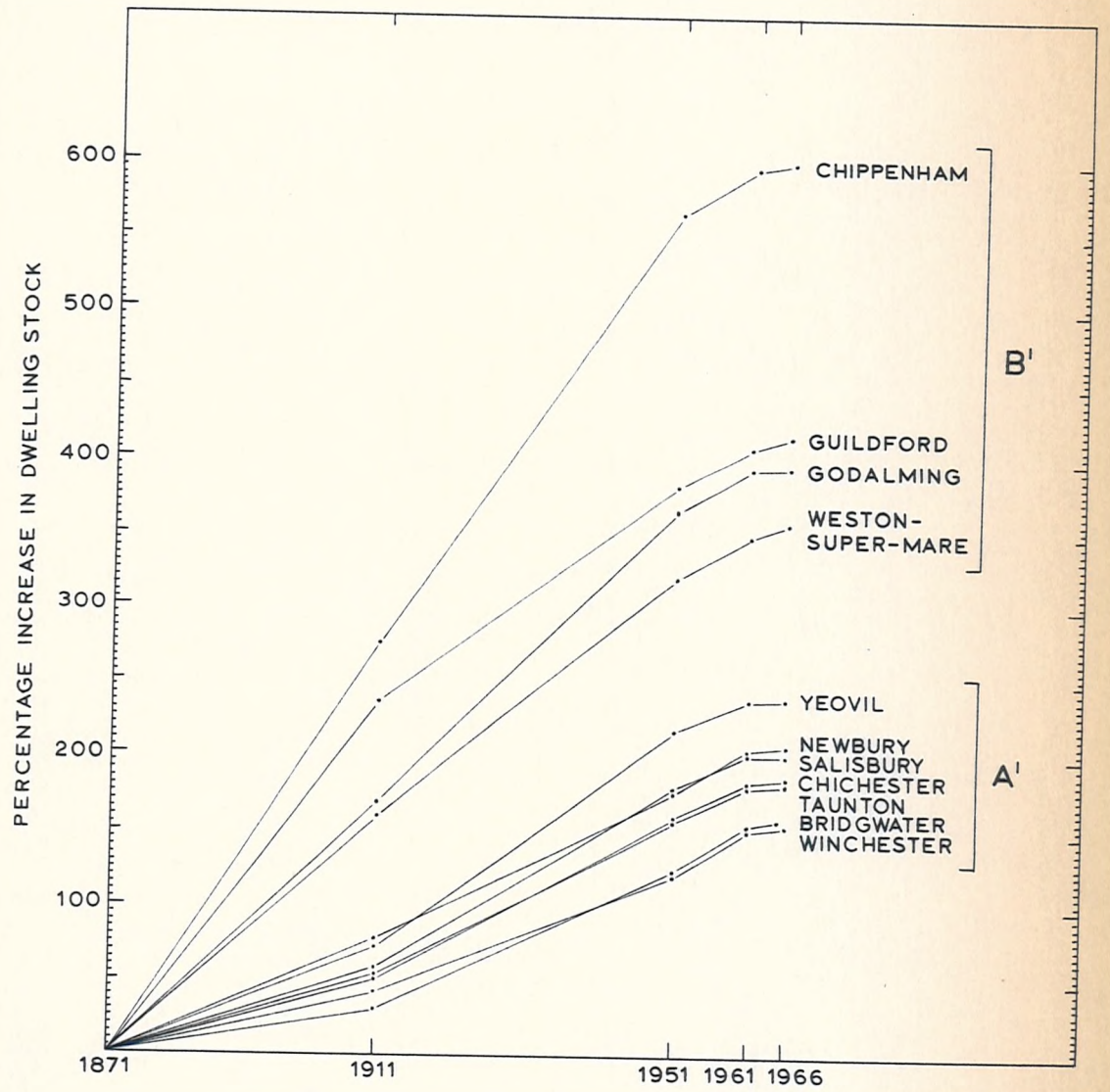

FIGURE 2.2 Rate of dwelling stock increase groups A' and B' between 1871 and 1966

During the period 1871 to 1911, towns in Group A' experienced a 50% increase in their dwelling stock compared to a trebling of stock in towns of Group B'. This difference in growth rate continued between 1911 and 1951, when Group A' towns just doubled their stock, whereas Group B' towns again almost trebled their total number of dwellings. The period 1951 to 1961 revealed an equalling of growth rates to a difference of only 3%, which was continued into the 1961 to 1966 period. By calibrating the growth rates over the number of years in each time interval, the difference between the two groups was made more obvious (Figure 2.2). During the ninety-five years elapsing between 1871 and 1966, the total increase in dwellings for towns in Group A' was between 150% and 250%, whereas for those in Group B' the increase was between 350% and 600%. At all periods, the growth rates for the towns in Group A' were more tightly clustered around the average values for that group than those of Group B'.

The seven municipal boroughs comprising Group A', namely Bridgwater, Chichester, Newbury, Salisbury, Taunton, Winchester and Yeovil were, therefore, adopted as the towns in which patterns of intra-urban movement were to be investigated. Although the sampling procedure had not resulted in any 'objective' definition of slow growth, a satisfactory relative measure had emerged from the classification. By less than trebling the size of their dwelling stock in approximately one hundred years, the towns were characterised by slow steady growth compared with other towns located in the south of England.

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4. As a result of recent redevelopment, the growth rates would provide only an approximate measure of the age characteristics of stock in 1968, but these towns were more likely to contain some older dwellings at the time of the survey if the number built before 1911 was quite large.

5. Census of England and Wales 1871. Population Tables - Areas, Houses and Inhabitants, Vol.I, Counties. Table 10. Inhabited houses, families or separate occupiers, and populations of the civil parishes and townships.

Census of England and Wales 1911. Vol.VI. Buildings of Various Kinds. Table 2. Administrative Counties, Urban and Rural Districts - Classification of buildings.

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Sample Census 1966, England and Wales, County Reports. Table 1. Acreage, population, private households and dwellings.

6. Lance,G.N. and Williams,W.T. (1966) 'A general theory of classificatory sorting strategies. I. Hierarchical systems', Computer Journal, 9, 373-80.

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CHAPTER 3 Sources of data relating to population movement in towns

In order to analyse the relationship between population movement and both the type and location of dwellings occupied by moving households in the seven selected towns, comprehensive and accurate data sources were essential.

3.1 Characteristics of the 'ideal' data source

Four characteristics were demanded of any data source or combination of sources before they were selected for use in the investigation.

(i) The data source must be available in identical form for all seven towns, since replication of both information and methodology was a vital aspect of the study[1].

(ii) Every household or dwelling unit in each of the towns should be included in the statistics. This provision was necessary as data based on a small sample could have biased the analysis. Bias is more probable when only a minority group within the population is characterised by the particular phenomenon being examined, and in this instance it was known that less than 10% of households change their address in any one year[2]. In order to discover sufficient moving households for generalisations to be made concerning their behaviour, it would have been necessary to sample a high proportion of dwellings in the towns. It appeared more useful, therefore, to search for an information source embracing the total population in each town.

(iii) A record of the exact location of every dwelling occupied by households who had recently moved was also required. Rates of population movement in different areas of the towns could then be related accurately to the characteristics of dwellings in those areas.

(iv) The data source should refer to a period as near as possible to the commencement of the investigation (October 1968), so that the character-

istics of dwellings at the times the moves took place could be assumed as almost identical to those observed at the period of study. If a considerable time elapsed between these two events, dwellings could have been altered or even demolished.

Data sources most frequently used for investigating population mobility in Great Britain, together with other less well-known sources, were examined in terms of the requirements outlined above.

3.2 A review of possible data sources

(i) The Census

The most accessible source of information on population movement at the time of the study was the 1966 Sample Census, in which households were asked to record their usual address one year and five years previous to the census[3]. The published volumes include statistics measuring gross in- and out-migration flows across the boundaries of regions, counties, county boroughs and the larger local authority areas, together with the origin and destination locations of these flows. Unpublished data includes the same statistics for the smaller local authorities. Although these flows are disaggregated by the socio-economic status of groups of migrants, no information is recorded concerning the characteristics of their present or previous accommodation, including its location within the destination or origin area.

Unpublished census data is also collated at the scale of the enumeration district within local authorities. Statistics for the districts indicate those sectors of towns with high rates of in- and out-migration, together with the origin and destination of those moves. It is, however, impossible from these statistics to locate the actual address of any migrant household, and thus to investigate the characteristics of the accommodation. Furthermore, as the census figures record

the number of persons who changed their address within or between districts, and not the number of households, it is difficult to estimate the true rate of household turnover. A proportion of total movement involves persons entering or leaving households whose other members may not have moved at the same time. For these reasons census statistics did not provide a suitable source of information for the investigation, despite the advantage of comparability between local authority areas.

(ii) Special sources

Researchers into patterns of population movement have utilised a variety of special data sources, but none of these was available in a form suitable for the investigation. Statistics relating to differences between the areas in which people register for and surrender their National Insurance cards, issued in the 1960's by the then Ministry of Labour, are both inaccurate and collated only at a regional scale[4]. The Register of Sasines, used by Crammond and Marshall for analysing movement of owner-occupiers, records changes in the ownership of property but refers only to Scotland[5]. Records of a nationalised industry have been used to trace the changes of address of customers but are, unfortunately, only available to a few selected researchers[6].

(iii) Questionnaire surveys

By far the greatest volume of data referring to the relationship between population mobility and housing has been gathered from individual households. The Rowntree Studies and the Government Social Surveys investigated several aspects of the housing situation in England and Wales in the early 1960's by selecting a sample of dwellings from either the property valuation lists or the electoral registers of every local authority area and then interviewing the occupants[7]. The results of these surveys were not presented for individual towns or counties, but

were published in aggregate form for England and Wales as a whole.

Although the data contained in the surveys was not applicable to an investigation into turnover and dwelling characteristics, a similar questionnaire approach was, perhaps, the most suitable method of obtaining the required information. Interviewing households would be an extremely flexible method of collecting data, since the questions could be focused on the particular items of interest to the study; these might include those details of dwelling character which were not apparent from street observation, as for example, internal physical condition and number of bedrooms. The occupant could give the actual date of moving to his present dwelling, details of his previous accommodation and his reasons for moving. From such data several aspects of present and previous dwelling type could be compared, and the patterns of inter-urban and intra-urban flows analysed.

For a number of reasons, such an approach was not, however, the most appropriate one for the study. With limited resources, it was impossible to interview every household in each of the seven towns. Thus, only a sample of households could be questioned, and a method of selecting this sample was required which would minimise the degree of bias in the survey results. The local valuation lists could be used as a sampling frame but the proportion of the addresses on that list which were contacted would be an arbitrary decision. Unless the sampling fraction was a very large one, households selected at random from the list might include only a few representatives of some types of households living in some types of accommodation; one example was single-person households living in furnished flats. Since all moving households form only a minority group within the population, generalisations concerning the behaviour of single-person households could not be based

on a small sample of movers. This difficulty would only be overcome by selecting a sample of addresses using a stratified sampling procedure in which every dwelling was pre-classified by some characteristic either of that dwelling or of the occupying household. Such information was not available, however, without undertaking a preliminary survey.

A comprehensive coverage of dwellings in the seven towns might have been possible using a postal questionnaire, in which members of every household were asked to provide some simple details concerning themselves and their dwellings. Households could be stratified into groups based on this information, and a proportion of those in each groups would be interviewed in depth. Unfortunately, postal questionnaires suffer from unpredicable variations in the response rate, for it has been found that anywhere between 20% and 70% of households may reply[8]. Respondents tend to be concentrated in the higher socio-economic groups, and a sample so obtained would be unrepresentative of the total population. In order to elicit a reply, a stamped addressed envelope must be included with every questionnaire. Postage to canvass approximately 60,000 dwellings (the total for the seven towns) could in 1968 have amounted to over £1,000 and such a sum was well outside the means of the research budget.

Should a satisfactory sample of addresses have been derived by this method, one further problem would have remained. Questionnaire surveys depending on interviews with households in their own homes are time-consuming for the interviewer. A large number of interviews would be conducted at weekends and in the evenings to avoid biasing the results in favour of households at home during weekdays as, for example, towards retired people and families with young children. Where resources are large, a number of interviewers can be employed and the interviewing concentrated within a limited period of time. A single interviewer

needed several months in which to question households in only one of the towns, and to undertake such an enquiry for all seven required more time than was available within the two years set aside for field investigation and the analysis of data.

As a result of these problems, it was necessary to seek other sources of data for the study. There remained two sources which were little utilised until recently for analysing population mobility. These were the Register of Electors and the Local Authority Rating Records.

(iv) The Register of Electors

The Register of Electors is published annually in February for every constituency in the United Kingdom. The register comprises the names and addresses of every person eligible to vote in the year following the date of publication, and is subdivided by local authority and ward. In addition to the complete list, a supplementary register is published in the preceding November. This second list comprises the 'B' list of 'electors not yet registered or with altered qualifications who will be included in the next register'. A further 'C' list contains the names of persons on the current list who will not be eligible to vote the following year at the same address. Both the 'B' and 'C' lists are published before the complete register so that people may check the accuracy of the alterations.

The volume of population mobility in an area can be estimated from the register in two ways. The first involves a comparison between the complete registers compiled for two succeeding years, in order to identify any changes occurring in the names of persons residing at a particular address. These changes might be the alteration of a surname, but could also be the addition of another name to those already recorded at an address. Where the surname of persons residing at an address in one year has been replaced in the succeeding year by a different surname, it can

be assumed that the previous occupants have moved away. The new surname refers to a household moving to that address since the previous register was compiled. This method of identifying moving households, although relatively simple, has not been used in studies of population mobility. Each register is very long and bulky, and it is difficult to consult two lists simultaneously. Furthermore, as the majority of names remain unchanged, searching for alterations would be akin to looking for the proverbial 'needle in a haystack'.

A less cumbersome source for identifying movers is the 'B' list, since the format of the register makes it easier to handle. As a result, a number of investigations have made use of the list[9]. All names on the 'B' list refer to persons eligible to vote for the first time at the given address in the year following the publication date of the complete list. Some of these names relate to persons coming of voting age during the lifetime of the new register, and in this case the date of eligibility is noted. The remainder of the list contains the names of persons wishing to register at a new address. These names cannot be used to measure the level of household mobility directly, since a number of them refer to persons joining households already resident at that address. It is possible, however, to record all the names (surname and initials) listed against each address on the 'B' list and then trace them in the complete register for the year beginning the following February. Where all the names at a particular address are found on both lists, it can be assumed that the entire adult household moved. In cases where more names appear for an address in the complete register than on the 'B' list, it is likely that either a member of the household has just reached voting age or that additional persons with the same surname have joined the household. By distinguishing in this manner between a complete change of household at an address and an alteration only in the qualifications of

some members of the household living there, it is possible to ascertain the number of wholly-moving households in a local authority area during one year.

Several problems, however, limit the value of the electoral register as a source for identifying moving households. Most of these problems concern the exclusion of certain types of households from the list. Non-British nationals are not eligible to vote and therefore no record of households totally comprising such persons is found on the register. Also excluded are any households composed of persons under voting age, which at the time of the investigation was 21 years. There are no estimates as to the number of young households who would not be included in any survey based on data from the register, but it might be expected that, as with foreigners, the importance of the omission would vary between different parts of the country.

The register is also an incomplete record of the total number of households in any area, due to the non-registration of certain households who are entitled to vote. According to the Government Social Survey, between 3.5% and 4% of persons eligible to vote in any year are not included on the register[10]. Non-registration arises from two circumstances. First, in order for a person to be registered, his or her name must be recorded on the registration form supplied to each householder by the Electoral Registration Officer in the October preceding publication of the list. These forms are sent to addresses identified by the local officer. Addresses recorded on the previous list are contacted, together with those of newly-built dwellings. The number of separate households resident at an address may, however, be unknown to the officer, and enquiries to obtain this information are left to his discretion. Every household at an address may not, therefore, receive a registration form. Householders are legally obliged to include the

names of all adults resident at that address, but the householder receiving the form may be unaware that this also refers to persons not resident in his own household. He may indeed think that they have received their own forms. As a result, households living in multi-occupied dwellings are particularly liable to be disenfranchised.

Population mobility is the second reason for non-registration. Households about to move at the time of registration may not consider it worthwhile registering at their old address, but may arrive at their new one too late to be recorded. The accuracy of the register for identifying moving households was tested by the North Regional Planning Committee[11]. Information received by door-to-door inquiry was compared with that obtained for the same addresses from the electoral register in several wards within Newcastle-upon-Tyne County Borough. On average, 15% of households would not have been recorded as moving, because they did not appear on the 'B' list. This proportion rose to 29% in areas of multi-occupation. They concluded that the register was an unreliable source of data for measuring the volume of movement in an area, but that it provided a satisfactory sampling frame for selecting migrant households for interview.

There are a number of further difficulties in using the electoral register when the information cannot be verified by personal enquiry. In some instances the identification of separate dwellings or households is not easily accomplished. Usually, households are identified as any person or persons on the list with the same surname recorded at the same address. Persons with different surnames may, however, be living as a household unit, for example, single persons sharing a flat; from the list, they might be identified as several different households. One address might refer to a number of separate dwelling units, usually in

circumstances where large houses have been converted to flats. It is also possible for persons to be registered twice, at different addresses, and approximately 0.6% of all households are so registered[12]. Furthermore, from personal experience of the 'B' list in connection with another research project interested in tracing movers, it appeared that households recorded at an address for the first time on the list may, in fact, have been resident there for many years. Such inaccuracies seem to lie in the compilation of the register, which is usually undertaken by temporary staff.

The electoral register has advantages over the other data sources for undertaking an investigation into population mobility. A register would have been available for each of the selected towns referring to the year preceding the investigation, that is from October 1967 to September 1968. Since the lists were compiled from identical information, there would have been no reason to suppose that the degree of error varied between the towns. The exact location of most dwellings occupied by moving households could have been identified within each town. On the other hand, the problems of correlating the addresses on the list with the number of dwellings or households at those addresses could have been overcome only by utilising a further source of information. This would have been a tedious procedure. The exclusion of households comprising persons under 21 years, or foreigners would also have affected the study since these people are among the more mobile groups of the population. Furthermore, a considerable proportion of moving households are omitted from the register. Since only a partial analysis of household mobility would be possible using the electoral register, it was proposed to consider it only if the Rating Records proved an unsuitable data source.

(v) The Rating Records

The rating records refer to the local levy raised by every local authority on all occupied buildings in the area under its jurisdiction. The Rating Office keeps two forms of record - the valuation list and the rating account. The valuation list provides information on the address of every useable building in the area, a description of its use and rateable value. Dwellings are arranged in streets, and addresses are in number order. This list is open to inspection by the public and has been used by researchers interested in delimiting areas of towns based on rateable values[13]. The rating accounts, on the other hand, are confidential documents recording details of rate payment - arrears, rebates, methods of payment etc. - as well as the information contained in the valuation list. The method of storing these accounts differs between authorities, but usually they are kept either in annual volumes for a financial year or each dwelling is allocated a card on which details for four consecutive years are recorded.

All properties within a local authority area are classified according to their primary use - industrial, commercial, mixed, and domestic - and different rates are levied according to the type of use. A domestic rating is applied to a property used solely as a dwelling-house; mixed rating is given where non-self-contained accommodation is attached to a building with some other use, as for example a shop or boarding house. Details of payments are recorded for all dwellings in private ownership. Local authority housing is administered by the housing department and their records are not available for consultation.

Against the address of each dwelling in the private sector, the account names the person responsible for paying the rates. Alterations to the name of the ratepayer are usually clear, since the original records

are typed or printed and annotations are hand written. In records collated annually, changes in the name of the ratepayer are made during the financial year to which the records refer. In four-yearly accounts, the year of any change is dated. In some instances, only the initials of the ratepayer are altered as, for example, if the ratepayer dies and his widow becomes responsible for the rates. In those cases where the name of the ratepayer has changed completely, it is probable that the previous household has moved out and been replaced by another. By tracing in the accounts for a particular year all those dwellings for which a change in the ratepayer's name has occurred, an estimate can be obtained of both the number and location of households who have moved within the private sector.

One major problem arises in using the rating accounts for identifying private dwellings into or from which occupiers have recently moved. This is the exact nature of the relationship between the occupants of a dwelling and the ratepayer of that dwelling. Three possible relationships can occur. First, the ratepayer can be both the owner and the occupier of a dwelling. Secondly, the ratepayer can be the owner of a dwelling but not the occupier, in other words, the landlord. Thirdly, the ratepayer can be the occupier of the dwelling but not the owner, that is the tenant of the dwelling. Alterations to the names of ratepayers who are also owner-occupiers or tenants refer to the actual household which has moved, but alterations to the names of ratepayers who are landlords indicates a change in ownership not necessarily involving the movement of the occupying household. Thus, the records can provide an accurate source of data on population mobility only if the relationship between the ratepayer and the occupier is made clear in the account.

Dwellings with occupier-ratepayers (both owner-occupiers and tenants) can be distinguished from those with landlord-ratepayers by the format

of the rating account. Landlords may pay the rates for their properties by one of three methods, all of which require extra information to be recorded in the account. The first method entails the landlord paying rates for each of his dwellings separately. In this case, the rating account for each dwelling records not only the address of the property, but also the name and address of the ratepayer. Since this second address is different from that of the dwelling on the account, those dwellings with landlord-ratepayers can be easily distinguished.

Alternative methods of rate payment by landlords arise from Section IV of the General Rate Act[14]. Paragraph 55 of that Act states that owners of hereditaments having rateable values of £56 or less may be compulsorily rated by direction of the rating authority. Owners so rated are entitled to an allowance of 10% of the total sum due per annum towards the expenses of collecting the rates and against the risk of bad debts, providing payment is made within a specified period of time. Under Paragraph 56 of the Act, a rating authority may also make agreements with owners of dwellings with any rateable value. The owner can be responsible for paying the rates of these dwellings providing that the rent is payable or collected at less than three monthly intervals, and that rates are paid within a specified period of time. Owners of these dwellings also receive an allowance of between 10% and 5% of the total rate demand. The rating accounts of dwellings for which these methods of payment are operating are grouped together under each owner and stored separately from the rest of the accounts. These dwellings can, therefore, be readily distinguished from those with occupier-ratepayers.

Two further problems affect the usefulness of the rating account as a source of data for identifying household moves. The first concerns the existence of a time-lag between the actual move made by a household and the

rating authority receiving notification of a change of ratepayer. Movers can make private arrangements as to the proportion of the half-yearly rate paid by each party; the local authority may only realise that the name of the ratepayer has changed when the next half-yearly rate demand is paid. A small number of the moves identified in the accounts could have taken place up to six months prior to the recorded date of change. In collecting data concerning the volume of movement during a specified period, this time-lag affects only the number of moves recorded at the beginning and end of that period. In one financial year, moves identified in the accounts for April might have taken place at any time since the preceding October (the date of the half-yearly account). Similarly, some moves occurring in the second half of the year, October to April, might not appear in the records until the following year. It seems likely, however, that only a very small number of moves occurring in a particular year would not appear in the accounts for that year.

A second difficulty concerns the 'void rating'. Rates are not levied on unused dwellings which stand empty of furniture for more than a few days. The changeover of households occupying a dwelling does not necessarily involve a period of void rating, as the two moves may occur simultaneously. In some circumstances, however, a void rating may operate for several months, as when, for example, the occupant has died and the dwelling is to be sold after probate. When calculating the rate of population turnover, it is usual to consider the movement out of a dwelling by one household and the movement into that dwelling by another as one combined move, irrespective of any intervening period when the dwelling was empty. Using the rating accounts, only one of this pair of moves may be identified at the beginning and end of a financial year, since the other move will have occurred in a different year. The actual

volume of movement recorded in an area during a specific period may not be greatly distorted, however, providing an almost equal number of one-way moves occur at the beginning and end of the period.

Despite the limitations outline above, the rating accounts have a number of advantages as a source of data for investigating household mobility. The accounts comprise an accurate enumeration of every habitable dwelling in the selected towns, and from the addresses, their exact location within the towns can be identified. The movement of most households within the private sector of the housing market can also be traced.

3.3 A comparison of the Electoral Register and the Rating Account

It appeared from the examination of data sources that both the electoral register and the rating records could provide some of the information relating to household mobility in the selected towns. Each was available for all the towns and the information they contained was comparable between the towns. The majority of dwellings or households were recorded in each, together with their addresses. Both sources were published for the year preceding the study; the electoral register for the period October 1967 to September 1968 and the rating account for the period April 1967 to March 1968. Using either source, however, only a partial analysis of movement patterns would be possible, since some types of households are excluded from the electoral register and the rating records omit some types of dwellings. An investigation combining both sources would have provided the most comprehensive analysis but to do so would have necessarily meant reducing the number of towns in the survey.

After weighing both the advantages and limitations of the two sources, it was decided to adopt the rating accounts as the data source in preference

to the electoral register, mainly because the former contained more information. From the accounts, it was possible not only to identify all the dwellings in each town, but also to obtain a description of them. Those dwellings for which no information on mobility was available - local authority housing and dwellings with landlord-ratepayers - could be isolated from the total housing stock. These omissions were of some advantage in that the investigation was simplified. The movement of households within the public sector is controlled by local housing departments through a system of transfers and exchanges, and some households may move for the convenience of the department rather than for their own satisfaction. It seemed unlikely that patterns of movement within the local authority sector were similar to those found in the private sector, and it would, therefore, have been necessary to examine the policies of housing departments in the towns.

The omission of dwellings for which the landlord was the ratepayer raised different issues. The majority of these dwellings have low rateable values and many units might be furnished or unfurnished flats in multi-occupied property. Turnover of households within such dwellings is usually rapid, and it is in recording moves in such areas that the electoral register is most inaccurate. Identification of these units was impossible from the register and thus the volume of turnover assessed from this source would have contained an unknown degree of error. Using the rating accounts such properties would be eliminated from the study, and the investigation would be concentrated on examining movement of households who were mostly owner-occupiers. Thus, although the data from the rating accounts would not provide a comprehensive coverage of movement in all sectors of the housing market, it was felt that the information they contained about the private housing sector was probably more accurate than that available from the electoral register.

3.4 Sources of data on dwelling characteristics

The investigation into household mobility was concerned with the relationship between patterns of movement and both the location and physical characteristics of the dwellings occupied by moving households. Information was available from the rating accounts as to the location of dwellings within the towns, the volume of movement in dwellings within the private sector of the market, and certain aspects of the physical characteristics of the housing stock. Dwellings are classified as house, bungalow, flat or maisonette but a fuller description of building form demands a subdivision of those dwellings classed as houses into detached, semi-detached or terraced. This classification could be achieved by using the latest edition of the 1:10,560 or 1:2,500 Ordnance Survey plans of the selected towns. Every dwelling built before the plans were compiled could be located on them by name or street number, and the building form identified. Only the form of those houses built since the plans were published could not be identified by this procedure and these could be located on the ground and classified by observation.

In addition to the form of dwelling composing the housing stock of the selected towns, dwelling units can be usefully classified according to period of construction. The age of a property might have a significant relationship with the movement of households, since many people prefer to live in modern accommodation. Where available, the 'Age of Building' maps compiled by the local planning departments of the selected towns were a useful source for this information. These maps are usually based on the Ordnance Survey 1:10,560 maps and the period of construction of each dwelling within the towns can, therefore, be identified. Since, however, many of these maps were compiled in the 1950s (although possibly updated), it was necessary to check by observation dwellings in those areas of the towns where subsequent demolition and redevelopment had occurred.

A large proportion of household movement is stimulated by the desire for larger accommodation, and it was therefore important to include the size of dwellings as one of the variables describing the physical character of the housing stock. Dwelling size can be measured in terms of the number of either habitable rooms or bedrooms. Unfortunately, there was no available data source from which information concerning dwelling size could be obtained; neither was it possible to assess the size of a dwelling by observation. In an attempt to overcome this data limitation, it was decided to describe the physical characteristics of dwellings using rateable values. The rateable value of a dwelling is calculated from its current market value and can perhaps be considered a composite measure of the general desirability of a dwelling as a residence. The market value reflects a number of features of the dwelling, including its size, building form, age and condition and location. The spatial pattern of rateable values within a town has also been used as an indicator of the social status of different residential areas[15]. By introducing this measure into the analysis, it was perhaps possible to assess the degree of association between the turnover of households and the social class of both the dwellings and areas in which those households lived.

3.5 A redefinition of the investigation

Thus the exact form of the investigation into household mobility was conditioned by the nature of the available data sources. The study aimed to describe the physical characteristics of the dwelling stock of the seven towns and to examine their location within each town. It was necessary to confine this analysis to the private sector of the housing market. The turnover of households in dwellings for which the occupier was the ratepayer were traced for the period 1st April 1967 to 31st March 1968, and the physical characteristics of the dwellings occupied by these

moving households were examined. Finally, the spatial distribution of household mobility within each town was analysed.

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CHAPTER 4 Some aspects of housing market conditions in the selected towns during the 1960s.

Before commencing the investigation, some background information was gathered concerning the seven sample towns. Various aspects of the housing market in these towns relevant to a discussion of population mobility were examined. How far could low rates of turnover be attributed to a lack of population growth, scarcity of new house-building, poor opportunities for households to increase their incomes, or difficulties in obtaining employment? And again, how far could any relationship between dwelling characteristics and rates of turnover be the result of certain policies operated by finance institutions? Adequate answers to such questions required a more comprehensive and sophisticated investigation than was possible within the scope of the study. Some attempt was made, however, to examine those conditions operating in the housing markets of the towns for which statistics were readily available in published form.

The operations of the housing market in any area result from the interaction of the demand for, and the supply of, housing. "The demand for housing is affected by population growth, household formation and composition, migration, the level and distribution of incomes, tax and tax relief policies, social aspirations, as well as by subsidies and rent control"[1]. The distinction between 'housing need' and 'housing demand', albeit a hazy one, was used to simplify this list of factors[2]. Housing need or potential demand for housing in an area arises from the characteristics of households, including their size, family composition, employment, income and personal circumstances[3]. The ability of households to turn the desire for housing into actual demand for accommodation depends

not only on the supply of dwellings but also on the operations of various institutions which control access to housing[4].

The potential and actual demand for housing were examined in the towns for a period as close to that of the investigation as was possible using published data. Population growth and household characteristics were analysed from 1961 and 1966 Census data. The two sets of information were not strictly comparable since the 1961 Census enumerated the total population in each local authority, while the 1966 Census sampled only 10% of the population. The slight discrepancies resulting from this difference were unlikely, however, to have affected the general trends revealed by the data. Of greater significance was the lack of information referring to the period of the investigation, April 1967 to April 1968. This could not be remedied until the 1971 Census material was published. It was felt, however, that insufficient time had elapsed between 1966 and 1968 for any significant changes in housing market conditions to have occurred. Information concerning the operations of various finance institutions was not published for individual local authorities but only for England and Wales as a whole.

The analysis was arranged in two sections. The first considered those factors influencing both the level of, and variations in, potential demand for housing by households in the selected towns. In the second section, the policies of finance institutions controlling access to housing were discussed at a national scale.

4.1 Factors affecting 'housing need' in the towns

The potential demand for housing generated by persons living in each of the selected towns was examined at two time-scales. Over a limited period of time, households residing in each area already in possession of housing do not necessarily need to change that accommodation, but newly-formed households and those entering the towns from elsewhere

experience a need for housing. Thus in the short-run, potential demand for housing is conditioned by the rate of population growth, including migration, and the rate of household formation. The population in the towns was, however, composed of different types of households occupying different types of accommodation. As the internal structure of these households changed (for example, by size or socio-economic position), their housing requirements would be reconsidered. Some households would desire to change their accommodation in order to bring it into harmony with their housing needs[5]. Thus, over a longer period, potential demand for housing would be affected by the characteristics of the households living in the towns. The following factors influencing both the short- and long-run needs of households in the selected towns for housing were examined.

(i) Population growth

During the period 1961 to 1966, the population of the towns remained relatively static, with the except of Newbury (Table 4.1)[6]. Three of the towns experienced an actual decrease in their populations, with the largest loss occurring in Salisbury. These figures suggested that aggregate demand for housing was extremely limited during this period, and that in those towns in which population had fallen, the supply of dwellings might have exceeded demand. A rather different situation, however, was revealed by the statistics relating to the number of households in each town between 1961 and 1966 (Table 4.2). All towns, including those recording losses of population, experienced increases in their total numbers of households. These increases ranged from 4.6% in Bridgwater and Yeovil to 10.6% in Newbury. It might be suggested, therefore, that in each of the towns some increase in the demand for housing would have resulted from these additional households[7].

TABLE 4.1 Population change in the selected towns between 1961 and 1966

Towns	Population 1961	Population 1966	Increase or decrease in population 1961-1966	% increase or decrease in population 1961-1966
Bridgwater	25,600	26,330	+ 730	+ 2.8
Chichester	20,124	19,930	- 194	- 0.9
Newbury	20,397	21,840	+ 1443	+ 7.0
Salisbury	35,492	34,770	- 722	- 2.1
Taunton	35,199	35,850	+ 661	+ 1.8
Winchester	28,770	29,910	+ 1140	+ 3.9
Yeovil	24,598	24,530	- 68	- 0.2

Source: Census 1961, England and Wales, County Reports, H.M.S.O. 1963. Table 3. Acreage, population, private households and dwellings.

Sample census 1966, England and Wales, County Reports, H.M.S.O. 1967. Table 1. Acreage, population, private households and dwellings.

TABLE 4.2 Change in the number of households in the selected towns between 1961 and 1966

Towns	Number of households 1961	Number of households 1966	Increase or decrease in number of households 1961-1966	% increase or decrease in number of households 1961-1966
Bridgwater	7,883	8,250	+ 367	+ 4.6
Chichester	6,100	6,420	+ 320	+ 5.2
Newbury	6,528	7,220	+ 892	+10.6
Salisbury	11,238	11,770	+ 432	+ 4.7
Taunton	11,391	12,000	+ 609	+ 5.3
Winchester	9,018	9,740	+ 722	+ 8.0
Yeovil	8,023	8,350	+ 333	+ 4.6

Source: As for Table 4.1.

(ii) Population migration

The number of households living in these towns would have increased both by the formation of new households from within the existing population and by the in-movement of households from elsewhere. No statistics were available concerning newly-formed households, but the 1966 sample Census included figures on population movement. All towns recorded an excess of in-migrant households over those leaving the towns between 1965 and 1966, ranging from 10 households in Yeovil to 330 households in Taunton (Table 4.3)[8]. Part of the increased demand for housing arose from this migration imbalance, since the dwellings vacated by emigrant households would be insufficient to accommodate the extra households moving to the towns. In all the towns, except Bridgwater, the population comprising these in-moving households accounted for a larger proportion of housing demand during the period than did the resident population moving within the area. In Salisbury, almost double the number of people moved into the town as changed their address within the town. In Bridgwater, however, there was a slighly greater demand for accommodation from residents than from those moving to the town.

(iii) Age structure of the population

A similar age structure was recorded for the populations living in six of the towns during 1966 (Table 4.4). In comparison with the age characteristics of the population of England and Wales at this date, these towns recorded a slight deficiency of young children and a larger proportion of people aged 60 years and over. The exception to this pattern occurred in Bridgwater, which contained a greater percentage of children than in England and Wales as a whole, and a correspondingly lower proportion of elderly persons. Since retired people generally have lower propensities to move than families with young children, turnover rates in the towns during the study period might perhaps have been lower than national rates of population mobility.

TABLE 4.3 The number of persons and households moving within, into and out of, the selected towns between 1965 and 1966

Towns	Number of persons moving within each town 1965-1966	Number of persons moving into each town 1965-1966	Number of persons moving out of each town, 1965-1966	Number of households moving into each town 1965-1966	Number of households moving out of each town 1965-1966
Bridgwater	1,250	1,080	980	320	270
Chichester	1,030	1,380	940	330	190
Newbury	990	1,870	1,650	500	370
Salisbury	1,830	3,040	2,260	730	540
Taunton	1,870	2,290	1,630	710	380
Winchester	1,320	2,080	1,980	440	380
Yeovil	1,170	1,430	1,830	410	400

Source: Sample Census 1966, England and Wales, Migration Regional Report (H.M.S.O.), 1968. Table 1A 'Migrants within one year preceding census. Numbers and proportions'.
Sample Census 1966, England and Wales, Migration Summary Tables, Part II (H.M.S.O.), 1969. Table 10A 'Households containing one year migrants'.

TABLE 4.4 The age structure of the population for the selected towns and England and Wales in 1961 and 1966.

Towns	0-14 years %	15-24 years %	25-59 years %	60 years and over %
1961				
Bridgwater	25.1	13.0	46.1	15.8
Chichester	20.9	12.8	44.1	22.1
Newbury	24.0	12.0	45.3	18.6
Salisbury	21.9	12.8	44.7	20.4
Taunton	22.6	12.3	46.6	18.5
Winchester	21.8	14.3	44.5	19.3
Yeovil	21.3	12.9	46.9	18.7
1966				
Bridgwater	24.0	14.9	43.1	17.8
Chichester	20.1	12.9	43.9	22.9
Newbury	21.9	14.3	44.0	19.9
Salisbury	21.3	14.6	42.3	21.5
Taunton	22.0	15.1	42.9	19.9
Winchester	21.8	13.6	42.6	21.7
Yeovil	20.2	14.6	43.7	21.3
England and Wales	22.9	14.4	44.3	18.1

Source: Census 1961, England and Wales, County Reports, H.M.S.O. 1963. Table 6. 'Age and marital conditions'.

Sample Census 1966, England and Wales, County Reports, H.M.S.O. 1967. Table 2A. 'Age and marital conditions'.

The influence of the retired population on the structure of housing demand might, in fact, have increased between 1961 and 1966. For all the towns, including Bridgwater, the elderly accounted for a higher proportion of the population in 1966 than in 1961 (Table 4.4). A similar increase in the number of persons aged between 15 and 24 was experienced in all the towns over this period with the exception of Winchester. This second trend might have counter-balanced the decrease in population mobility resulting from the larger numbers of elderly persons in the towns at the end of the period. The formation of new households would be concentrated in the 15 to 24 age range, as the children of the resident population left the parental home and demanded separate accommodation. Although overall mobility rates in the towns could have remained constant between 1961 and 1966, the demand for accommodation might perhaps have shifted between the different sectors of the housing market as the age structure of the population changed.

(iv) Socio-economic structure of the population

Information concerning the socio-economic structure of the population in both 1961 and 1966 referred only to 'economically active' males living in each of the towns. The total number of such persons in 1966 ranged from 5,540 in Chichester to 10,490 in Taunton. Comparing the socio-economic structure of the populations of these towns with that of England and Wales as a whole, it appeared that in 1966, with the exception of Bridgwater and Yeovil, there was greater than average proportions of males in all non-manual groups, and less than average proportions in the manual occupations (Table 4.5). Bridgwater, on the other hand, recorded higher than average proportions working as supervisors and in skilled and semi-skilled occupations. The highest percentage of skilled manual workers was found in Yeovil, where they formed almost 40% of the male work force.

TABLE 4.5 The proportion of 'economically active' males in each socio-economic group for the selected towns and England and Wales in 1966

	Executive and managerial workers %	Professional workers %	Intermediate and junior non-manuel workers %	Personal service workers %	Foremen and supervisors %	Skilled manual workers %
Bridgwater	6.1	2.1	12.6	1.1	4.6	33.1
Chichester	11.5	7.1	17.9	1.4	4.1	25.4
Newbury	12.2	5.9	21.2	1.0	2.6	33.6
Salisbury	9.9	5.0	25.3	1.8	3.3	28.4
Taunton	9.2	5.9	23.5	1.5	3.4	30.0
Winchester	12.2	5.6	23.7	1.0	3.2	26.1
Yeovil	10.0	3.5	19.3	0.8	2.6	38.2
England and Wales	10.0	4.5	17.2	1.0	3.6	31.5

	Semi-skilled workers %	Unskilled workers %	Own account workers %	Farmers & farm labourers %	Others %
Bridgwater	26.3	8.8	3.1	1.0	1.2
Chichester	15.3	7.2	3.2	3.0	3.9
Newbury	10.1	7.0	2.8	1.2	2.4
Salisbury	11.3	6.3	3.5	0.5	4.7
Taunton	11.2	7.6	4.3	0.5	2.9
Winchester	11.2	7.6	3.6	0.5	5.3
Yeovil	12.9	5.8	3.6	0.5	2.8
England and Wales	14.9	8.1	3.6	3.5	2.1

Source: Sample Census 1966, England and Wales, Economic Activity Tables, County Leaflets, Table 4. Economically active males by area of residence and socio-economic group.

TABLE 4.6 The proportion of 'economically active' males in each socio-economic group for the selected towns in 1961

Towns	Executive and managerial workers %	Professional workers %	Intermediate and junior manual workers %	Personal service workers %	Foremen and supervisors %	Skilled manual workers %
Bridgwater	8.4	3.1	11.3	0.4	3.9	34.5
Chichester	11.8	3.6	18.7	1.9	2.7	34.4
Newbury	11.1	6.9	18.2	0.6	3.4	31.4
Salisbury	8.6	3.9	21.2	2.4	3.5	31.8
Taunton	9.9	2.3	25.1	0.7	2.8	31.6
Winchester	11.1	6.4	21.8	1.5	1.3	25.0
Yeovil	8.7	4.1	21.8	1.0	2.5	39.2

	Semi-skilled workers %	Unskilled workers %	Own account workers %	Farmers and farm labourers %	Others %
Bridgwater	23.3	8.8	2.2	0.5	3.6
Chichester	13.0	6.1	4.2	1.6	2.0
Newbury	10.8	6.8	4.2	1.1	5.5
Salisbury	11.2	5.8	3.9	1.1	6.6
Taunton	12.9	6.6	2.6	1.2	4.3
Winchester	12.4	7.2	3.9	1.1	8.3
Yeovil	10.2	6.1	3.6	0.3	2.5

Source: Census 1961, England and Wales, Occupation, Industry and Socio-economic groups, H.M.S.O. 1966. Table 5. Socio-economic group (numbers and proportions) of economically active males and economically inactive males (stating an occupation).

Middle-class groups are perhaps more inclined than others to alter their housing situation at different stages of their life-cycle, in an attempt to equate the location and type of accommodation they occupy with their social aspirations. As there appeared to be a greater preponderance of these groups in five of the selected towns than in England and Wales as a whole, the overall rates of population turnover in these towns might, perhaps, have been higher than in urban areas with socio-economic structures closer to the 'national' average.

An examination of the changing socio-economic structure of the towns between 1961 and 1966 suggested that a more complex pattern of housing demand occurred during this period (Table 4.6). In Chichester, Salisbury, and Taunton, the proportions of economically-active males in the professional grades increased; thus, demand for housing 'suitable' for such persons might also have increased over this period. For Bridgwater, Salisbury, Newbury and Winchester, similar increases in housing demand might have been experienced in those sectors of the market serving the intermediate and junior non-manual groups. The demand for housing for manual and supervisory workers might have increased in Chichester. Overall, these figures suggested that during the period immediately prior to the investigation demand for particular types of housing varied between the towns.

(v) Size of households

Statistics concerning the size and tenure status of households were more easily related to potential demand for housing in each town, since they referred to the actual population unit for which accommodation was needed. The proportion of households of different sizes for each of the towns is indicated in Table 4.7, together with the figures for England and Wales. The highest proportions of one-person households were recorded in Chichester, Salisbury and Winchester. It was possible, therefore, that demand for small dwelling units might have been greater in these towns than in the others.

TABLE 4.7 The proportion of households of different sizes for the selected towns and England and Wales in 1961 and 1966

Town	One person %	Two persons %	Three persons %	Four persons %	Five persons %	Six and more persons %
1961						
Bridgwater	10.2	28.8	23.5	19.8	9.4	8.3
Chichester	14.4	28.9	22.6	19.4	8.8	5.8
Newbury	12.3	29.2	22.4	19.8	9.3	6.6
Salisbury	12.8	31.3	22.3	18.0	8.9	6.6
Taunton	12.0	31.2	23.8	18.0	9.0	5.8
Winchester	15.2	30.6	21.7	19.1	8.6	5.4
Yeovil	11.2	30.7	24.2	19.5	8.7	5.5
1966						
Bridgwater	11.1	28.8	23.5	18.9	9.9	7.8
Chichester	16.6	31.4	21.3	16.9	8.1	5.4
Newbury	14.7	30.8	22.6	18.1	8.4	5.3
Salisbury	16.1	33.5	19.7	16.1	8.7	5.8
Taunton	14.8	31.1	21.9	18.7	8.1	5.1
Winchester	16.3	31.5	19.8	17.6	8.3	6.4
Yeovil	12.3	34.7	23.2	16.6	7.4	5.7
England and Wales	15.3	30.5	21.2	17.7	8.6	6.5

Source: Census, 1961, England and Wales, County Reports, H.M.S.O. 1963. Table 13. 'Private households by size, rooms occupied and sharing of dwellings'.

Sample Census 1966, England and Wales, County Reports, H.M.S.O. 1967. Table 7A. 'Private households by size, rooms occupied and sharing of dwellings'.

The demand for small dwellings in Bridgwater in particular appeared, from the small percentage of one-person households in that town, to have been less than for the country as a whole. Yeovil had a higher proportion of two-person households than the other towns, but only Bridgwater recorded a higher than average percentage of large households. The demand for dwellings able to accommodate at least six persons would have been greater perhaps in this town than elsewhere. Three-, four-, and five-person households occurred in similar proportions in all the selected towns.

Changes in the proportion of households of different sizes had occurred in the selected towns between 1961 and 1966. All the towns recorded increases in the percentages of one-person households, suggesting that the demand for small accommodation would have similarly increased over the period. This trend was most obvious in Salisbury. Five of the towns also experienced a growth in the proportion of two-person households, perhaps increasing still further the demand for smaller dwellings in these areas. Increases in the proportions of large households with six and more persons were confined to Winchester and Yeovil. Thus, although the highest proportion of such households in 1966 was recorded for Bridgwater, the significance of larger households within the population was declining. For six of the towns the percentage of households containing four and five persons also decreased during this period. Pressure for housing between 1961 and 1966 appeared, therefore, to have been concentrated in the sectors of the housing market comprising small dwellings.

(vi) Tenure status of households

Finally, the potential demand for housing in each tenure group was examined. Variations occurred between the towns in the proportions of households recorded in the four tenure groups.

TABLE 4.8 The proportion of households in each tenure group for the selected towns and England and Wales in 1961 and 1966

	Households in owner-occupation %	Households in local authority accommodation %	Households in private rented accommodation %	Households in other accommodation %
1961				
Bridgwater	34.8	40.4	20.3	4.5
Chichester	40.3	26.7	24.4	8.6
Newbury	42.4	21.6	25.2	10.8
Salisbury	40.5	21.4	27.2	11.1
Taunton	39.7	35.1	18.4	6.8
Winchester	32.6	36.1	22.0	9.3
Yeovil	43.0	34.4	16.8	5.8
1966				
Bridgwater	43.0	40.0	14.5	2.5
Chichester	44.5	29.0	22.5	4.0
Newbury	52.2	26.3	16.2	5.3
Salisbury	43.3	23.8	23.6	9.3
Taunton	44.3	36.6	14.5	4.6
Winchester	37.2	36.8	18.1	7.9
Yeovil	46.0	35.5	13.3	5.2
England and Wales	46.6	25.6	22.5	5.1

Source: Census 1961, England and Wales, County Reports, H.M.S.O. 1963. Table 17. Private households, persons and rooms by tenure.

Sample Census 1966, England and Wales, County Reports, H.M.S.O. 1967. Table 9. Dwellings, private households, persons and rooms by tenure.

The proportions of owner-occupiers in six of the towns was below the average figure of 46.6% for England and Wales, the lowest percentage being recorded for Winchester (Table 4.8). Only in Newbury did the level of owner-occupation rise above the national average. The local authority sector, on the other hand, contained higher proportions of households than in the country as a whole, with percentages in Bridgwater, Taunton, Winchester and Yeovil rising to 10% above the average figure of 25.6% of households. Below average proportions of households in this sector were recorded only for Salisbury. The private rented sector of the market contained smaller proportions of households in five of the towns compared to the figure for England and Wales, but Chichester and Salisbury recorded figures close to the average situation. Other tenures, for example rent-free accommodation, accounted for small but varying proportions of households. These figures together suggested that, compared with the country as a whole, potential demand for housing might have been greater in the public housing sector of the market of these towns, and that less demand may have been experienced for the various tenures of the private housing sector.

The pattern of demand for housing of different tenures might have altered between 1961 and 1966. All the towns experienced an increase in the proportion of households living in owner-occupied accommodation during this period (Table 4.8). The largest increases in this sector were recorded for Bridgwater and Newbury. Similarly, all the towns except Bridgwater increased their proportions of households in the local authority sector of the market. The demand for accommodation in these two tenure groups appeared to have increased at the expense of accommodation in the private rented sector and in other types of

tenures. This change might be attributable to two factors. First, during this period, households might increasingly have desired to become owner-occupiers and local authority tenants, and these figures could reveal their level of success in attaining the accommodation of their choice. Secondly, the amount of private rented property on the market was continuously declining as landlords became unwilling to operate in a controlled market[9]. A decreasing amount of dwellings available to rent in the private market might have forced households to enter tenure groups which they would not otherwise choose.

This brief examination of the characteristics of the population living in the selected towns highlighted some aspects of the potential demand for housing in the towns between 1961 and 1966. In general, it appeared that, compared with the average situation for England and Wales, the populations of these towns had similar age, socio-economic, household size and tenure characteristics. Changes taking place during the period in the proportions of the population with particular characteristics were common to most towns. Bridgwater, however, seemed the one exception to this pattern. Compared with the other towns, its population was younger, formed into larger households, and was concentrated to a greater extent in the manual occupations. It was expected, therefore, that some contrasts would be found between the pattern of housing demand in Bridgwater and that in the other six towns.

The potential demand for housing hinted at in this discussion could only be satisfied, however, through the operations of institutions controlling access to housing. Access to local authority housing is governed by the regulations and resources of individual local councils. The availability of private rented accommodation is less formally controlled by the activities of landlords and letting agencies. In the owner-occupied sector, access to housing is affected by the finance

institutions who control the availability of credit. Unless households can successfully negotiate these institutions, their housing needs are unlikely to be fulfilled. The manner in which these institutions might have affected the levels of actual housing demand in the towns was, therefore, considered.

4.2 Factors affecting 'housing demand' in the towns

Every year, between 7% and 8% of households change their accommodation, but this is only 25% of those who have expressed a desire to move, and about 70% of households who have actually tried to move[10]. Movement within the owner-occupied sector of the housing market was the major concern of this investigation, and in this sector " the volume and character of demands for housing which are actually met ... depend not only on the level and distribution of incomes, but particularly on the supply of credit and the operation of the channels through which loans for housing flow"[11]. A small number of owner-occupiers are able to buy their dwellings outright. Needleman estimated that 15% of owner-occupiers bought without recourse to external borrowing, and a figure of 20% was given by Cullingworth[12]. The majority of households wishing to become owner-occupiers for the first time and those households already owning accommodation who wish to move elsewhere must, therefore, negotiate mortgage advances through finance institutions.

Both the level of mortgage availability and the yearly costs of the loan should be taken into consideration by households hoping to obtain mortgages. However, "all the evidence suggests that the demand for housing is not very sensitive to moderate variations in the cost of finance"[13]. It appears, therefore, that levels of interest rates and taxation have little impact of the demand for owner-occupied accommodation. On the other hand, the level of demand seems fairly sensitive to the amounts of money available for lending to individual

mortgagees[14]. The discussion concentrated, therefore, on investigating the level of mortgage availability between 1967 and 1968 and ignored any changes occurring to the costs of those mortgages during that period.

Housing Statistics publishes information concerning the volume of mortgage advances every year by various finance institutions[15]. Unfortunately, the figures referred to Great Britain as a whole, and any variations occurring between the towns in the availability of mortgages for different types of dwellings could not, therefore, be ascertained. Some evidence collected in the course of another inquiry suggested that such variations might be found both between areas and between institutions within an area[16]. Building societies operating at a national scale adopt general policies for allocating mortgages, but individual branches of each society are allowed a fair degree of flexibility in interpreting those policies, depending on the local housing situation. Small societies relying for investment on strong support in one area may adopt policies towards borrowers in those areas which are rather different from the attitudes of larger nationally-based societies. The regulations governing advances by local authorities may also be strongly influenced by housing market conditions in their areas because the councils are directly responsible to the local population. Although it was not possible to investigate individual lending institutions operating in the towns, a discussion of national statistics was undertaken in the hope of revealing some general trends in the volume of mortgages available.

The level of mortgage advances and their distribution between different types of dwellings were examined for two periods, the decade 1960 to 1969, and the years 1966 to 1969. This two-fold division was necessary because certain statistics were published only for the latter years of the decade. By using this time division, it was possible to indicate how far the allocation of mortgages in the study year, April 1967

TABLE 4.9 Mortgage advances each year as a percentage of the total amount of mortgage money made available between 1960 and 1969

Year	Proportion of total mortgage money advanced each year %	Proportion of total building society money advanced each year %	Proportion of local authority money advanced each year %	Proportion of insurance company money advanced each year %
1960	4.9	5.3	5.9	0.0
1961	5.0	5.2	7.7	0.0
1962	6.4	5.9	7.1	10.3
1963	8.3	8.1	9.0	9.4
1964	10.6	10.0	14.8	11.5
1965	10.6	9.2	18.6	14.3
1966	11.9	11.9	10.2	12.9
1967	13.7	14.1	12.8	10.8
1968	14.4	15.1	8.2	14.7
1969	13.9	14.7	5.3	15.7

Source: Housing Statistics, Great Britain, No.17, May 1970.

Table 38. Loans for house purchase - main institutional sources. United Kingdom.

to March 1968, conformed to general trends in mortgage availability for the whole decade, and thus how far the operations of the housing market in the selected towns during that year were influenced by unusual occurrences in the national money market.

(i) Total mortgage advances 1960 to 1969

The total amount of money advanced for mortgages between 1960 and 1969 was £12,892 million, of which 80% was provided by building societies, with the local authorities and insurance companies supplying a further 10% each. Each type of lending institution increased the amount of money it advanced towards the end of the decade, although the local authorities slightly decreased their amounts once more in 1968 and 1969 (Table 4.9). Of the total advanced for the four years 1966 to 1969, almost equal proportions were distributed each year by building societies, (the largest supplier of credit for house purchase), whereas insurance companies increased and local authorities decreased the amounts they lent in the latter two years. It appeared, therefore, that although there was slightly more money available in the second half of the decade, the year 1967 to 1968 was not characterised by any sudden alterations in the supply of credit.

The additional amount of money available for mortgages after 1965 might not necessarily have indicated an increase in the actual number of mortgages advanced during the period. The larger sums of money might only have been used to offset a rise in house prices and to extend the provisions for loaning up to 95% of the purchase price. Prices of secondhand dwellings for which mortgages were advanced by building societies rose by about £800 between 1966 and 1969 (Table 4.10). The majority of mortgages allocated by this institution were for dwellings priced between £2,000 and £6,000, but whereas dwellings priced at less than £4,000 received over 60% of all mortgages allocated in 1966, this proportion had fallen to just over 40% by 1969. Whether part of the extra money

TABLE 4.10 The number of mortgages advanced by building societies to dwellings of different price, as a percentage of the total number of mortgages advanced between 1966 and 1969, together with the average price of dwellings for each year

Price range	1966 %	1967 %	1968 %	1969 %
Less £2,000	14.8	11.8	9.0	6.8
£2,000 - £3,999	48.2	45.6	42.4	38.0
£4,000 - £5,999	28.3	30.9	34.3	36.6
£6,000 - £7,999	6.4	7.8	9.4	11.7
£8,000 and over	3.1	3.9	4.9	6.7
Average price	£3,776	£4,001	£4,290	£4,598

Source: Housing Statistics, Great Britain, No.17, May 1970.(H.M.S.O.) Table 44 Building Societies- The number of mortgages by purchase price. United Kingdom.

TABLE 4.11 The number of mortgages advanced each year by building societies and local authorities, as a percentage of the total number of mortgages advanced between 1963 and 1969

Year	Building Societies %	Local Authorities %
1963	8.8	15.1
1964	12.0	20.2
1965	12.1	22.7
1966	13.5	12.1
1967	14.6	14.7
1968	16.0	10.1
1969	13.8	4.9

Source: Housing Statistics, Great Britain,No.17, May 1970.(H.M.S.O). Table 40. Building Societies: mortgage advances by type of property. United Kingdom. Table 51. Housing loans by Local Authorities. England and Wales, (a) Loans to private persons for house purchase.

available was used to increase the number of advances to more expensive dwellings or whether these figures simply reflected the inflation of house prices over the period is difficult to ascertain.

Statistics relating to number of mortgages advanced each year are published for building societies and local authorities. Of the total number of mortgages advanced by each type of institution between 1963 and 1969, local authorities allocated the greatest proportion in 1964 and 1965, whereas building societies (with much larger amounts of money to lend), awarded the greatest proportions in 1967 and 1968 (Table 4.11). It seemed, therefore, that despite the rise in house prices over this period, a slightly greater number of mortgages were allocated for house-purchase between April 1967 and March 1968. A few households, who perhaps had little opportunity for obtaining a loan prior to 1967, might have acquired a mortgage after this date, and as a result, there could have been a rise in the demand for owner-occupied accommodation in some areas of the country. The degree to which increased availability of credit affected demand in the selected towns was uncertain, but it was possible that rates of turnover in owner-occupied dwellings might have been slightly higher during the study period than in both the preceding and succeeding years.

(ii) Types of dwellings for which mortgages advanced

Although new dwellings represent only a very small proportion of dwelling stock in any year, the portioning out of mortgages between new and secondhand dwellings appeared to favour the purchasers of new dwellings. Approximately 30% of mortgages from building societies were allocated to new property in every year between 1963 and 1969 (Table 4.12). Throughout this period, however, a greater proportion of local authority mortgages were advanced to secondhand dwellings, and this trend considerably increased from 1966 onwards. The level of population mobility,

operating through the filtering process, could be affected by alterations in the mortgage allocation between new and secondhand dwellings[18]. For example, restrictions in the number of mortgages available for purchasing new property might impose financial constraints on households wishing to purchase such accommodation. These households might, therefore, be obliged to remain in their present accommodation, thereby restricting the supply of secondhand dwellings to other households. On the other hand, for households considering either a move to a new dwelling by outright purchase or acquiring accommodation in a different tenure group, the chances of selling their present accommodation could be enhanced by the greater availability of mortgages for secondhand dwellings.

The proportion of mortgages awarded for dwellings of different ages between 1966 and 1969 confirmed the trend towards greater availability of mortgages for secondhand dwellings towards the end of the decade. During this period, the number of mortgages advanced by building societies for new dwellings decreased by 6% (Table 4.13). The resulting increase in the proportion of mortgages available for dwellings of other ages was, however, entirely allocated to dwellings built since 1939, and the level of mortgages advanced for dwellings built before 1939 remained unaltered. Dwellings built before 1919 appeared particularly discriminated against in terms of mortgage allocation. Less than 20% of all mortgages were advanced for this type of dwelling between 1966 and 1969, although they accounted for over 45% of the country's total housing stock[19]. It is possible that people living in older dwellings may have less desire to move, but it seems more likely that building societies consider lending on older property too great a risk.

TABLE 4.12 The percentage of total advances by building societies and local authorities allocated to secondhand dwellings in each year between 1963 and 1969

Year	Building Societies %	Local Authorities %
1963	72.0	81.0
1964	69.0	76.0
1965	65.4	78.7
1966	68.0	86.1
1967	75.8	88.6
1968	69.9	89.9
1969	72.2	90.4

Source: As for Table 4.11

TABLE 4.13 The percentage of total advances by building societies for dwellings of different ages for each year between 1966 and 1969

Age of dwelling	1966 %	1967 %	1968 %	1969 %
Pre-1919	16.9	17.8	16.4	16.4
1919-1939	22.5	23.0	21.5	22.9
Post-1939	24.6	26.7	27.8	30.2
New	36.0	32.5	34.3	30.5

Source: Housing Statistics, Great Britain, No.17, May 1970,(H.M.S.O.) Table 46. Building Societies- Number of mortgages by age of dwelling. United Kingdom.

As a result of the scarcity of mortgages for older property, some variations in rates of turnover between dwellings built before and after 1939 might be apparent. The price of pre-1939 dwellings could be depressed to a level where would-be purchasers might consider outright purchase or private borrowing as an alternative to trying to raise a mortgage. This might benefit the purchasers of older property by restricting their housing costs; it could, however, discourage owners of such property from selling them because the small amount of money realised from the sale might be insufficient for them to purchase alternative accommodation. Attempts to encourage elderly households to vacate their dwellings because of under-occupation might be more successful if credit facilities were more easily available for the older dwellings which they occupy. The selected towns contained large amounts of housing built before 1919, together with high proportions of elderly households, and rates of dwelling turnover could be considerably affected by the low level of mortgage allocation to these older dwellings.

This examination of mortgage availability in the 1960s suggested that the period April 1967 to March 1968 was characterised by a moderate increase in the number of mortgages advanced compared to the rest of the decade. Of the total number of mortgages allocated, a greater proportion were awarded to more expensive properties during this period, although this might only have reflected rises occurring in the price of dwellings. The increased availability of mortgages for households desiring access to the owner-occupied sector of the market, and for households already in that sector wishing to change their accommodation, might have increased the levels of actual demand for housing during the study period. Purchasers of new dwellings, however, could have found greater difficulty in obtaining mortgages than previously, since there

was a decline in the proportion of mortgages allocated to that type of dwelling. In contrast, households buying secondhand dwellings built since 1939 would have found credit facilities easier. Only a small proportion of mortgages were advanced for pre-1939 property throughout the 1960s and therefore, compared to demand for newer accommodation, a higher proportion of potential demand for older dwellings might have remained unsatisfied.

The level of dwelling turnover in the towns could perhaps have been influenced by these trends in mortgage allocation. The overall rate of turnover in each town between April 1967 and March 1968 might be similar to rates recorded in all the later years of the decade, since the general level of mortgage availability underwent only minor fluctuations during this period. Within each town, residential areas with large proportions of post-1939 dwellings could perhaps have recorded higher rates of turnover than areas with large proportions of dwellings built before 1939. At the same time, however, it should be noted that such a relationship might not have occurred at all in that the local housing market conditions in the selected towns could have affected the policies adopted by the institutions operating within them.

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1. Cullingworth, J.B. (1965), 'English Housing Trends', Occasional Papers in Social Administration, No.13, (London: Bell), 11.
2. Ibid. "It is extremely difficult to distinguish between demand and needs, need and preference".
3. Donnison, D.V. (1967), The government of housing (Harmondsworth: Penguin Books), 201.
4. See Chapter 1 for a more detailed discussion of constraints operating in the housing market and their effects on access to housing.

5. Rossi,P.H. Why families move (Illinois: Free Press Glencoe) 178.

6. This low rate of population growth between 1961 and 1966 was only to be expected because the towns were selected for their similar slow growth rates. Although this similarity was measured in terms of increase in dwelling stock, and not increase in population, a close relationship between the two could be expected. See Chapter 2.

7. Since completing this chapter some population figure have been published in the preliminary report of the 1971 census. Only total population statistics were available for each of the selected towns. As indicated below, the populations of the towns increased between 1966 and 1971, suggesting that the demand for housing would also have increased during this period. Those towns which appeared to lose population between 1961 and 1966 recorded 1971 populations very similar to their 1961 figures, indicating a static rate of growth over the whole decade. The highest rate of growth between 1966 and 1971 was experienced by Newbury, reiterating the trend in the first five years of the decade. However, the relationship between these figures and the growth in the number of households during this period could not be ascertained.

Population of the selected towns in 1971. (Figures from Census 1971, England and Wales, Preliminary Report, H.M.S.O. 1971).

Town	Population 1971	Population increase 1966 to 1971
Bridgwater	26,599	1.0%
Chichester	20,547	3.1%
Newbury	23,696	8.5%
Salisbury	35,271	1.4%
Taunton	37,373	4.2%
Winchester	31,041	3.8%
Yeovil	25,492	3.9%

8. The one-year migration figures were analysed in preference to the five year figures, because the former are considered more accurate.

9. Donnison, op.cit., 189.

10. Ibid., 202.

Woolf,M. (1967) The housing survey in England and Wales 1964 (London: Government Social Survey), 120.

11. Donnison, op. cit., 182.

Although a few occupier-ratepayer units would be private rented dwellings, an examination of the institutional framework governing access to this sector was outside the scope of the investigation, since there is almost no material published.

12. Needleman,L. (1965) The economics of housing (London: Staples Press) 126. Cullingworth, op. cit., 72.

13. Needleman, op. cit., 134.

14. This was illustrated by the impact on the housing market during 1971 and 1972 of the sudden release of credit for house purchase.

15. Ministry of Housing and Local Government, Scottish Development Dept., Welsh Office, Housing Statistics, Great Britain, (quarterly), (London:H.M.S.O.).

16. Madjifotiou,N.A. and Robinson,M. (1972) 'Employment and housing conditions in four selected labour market areas in England and Wales', Working Paper No.5, Housing and Labour Mobility Study, Dept. of Geography, University College London.

17. Housing Statistics, op. cit., No.17, May 1970.

18. A discussion of the 'filtering process' is published in

Fristof,F.S. (1966) 'Housing Policy Goals', Urban Studies,2, 89-111

Lansing,J.B., Clifton,C.W. and Morgan,J.N. New homes and poor people: a study of chains of moves Institute of Social Research, The University of Mitchigan, (Ann Arbor: Mitchigan)

Lowry,I.S. 'Filtering and housing standards: a conceptual analysis', Land Economics, 36, 362-340.

19. Stone,P.A. (1970) Population trends and housing (Cambridge: University Press) 291.

It must, however, be acknowledged that some of these older dwellings would be found within the private rented sector of the housing market, but the proportion was unlikely to account for total difference between these two figures.

In 1958, the government advanced £100 million to the building societies, to enable them to advance 95% mortgages on pre-1919 property. There is no information as to the success of this attempt to aid purchasers of older dwellings. See E.J. Cleary, (1965) The building society movement (London: Elek) 245.

CHAPTER 5 Methods of data collection and storage

The preceding discussion of housing demand during the study period completed the preliminary stage of the research programme. The second stage was the collection and storage of data relating to dwelling-occupant turnover, in preparation for analysis. These two procedures are examined briefly.

5.1 Data collection

The types of data sources for investigating dwelling-occupant turnover were discussed in Chapter 3. The major source of information was the rating account records; additional data was obtained from the Ordnance Survey 1:2,500 or 1:1,250 plans and the 'Age of Building' maps compiled by the local planning departments of the sample towns. Information could be extracted from these sources concerning the age and physical characteristics of the privately-owned dwellings in the towns. For a majority of these dwellings, it would be possible to indicate any change of occupier between April 1967 and March 1968.

Despite the confidentiality of the information contained in the rating accounts, access to the records was readily granted on application to the Borough Treasurer. The method of collating the accounts differed between the seven towns. The simplest records were compiled by the rating departments of Bridgwater and Chichester. Each page of the account had an identical format and referred to one rateable unit. Volumes were printed by computer at the beginning of the financial year and any subsequent changes to the record were hand-written. Alterations to the name of a ratepayer who was also the occupier of a dwelling could, therefore, be easily identified.

A second method of recording rating accounts was found in Newbury, Salisbury and Yeovil. A rate-card was allocated to each rated property,

on which was stored information for four consecutive years. The address of the property, together with the name of the ratepayer (and the ratepayer's address if different from that of the rated unit), was typed onto the card, but alterations to this information were hand-written. Since information for more than one year was contained on the same card, these alterations had to be scrutinised with some care. However, all annotations were dated, and thus it was possible to distinguish those referring to the period 1st April 1967 to 31st March 1968.

The Boroughs of Taunton and Winchester used a third system of recording rating information. Accounts were hand-written into a yearly rate-book, each line on a page referring to a single rated unit. Space for annotations was severely limited, and numerous abbreviations were used. Some assistance from staff in the rating department was required to decipher these. Fortunately, each rate-book contained information for one financial year only, and all alterations referred to that year.

Although these differences in format caused some inconvenience, all the records contained the data required for the investigation. Since the accounts could not be removed from council premises, it was necessary to extract the information at the various rating departments. In order to facilitate this procedure, a simple record sheet was designed (Figure 5.1). Data was obtainable from the rating accounts to fill the first four and the last columns of the record sheet. To complete the information for each dwellings, the additional data sources were used. Dwellings classified as houses by the rating authority were subdivided into detached, semi-detached or terraced dwellings by consulting the Ordnance Survey 1:2,500 plans belonging to the planning departments of each town. These plans provided details of the form of individual properties, since their scale was sufficiently large for garden boundaries to be identified. The numbers or names of properties were also recorded.

Street _____ Town _____

No. of property units in street _____

No.	RV	House-type					House-age				R
		B	F	SD	D	T	1	2	3	4	

KEY

(No.) - Number or name of any rated property having a domestic rating.

(RV) - The rateable value of unit

(B) - Bungalow

(F) - Flat or maisonette

(SD) - Semi-detached house

(D) - Detached house

(T) - Terraced house

(1) - Dwelling built before 1875

(2) - Dwelling built 1875-1914

(3) - Dwelling built 1914-1950

(R) - Ratepayer not the occupier

* - Dwelling recording a change of occupier

FIGURE 5.1 Data record sheet

Staff in the planning departments attempted to up-date these plans by adding newly-constructed dwellings, but some recently rated units in the towns had been omitted. These were located both on private estates and in redevelopment areas. It was necessary, therefore, to supplement the data on dwelling form obtained from the plans by carrying out localised street surveys in all the towns.

The physical characteristics of dwellings were measured by both the form and the age of construction. To ascertain the period during which each dwelling was built, it was hoped to use the 'Age of Building' map compiled by each local planning department. Such maps, however, were available for only three of the towns - Salisbury, at a scale of 1:10,560, and Taunton and Yeovil at a scale of 1:2,500. The building periods used to classify property differed slightly between the three towns; for Salisbury and Yeovil, buildings were grouped as pre-1875, 1875-1914, and 1914-1950; for Taunton, the grouping was pre-1875, 1875-1914, 1914-1939 and post-1939. None of these maps included dwellings located either on estates or in redevelopment areas dating later than 1950. Although the new estates comprised areas of homogeneous housing, and were, therefore, easily classified, this was not true of redevelopment areas. In most of the town centres, a few old properties had been demolished and new dwellings built. These could only be distinguished by a street survey.

'Age of Building' maps were not available for Bridgwater, Chichester, Newbury and Winchester. In order to obtain information on property ages, a survey of all private dwellings in these towns was necessary. To classify dwellings by observation, building periods with easily identifiable characteristics were chosen. By using such guidelines as type of building material and facing, the degree of brick discolouration and weathering, window design and position, porch layout, architectural embellishment, and the existence of a garage built as part of the dwelling, it was possible with some practice, to acquire an 'eye' for the essential differences in domestic architecture at particular periods. Building

periods selected for the 'Age of Building' maps coincided with those readily distinguishable in the field - dwellings built prior to the passing of the Artisans and Labourers Dwellings Improvement Act in 1875, dwellings built between the passing of the Act and the First World War, inter-war housing, and post-war housing. By adopting a four-fold age division corresponding to that of the 'Age of Building' maps, data from both map and survey sources could be incorporated into the age classification. The following age groups were, therefore chosen for the classification - dwellings built before 1875, dwellings built between 1875 and 1914, dwellings built between 1914 and 1950, and dwellings built between 1950 and 1967[1]. These groupings corresponded exactly with those used for the 'Age of Building' classifications of Salisbury and Yeovil, but deviated slightly from those for Taunton, where dwellings were classified as built either before or after 1939. The map for Taunton was compiled in the early 1950s, and the data was standardised by combining the two groups 1914-1939 and post-1939 to form a single group of dwellings built between 1914 and 1950.

Using a combination of map sources and street surveys, the data record sheets were completed. The time spent in each town on data collection varied between two and three weeks, depending on the size of the town and the amount of street survey work which was necessary.

5.2 Data storage and processing

The record sheets contained data for 38,786 privately-owned dwellings in the seven sample towns. With such a large number of dwellings, investigating the existence of any relationship between the physical characteristics of these dwellings and the level of dwelling-occupant turnover was impossible without the aid of a mechanical counting and sorting machine. To make use of this machine, the data was transferred from the record sheets to punched cards, and a new coding system was devised for this purpose (Table 5.1).

TABLE 5.1 Coding of data for punched cards *

Column	Type of information	Code
1 - 2	Rateable value	Grouped in £10 units up to £990.
3	Type of dwelling	1 Bungalow 2 Flat or maisonette 3 Semi-detached house 4 Detached house 5 Terraced house
4	Age of dwelling	1 Pre-1875 2 1875-1914 3 1914-1950 4 Post-1950
5	Tenure status	1 Ratepayer - occupier - owner 2 Ratepayer - occupier - non-owner 3 Ratepayer - owner - non-occupier
6 - 76	Location in street	Street number or name printed in full
77 - 79	Street code	AAA, AAB, AAC . . . . ZZZ.
80	Town code	B Bridgwater C Chichester N Newbury S Salisbury T Taunton W Winchester Y Yeovil

* Dwellings recording a change of occupier were coded on yellow as opposed to white data cards.

Once the data was available on punched cards, the machine could be set to identify and count the number of cards containing a specified combination of codes. For example, to discover the number of bungalows built between 1914 and 1950, with rateable values between £90 and £100, all the cards were placed into the machine and the dials set as follows:-

First Run - sort column 3 - All cards were divided into groups representing codes 1 to 5. Cards coded 1 were extracted and the rest eliminated.

Second Run - sort column 4 - Cards coded 1 previously were divided into groups representing codes 1 to 4. Cards coded 3 were extracted and the rest eliminated.

Third Run - sort column 1 - Cards coded 3 previously were divided into groups representing codes 0 to 9. Cards coded 0 were extracted and the rest eliminated.

Fourth Run - sort column 2 - Cards coded 0 previously were divided into groups representing codes 1 to 9. Cards coded 9 were extracted and the rest eliminated.

The cards coded 9 on the fourth run were those identifying dwellings with the required characteristics.

The data for all seven towns were initially analysed by this procedure in order to establish the exact composition of the housing stock in each town. The results, together with an examination of the relationship between the physical characteristics of dwellings and the level of dwelling-occupant turnover are discussed in succeeding chapters.

REFERENCES

1. Information concerning dwellings occupied for the first time during the financial year 1967 to 1968 were not included in the rating account but collated separately. Thus the newest dwellings in the survey were built and occupied prior to 1st April 1967. By omitting dwellings first occupied during the study year, the analysis of turnover was not influenced by the sudden completion of a new housing estate.

CHAPTER 6 Characteristics of the housing stock of the selected towns and the classification of local housing areas

The investigation into turnover rates in different types of dwellings was concerned with both the characteristics of the dwellings and their location within the towns. In order to provide a framework for the analysis, a system of areal sub-divisions was required for each town. The housing stock was then examined within this framework in terms of rating and tenure characteristics, physical characteristics and the pattern of spatial distribution.

6.1 The selection of areal sub-divisions and the pattern of dwelling density

In assessing the type of spatial unit to be used, it was necessary to consider the suitability of a framework for spatial analyses occurring throughout the investigation. A uniform framework was essential for comparing different distribution patterns both within and between the towns. The areal unit most favoured by researchers into the structure of towns is the enumeration district used by the Registrar General for the compilation of the census. In theory, an enumeration district should be a reasonably homogeneous demographic tract, containing about 300 households. Information is published for these areas concerning the characteristics of the resident population, as for example, their social class, working status and tenure. It was thought initially that this unit was a satisfactory one for plotting the distribution of dwelling characteristics, particularly as patterns could then have been related to the types of people living in those dwellings. Before selecting this unit, however, it was decided to examine the characteristics of the enumeration districts in one of the towns. Winchester was chosen for this analysis.

A detailed examination of the enumeration districts revealed several factors which resulted in the rejection of this sub-division in favour of a more suitable one. Of the 15 districts in the borough, only 2 contained 300 or less households (Table 6.1)[1]. Six districts recorded over 600 households, with the largest having 950 households. So large a population was unlikely to be homogeneous in its characteristics. The areal size of districts also varied considerably. Comparing patterns both within towns and between towns would be difficult where units had neither a constant base population nor a constant areal size. Furthermore, the investigation excluded the public housing sector, and it was necessary, therefore, to eliminate from the spatial analyses all areas containing large numbers of council houses. In Winchester, the enumeration district boundaries failed to distinguish between areas of public and areas of private housing. Only three districts contained no council houses and four comprised over 75% council houses; the remainder were mixed in character.

This brief survey of Winchester suggested that difficulties would arise in comparing spatial distributions based on the enumeration district. To overcome this problem, it was decided to adopt a grid square system of areal units based in the Ordnance Survey National Grid. The grid system has been increasingly recognised as a more satisfactory unit than the enumeration district for collating population data[2]. Its major advantage is the achievement of spatial units with constant size irrespective of the size or shape of the town being studied.

The value of the grid system for analysing patterns of turnover was tested using data for Winchester. At the scale of 1:10,560, the total built-up area was divided into 0.25 kilometre sub-divisions of the National Grid. This produced 161 uniform squares, each with an area of 0.0625 of a kilometre. Areas of exclusive council housing development were omitted. With the aid of both maps and street directories, the 5,291 private dwellings in the town were allocated to the appropriate grid square.

TABLE 6.1 Characteristics of enumeration districts in Winchester

Enumeration District Number	Total number of households 1966	% of households renting from council 1966
1	900	45.0
2	480	10.7
3	230	20.0
4	750	54.7
5	820	86.2
6	600	31.4
7	670	6.7
8	220	4.7
9	950	0.0
10	560	23.6
11	990	0.0
12	600	96.7
13	440	0.0
14	540	90.5
15	730	75.7

Source: Sample Census 1966, Unpublished Data.

Of the 161 units, 27 contained no private dwellings; less than ten dwellings were recorded in a further 24 squares. The remaining 157 squares embraced between 10 and 203 dwellings, although only 8 squares had more than 100 dwellings (Table 6.2).

From this analysis the grid square system of areal units appeared more suitable than enumeration districts for mapping the various distributions throughout the investigation. Not only did the grid square provide a base area of constant size, but it also seemed more likely that spatial patterns revealed by conducting the analysis at this finer level would reflect more accurately the complexities of the real world.

The pattern of dwelling density in all the towns was then examined using the grid square system of spatial units. The urban areas of the seven towns were divided into 0.25 kilometre squares and each square was numbered. Using street directories in conjunction with Ordnance Survey maps at the scale of 1:10,560, individual dwellings were pinpointed and their grid square locations recorded. A limit of 10 dwellings per square was chosen to delimit the effective extent of private housing in the towns, since calculations based on units containing very few dwellings would have distorted the resulting spatial patterns.

The number of squares containing 10 or more private dwellings varied between the towns. The largest area of private housing was recorded for Salisbury and the smallest for Bridgwater (Table 6.3). Maximum density of dwellings ranged from 266 dwellings in one square in Bridgwater to 175 dwellings in one square in Yeovil. The spatial pattern of dwellings density in the towns revealed a far from simple pattern of declining density from town centre to periphery. Two types of distribution pattern were discernible but the difference between them was not absolutely distinct. The towns of Chichester, Newbury, Winchester and Yeovil comprised the first group (Figure 6.1 b, c, f, g).

TABLE 6.2 Number of dwellings in each grid square in Winchester

Grid square number	No. dwell-ings	Grid square number	No. dwell-ings	Grid square number	No. dwell-ings	Grid square number	No. dwell-ings
1	18	37	21	70	64	110	11
1A	13	38	61	71	30	112	19
4	65	39	54	72	46	113	15
5	15	40	99	73	66	114	33
9	10	41	86	74	35	116	26
10	27	42	15	75	52	118	60
12	48	43	49	81	26	119	99
13	76	44	36	83	40	120	54
14	82	45	25	84	30	122	12
15	23	47	38	85	38	123	29
16	10	48	114	87	103	129	104
17	16	49	159	88	20	130	56
18	10	50	102	89	50	131	12
19	33	51	87	90	41	132	13
20	23	52	53	91	25	137	19
21	36	53	10	92	11	138	19
22	32	54	38	93	14	139	74
23	39	55	127	97	10	140	23
24	41	56	203	98	64	141	28
25	26	57	52	99	94	145	23
28	80	58	65	100	85	146	93
30	24	59	102	101	29	147	19
31	77	60	46	102	49	148	35
32	94	61	21	103	23	149	35
33	88	66	36	104	29	150	16
34	52	67	69	106	29	160	33
35	23	68	13	107	58		
36	28	69	64	108	20		

TABLE 6.3 The division of the selected towns into grid squares *

Town	Total number of grid squares containing ten or more dwellings	Number of dwellings in the densest grid square
Bridgwater	65	266
Chichester	85	204
Newbury	102	181
Salisbury	128	258
Taunton	108	206
Winchester	109	203
Yeovil	92	175

* The location of each grid square within a town is shown on the maps in Appendix A.

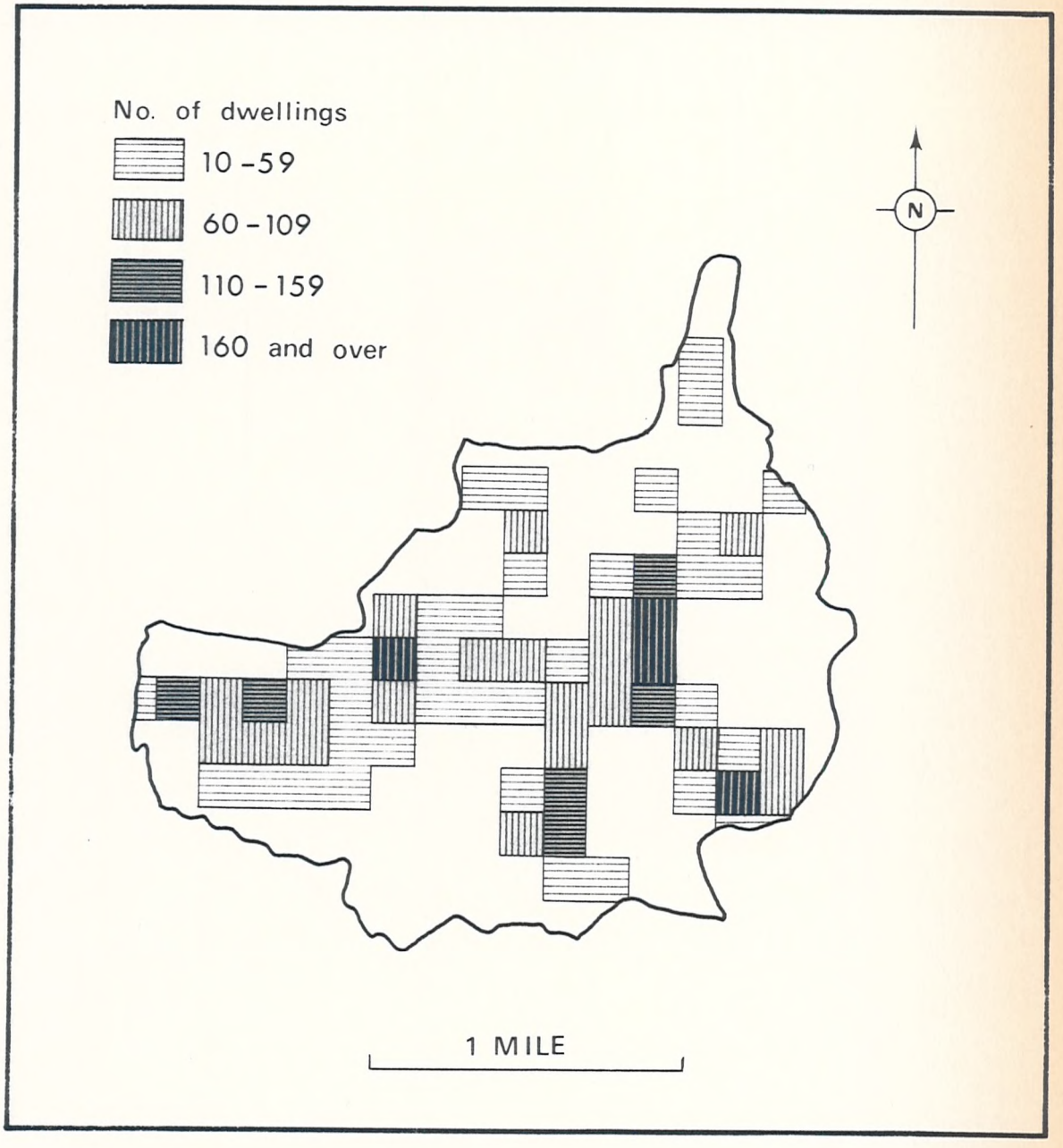

FIGURE 6.1 The spatial pattern of dwelling density - (a) Bridgwater

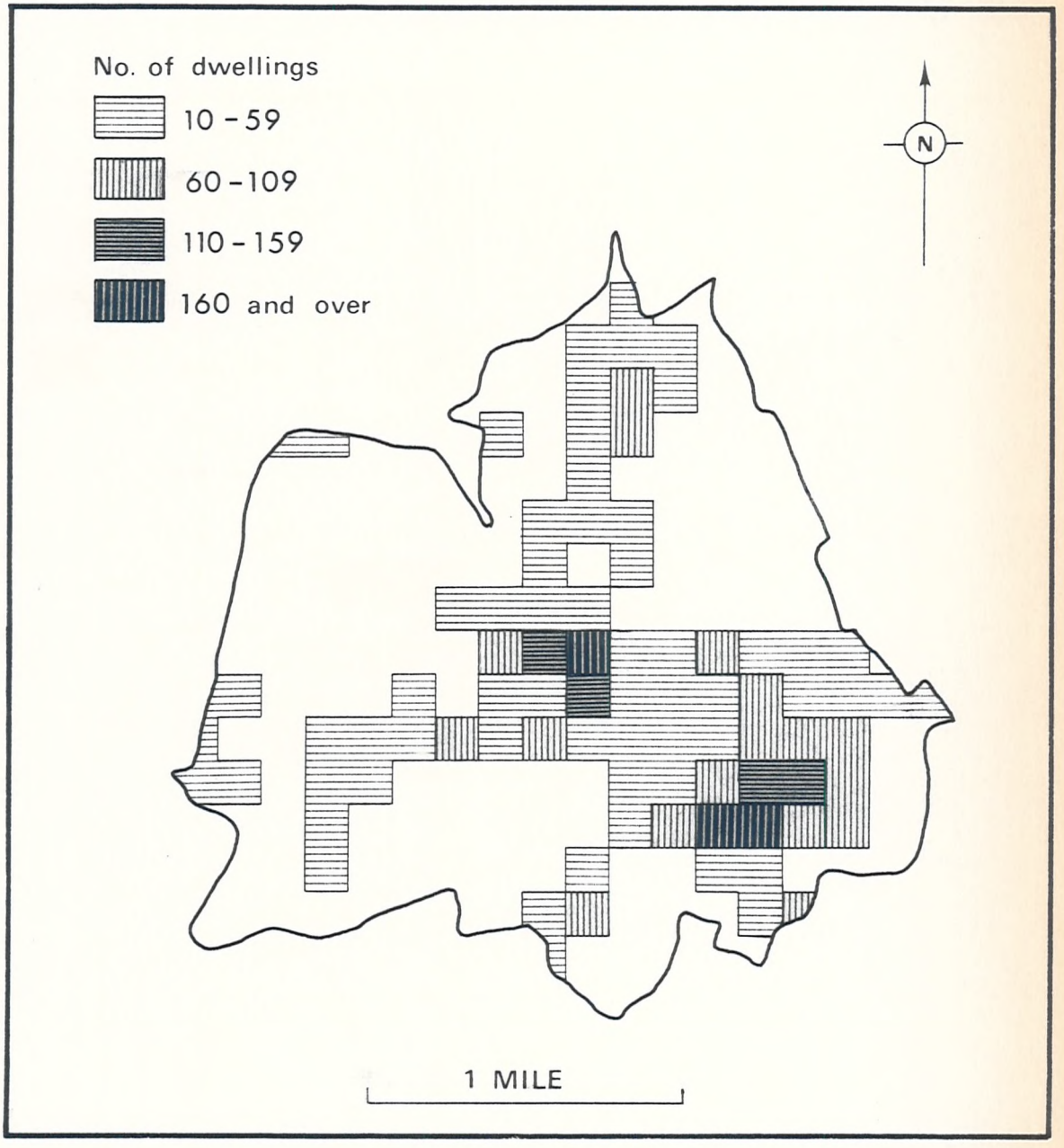

FIGURE 6.1 The spatial pattern of dwelling density - (b) Chichester

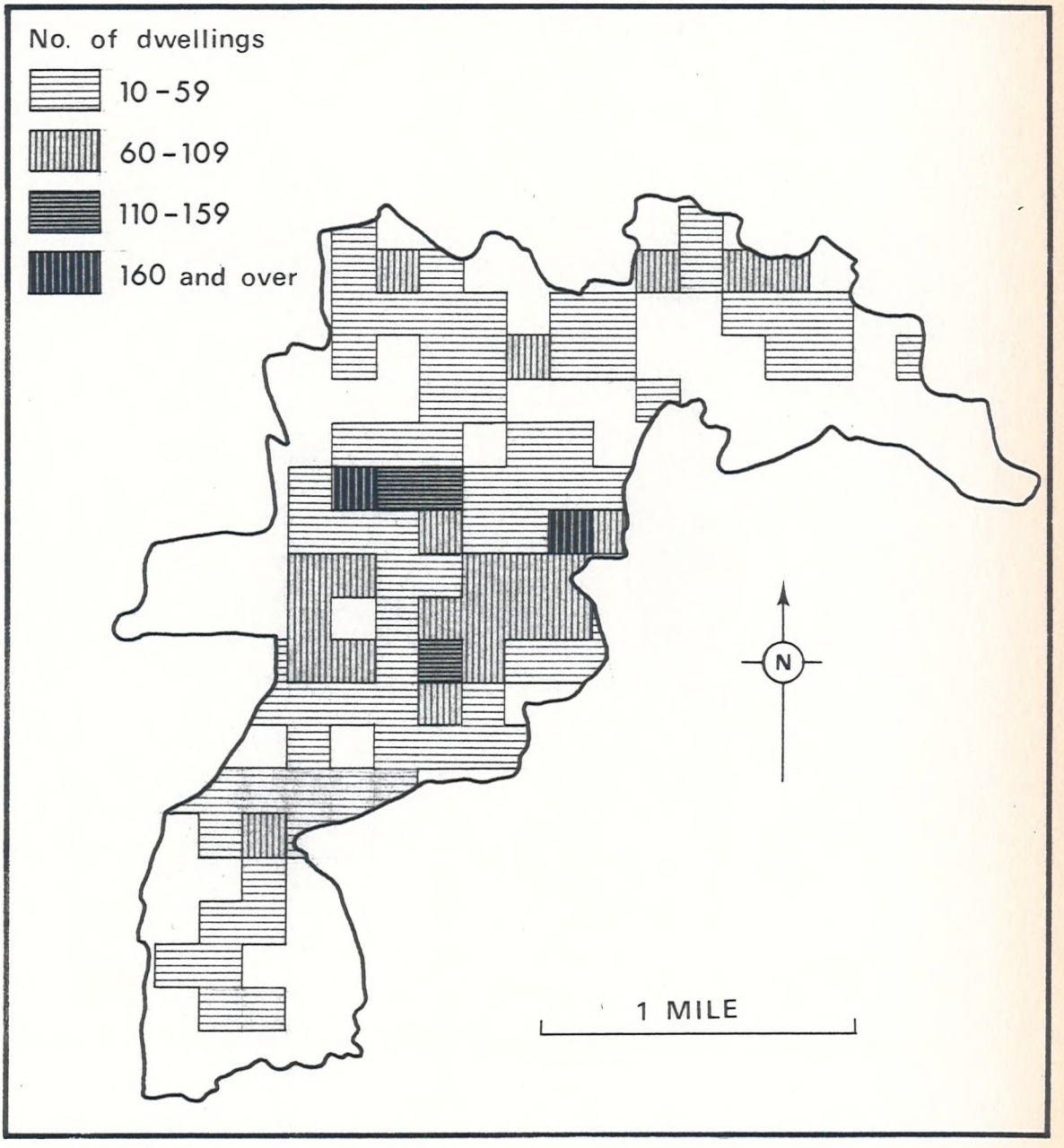

FIGURE 6.1 The spatial pattern of dwelling density - (c) Newbury

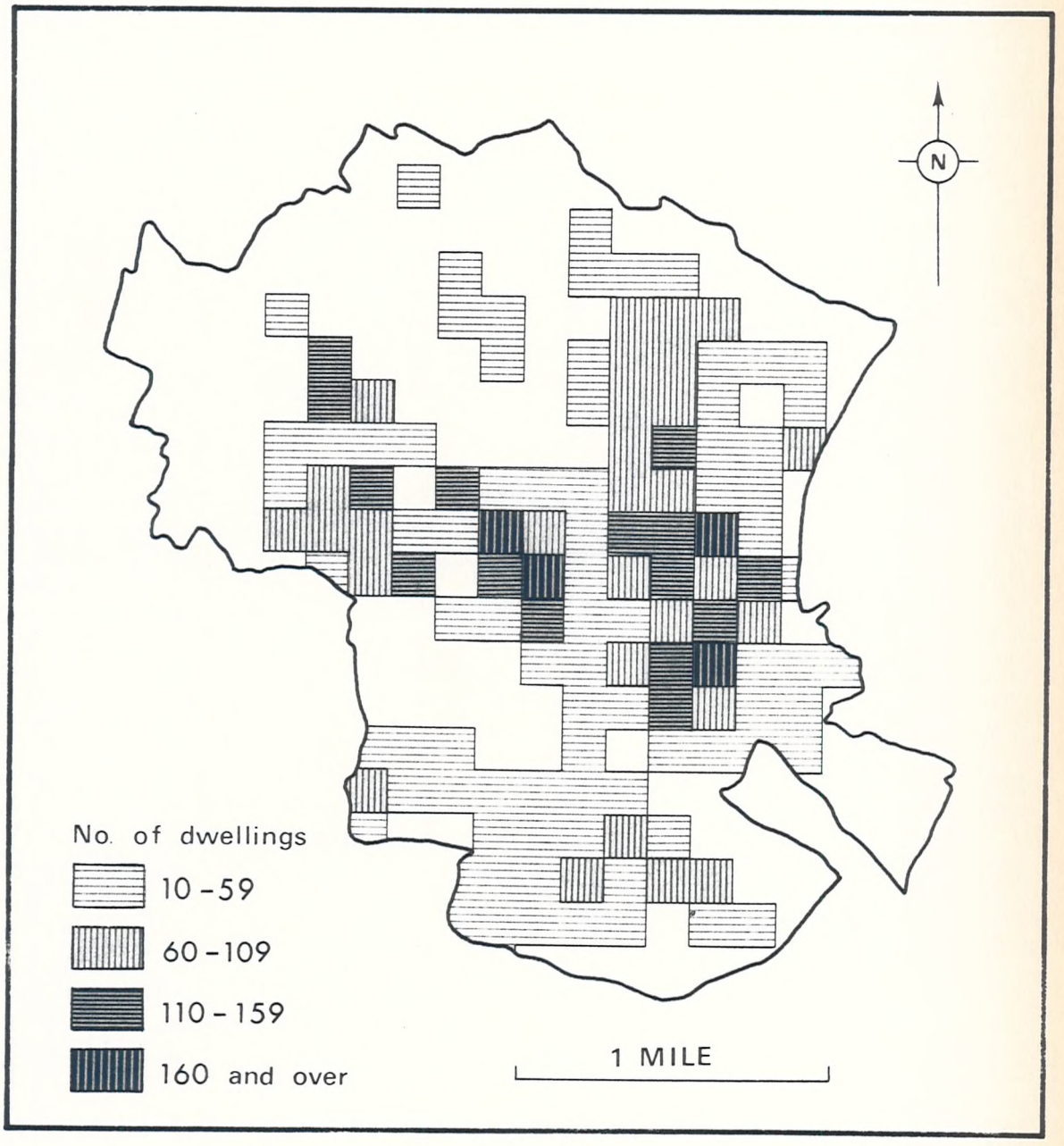

FIGURE 6.1 The spatial pattern of dwelling density - (d) Salisbury

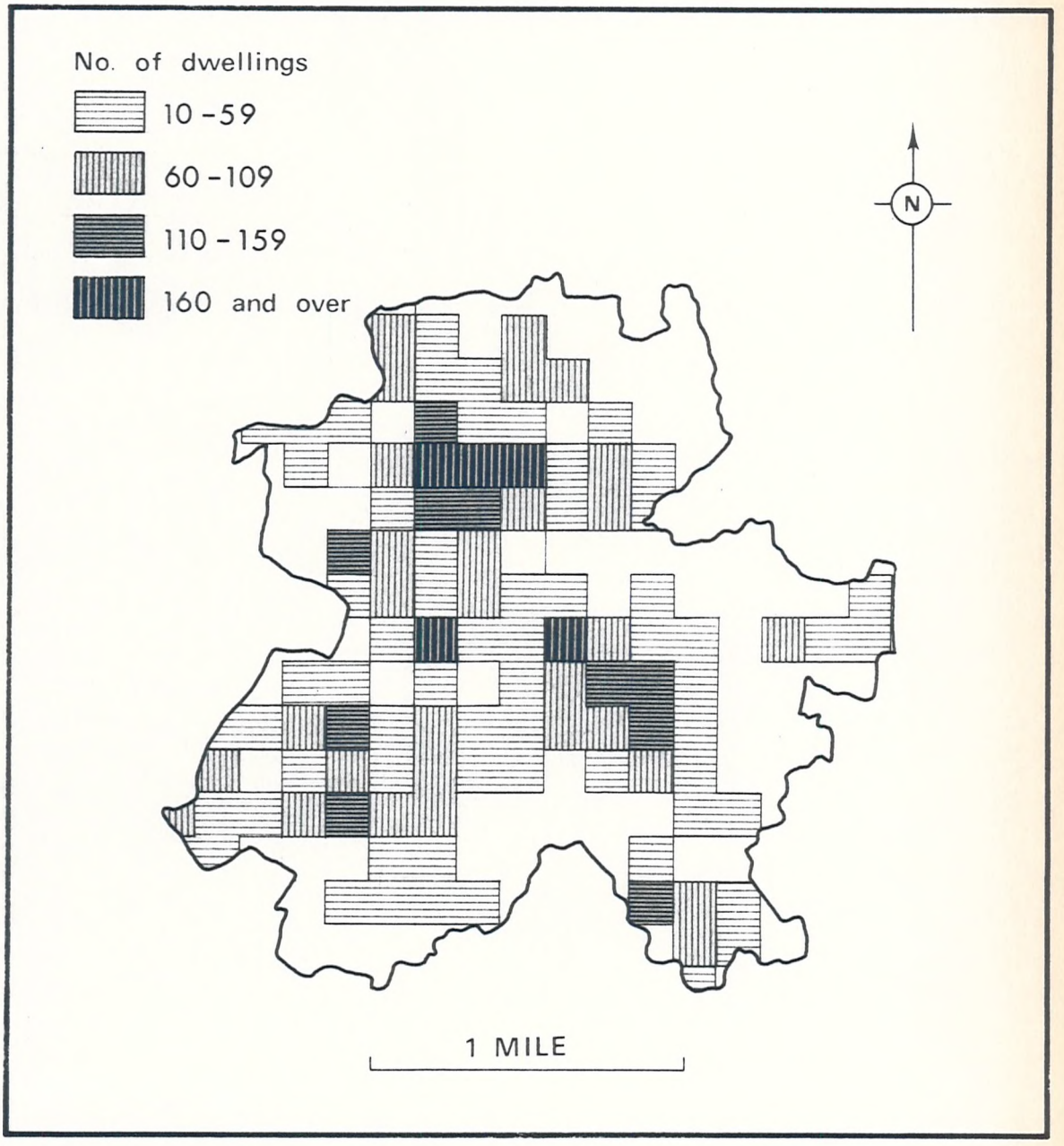

FIGURE 6.1 The spatial pattern of dwelling density - (e) Taunton

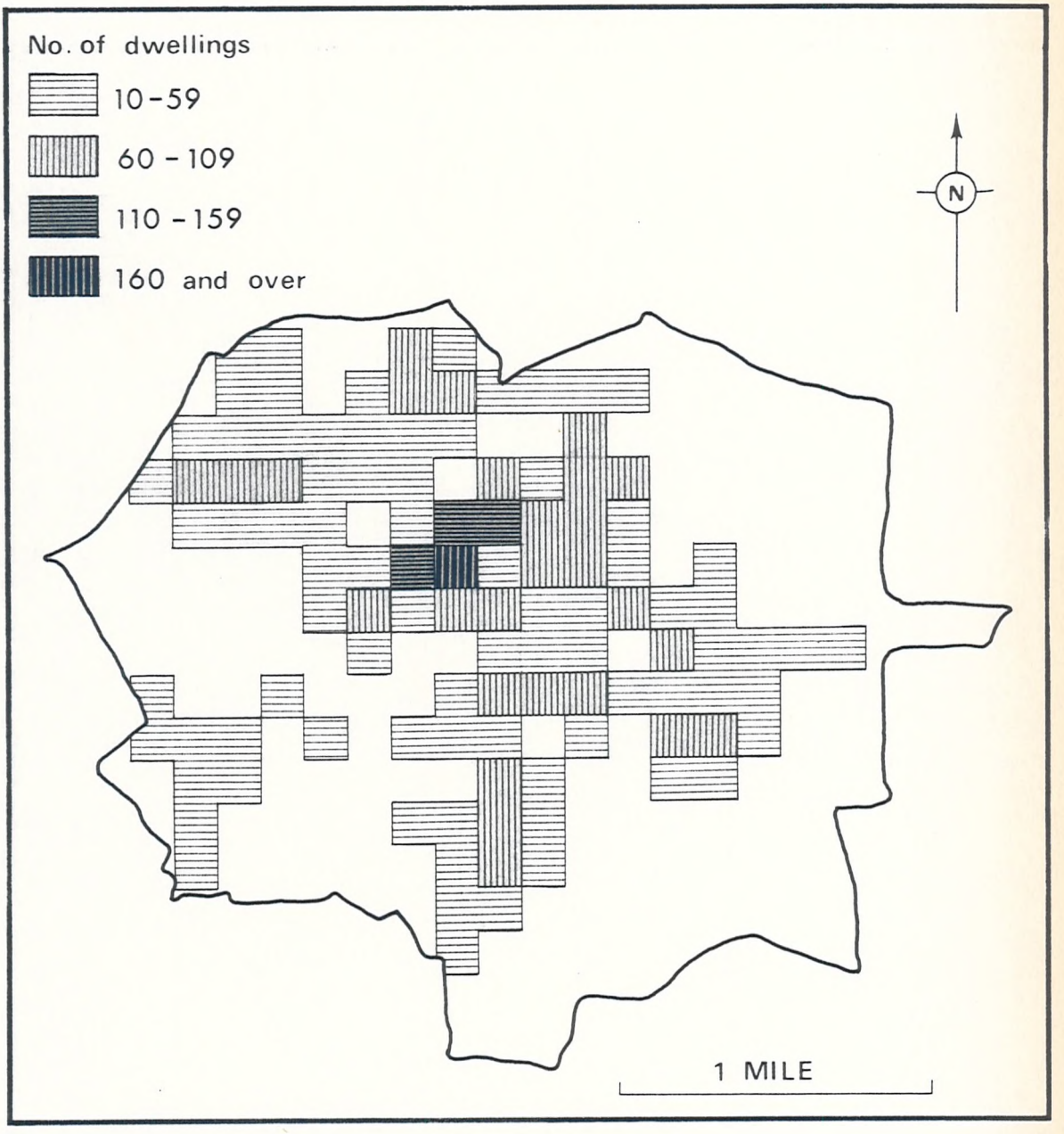

FIGURE 6.1 The spatial pattern of dwelling density - (f) Winchester

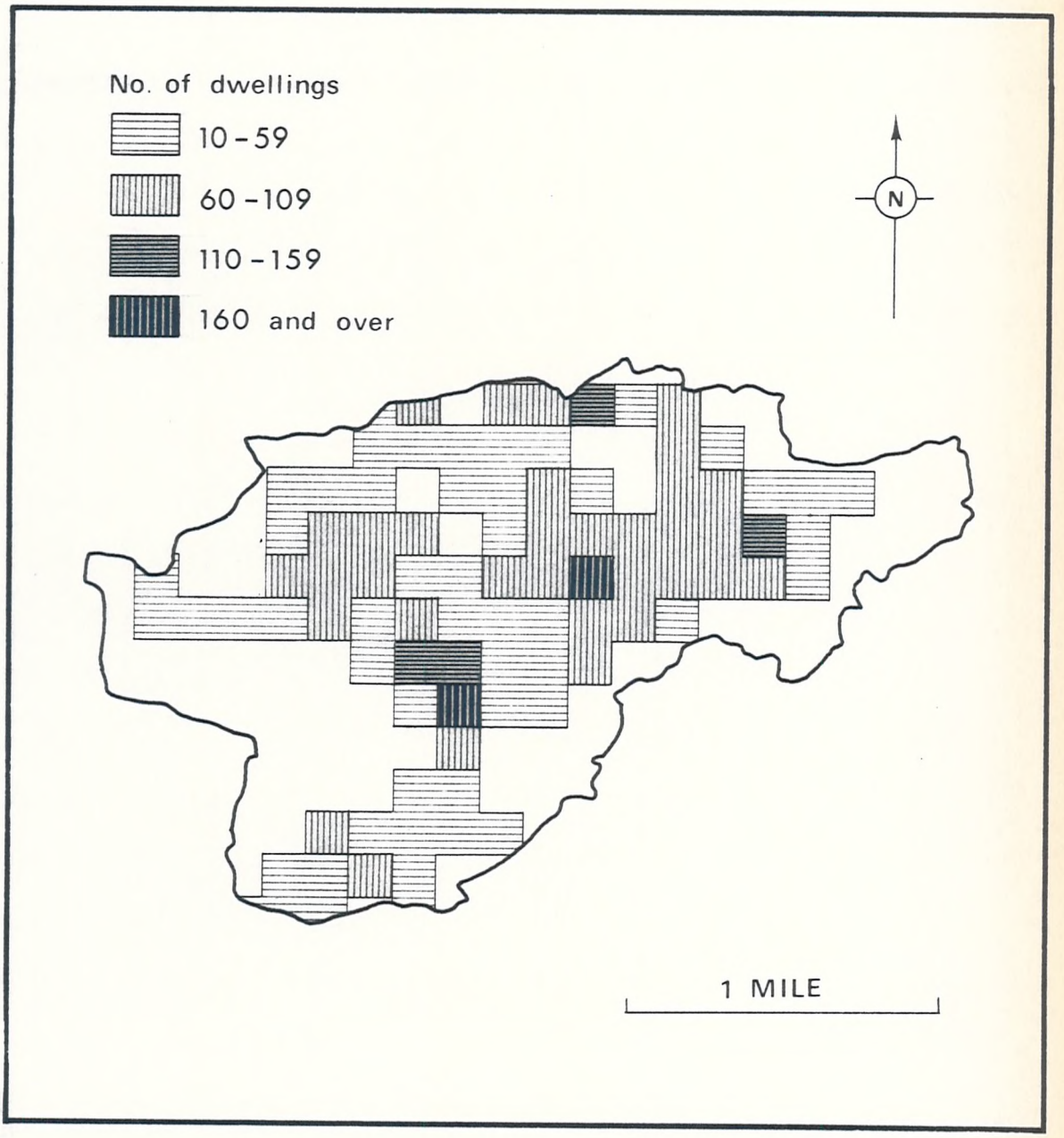

FIGURE 6.1 The spatial pattern of dwelling density - (g) Yeovil

A large proportion of the private housing of these towns was at a density of less than 60 dwellings per square. Fewer than 10 squares contained 110 or more dwellings and these were located in at least two separated areas of the towns. The second group comprised Bridgwater, Salisbury and Taunton (Figure 6.1 a, d,e). These towns appeared to have a smaller proportion of their private housing at less than 60 dwellings per square, and a correspondingly greater number of squares with 110 or more dwellings. Once again, the areas of higher density were not clustered in one part of the towns, but since in Salisbury and Taunton there were more squares than in the other towns, there was an impression that these towns contained several sectors of high density private housing.

Having selected the grid square as the areal framework for the investigation, a detailed analysis of the housing stock in the seven towns was undertaken.

6.2 The rating and tenure characteristics of the private housing stock

Data was obtained from the rating accounts for a total of 38,786 privately-owned dwellings. The smallest town was Chichester with 4,321 private dwellings registering a domestic rating on 1st April 1967; the largest was Salisbury with 7,540 domestic-rated private dwellings recorded at the same date (Table 6.4).

The major limitation of the rating accounts as a source of data for the investigation was the problem of identifying the association between each rated unit and the ratepayer of that unit; a ratepayer was not necessarily the occupier of the property on which he paid the rates[3]. The majority of instances where the address of the rated unit differed from that of the ratepayer were, however, identified. Of the total number of private dwellings, 4,605 had ratepayers who were non-occupiers of the dwelling. No information on dwelling-occupant turnover was available for those units. The proportion of dwellings of which the ratepayer was the occupier varied between the towns; the highest, 91.7% occurred in Yeovil

TABLE 6.4 Method of rate payment for private domestic rated property in the selected towns 1967-1968

Town	Total number of dwellings in private ownership	Number of dwellings of which a non-occupier is the ratepayer	Number of dwellings of which an occupier is the ratepayer	% total dwellings of which the occupier is the ratepayer
Bridgwater	4,530	572	3,958	87.4
Chichester	4,321	767	3,554	82.2
Newbury	5,015	737	4,278	85.3
Salisbury	7,540	775	6,765	89.8
Taunton	7,038	849	6,189	87.9
Winchester	5,291	488	4,803	90.9
Yeovil	5,051	417	4,634	91.7
All towns	38,786	4,605	34,181	88.1

whilst the lowest, 82.2% was found in Chichester. Since more than three-quarters of the ratepayers of private dwellings were also the occupiers of these dwellings, data on dwelling-occupant turnover was available for the majority of units comprising the private housing sector of each town.

Patterns of population mobility in an area are conditioned, at least in part, by the different tenure arrangements operating within the housing market of that area[4]. The private sector of the market comprises two major sub-markets - the owner-occupied sector and the private rented sector. One set of institutional contraints, particularly the level of mortgage availability, would have influenced household movement between 1967 and 1968 in the owner-occupied sector of each town[5]. Constraints on mobility operating in the private rented sector would have differed from those in the owner-occupied market and tended to be less formalised. Had information been available concerning the tenure of each dwelling with an occupier-ratepayer, the investigation of dwelling-occupant turnover would have been greatly assisted. Unfortunately, there was no source of information on the tenure of individual dwellings other than by a direct approach to the occupier[6]. An indication of the proportion of dwellings in each town which were owner-occupied was obtained, however, from the 1966 Sample Census.

In 1966, the total number of owner-occupied units in the seven towns was 27,390 (Table 6.5). Since the average rate of additions to housing stock is around 2% per annum, the number of owner-occupied dwellings in the towns by April 1967 would have increased only slightly. Thus, at the time of the investigation, the occupiers of approximately 6,791 dwellings were not the owners of these dwellings although they were directly responsible for paying the rates. This figure represented about 20% of all dwellings for which information was available on dwelling-occupant turnover. The proportion of the total sample of

private dwellings which were owner-occupied differed between the towns. The highest percentage occurred in Bridgwater where 85.0% of all occupier-ratepayer units were owner-occupied; the lowest, 73.3%, was found in Winchester.

Of the total number of private dwellings in each town, approximately 85% were occupied by the ratepayer and three-quarters of these ratepayers owned their dwellings. Information concerning the turnover of occupiers therefore embraced the majority of the population living in private dwellings and many of the moves recorded would have been affected by factors operating in the owner-occupied market. The extent to which this information registered the majority of moves within particular grid squares of each town, however, depended on the spatial pattern of occupier-ratepayer units.

The location within each town of occupier-ratepayer units was examined by calculating the proportion of total dwellings with occupier-ratepayer status in each square. Although differences existed between the towns in the shape of their built-up areas, the distribution of occupier-ratepayer dwellings formed a recognisable pattern in all the towns (Figure 6.2). There were a number of grid squares in every town in which all dwellings were occupier-ratepayer units, and these were most apparent towards the outskirts of each town. A few squares, on the other hand, contained less than 60% occupier-ratepayer units; these were located within, and adjacent to, the shopping centres of the towns. In three of the towns the percentage of occupier-ratepayer units in a square fell below 50% - Chichester 34.5%, Newbury 45.5% and Salisbury 20.0%. Generally, the further from the central area of each town a dwelling was located, the more likely was it for the occupier to be responsible for the rates.

TABLE 6.5 The number and proportion of occupier-ratepayer units which were owner-occupied

	Number of occupier-ratepayer units 1967	Number of owner-occupied units 1966*	Number of units not owner-occupied (approximate)	% occupier-ratepayer units owner-occupied
Bridgwater	3,958	3,400	558	85.9
Chichester	3,554	2,780	774	78.2
Newbury	4,278	3,620	658	84.6
Salisbury	6,765	5,060	1,705	74.7
Taunton	6,189	5,180	1,009	82.0
Winchester	4,803	3,510	1,293	73.3
Yeovil	4,634	3,840	794	82.8
All towns	34,181	27,390	6,791	79.4

* Source: Sample Census 1966, England and Wales, County Reports, H.M.S.O. 1967. Table 9. Dwellings, private households, persons and rooms by tenure.

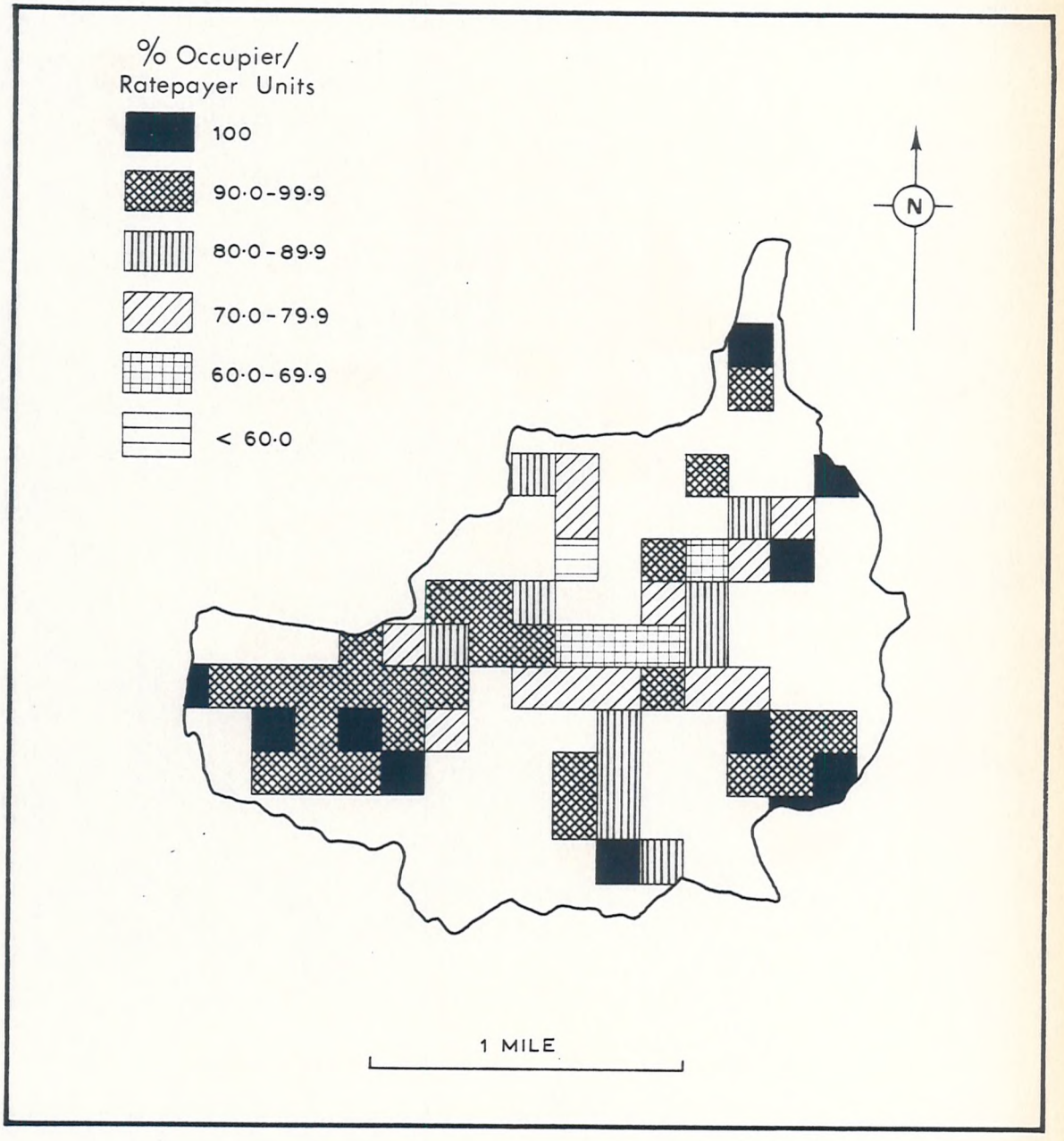

FIGURE 6.2 The spatial pattern of occupier-ratepayer units -

(a) Bridgwater

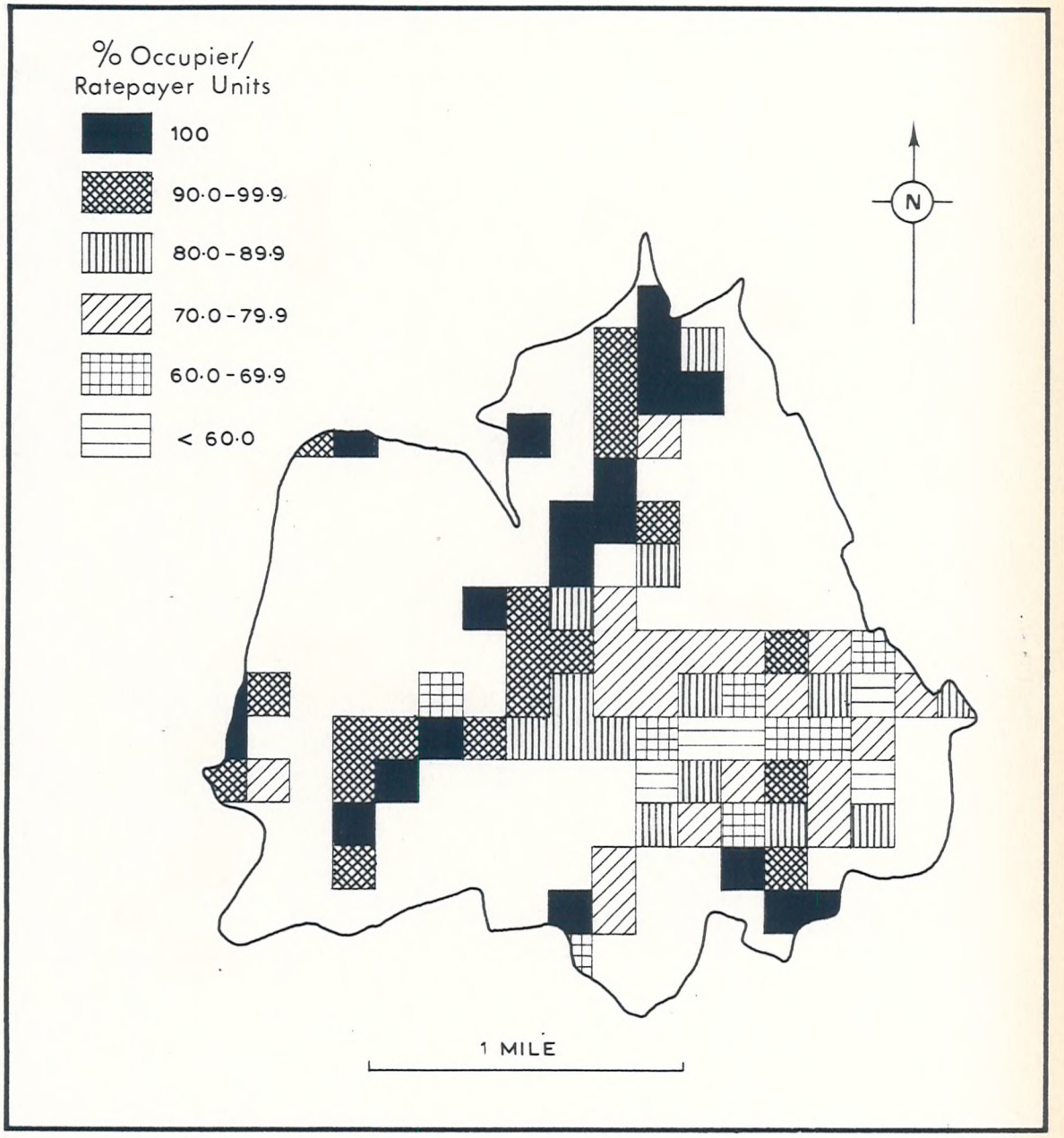

FIGURE 6.2 The spatial pattern of occupier-ratepayer units -

(b) Chichester

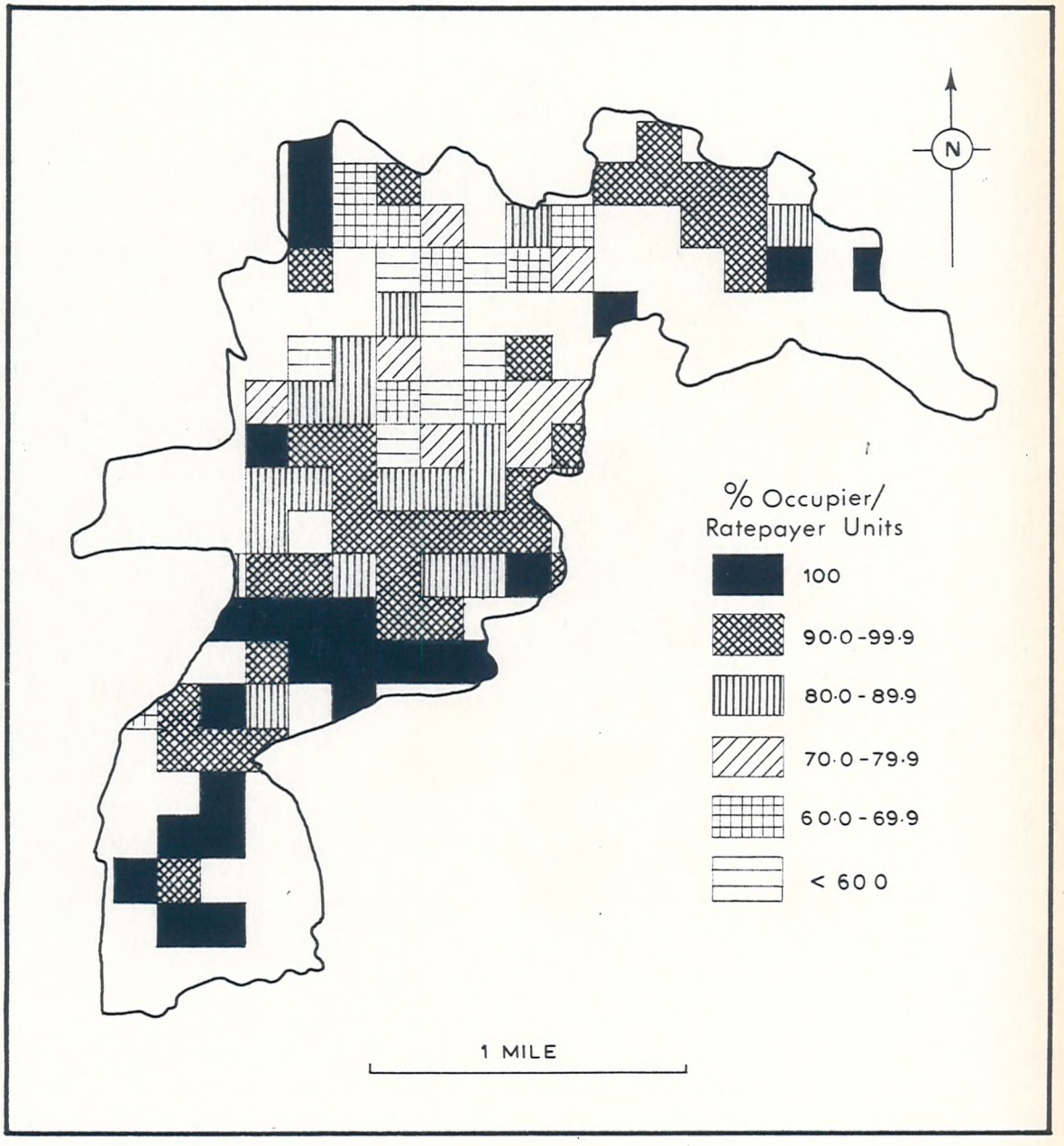

FIGURE 6.2 The spatial pattern of occupier-ratepayer units -

(c) Newbury

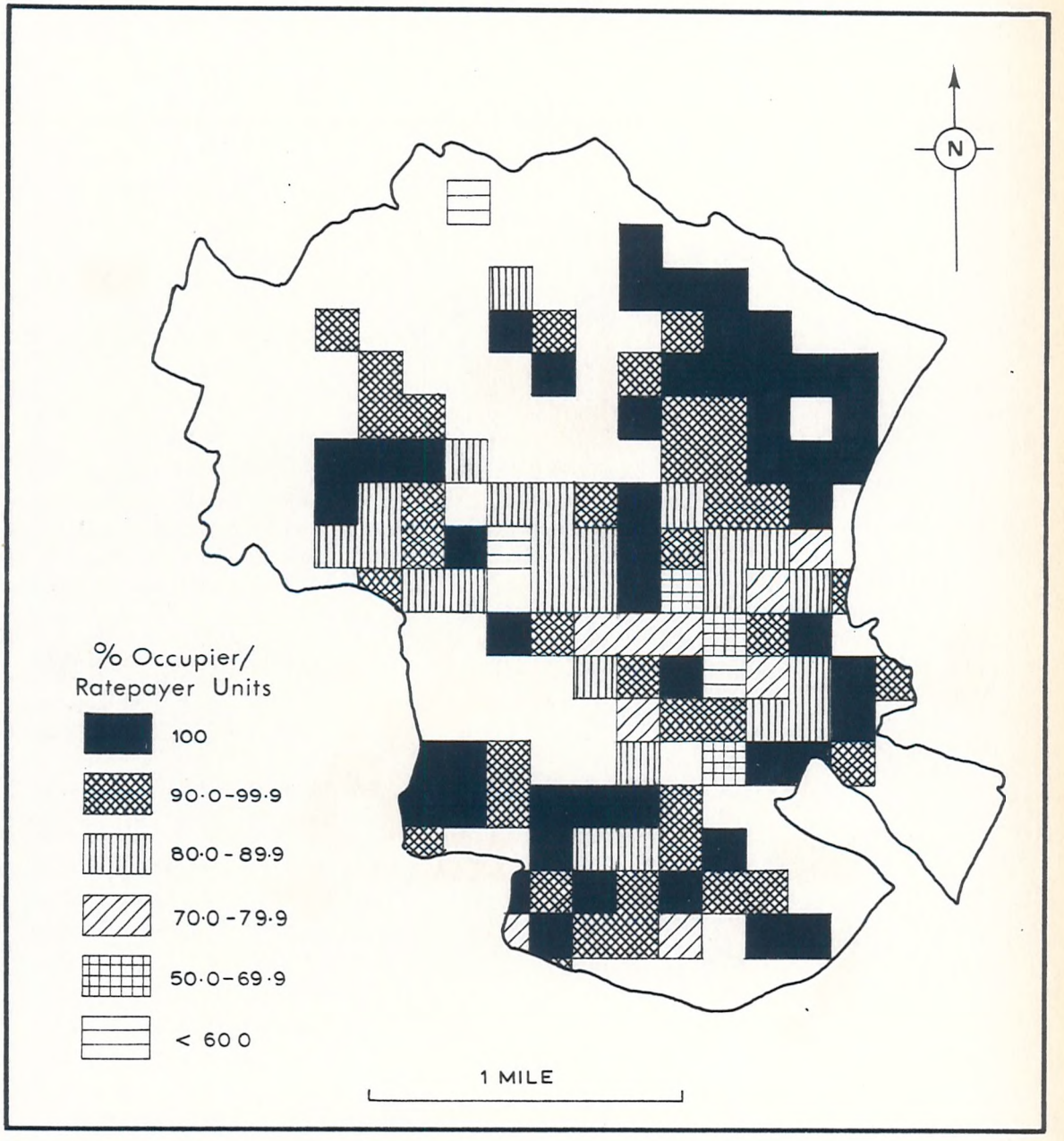

FIGURE 6.2 The spatial pattern of occupier-ratepayer units -

(d) Salisbury

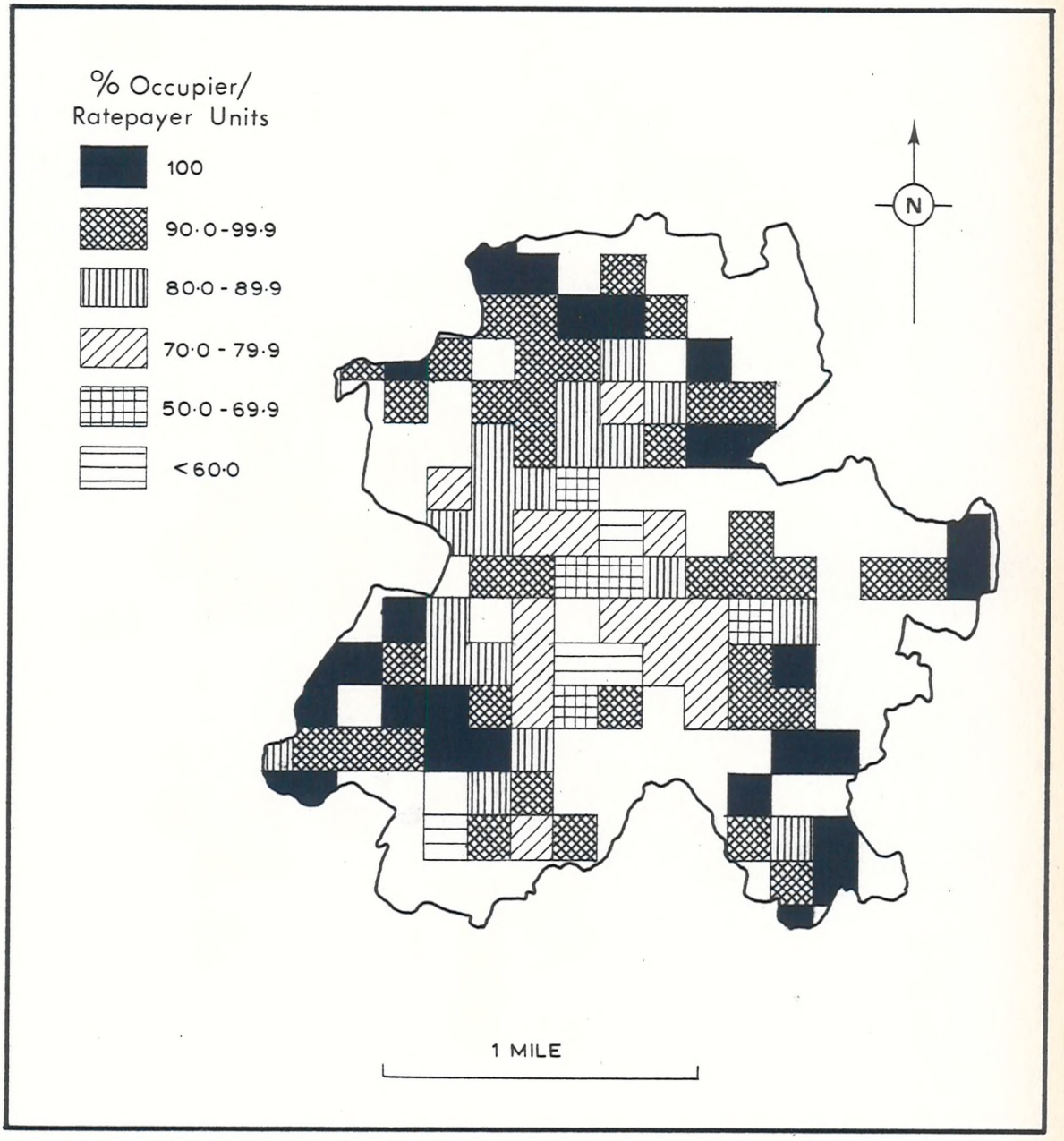

FIGURE 6.2 The spatial pattern of occupier-ratepayer units -

(e) Taunton

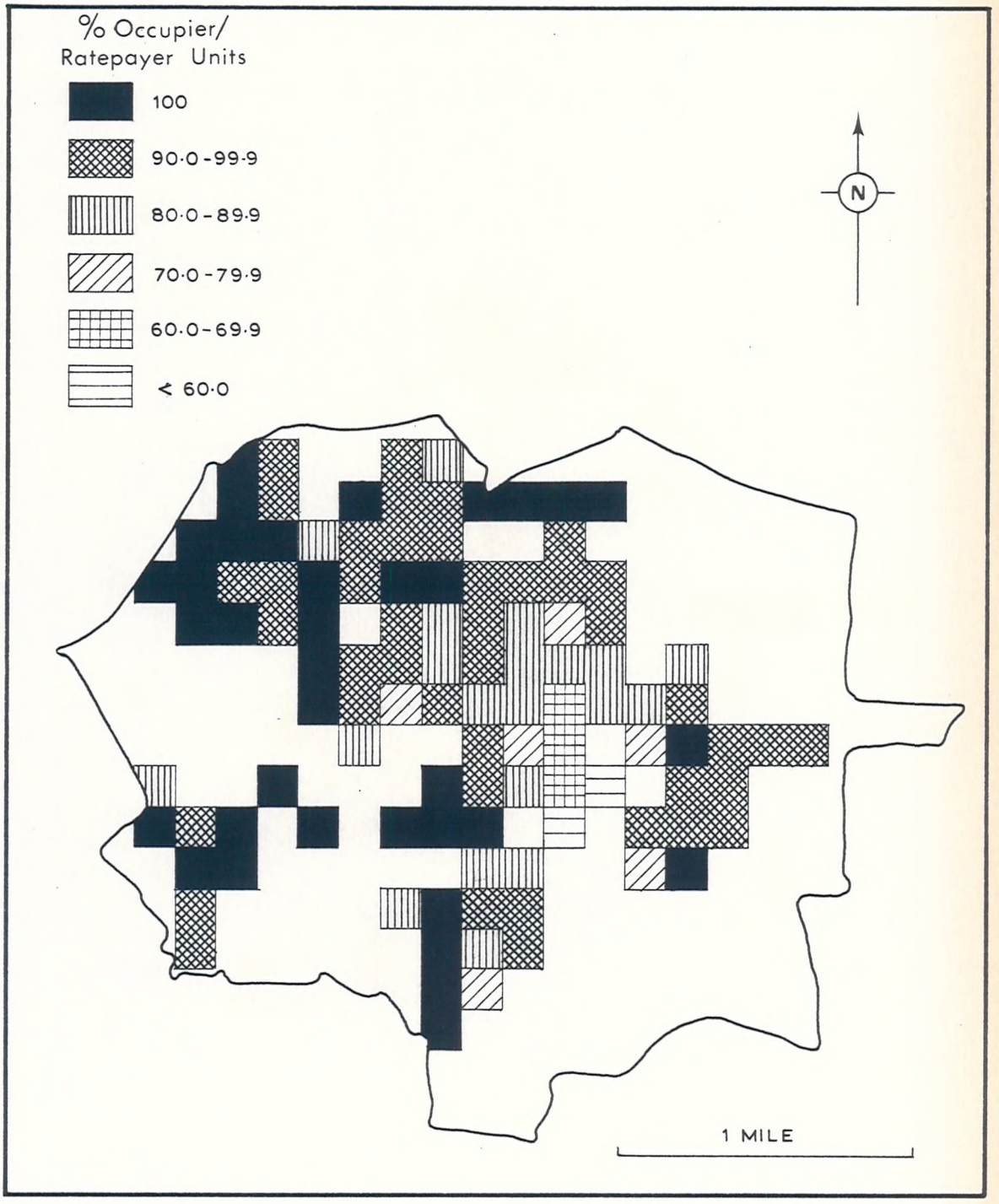

FIGURE 6.2 The spatial pattern of occupier-ratepayer units -

(f) Winchester

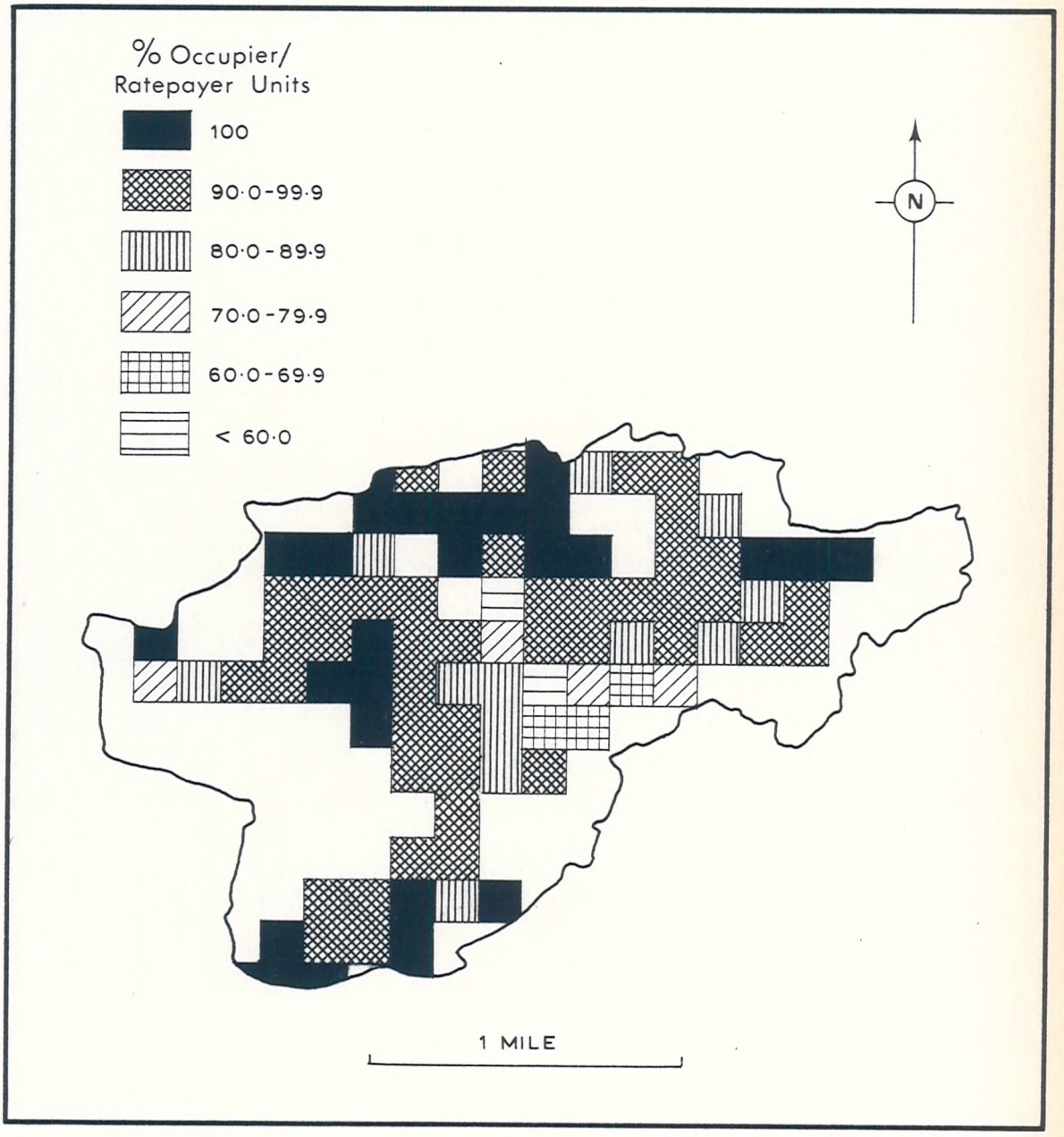

FIGURE 6.2 The spatial pattern of occupier-ratepayer units -

(g) Yeovil

The spatial pattern of occupier-ratepayer units in the towns revealed that in the majority of grid squares over 75% of dwellings were included in the analysis of dwelling-occupant turnover. Thus the identifiable pattern of movement would represent the most important aspect of the overall mobility pattern in those squares, since the unknown amount of movement occurring in non-occupier-ratepayer units referred to a minority of dwellings. In a few squares close to the town centres, however, the identifiable pattern of movement could in fact have represented the minority pattern, since most of the dwellings were of the non-occupier-ratepayer type. This variation in the distribution of occupier-ratepayer dwellings was, therefore, of some importance when discussing the spatial pattern of dwelling-occupant turnover.

6.3 The physical characteristics of the private housing stock

During the survey stage of the investigation, information was gathered regarding the form, age and rateable value of each domestic rated privately-owned unit. The private housing stock of the selected towns was, therefore, examined in terms of each of these physical characteristics.

(i) Form of dwelling (total stock)

Of the 38,786 privately-owned dwellings in the towns, the most common type was the terraced house (Table 6.61). The importance of this type within the housing stock of each town varied between the towns; more than half the units in Bridgwater were terraced houses, compared to one-quarter in Newbury. Semi-detached houses accounted for approximately 25% of stock in all the towns; only in Newbury did this type represent a larger proportion of total dwellings than terraced houses. Detached houses were more common in Newbury than elsewhere, but were particularly scarce in Bridgwater. In Chichester and Winchester, detached and semi-detached houses were of equal importance in the total dwelling stock.

TABLE 6.6 The physical characteristics of the private housing stock

(i) Form of dwelling (% of all dwellings)

Town	Detached house	Semi-detached house	Terraced house	Flat or maisonette	Bungalow
Bridgwater	6.0	26.6	57.6	4.0	5.8
Chichester	20.5	23.5	35.0	10.6	10.4
Newbury	22.5	31.4	26.9	9.1	10.1
Salisbury	16.6	22.4	41.5	10.4	9.1
Taunton	13.8	24.3	47.9	7.6	6.4
Winchester	20.5	20.7	39.9	11.3	7.9
Yeovil	17.3	29.5	35.8	8.1	9.3
All towns	16.7	25.5	40.5	8.8	8.3

(ii) Age of dwelling (% of all dwellings)

Town	Pre-1875	1875-1914	1914-1950	Post-1950
Bridgwater	21.9	32.0	27.1	20.0
Chichester	21.7	25.0	35.8	17.5
Newbury	17.7	25.4	28.1	28.8
Salisbury	24.5	35.5	28.2	11.8
Taunton	17.1	36.7	30.3	15.9
Winchester	21.2	36.9	20.8	21.1
Yeovil	10.1	34.6	39.3	16.0
All towns	19.3	32.9	29.9	17.7

TABLE 6.6 cont.

(iii) Rateable value of dwelling (% of all dwellings)

Town	Less £30	£30-£59	£60-£89	£90-£119	£120-£149	£150 and over
Bridgwater	16.1	38.0	28.5	15.1	1.5	0.7
Chichester	1.9	26.7	22.7	25.8	13.5	9.3
Newbury	1.3	26.0	24.4	38.6	7.3	3.3
Salisbury	4.0	31.6	25.4	26.4	7.3	5.2
Taunton	4.1	38.8	27.4	20.6	6.1	2.9
Winchester	2.0	30.9	17.7	21.6	11.7	15.9
Yeovil	3.8	28.3	32.5	26.7	5.0	3.5
All towns	4.6	31.8	25.6	24.9	7.4	5.6

The remaining dwellings in each town consisted of flats and maisonettes, together with bungalows. The two groups were of equal proportion in all the towns except Winchester, where flats were of greater importance.

(ii) Age of dwelling (total stock)

Dwellings in each of the towns were grouped into one of four age categories (Table 6.6ii). The oldest group, comprising dwellings built prior to 1875, accounted for about one-fifth of the total housing stock. There was, however, some range in values between the towns, as pre-1875 dwellings represented 25% of the stock in Salisbury, and only 10% of the stock in Yeovil. Approximately one-third of all dwellings were built between 1875 and 1914, accounting for the largest category of dwellings in Bridgwater, Salisbury, Taunton and Winchester. In Chichester and Newbury, on the other hand, the proportion of dwellings in this group was as low as 25%. A further 30% of dwellings were constructed between 1914 and 1950; these dwellings represented the largest group in Chichester, Newbury and Yeovil. The proportion of post-1950 dwellings again varied between the towns. The highest percentage of such units were found in Newbury, and the lowest in Salisbury. In general, it appeared that Salisbury and Winchester were the two towns with the greatest proportion of older dwellings, and Yeovil and Newbury were the two with greater proportions of inter-and post-war property.

(iii) Rateable value (total stock)

The description of dwelling form and age was based on information derived from maps and field survey. Data concerning the rateable value of dwellings was recorded in the rating accounts by £1 units and in order to simplify this data, dwellings were grouped into value categories. A grouping of £30 units was considered satisfactory for this purpose. The resulting tabulation revealed that the majority of dwellings in the towns had rateable values ranging from £30 to £120 (Table 6.6iii).

Only in Brigwater were a large number of dwellings valued at less than £30. Variations occurred between the towns in the value of the largest group; in Bridgwater, Chichester, Salisbury, Taunton and Winchester the largest percentage were valued at between £30 and £60; in Yeovil, between £60 and £90; and in Newbury, between £90 and £120. Chichester and Winchester were the only towns with more than 20% of dwellings recording rateable values above £120.

This examination of the character of housing in the towns was important for conveying the 'tone' and 'atmosphere' of each place; factors which could be important for people thinking of moving into the towns from elsewhere. All the towns contained a variety of both dwelling styles and sizes, and differences between the towns in the nature of their stock were also apparent. The figures could not, however, be used directly for investigating the relationship between dwelling characteristics and the level of dwelling-occupant turnover since information on occupier-movement was not available for all private dwellings. It was, therefore, necessary to eliminate from further discussion those dwellings for which the occupier was not the ratepayer. Some indication of the character of these units was gained during the investigation, and a full description of them has been provided elsewhere[7]. The characteristics of occupier-ratepayer units only were considered in this analysis.

(iv) Form of dwelling (occupier-ratepayer units)

The distribution of units by form revealed differences compared to the total stock of private housing in the towns (Table 6.7i). The proportion of dwellings built as terraced houses, flats and maisonettes decreased slightly whereas the percentage of bungalows, detached and semi-detached houses increased. In Chichester, the proportion of terraced housing fell by as much as 8%; as a result, the proportions of detached, semi-detached and terraced housing in that town became almost

equal. Terraced houses were, however, still the most common form of dwelling in Bridgwater, Salisbury, Taunton, Winchester and Yeovil. As regards flats and maisonettes, only in Winchester did these forms of dwelling account for over 10% of all occupier-ratepayer units.

(v) Age of dwelling (occupier-ratepayer units)

The age distribution of the occupier-ratepayer units in the towns also revealed differences compared with the total private housing stock (Table 6.7ii). The occupier-ratepayer dwellings tended to be newer in construction; the proportion built prior to 1875 fell by between 3% and 5%, and those constructed since 1914 increased by a similar amount. As with building form, the largest alteration to the age distribution occurred in Chichester. The towns with the highest proportions of occupier-ratepayer units built before 1914 were Salisbury and Winchester; this reflected the age distribution of their total stock. The towns with the highest proportion of occupier-ratepayer units constructed since 1914 were Chichester, Newbury and Yeovil.

(vi) Rateable value (occupier-ratepayer units)

The rateable values of the occupier-ratepayer units reflected, to some degree, the age and form of properties in the towns. Although the majority of dwellings were still concentrated in the range £30 to £120, there was a shift from the lower to the higher end of this range (Table 6.7iii). Once again, this shift was most apparent in Chichester where there was also a considerable increase in the proportion of dwellings rated at over £120.

TABLE 6.7 The physical characteristics of the occupier-ratepayer units

(i) Form of dwelling (% of total occupier-ratepayer units).

Town	Detached house	Semi-detached house	Terraced house	Flat or maisonette	Bungalow
Bridgwater	6.7	29.6	53.9	3.2	6.5
Chichester	23.8	27.4	27.9	8.4	12.3
Newbury	25.0	33.1	22.4	7.7	11.6
Salisbury	18.1	24.2	39.7	8.6	9.3
Taunton	15.1	26.5	45.9	4.9	7.5
Winchester	21.9	21.6	37.8	10.2	8.5
Yeovil	18.5	31.3	34.5	5.4	10.4
All towns	18.3	27.3	38.0	6.9	9.4

(ii) Age of dwelling (% of total occupier-ratepayer units).

Town	Pre-1875	1875-1914	1914-1950	Post-1950
Bridgwater	17.2	31.8	29.6	21.3
Chichester	16.5	21.8	41.0	20.6
Newbury	12.8	23.4	31.1	32.6
Salisbury	21.6	35.3	30.6	12.4
Taunton	14.0	34.6	33.5	17.8
Winchester	18.3	36.8	23.1	21.7
Yeovil	7.3	34.3	41.3	16.9
All towns	15.7	31.9	32.6	19.7

TABLE 6.7 cont.

(iii) Rateable value of dwelling (% of total occupier-ratepayer units)

Town	Less £30	£30-£59	£60-£89	£90-£119	£120-£149	£150 and over
Bridgwater	11.5	37.6	31.5	16.8	1.6	0.8
Chichester	0.5	18.7	23.3	30.1	16.2	10.9
Newbury	0.7	20.3	25.3	42.8	9.2	2.6
Salisbury	2.8	28.4	26.0	29.0	7.9	5.6
Taunton	2.2	36.3	28.5	22.6	6.2	3.0
Winchester	1.4	29.7	17.3	22.5	12.1	16.9
Yeovil	2.3	26.5	33.5	28.5	5.3	3.6
All towns	2.9	28.8	26.6	27.3	7.8	6.4

When selecting the towns in which to study dwelling-occupant turnover, it was suggested that towns with slow, steady growth rates would contain a varied stock of private housing. The examination of occupier-ratepayer units indicated that such a variety existed in all the towns. It was possible from the preceding description to make certain assumptions concerning the nature of the potential supply of occupier-ratepayer dwellings available to households moving into and within each town.

Bridgwater - A large proportion of dwellings in this town were terraced houses; detached houses were relatively scarce and the proportion of flats and maisonettes was low. Property of all ages was available and dwellings with low rateable values were more plentiful than elsewhere.

Chichester - All types of housing was available on the market; houses formed three-quarters of the stock of occupier-ratepayer units. The largest proportion of dwellings were of interwar construction, although dwellings of all ages occurred. The rateable values of property tended to be higher than elsewhere.

Newbury - Semi-detached and detached houses were more plentiful than terraced houses. Two-thirds of the occupier-ratepayer units were constructed since 1914, so newer dwellings were more readily available. Rateable values of dwellings clustered between £30 and £120, with the greatest concentration in the £90 to £120 group.

Salisbury - Terraced houses were the most plentiful dwelling in this town, but semi-detached and detached houses were also available. A higher proportion of stock than elsewhere was built prior to 1875, and 'byelaw' housing was in ready supply. Dwellings built since 1950 were relatively scarce. The rateable values of dwellings clustered between £30 and £120.

Taunton - Terraced houses formed a large proportion of the stock, detached houses were relatively under-represented, and flats and maisonettes were scarce. The majority of stock was constructed between 1875 and 1950. Rateable values of dwellings clustered between £30 and £120, with the greatest concentration in the £30 to £60 group.

Winchester - All types of dwellings were available, and flats and maisonettes were more plentiful than elsewhere. Dwellings had been built at each period, and a variety was available. Rateable values of dwellings were higher than elsewhere.

Yeovil - Terraced and semi-detached houses formed two-thirds of the stock of occupier-ratepayer units; flats were scarce. Few dwellings were built prior to 1875, the largest proportion being of inter-war construction. Rateable values of dwellings were clustered between £30 and £120.

6.4 The spatial pattern of housing types

The physical characteristics of the potential supply of dwellings available to movers into and within the selected towns was examined without reference to the location of these dwellings within the urban area of each town. The position of a dwelling may, however, be as marketable a commodity as the amenities of the dwelling itself. Dwellings situated close to local shops and schools, for example, might be in greater demand than those farther away from these facilities. It can also be suggested that a buyer would find a modern, detached house more attractive if located in an area of similar houses than if surrounded by decaying 19th century workmens' cottages. The level of dwelling-occupant turnover between 1967 and 1968 may have depended, therefore, not only on the characteristics of the dwellings which had changed hands but also on the general character of housing in a locality.

Two factors relating to the size of the sample towns might, however, have reduced the effect on turnover of spatial variation in housing character. First, homogeneous housing areas forming recognisable elements in the townscapes of big cities might be less apparent in small towns; if this was so, many types of housing would be found in juxtaposition, resulting in a lack of identifiable 'good' or 'bad' areas in which to live. Second, the areal extent of the larger towns in the sample was about four square miles, and within this area, all households would be in easy reach of amenities. Since this area approximates to the neighbourhood of the city dweller, it could, perhaps, be argued that the entire urban area of these towns was included in the 'migration field' of a mover. Thus the character of the locality surrounding a particular dwelling would, in fact, be equivalent to the character of the town as a whole.

In order to test the validity of these assumptions, it was essential to investigate the spatial pattern of housing in the towns by examining the degree to which similar dwellings were clustered together to form visually homogeneous areas. Since the character of an area would be affected by the characteristics of all the dwellings situated in the locality, it was necessary to incorporate into the analysis data for both occupier-ratepayer and non-occupier-ratepayer units. The nature of the private housing in each grid square containing 10 or more dwellings was summarised. The number of units of each dwelling form were calculated as a percentage of the total private dwellings in a square; similarly, the number of dwellings in each age category was percentaged. It was also possible to adopt this procedure for summarising the rateable values of dwellings, but to reduce the number of variables, it was decided to average the rateable values of all dwellings in each square. The housing stock located in each square was, therefore, described by ten variables:

1. Detached houses
2. Semi-detached houses
3. Terraced houses
4. Flats and maisonettes
5. Bungalows

——— As a percentage of total dwellings in each square

6. Dwellings built before 1875
7. Dwellings built between 1875 and 1914
8. Dwellings built between 1914 and 1950
9. Dwellings built in and after 1950

——— As a percentage of total dwellings in each square

10. Average rateable value of all dwellings in the square

An examination of the housing characteristics of each grid square revealed a variety of housing types between different parts of the towns. In a number of squares, dwellings of all forms and ages were represented; others contained dwellings exclusively of one form and age. To investigate how far housing stock in adjacent squares was of similar type, a method of combining squares with similar housing characteristics was required. Since housing in each square was described by ten variables, a multivariate classification procedure was most appropriate. Such a technique for delimiting sub-areas of cities was suggested by Robson in his study of the spatial structure of Sunderland[8]. He rejected this method in favour of a simpler one where a measure of contiguity of the areal units could be inserted. In this investigation, it was not important for squares with similar housing to be adjacent to one another; indeed, the purpose of the classification was to see if such a feature occurred without imposing a locational constraint on the data.

The multivariate classification chosen for grouping the grid squares into a typology of housing areas was that used in Chapter 2 for classifying the towns according to growth rate[9]. Since the variables describing housing characteristics were not calculated on a common base, all variables

were transformed to unit variance[10]. Using the Euclidean distance measure, the housing data for the grid squares in each town were classified by the group averaging method. Seven hierarchical linkage trees were produced. As with all hierarchical groupings, there was no natural break in the classification and the cut-off point for identifying groups of squares with similar types of housing was chosen subjectively. Since it was unlikely for the same types of housing area to appear in all the towns, one cut-off point for all the classifications could not be considered. Each hierarchy was examined and a cut-off point selected when the greatest number of individual squares were included in groups but the largest groups had not yet combined.

The resulting classification revealed a different number of housing types between the towns, and in each town a few squares remained unclassified. The average characteristics of each group at the cut-off point were calculated in order to identify the nature of the housing stock for each group of squares. By plotting the distribution of similar squares, the spatial pattern of housing types in the towns was revealed. Each town was different and it was therefore necessary to examine them individually.

(i) Bridgwater

Six types of housing area were differentiated from the classification. Four squares remained unclassified (Table 6.8a and Figure 6.3a).

Type 1 This type of housing area was located in two blocks close to the town centre. The areas contained a mixture of terraced houses and some flats and maisonettes. The rateable values of the dwellings were low, and the majority were built before 1875.

Type 2 The areas comprising this type were located in several blocks surrounding the area of Type 1 housing. The majority of dwellings were terraced houses, constructed between 1875 and 1914. A few were of inter-war date. Rateable values of this type was also low.

TABLE 6.8a Average characteristics of each housing type - Bridgwater *

Type No.	Detached houses %	Semi-detached houses %	Terraced houses %	Flats & maisonettes %	Bungalows %	Pre-1875 dwellings %	1875-1914 dwellings %	1914-1950 dwellings %	Post-1950 dwellings %	Rateable value %
1	0.1	1.6	85.2	12.7	0.2	73.4	21.8	4.5		30
2	2.2	9.1	85.8	1.5	1.1	4.3	60.0	33.7	1.9	43
3	12.1	75.3	5.5	1.3	5.3	1.3	3.8	91.7	3.6	87
4	62.6	21.6	5.7	10.0		3.3	5.2	91.4		117
5	9.4	47.4	28.0	2.3	12.7	3.1	9.0	5.8	81.9	76
6	0.4	15.6	10.6		73.4				100.0	68

* The characteristics of individual squares making up each group will be found in Appendix C.

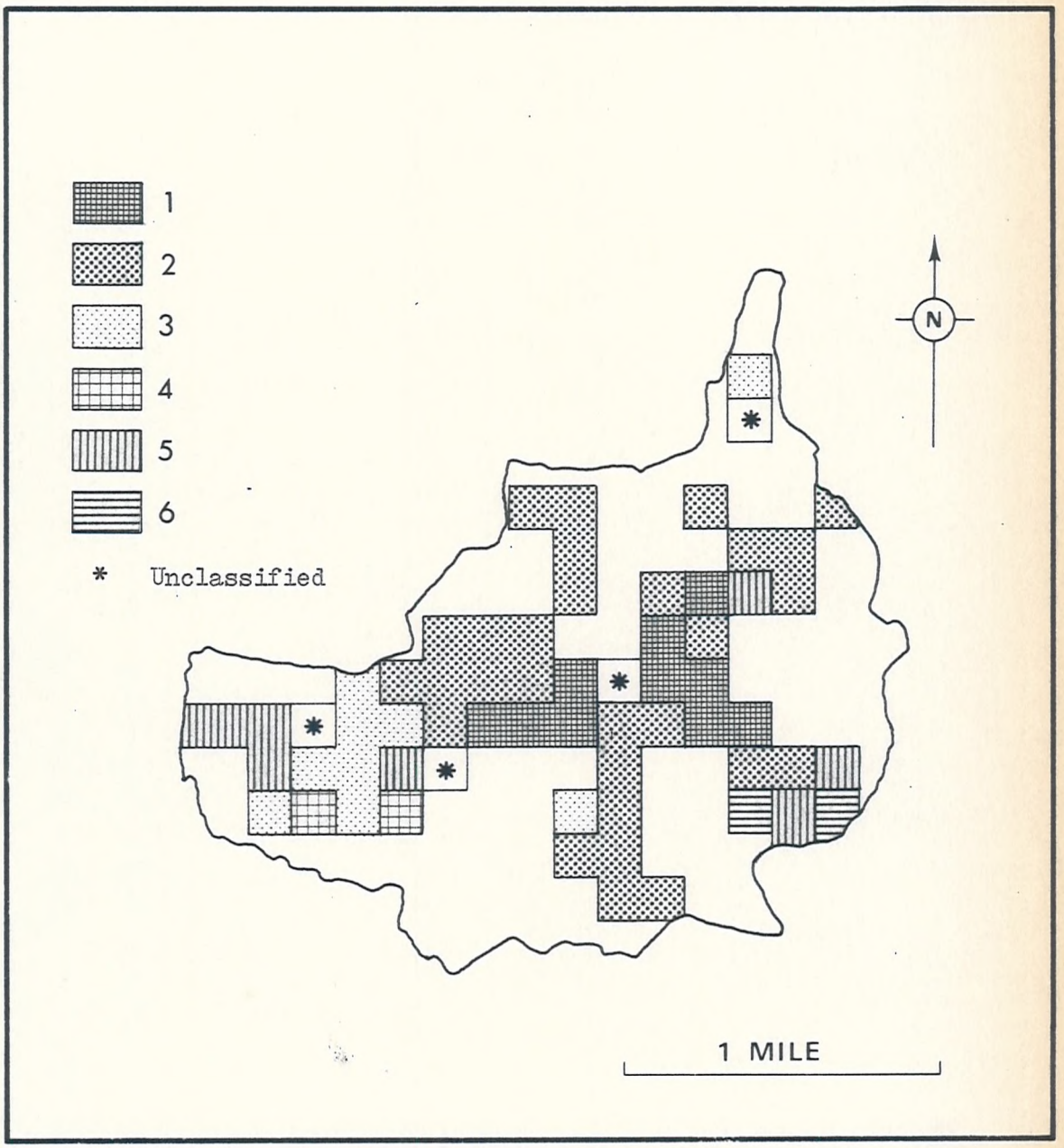

FIGURE 6.3 The spatial pattern of housing type areas - (a) Bridgwater

Type 3 The largest area of Type 3 housing was to the west of the town. The dwellings here were of inter-war construction, and consisted of semi-detached houses with a few detached houses interspersed.

Type 4 Two small areas of this type were located adjacent to the area of Type 3 housing. They comprised detached, inter-war houses with high rateable values.

Type 5 Two small areas on the eastern and western fringes of the town comprised a mixture of bungalows, semi-detached and terraced houses, all of which were constructed after 1950.

Type 6 Associated with the previous type in the east of the town was an areaalmost exclusively consisting of bungalows. These were built after 1950.

(ii) Chichester

Nine types of housing area were distinguished in Chichester. Only one square remained unclassified (Table 6.8b and Figure 6.3b).

Type 1 A concentrated area of housing in the centre of the town consisted of flats, maisonettes and terraced houses. Three-quarters of the dwellings were built prior to 1875, but a few were constructed after 1950. These possibly represented sites of central area redevelopment.

Type 2 To the east of the centre was an area of mixed housing. Terraced houses were the most prominent dwelling form, but semi-detached and detached houses were also in evidence. Three-quarters of the stock in this area was built before 1914.

Type 3 The largest areas of this type were located on the fringes of the previous type areas; there were also small scattered blocks in the rest of the town. These areas contained a variety of dwellings, but in different proportions to Type 2. Semi-detached houses formed the largest group, and flats and maisonettes were in greater evidence. Half the stock was constructed between 1875 and 1914; the remainder of the dwellings were divided between the three other age categories.

TABLE 6.8b Average characteristics of each housing type - Chichester *

Type No.	Detached houses %	Semi-detached houses %	Terraced houses %	Flats & maisonettes %	Bungalows %	Pre-1875 dwellings %	1875-1914 dwellings %	1914-1950 dwellings %	Post-1950 dwellings %	Rateable value %
1	4.7	0.2	54.7	40.2	0.1	75.7	5.2	4.0	14.8	69
2	17.7	23.0	46.7	5.9	5.7	36.6	38.2	19.4	6.8	70
3	22.7	36.9	22.6	15.2	3.1	11.9	51.4	16.5	20.0	82
4	4.5	7.4	86.2	0.5	1.3	22.0		76.7	1.2	63
5	60.8	9.5	3.6	2.5	23.4	5.2	5.4	69.0	20.2	127
6	15.8	61.4	6.5	3.3	13.1	6.4	9.4	74.7	9.6	91
7	41.3		1.6	51.1	6.9		24.2	30.9	44.8	162
8	22.7	7.8		2.7	66.6	0.8		7.7	91.4	115
9	88.5	10.5							100.0	128

* The characteristics of individual squares making up each group will be found in Appendix C.

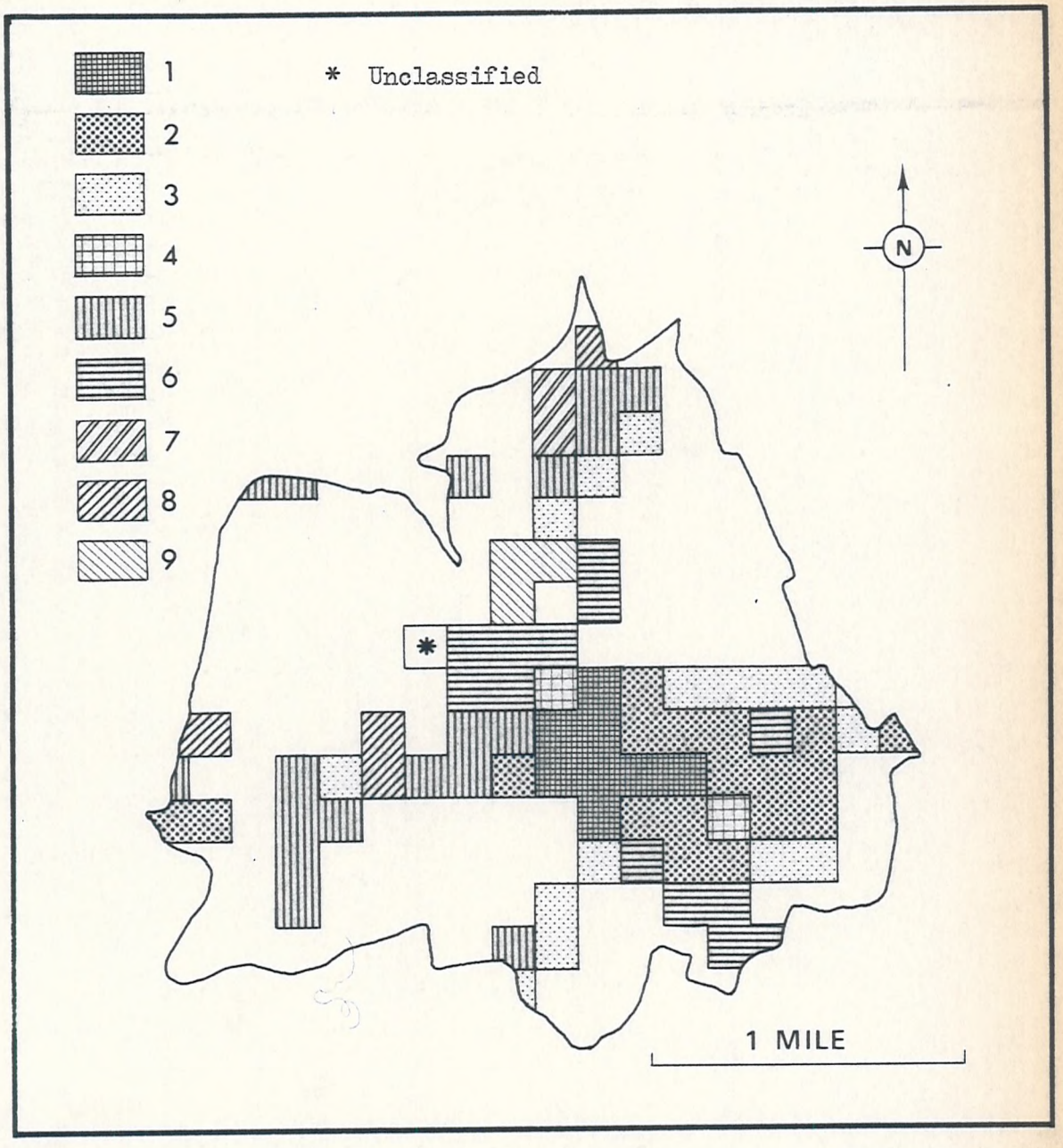

FIGURE 6.3 The spatial pattern of housing type areas - (b) Chichester

Type 4 Only two squares, not adjacent to each other, were classified in this type of area. They comprised terraced dwellings built between 1914 and 1950.

Type 5 Two areas of this type were located to the west of the town, and a further disjointed belt ran across the north of the city. The dwellings in these areas were detached houses, with a few bungalows interspersed. The major construction period was between 1914 and 1950, although a minority of dwellings were of post-war date. The dwellings all had high rateable values.

Type 6 This type of housing area was situated in two blocks - one to the north, the other to the south-east, of the town centre. The majority of dwellings were semi-detached houses; detached houses and bungalows were also found. Three-quarters of the stock in these areas was constructed between 1914 and 1950.

Type 7 A small area to the north of the town comprised a mixture of flats, maisonettes and detached houses. Rateable values of these dwellings were high, and building had occurred in all periods after 1875. Newer dwellings predominated, however.

Type 8 This type of area was scattered around the periphery of the town. The dwellings were mostly bungalows, interspersed with a few detached houses, constructed after 1950.

Type 9 A small area to the north of the town centre contained detached houses and some semi-detached houses, built since 1950.

(iii) Newbury

The classification of housing in Newbury revealed ten types of housing areas, the largest number of all the towns. The pattern of housing appeared extremely confused. Two squares remained unclassified (Table 6.8c and Figure 6.3c).

Type 1 The largest concentration of this type was in an L-shaped band stretching north and east from the town centre; other squares were situated on the fringes of the central area. The majority of dwellings in these areas were terraced houses, but some dwellings of each of the other forms were also found. Most were built before 1875, and rateable values were relatively low.

Type 2 Two small areas east and west of the centre comprised a mixture of terraced and semi-detached houses. The majority were constructed between 1875 and 1914.

Type 3 Scattered throughout the town were small areas of mixed housing, of which flats and maisonettes were the most numerous. The largest age categories were the oldest and newest constructed dwellings.

Type 4 Also scattered were areas of housing comprising variety of both form and age.

Type 5 Small areas around the town centre contained a mixture of detached and semi-detached houses of inter-war construction.

Type 6 Two areas of this type of housing were located on the southern periphery of the town; a third was situated south of the town centre. They comprised detached dwellings with high rateable values, built between 1914 and 1950.

Type 7 The major concentration of this type was in a discontinuous belt across the southern part of the town. Other scattered squares also occurred elsewhere. Most of the dwellings were built after 1950 and comprised detached and semi-detached houses and bungalows. Three-quarters of these dwellings were contructed after 1950.

Type 8 Small areas on the periphery of the town consisted of bungalows and some detached and semi-detached houses. Most were of post-1950 construction.

Type 9 Scattered squares containing a high proportion of flats and maisonettes built after 1950 were distinguished.

TABLE 6.8c Average characteristics of each housing type - Newbury *

Type No.	Detached houses %	Semi-detached houses %	Terraced houses %	Flats & maisonettes %	Bungalows %	Pre-1875 dwellings %	1875-1914 dwellings %	1914-1950 dwellings %	Post-1950 dwellings %	Rateable value %
1	8.2	12.3	70.8	6.4	1.3	65.5	24.3	5.1	5.1	51
2	11.1	34.9	47.5	2.1	2.4	6.0	73.4	15.1	4.5	59
3	17.6	18.9	20.8	35.3	7.3	33.2	21.4	9.0	36.3	90
4	24.9	42.0	23.2	3.0	5.8	20.3	25.9	28.0	20.8	72
5	27.1	55.1	7.9	0.4	9.5	1.6	0.8	91.3	5.3	89
6	82.7	4.9	2.0		10.3	0.7	2.7	89.3	7.3	134
7	22.3	53.6	3.8	2.9	17.4	2.2	8.3	18.7	70.8	92
8	17.5	16.7	1.8	0.4	62.6	0.5	4.4	19.5	75.6	93
9	5.5	5.2	11.4	75.4	2.5	4.5	5.8	7.6	82.5	93
10	75.4	6.7	8.7	2.7	4.4	5.2	4.4	16.9	73.4	115

* The characteristics of individual squares making up the groups will be found in Appendix C.

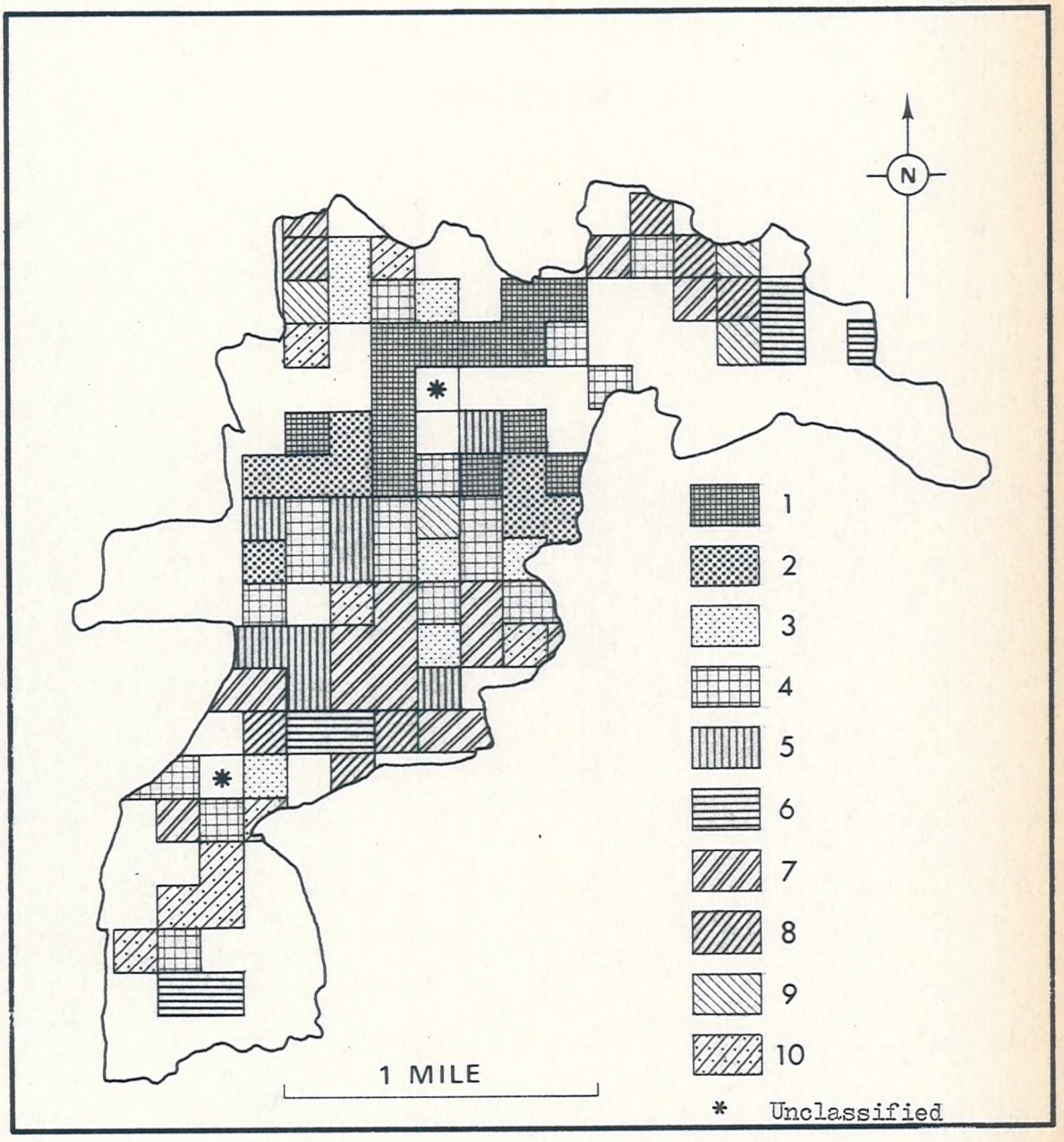

FIGURE 6.3 The spatial pattern of housing type areas - (c) Newbury

Type 10 The largest concentration of this type of area was in the south of the town, but small blocks occurred elsewhere. The dwellings were detached houses with high rateable values, built since 1950.

(iv) Salisbury

Six housing types described the spatial pattern of housing in Salisbury. Three squares remained unclassified (Table 6.8d and Figure 6.3d).

Type 1 The major location of this type of area was in the town centre, but four isolated blocks occurred to the east and north of the town. The dwellings in these areas were flats and maisonettes, mixed with a few houses. The major construction period was prior to 1875, but some dwellings were of post-1950 date. Rateable values were high compared to similar areas in the other towns.

Type 2 Two areas to the west and east on the town centre comprised a mixture of terraced and semi-detached houses. The majority were built between 1875 and 1914.

Type 3 This type of housing formed a large homogeneous area to the north of the town centre, and a smaller area to the south. The majority of dwellings in these areas were terraced houses, with some detached and semi-detached houses interspersed. Most were constructed between 1875 and 1914.

Type 4 Two areas of housing to the north and west of the town comprised a mixture of dwelling types with semi-detached houses predominating. Over half of the dwellings were built between 1914 and 1950; the remainder were divided between the other age categories.

Type 5 This type of area was found in a number of location - two areas in the south of the town, two in the north, and several small blocks elsewhere. Three-quarters of the dwellings in these areas were detached houses, constructed in the inter- and post-war periods. Rateable values of these dwellings was high.

TABLE 6.8d Average characteristics of each housing type - Salisbury *

Type No.	Detached houses %	Semi-detached houses %	Terraced houses %	Flats & maisonettes %	Bungalows %	Pre-1875 dwellings %	1875-1914 dwellings %	1914-1950 dwellings %	Post-1950 dwellings %	Rateable value %
1	14.0	7.5	12.5	65.0	4.0	64.1	9.4	9.9	27.6	85
2	7.5	9.1	70.2	15.4	2.8	79.5	10.1	5.4	9.0	62
3	10.0	11.9	62.1	10.5	1.5	11.6	80.3	6.4	0.7	64
4	24.9	50.9	10.4	4.3	12.5	10.4	16.4	59.0	21.2	90
5	77.7	9.8	2.2	5.8	4.5	22.7	7.7	47.9	21.7	139
6	14.7	12.4	7.6	1.3	66.0	3.4	0.6	37.8	48.2	90

* The characteristics of individual squares comprising the groups will be found in Appendix C.

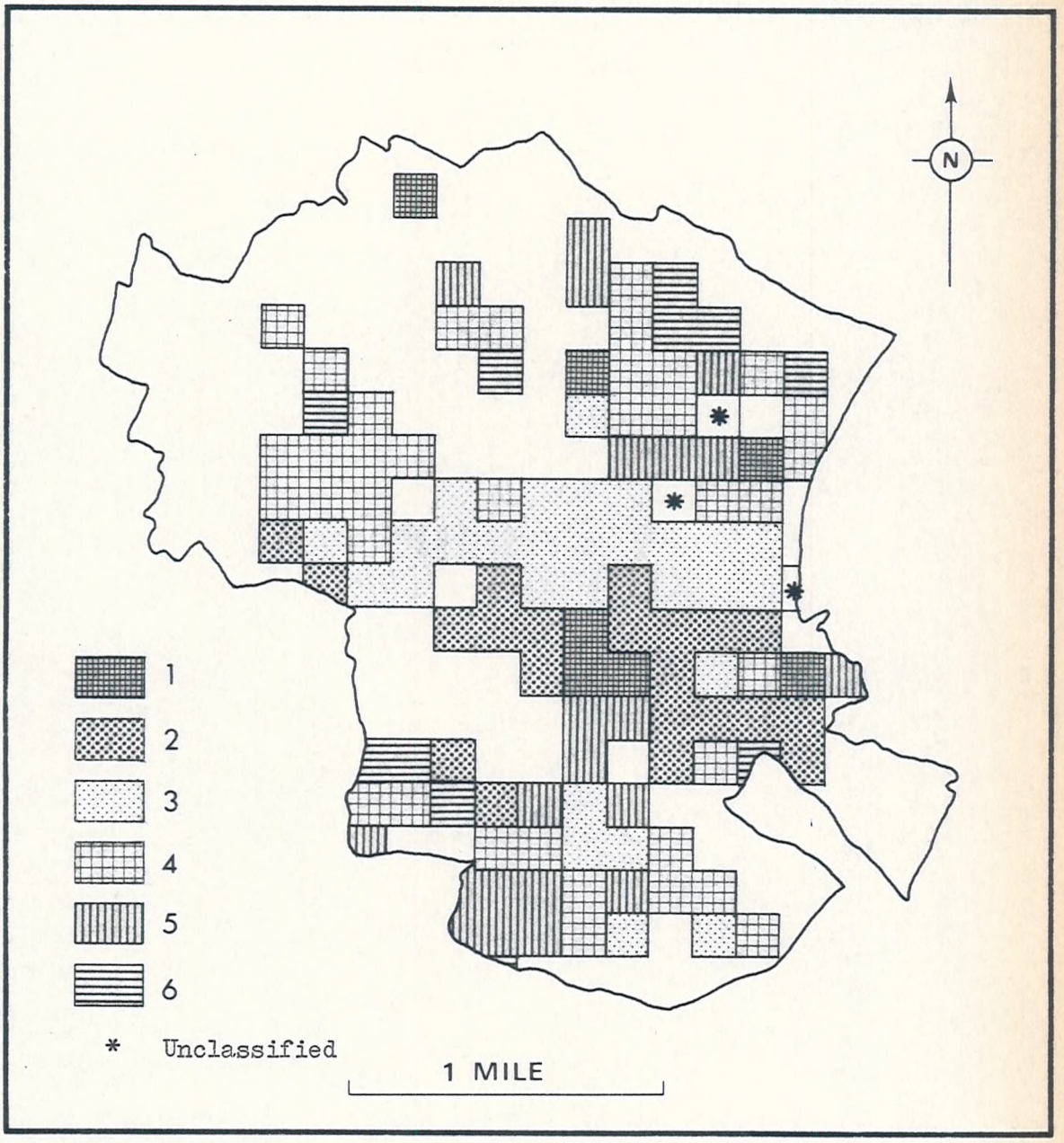

FIGURE 6.3 The spatial pattern of housing type areas - (d) Salisbury

Type 6 The largest area of this type was located on the north-east periphery of the town; small areas were scattered in other locations. The majority of dwellings were bungalows, with a few detached and semi-detached houses interspersed. Their period of construction spanned from 1914 to 1966.

(v) Taunton

Seven types of housing area were distinguished in Taunton. No squares remained unclassified. (Table 6.8e and Figure 6.3e).

Type 1 An area of homogeneous housing in the centre of the town comprised flats, maisonettes and terraced houses constructed before 1875. Rateable values were low.

Type 2 Three small areas to the north and west of the town centre also contained a mixture of flats, maisonettes and terraced houses. The majority of these were, however, built between 1875 and 1914.

Type 3 Two large areas of housing were located to the north and east of the town centre. These two areas comprised terraced houses, with a few semi-detached houses in between. Over half were constructed between 1875 and 1914; the remainder were built at both earlier and later periods.

Type 4 This type of area was found in two small blocks to the west of the town, together with two single squares in the south. These were areas of mixed housing containing dwellings of all forms and ages.

Type 5 This type of area was scattered throughout the town; one large block ran across the northern end of the town, smaller areas were found on the western and southern peripheries, and some single squares were located in the east. The majority of dwellings in these areas were semi-detached houses constructed between 1914 and 1950. A few detached houses were also included.

TABLE 6.8a Average characteristics of each housing type - Taunton *

Type No.	Detached houses %	Semi-detached houses %	Terraced houses %	Flats & maisonettes %	Bungalows %	Pre-1875 dwellings %	1875-1914 dwellings %	1914-1950 dwellings %	Post-1950 dwellings %	Rateable value %
1	5.9	3.4	51.3	39.3		89.2	9.3	1.5		46
2	3.7	3.1	37.9	55.3		17.8	75.9	5.0	1.3	66
3	2.6	14.0	76.3	5.1	1.0	20.0	59.7	16.6	3.7	46
4	28.5	21.6	25.3	20.3	3.3	17.0	47.9	24.8	10.3	99
5	18.8	66.9	5.7	1.1	7.5	0.8	1.8	67.5	9.9	83
6	57.5	14.7	3.2	3.4	17.2	4.3	8.3	56.3	31.0	112
7	11.7	31.5	24.9	1.5	26.4	5.8	4.7	15.7	73.8	81

* The characteristics of individual squares comprising the groups will be found in Appendix C.

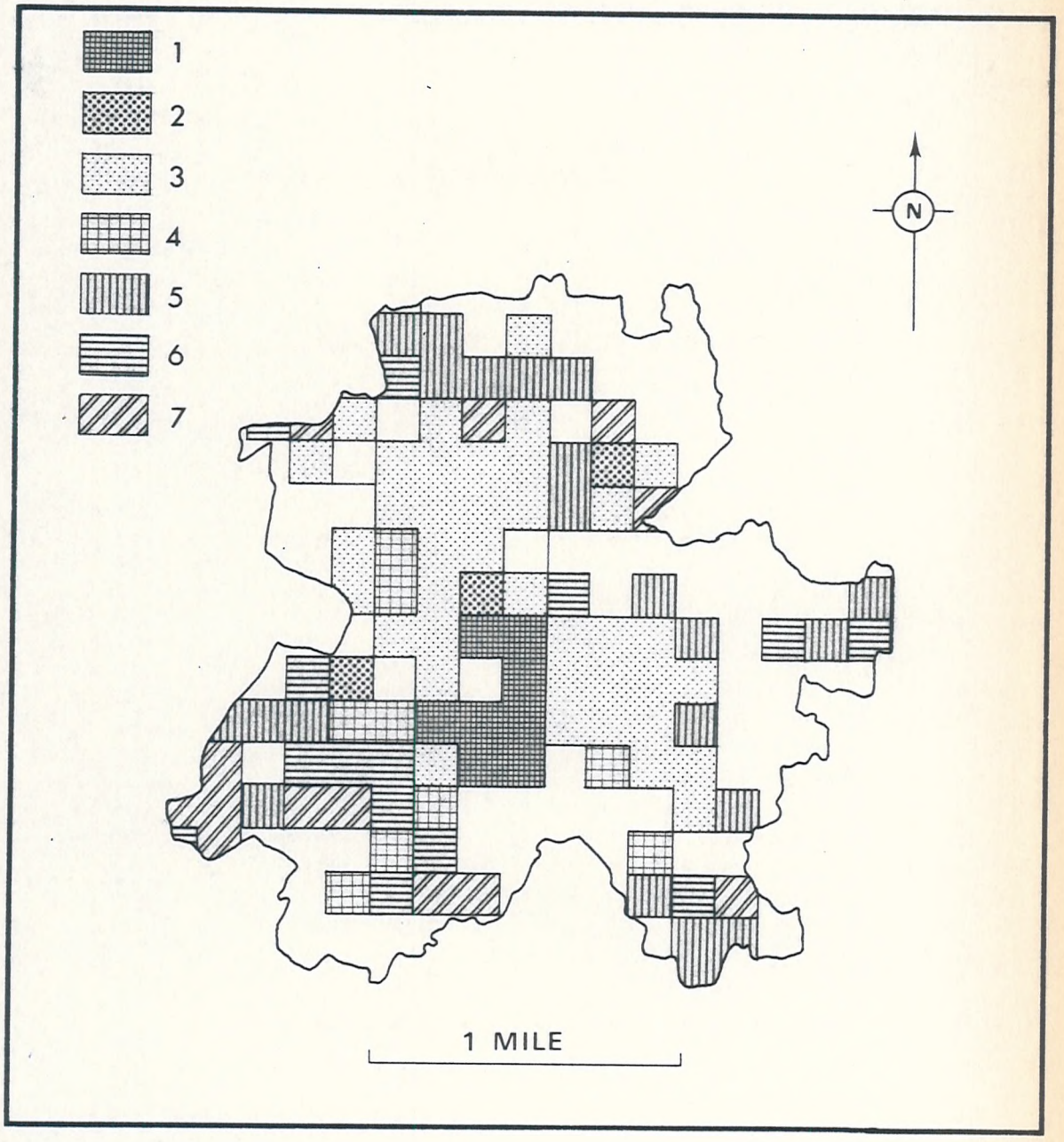

FIGURE 6.3 The spatial pattern of housing type areas - (e) Taunton

Type 6 The largest area of this type was located to the south-west of the town centre; smaller areas were scattered on the fringes of the town. The predominate dwelling in these areas was the detached house, interspersed with a few semi-detached houses and bungalows. Rateable values in these areas were higher than elsewhere in Taunton. The dwellings were constructed from 1914 onwards.

Type 7 The major concentration of this type of area formed a disjointed band across the south-west corner of the town; isolated areas occurred elsewhere. The dwellings were mixed in character, and only flats and maisonettes were absent. The majority of dwellings were constructed after 1950.

(vi) Winchester

Eight distinctive type of housing areas for Winchester were revealed from the classification. Three squares remained unclassified (Table 6.8f and Figure 6.3f).

Type 1 A small area of housing in the centre of the town comprised a mixture of flats, maisonettes and terraced houses. Almost all the dwellings were constructed before 1875.

Type 2 A concentric ring of housing surrounding the Type 1 area consisted of terraced houses with a few flats and maisonettes interspersed. The majority were built before 1875.

Type 3 The areas of this type were located in a broken circle around the previous Type 2 area. The dwellings were mixed in character, but most were built between 1875 and 1914.

Type 4 Two squares, one to the northeast, the other to the south of the town centre, comprised terraced and semi-detached houses constructed between 1914 and 1950.

TABLE 6.8f Average characteristics of each housing type - Winchester *

Type No.	Detached houses %	Semi-detached houses %	Terraced houses %	Flats & maisonettes %	Bungalows %	Pre-1875 dwellings %	1875-1914 dwellings %	1914-1950 dwellings %	Post-1950 dwellings %	Rateable value %
1	2.2	1.7	41.1	54.9		87.2	12.7			73
2	5.2	6.6	75.1	11.2	1.8	70.0	27.5	1.5	2.0	80
3	13.6	22.3	52.2	10.4	1.5	6.2	72.4	10.2	3.2	78
4	14.9	32.4	46.8	8.8			6.6	93.4		66
5	77.0	9.4	0.9	5.6	13.1	1.4	17.0	63.2	17.4	166
6	26.0	19.4			54.6	0.8	0.1	57.4	41.6	100
7	18.1	12.1	14.1	47.5	8.1	5.4	9.5	20.6	64.4	115
8	56.7	25.4	4.4	1.6	11.9	0.6	3.3	8.1	87.9	129

* The characteristics of the individual squares comprising the groups will be found in Appendix C.

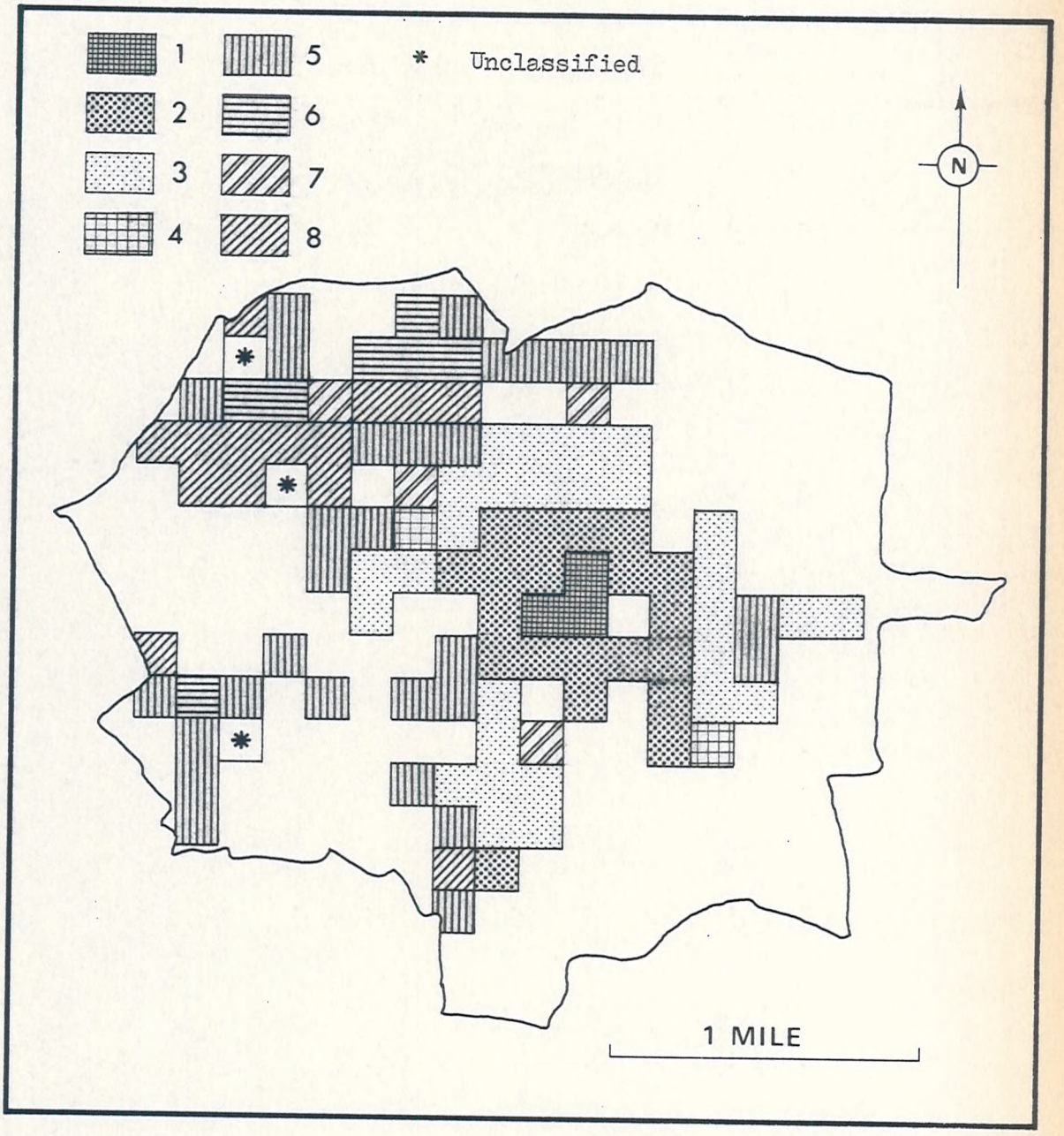

FIGURE 6.3 The spatial pattern of housing type areas - (f) Winchester

Type 5 The housing areas of this type were found in several locations - one discontinuous area to the west of the town, another in the north, and one small area in the east. The majority of dwellings in these areas were detached houses, with high rateable values. Two-thirds were built between 1914 and 1950; the remainder were constructed in the preceding and succeeding periods.

Type 6 Two small areas to the north of the town comprised bungalows, interspersed with detached and semi-detached houses. They were constructed after 1914.

Type 7 Almost half the dwellings in four scattered squares were flats and maisonettes; the remainder of the dwellings comprised all other building forms. The major period of construction was after 1950.

Type 8 The largest area of this type was to the north of the town centre, but a few isolated squares were found elsewhere. Half the dwellings in these areas were detached houses; the rest were semi-detached houses and bungalows. The majority were constructed after 1950, and the areas were characterised by high rateable values.

(vii) Yeovil

Six types of housing area were differentiated from the classification. Eight squares remained unclassified (Table 6.8g and Figure 6.3g).

Type 1 This type formed a small area in the centre of the town, and was also found in two blocks elsewhere. Flats, maisonettes and terraced houses were the predominate dwellings in these areas; a few detached houses also occurred. The majority of dwellings were constructed before 1875, and the rest were built during all the other periods.

Type 2 Two squares close to the town centre consisted of terraced houses built before 1875, and having low rateable values. A few dwellings of other forms and ages were mixed with them.

TABLE 6.8c Average characteristics of each housing type - Yeovil *

Type No:	Detached houses %	Semi-detached houses %	Terraced houses %	Flats & maisonettes %	Bungalows %	Pre-1875 dwellings %	1875-1914 dwellings %	1914-1950 dwellings %	Post-1950 dwellings %	Rateable value %
1	17.1	6.6	33.5	39.4	3.3	61.6	21.0	10.9	6.5	64
2	12.5	2.9	71.9	0.9	11.7	65.7	5.3	15.2	13.8	42
3	4.7	17.6	69.6	7.6	0.4	12.1	68.4	16.8	2.6	52
4	16.1	67.0	5.5	3.7	5.7	1.6	7.9	74.7	15.7	84
5	49.9	9.6	9.6	4.1	26.8	4.9	12.5	57.2	12.4	108
6	75.3	9.9	2.9		11.8	7.3	2.2	2.2	88.3	111

* The characteristics of individual squares comprising each group will be found in Appendix C.

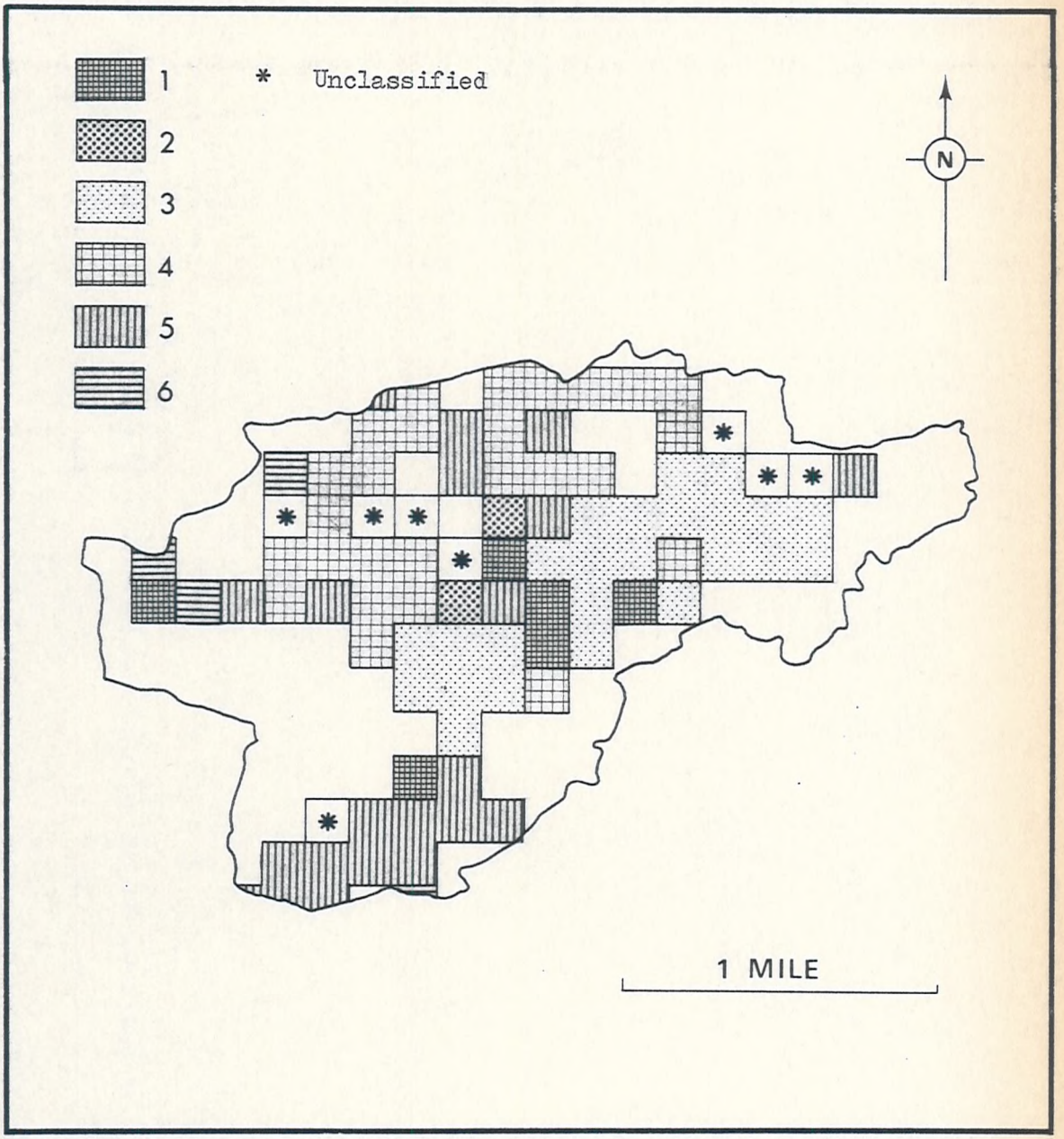

FIGURE 6.3 The spatial pattern of housing type areas - (g) Yeovil

Type 3 Two large areas, one to the north-east, the other to the south-west of the town centre, were mixed in character. Terraced houses and semi-detached houses were mostly built between 1875 and 1914, although a few were constructed in the periods immediately preceding and succeeding this.

Type 4 A large discontinuous area of housing crossed the northern part of the town. The majority of dwellings were semi-detached houses, with some detached houses interspersed. Three-quarters of the dwellings were built between 1914 and 1950.

Type 5 The major concentration of this type was on the southern periphery of the town. Small areas occurred elsewhere. These areas comprised detached houses and bungalows. Half the dwellings were built between 1914 and 1950; the remainder were of both earlier and later construction.

Type 6 This type formed scattered areas on the western fringe of the town,. Three-quarters of the dwellings were detached houses, and the majority were constructed after 1950. Rateable values in these areas were around £100.

(viii) Summary

Although seven different classifications were produced by the analysis, several types of housing area appeared common to almost all the towns. Central areas were characterised by flats, maisonettes, and terraced houses built prior to 1875. The adjacent areas comprised mixed housing, although terraced houses predominated; the greater proportion of dwellings were constructed between 1875 and 1914. A third common type was areas of detached houses with high rateable values built between 1914 and 1950. Bungalow development since 1914 dominated small peripheral sectors of the towns. Lastly, almost all the towns contained areas of mixed housing constructed after 1950.

The spatial pattern of housing in the towns revealed a clustering of some types to form homogeneous housing tracts. Squares containing dwellings built before 1875 tended to be contiguous, as did those comprising dwellings of 1875 to 1914 construction. Newer development formed smaller sectors of two or three squares, with the same type of housing occurring in several locations within the urban area. In Newbury, Salisbury and Yeovil, however, interwar dwellings were located in somewhat larger housing sectors.

The strong contrast in housing environment between areas of concentrated older housing in the centres of the towns, and the variety of newer housing types towards the periphery could possibly have affected the marketability of a dwelling located within one or other of these sectors. Dwellings located in the central area, whatever their individual amenities, were surrounded by old, poor properties, which could have affected their desirability and price. On the other hand, the areal extent of any one of these larger homogeneous areas was still far smaller than housing tracts in large cities. People moving into and within the towns might have been content to accept housing in a less desirable area, since they had access to pleasant amenities within about a quarter of a mile of their house.

To complete the picture of housing in the towns, the location of housing type areas in each town was compared with the pattern of dwelling density and the distribution of occupier-ratepayer units. These housing areas comprising dwellings constructed before 1914 tended to have higher dwelling densities and lower proportions of occupier-ratepayer units. To a lesser extent, higher densities were also found in areas of mixed modern housing.

Although the character of the housing stock in the towns was complex, there were a number of underlying patterns with which dwelling-occupant turnover might be associated. The two succeeding chapters examine the

extent to which such relationships were identified.

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. Regional Studies Association, (1967), 'Grid Squares for Planning; possibilities and prospects', Papers of the Annual Conference.

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4. See Chapter 1, pages 4-6.

5. See Chapter 4, pages 79-88.

6. See Chapter 3, page 58.

7. Witherick,M.E. and Baldock,M.A. (1970) 'Rating accounts as a source of data for the private rented housing market' Housing and Planning Review, 26, No.4, 16-20.

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10. Nine out of the ten variables were percentages but rateable value was an average calculated in £s.

CHAPTER 7 Dwelling-occupant turnover in the sample towns

The analysis of occupier-ratepayer dwellings revealed private housing in the seven towns to be varied in character. The second stage of the analysis was an examination of dwelling-occupant turnover in these towns.

7.1 The level of dwelling-occupant turnover

The number of occupier-ratepayer units in each town recording a change of occupier was traced through alterations to the rating accounts[1]. Of the 34,181 private occupier-ratepayer dwellings in the towns, 2,671 registered a change of occupier. The average level of turnover was therefore, 8.1% (Table 7.1). This figure was remarkably close to that suggested by Donnison of between 7% and 8% of households moving each year[2]. The similarity of these figures provides some evidence for supposing that rating accounts form a reasonably accurate source of household mobility data.

An examination of turnover in each of the towns revealed variations from this average figure. Less than 8% of dwellings in Bridgwater, Salisbury and Yeovil recorded a change of occupier; figures suggested that population in Salisbury was particularly immobile between 1967 and 1968. Above average levels of movement for this period were registered for Chichester, Newbury, Taunton and Winchester.

7.2 Dwelling-occupant turnover and housing characteristics

The distribution of units between the five categories of dwelling form indicated that the greatest proportion of turnover occurred in terraced houses (Table 7.2). One-quarter of movement was associated with semi-detached houses; the two categories of detached houses, and flats and maisonettes, each accounted for just under one-fifth of all moves.

TABLE 7.1 Dwelling-occupant turnover as a proportion of total occupier-ratepayer units

Town	Number of dwellings changed occupier	% occupier-ratepayer units changed occupier
Bridgwater	310	7.8
Chichester	345	9.7
Newbury	372	8.7
Salisbury	386	5.7
Taunton	534	8.6
Winchester	450	9.4
Yeovil	364	7.8
All towns	2761	8.1

TABLE 7.2 The physical characteristics of dwellings recording a change of occupier

(i) Form of dwellings (% of total dwellings recording a change of occupier)

Town	Detached houses	Semi-detached houses	Terraced Houses	Flats and maisonettes	Bungalows
Bridgwater	4.5	32.2	46.1	10.9	6.1
Chichester	20.7	21.4	29.5	19.4	8.7
Newbury	23.9	27.1	17.2	22.3	9.4
Salisbury	19.7	21.5	38.6	12.9	7.2
Taunton	16.5	22.3	39.1	14.2	7.9
Winchester	24.4	17.3	29.5	20.9	7.7
Yeovil	20.3	26.6	31.3	15.9	5.8
All towns	18.9	23.5	33.1	16.7	7.9

(ii) Age of dwellings (% of total dwellings recording a change of occupier).

Town	Pre-1875 dwellings	1875-1914 dwellings	1914-1950 dwellings	Post-1950 dwellings
Bridgwater	21.9	22.9	26.1	29.0
Chichester	23.5	21.1	31.3	24.1
Newbury	11.0	20.4	23.9	44.6
Salisbury	25.1	35.2	27.2	12.4
Taunton	18.9	31.3	27.3	22.5
Winchester	16.6	34.6	21.5	27.2
Yeovil	10.4	33.5	32.7	23.4
All towns	18.1	29.0	27.3	25.6

TABLE 7.2 (Continued)..

(iii) Rateable value of dwellings (% of all dwellings recording a change of occupier).

Town	Dwellings less £30	Dwellings £30-£59	Dwellings £60-£89	Dwellings £90-£119	Dwellings £120-£149	Dwellings £150 and over
Bridgwater	12.9	32.2	34.5	17.4	2.3	0.6
Chichester	1.4	22.6	22.0	28.1	15.4	10.4
Newbury	0.3	15.9	22.6	56.6	8.0	1.6
Salisbury	3.1	30.3	23.3	29.8	6.9	6.5
Taunton	4.5	32.4	32.4	21.9	7.1	1.7
Winchester	1.7	21.5	20.7	24.8	16.4	14.7
Yeovil	2.7	26.6	31.3	29.9	6.9	2.6
All towns	3.6	26.1	26.7	28.8	9.2	5.6

Bungalows recorded the lowest proportion of turnover. Depending on the importance of a particular dwelling form within the stock of each town, however, this general pattern of association between turnover and dwelling form altered. In Newbury, the greatest proportion of movement occurred in semi-detached houses; in Winchester, detached houses, flats and maisonettes each accounted for larger proportions of turnover than semi-detached houses; in Bridgwater, detached houses replaced bungalows as the smallest group of dwellings recording a change of occupier.

The pattern of dwelling-occupant turnover was also examined in terms of the age of dwellings. The greatest proportion of units recording a change of occupier were built between 1875 and 1914; the smallest percentage was units constructed before 1875. Variations to this pattern were recorded in some towns. The largest proportion of dwelling-occupant turnover in Bridgwater involved dwellings built between 1914 and 1950; in Newbury turnover was most strongly associated with dwellings constructed after 1950; in Salisbury, the oldest dwellings accounted for a greater proportion of turnover than the newest units.

Turning to rateable value, the largest proportion of turnover was found in dwellings rated between £90 and £119. Half the dwellings recording a change of occupier registered values between £30 and £89. The smallest category comprised dwellings valued at less than £30. Once again, differences were recorded between the towns. More than 10% of dwelling-occupant turnover in Bridgwater occurred in dwellings rated at less than £30; over 25% of movement in Chichester and Winchester involved dwellings valued at over £120.

The characteristics of dwellings recording a change of occupier appeared to reflect the general pattern of housing in the towns. It

was only to be expected that a large number of the dwellings changing hands were terraced houses, since the greatest number of occupier-ratepayer units were of this form. The question to be answered was whether the proportion of terraced houses recording a change of occupier reflected the overall level of turnover in each town, or whether dwelling-occupant turnover was more highly associated with some types of housing than with others. In order to investigate these possibilities, it was necessary to calculate the percentage of total dwellings recording a change of occupier in each form, age and rateable value category.

A number of interesting points emerged from this analysis (Table 7.3). The distribution of turnover within the five dwelling form categories indicated that about 20% of all flats and maisonettes recorded a change of occupier, compared to a little over 5% of all other dwelling forms. In Bridgwater, Newbury and Taunton, the proportion of flats and maisonettes changing hands rose to around 25%. Only in Salisbury was this pattern disturbed, although even here the level of turnover for flats and maisonettes was still greater than for any other dwelling form. The second highest rate of turnover in the majority of towns was recorded for detached houses; the three other categories, (semi-detached and terraced houses, and bungalows), each had similar turnover rates.

Fluctuations in the level of turnover also occurred between the different categories of dwelling age. The highest level of turnover for the total sample was recorded for dwellings built in or after 1950. Dwellings constructed before 1875 also had relatively high turnover rates. On the other hand, less than 8% of dwellings built between 1875 and 1950 had changed hands. Bridgwater, Chichester, Taunton and Yeovil each conformed to this pattern of higher turnover within the oldest and newest dwellings, but variations were found in the other towns. Newbury and Winchester had similar patterns of turnover, with higher mobility occurring only in dwellings constructed after 1950.

TABLE 7.3 The physical characteristics of dwellings recording a change of occupier

(i) Form of dwelling (% occupier-ratepayer units in each category).

Town	Detached house	Semi-detached house	Terraced house	Flat or maisonette	Bungalow
Bridgwater	5.3	8.5	6.7	26.8	7.4
Chichester	8.5	7.6	10.2	22.4	6.8
Newbury	8.3	7.1	6.6	25.0	7.0
Salisbury	6.2	5.1	5.5	8.6	4.4
Taunton	9.4	7.2	7.3	24.7	9.1
Winchester	10.4	7.5	7.3	19.3	8.5
Yeovil	8.6	6.7	7.1	23.0	4.4
All towns	8.3	6.9	7.0	19.3	6.5

(ii) Age of dwelling (% occupier-ratepayer units in each category).

Town	Pre-1875 dwellings	1875-1914 dwellings	1914-1950 dwellings	Post-1950 dwellings
Bridgwater	9.9	5.6	6.9	10.6
Chichester	13.8	9.4	7.4	11.7
Newbury	7.4	7.6	6.7	11.8
Salisbury	6.6	5.7	5.1	5.7
Taunton	11.6	7.8	7.0	10.9
Winchester	8.5	8.8	8.7	11.7
Yeovil	11.2	7.7	6.2	10.8
All towns	9.3	7.3	6.2	10.6

TABLE 7.3 (Continued) ...

(iii) Rateable of dwellings (% occupier-ratepayer units in each category).

Town	Less £30	£30-£59	£60-£89	£90-£119	£120-£149	£150 and over
Bridgwater	8.7	6.7	8.6	8.1	10.8	6.2
Chichester	26.3	11.7	9.2	9.0	9.1	9.0
Newbury	3.3	6.8	7.7	10.5	8.6	5.3
Salisbury	6.2	6.0	5.1	5.8	5.0	6.4
Taunton	17.8	7.7	9.8	8.4	12.0	4.7
Winchester	12.1	6.8	11.2	10.3	12.7	8.1
Yeovil	9.0	7.9	7.3	8.2	10.1	4.6
All towns	9.9	7.3	8.1	8.5	9.5	6.9

Salisbury was, once again, exceptional in having a low rate of turnover in all age categories, with a slight rise in the proportion of pre-1875 dwellings changing hands.

The rateable value distribution of dwellings recording a change of occupier revealed turnover levels fairly close to 8% for all categories. Highest levels of turnover were found for dwellings rated at less than £30; mobility within this group was particularly high in Chichester and Taunton. A relatively high proportion of dwellings valued at between £120 and £149 also changed hands; this group recorded the highest turnover rate of all categories in Bridgwater, Winchester and Yeovil. The lowest level of turnover was found in dwellings rated over £150; Bridgwater, Chichester, Taunton and Yeovil all recorded low rates of movement in this group.

7.3 The X^2 test of association between dwelling-occupant turnover and housing characteristics

In order to assess the significance of the relationships revealed in the preceding description, the distribution of turnover within the form, age and rateable value groups was subjected to simple statistical analysis. If there was no association between turnover and housing type, it was hypothesised that the number of dwellings changing hands would be proportional to the number of dwellings of that type within the stock of occupier-ratepayer units. Using the X^2 test of association, it was possible to compare this theoretical distribution of units within each type grouping with the actual distribution of units recording a change of occupier. Where the distribution of actual units deviated significantly from the expected distribution, then a relationship between turnover and housing characteristics could be suggested.

The distribution of dwellings between the various form, age and rateable value categories were tested and the results summarised in Table 7.4[3]. When all the towns were examined together, the results indicated considerable variation between the expected and actual pattern of dwelling-occupant turnover. The greatest difference was recorded in the distribution of dwellings according to dwelling form, while the smallest deviation was associated with the rateable value of units. As, however, even this smallest value was significant at the 99.9% level, it was safe to assume that the initial hypothesis could be rejected in all three cases. Thus the evidence strongly suggested a marked association between dwelling-occupant turnover and housing type.

These results did not rule out, however, the possibility that one or more of the individual towns conformed to the hypothesis, and it was therefore necessary to perform similar X^2 tests on the individual towns in turn (Table 7.4). These too revealed a strong association between dwelling form and turnover. Similarly, the age of dwellings appeared to be significantly associated with turnover, although Salisbury (with an inconclusive X^2 value), did not definitely conform to the general pattern of the remaining towns. In contrast, the test of rateable values provided a less forthright rejection of the hypothesis, as for all but three towns (Newbury, Taunton and Winchester) the X^2 values were inconclusive[4]. Overall, therefore, the strongest associations between dwelling-occupant turnover and housing characteristics were with both the form and age of dwellings.

7.4. The physical characteristics of dwellings having high rates of dwelling-occupant turnover

Significant associations between turnover and housing characteristics were thus established using the X^2 test, but the analysis did not reveal the exact types of dwelling having higher or lower than expected rates of turnover.

TABLE 7.4 The statistical relationship between dwelling-occupant turnover and housing characteristics (X^2 values and significance levels).

Town	Form of dwelling	Age of dwelling	Rateable value of dwelling
Bridgwater	91.5 ***	25.6 ***	7.3
Chichester	65.8 ***	22.3 ***	8.8
Newbury	122.5 ***	27.9 ***	16.6 ***
Salisbury	13.9 ***	4.4	1.1
Taunton	111.2 ***	27.2 ***	21.2 ***
Winchester	71.1 ***	8.4 *	23.5 ***
Yeovil	92.3 ***	21.4 ***	4.9
All towns	442.8 ***	95.7 ***	24.7 ***

*** = Significant at the 99.0% significance level

** = Significant at the 97.5% significance level

* = Significant at the 95.0% significance level

Blank = Inconclusive result

In order to identify the character of units for which levels of turnover were significantly higher than expected, the X^2 values were examined in detail.

(i) Dwelling form

Those forms of dwelling significantly associated with high levels of turnover were identified by examining the deviation between the actual and expected frequency of turnover within each category. Movement in flats and maisonettes accounted for the greatest deviation from the theoretical value, and this difference produced the largest positive contribution to the overall X^2 value[5]. To assess whether or not the significant relationship between turnover and dwelling form was wholly attributable to movement within this sector of the housing stock, data for these dwellings were omitted from the analysis and the test repeated on the four remaining groups (detached houses, semi-detached houses, terraced houses and bungalows), (Table 7.5).

The resulting X^2 value of 14.9 was considerably lower than the value achieved for the pattern of turnover which included movement in flats and maisonettes (442.8). At first, this suggested that the other forms of dwelling were not strongly associated with the movement of households. This surmise was not altogether true, however, for the significance level of the new X^2 value indicated that variations in the distribution of turnover within the four dwelling form categories were still significantly different at the 99.0% confidence level. Further examination of the data revealed that this result was primarily the product of unusually high rates of turnover in the detached house category. Detailed testing of the five dwelling form groups indicated, therefore, that they fell into two classes. On the one hand were detached houses, flats and maisonettes, dwelling forms with significantly high turnover rates. In this class, X^2 values indicated that flats and

TABLE 7.5 The statistical relationship between dwelling-occupant turnover and housing characteristics - some categories omitted (X^2 values and significance levels)

Town	Form of dwelling with flats and maisonettes omitted	Age of dwelling with post-1950 units omitted	Rateable value of dwelling with units rated £120-£149 omitted	Age of dwelling with flats and maisonettes omitted
Bridgwater	5.1	11.9 ***		23.5 ***
Chichester	6.4	18.9 ***		18.7 ***
Newbury	2.3	0.6	13.7 ***	4.2
Salisbury	3.0			
Taunton	5.9	15.9 ***	23.3 ***	31.3 ***
Winchester	9.6 **	0.2	15.2 ***	11.3 ***
Yeovil	8.5 *	9.2 ***		11.4 ***
All towns	14.9 ***	33.9 ***	19.0 ***	58.4 ***

*** = Significant at 99.0% significance level

** = Significant at 97.5% significance level

* = Significant at 95.0% significance level

Blank = Inconclusive result

maisonettes were easily the more important members. On the other hand, there were semi-detached and terraced houses and bungalows which together formed the low turnover class.

Although the results were clear-cut when all the towns were considered together, a different picture emerged when the towns were examined separately (Table 7.5). Only two of the towns, Winchester and Yeovil, revealed X^2 values significant at the 95.0% level, which resulted from a higher than expected level of turnover in detached houses. The five remaining towns produced inconclusive X^2 values. It appeared that within each town, therefore, the only important forms of dwelling associated with dwelling-occupant turnover were flats and maisonettes.

(ii) Dwelling age

An identical procedure was adopted for isolating the particular ages of dwellings significantly associated with higher rates of dwelling-occupant turnover. The greatest deviation from the expected pattern of turnover occurred in dwellings constructed after 1950 and these units were, consequently, withdrawn from the analysis. The pattern of turnover in the remaining three groups (dwellings built prior to 1875, those constructed between 1875 and 1914, and those built between 1914 and 1950), was then retested, the result being a X^2 value of 34.0 (Table 7.5). This second value was again much lower than that for the pattern of movement in the total sample of dwellings, but it was nonetheless significant at the 99.9% probability level. Further investigations were necessary to explain this result, and these revealed that the only group of dwellings in which movement was greater than expected was that containing units built before 1875. The analysis indicated that higher rates of turnover were associated with both the oldest- and newest-constructed dwellings, whereas low levels of movement were found in units built between 1875 and 1950.

The pattern of turnover in the individual towns was then scrutinised in order to establish whether this general relationship was common to all the towns. The data for Salisbury was not considered, however, since the relationship between turnover and dwelling age in this town was found to be inconclusive (Table 7.4). In four of the remaining towns (Bridgwater, Chichester, Taunton and Yeovil), X^2 values above the 99.0% significance level were obtained (Table 7.5). In these towns, the largest positive deviation from the expected pattern was associated with dwellings built before 1875. The data for Newbury and Winchester, on the other hand, produced inconclusive X^2 values. Thus, in these two towns, only dwellings constructed since 1950 could be reliably associated with a high level of dwelling-occupant turnover.

(iii) Rateable value

When all the towns were considered together, dwelling-occupant turnover was also significantly associated with variations in the rateable value of dwellings (Table 7.4). The X^2 value obtained for this distribution was, however, much smaller than that for the two other characteristics, and the deviation between the expected and actual frequencies of movement was fairly evenly spread across a number of categories. As a result, no one rateable value grouping could be isolated as overwhelmingly associated with turnover. The largest deviation occurred with dwellings rated at between £120 and £149 and these were, therefore, omitted from the analysis. After recalculating the theoretical distribution of units, a new X^2 value of 19.0 was obtained, the significance level of which indicated that the distribution of dwelling-occupant turnover between the remaining rateable value groups displayed significant variations (Table 7.5). Thus higher than expected rates of turnover were also strongly associated with dwellings rated at values other than £120 to £149.

Examining the composition of the new X^2 value, it was found that higher than expected rates of turnover were associated with more than one of the rateable value groups (dwellings rated at less than £30, dwellings rated between £60 and £89, and dwellings rated at between £90 and £120). In order to assess whether all of these groups were significantly associated with higher levels of turnover, the group deviating most from the theoretical distribution (dwellings rates at less than £30), should have been eliminated and the analysis repeated. As, however, rateable value was not conclusively associated with turnover in four of the towns, it was decided that the investigation of this characteristic should be pursued no further. Even so, it was justifiable to conclude that higher rates of dwelling-occupant turnover were significantly associated with dwellings rated at between £120 and £149 and with dwellings rated at less than £30.

Only the three towns recording a significant relationship between turnover and rateable value were examined in detail. After eliminating dwellings with values between £120 and £149, X^2 values significant at the 99.0% level were obtained for all three (Table 7.5). Investigation showed that high rates of turnover in Newbury were associated with dwellings rated at between £90 and £149, whereas in the two other towns (Taunton and Winchester), high turnover rates occurred in dwellings rated at less than £30 as well as between £120 and £149.

7.5 Effects on the pattern of turnover of the inter-relationship between dwelling form and dwelling age

In analysing the types of dwelling with higher or lower than expected rates of turnover, the three dwelling characteristics - form, age and rateable value - were examined independently. The possibility that these characteristics were inter-dependent could not be ignored, however, as the classification of housing areas in Chapter 6 revealed certain dwelling

characteristics to be spatially associated. For example, semi-detached houses were usually found in areas of housing built between 1914 and 1950. The two most consistent findings in this chapter are that higher than expected levels of turnover occurred in flats and maisonettes, and also in dwellings built prior to 1875 and after 1950. It appeared probable that these movement patterns concerned the same dwellings, since flats and maisonettes tend to be found either in old converted houses or as part of a redevelopment scheme.

It was necessary, therefore, to examine how far high levels of turnover in old and new dwellings were the result of those dwellings being either flats or maisonettes. This relationship was chosen in favour of the reverse (i.e. that high turnover in flats and maisonettes was the result of those dwellings being built before 1875 or after 1950), as the largest individual X^2 value for any characteristic was associated with flats and maisonettes. The housing data was re-sorted to extract from the age groups those dwellings classified as flats or maisonettes. The expected pattern of turnover for each age group was then recalculated, based on the proportion of the total remaining dwellings in each group. The distribution of dwellings actually recording a change of occupier was then compared with the theoretical distribution, and a X^2 value of 58.4 obtained (Table 7.5). This value was significant above the 99.9% probability level and it was therefore safe to assume that high rates of turnover were associated with distinct age groups. The calculations producing this X^2 value revealed that turnover was strongly associated with pre-1875 and post-1950 housing, irrespective of the form of those dwellings.

This procedure was repeated for all the towns except Salisbury, where no conclusive relationship between turnover and dwelling age was established. In five of the towns (Bridgwater, Chichester, Taunton,

Winchester and Yeovil), X^2 values with significance levels above 99.0% were obtained, indicating that the association between high turnover rates in dwellings built before 1875 and after 1950 were not simply the result of high levels of movement in flats and maisonettes. In Newbury, on the other hand, the X^2 value was inconclusive. Thus, there was no positive evidence to confirm that high turnover rates in the newest dwellings were unconnected with the large amount of movement in flats and maisonettes.

7.6 Summary

Detailed analysis of dwelling-occupant turnover within the occupier-ratepayer units of the seven towns revealed variations in the rate of turnover between April 1967 and March 1968 to be associated, to some extent, with the physical characteristics of those dwellings. The most important findings were as follows:-

(i) In all seven towns, flats and maisonettes recorded significantly higher than expected rates of turnover. High turnover in detached houses was significant only in two towns. Low rates of turnover, on the other hand, were associated with semi-detached and terraced houses, and bungalows.

(ii) In six of the seven towns, significantly higher than expected rates of movement were associated with dwellings built after 1950; in four of these towns, dwellings constructed before 1875 also recorded significantly high levels of turnover. Lower rates of movement were associated with dwellings built between 1875 and 1914.

(iii) In five of the towns, the oldest and newest dwellings recorded high rates of turnover irrespective of the form of those dwellings. In Newbury the results were inconclusive.

(iv) Within each town, rateable value appeared less significantly associated than both form and age with variations in the pattern of turnover. In only three towns was a significant relationship established between rates of turnover and rateable value; in these towns, the strongest association was with dwellings rated at between £120 and £149. Dwellings rated at less than £30 in Bridgwater and Taunton, and at between £90 and £119 in Newbury, were also associated with higher rates of movement. Lower than expected levels of turnover in these towns were found in dwellings rated at between £60 and £89 and at over £150.

(v) The greatest deviation from these general trends in the pattern of dwelling-occupant turnover was recorded in Salisbury. Here, the overall level of turnover was much lower than elsewhere, and the only significant relationship between turnover and the physical characteristics of dwellings was a higher than expected rate of movement in flats and maisonettes.

REFERENCES

1. See Chapter 5, pages 92-93
2. Donnison, D.V. (1967) The Government of Housing (Penguin Books: Harmondsworth), 202.
3. The calculations of X^2 value for all the towns examined together are collated in Appendix D.
4. The interpretation of the X^2 values for individual towns varied from the results of the total sample taken together because, in each town, differences between the expected and actual number of units were too small to produce a significant X^2 value. On the other hand, when all dwellings in all the towns were amalgamated, the number of units comprising the deviation from the expected value was large enough to result in a significant X^2 value.
5. See the calculations in Appendix D.

CHAPTER 8 The spatial pattern of dwelling-occupant turnover

The final stage of the investigation was an examination of the location within the sample towns of dwellings recording a change of occupier. It appeared from the analyses in the previous chapter that higher levels of dwelling-occupant turnover were associated with flats and maisonettes and with dwellings constructed before 1875 and after 1950. It could be hypothesised, therefore, that areas of the towns in which these types of dwellings predominated would also be those sectors recording highest rates of dwelling-occupant turnover. In order to test this hypothesis, the turnover data was subjected to two different analyses.

8.1 The pattern of dwelling-occupant turnover by percentages

The areas of private housing in the seven towns were divided into 0.25 kilometre squares[1]. The total number of occupier-ratepayer units within each square was known and of these, the dwellings recording a change of occupier were identified. The spatial pattern of turnover within each town was then determined by calculating the percentage of total units in each square changing hands. The resulting data was plotted in the base maps.

Both within and between towns, there was considerable variation in the rate of turnover (Figure 8.1). Although in a number of squares in each town, there was no change of occupier, the majority of squares recorded turnover rates of between 5% and 20%, while one or two squares registered percentages above average for each town. The maximum recorded rate for any one square in each of the towns was as follows:-

Bridgwater	41.2%
Chichester	28.2%
Newbury	68.2%
Salisbury	30.0%
Taunton	27.2%
Winchester	40.0%
Yeovil	29.2%

The spatial distribution of dwelling-occupant turnover displayed an apparently random pattern. There was, however, a tendency for squares classified in the three lower turnover groups (i.e. squares with turnover less than 20%), to form contiguous areas, since these groups accounted for a large proportion of the total squares in each town. In Bridgwater, Chichester, Winchester and Yeovil, the largest number of adjacent squares formed areas recording turnover rates of between 5.0% and 9.9%. In Salisbury, two large segments of the town registered a rate of turnover of below 5.0%. There were two large continuous areas of housing in Newbury recording similar turnover rates - one had a rate of between 5.0% and 9.9%, while the other recorded changes of between 10.0% and 19.9%. In Taunton, only a few squares with similar turnover rates were located adjacent to each other. Thus, in that town, there existed no large area of housing falling within a particular turnover category. In all the towns, those squares recording a rate of dwelling-occupant turnover above 20% were rarely located in juxtaposition, but were scattered throughout the private housing areas of each town.

Due to the complex pattern of turnover in the towns, there was some difficulty involved in visually comparing the distribution of turnover with the nature of the housing stock in different localities. But before embarking on a more sophisticated method of comparison, it was felt necessary to remove a slight deficiency in the turnover data which

could possibly have distorted the actual pattern of turnover in each town. When dividing the towns into 0.25 kilometre sub-divisions, a minimum limit of 10 occupier-ratepayer units per square was fixed for delimiting the effective extent of the private housing area of each town[2]. In the seven towns, there was, therefore, a variation in dwelling density ranging from 10 dwellings per square to 266 dwellings per square. As a result, those sectors of the towns with a few dwellings in each square could have registered high rates of dwelling-occupant turnover even if only one dwelling changed hands, whereas in squares containing a larger number of units, the difference in turnover level resulting from one more dwelling changing hands was insignificant. Thus the importance to the overall pattern of turnover of any individual dwelling which recorded a change of occupier depended on the total number of units in the square[3]. In order to circumvent this problem, a second method of plotting the data was investigated.

8.2 The pattern of dwelling-occupant turnover by regression residuals

The influence on the spatial pattern of turnover of the variations in the density of occupier-ratepayer units was examined in greater detail. If there was no significant relationship between the pattern of turnover and the location of particular types of dwellings, it could be hypothesised that, in any square, the number of dwellings recording a change of occupier would be directly proportional to the number of dwellings in that square. Thus, squares containing very small proportions of the total stock of dwellings would be expected to have only a small percentage of the total number of dwellings changing hands. Deviations from this relationship, with squares recording higher or lower than expected rates of turnover, would indicate areas of the towns in which factors other than the density of dwellings were, perhaps, important in influencing the spatial pattern of turnover.

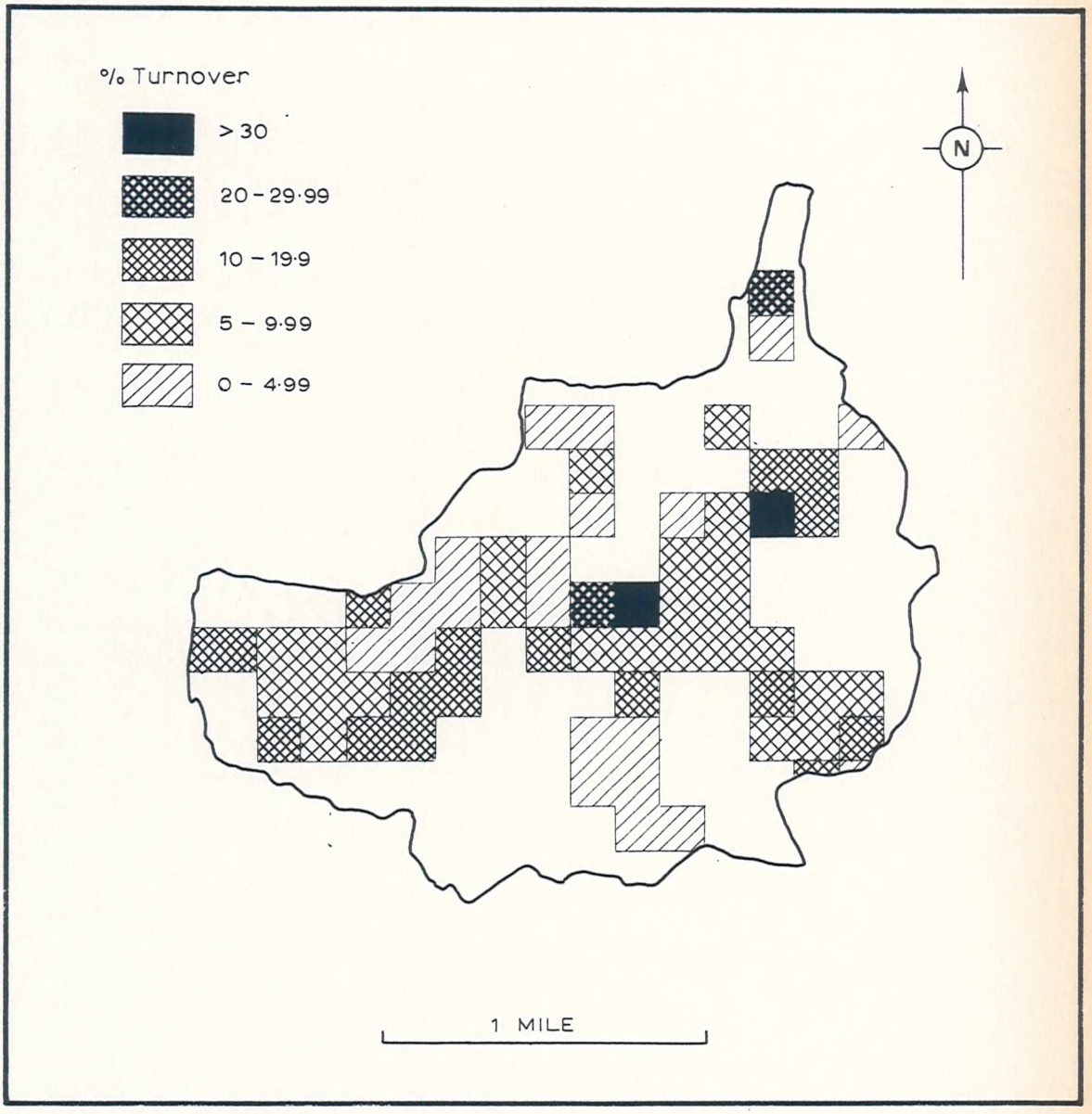

FIGURE 8.1 The spatial pattern of dwelling-occupant turnover -

(a) Bridgwater

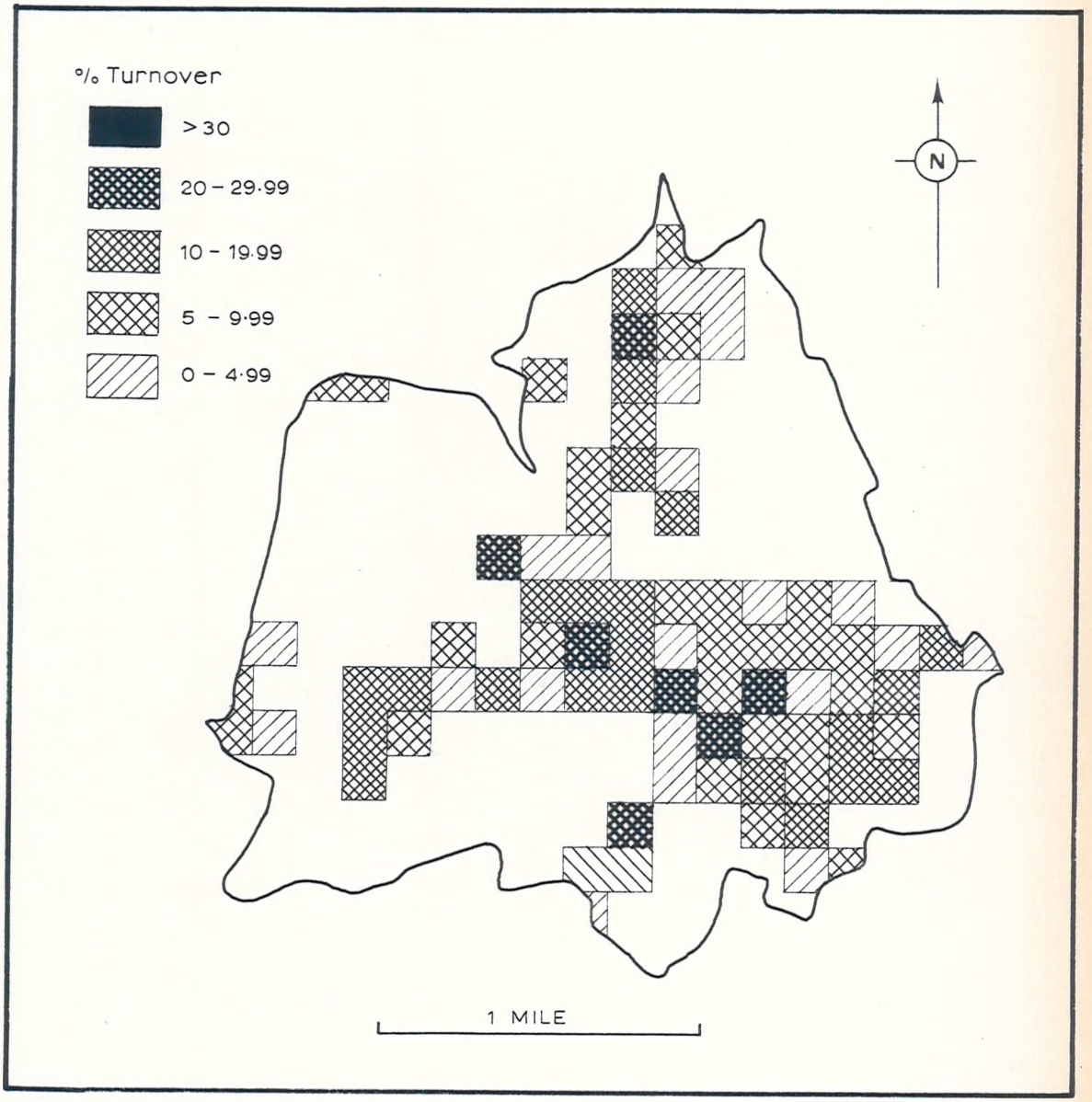

FIGURE 8.1 The spatial pattern of dwelling-occupant turnover -

(b) Chichester

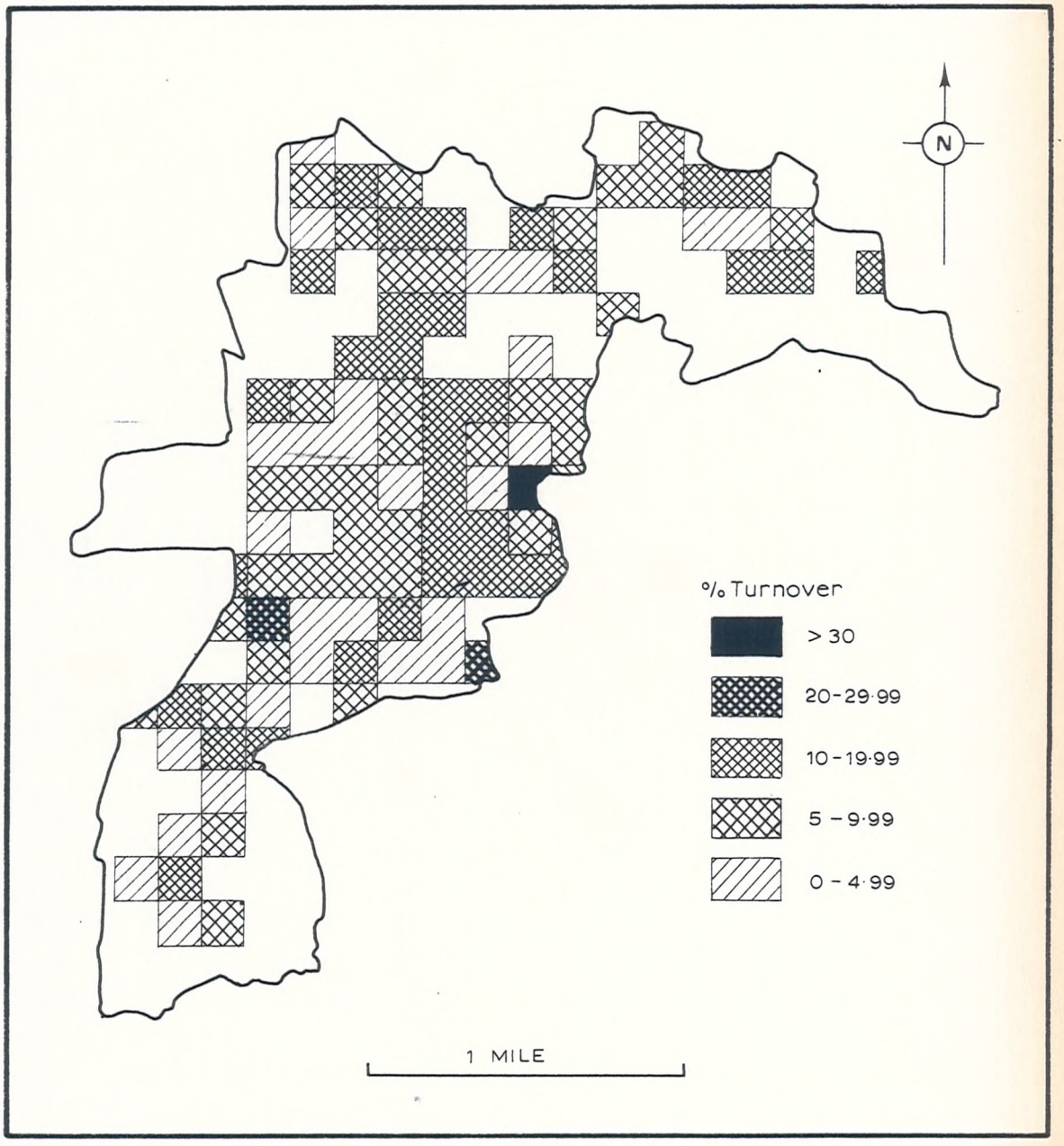

FIGURE 8.1 The spatial pattern of dwelling-occupant turnover -

(c) Newbury

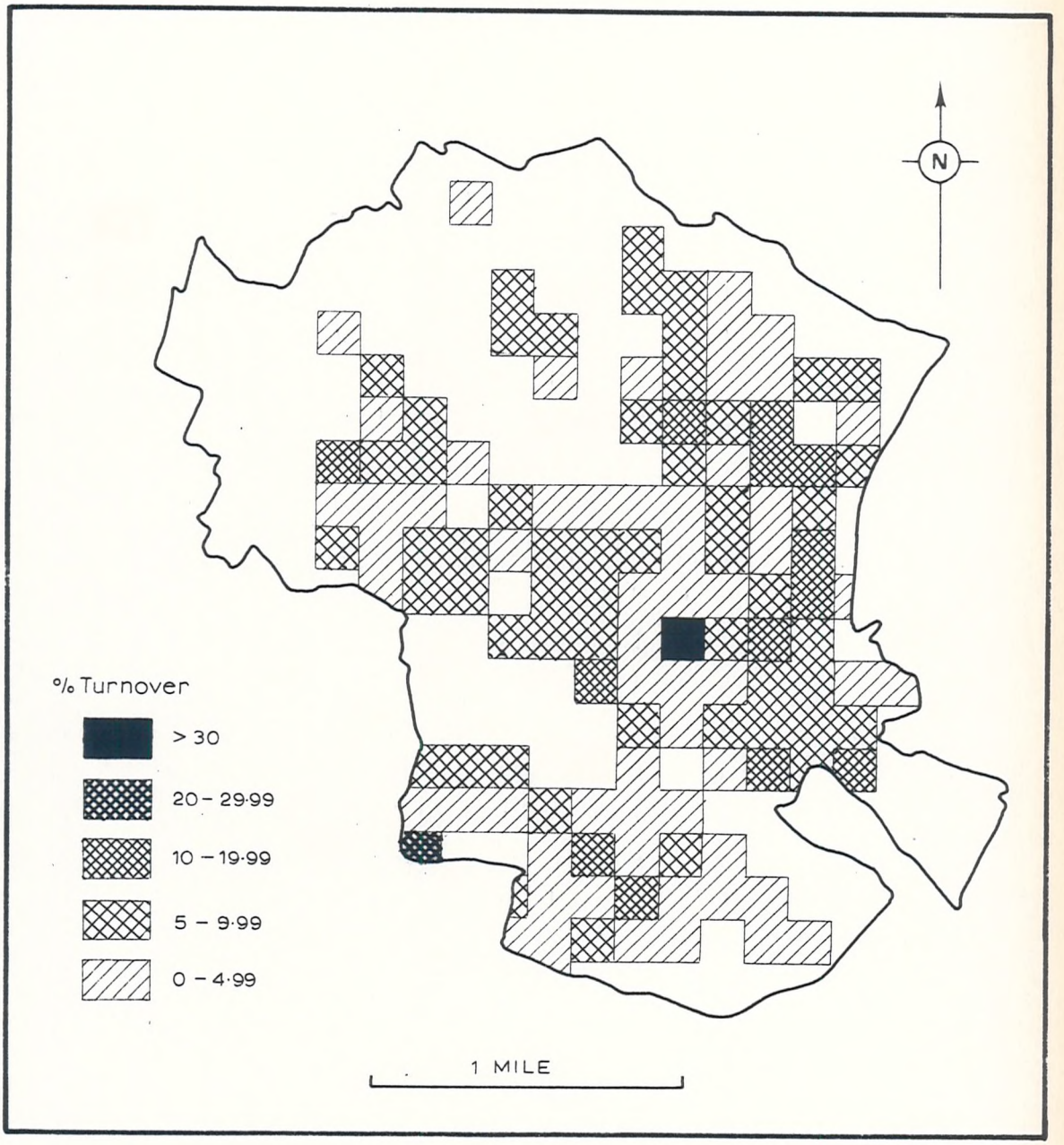

FIGURE 8.1 The spatial pattern of dwelling-occupant turnover -

(d) Salisbury

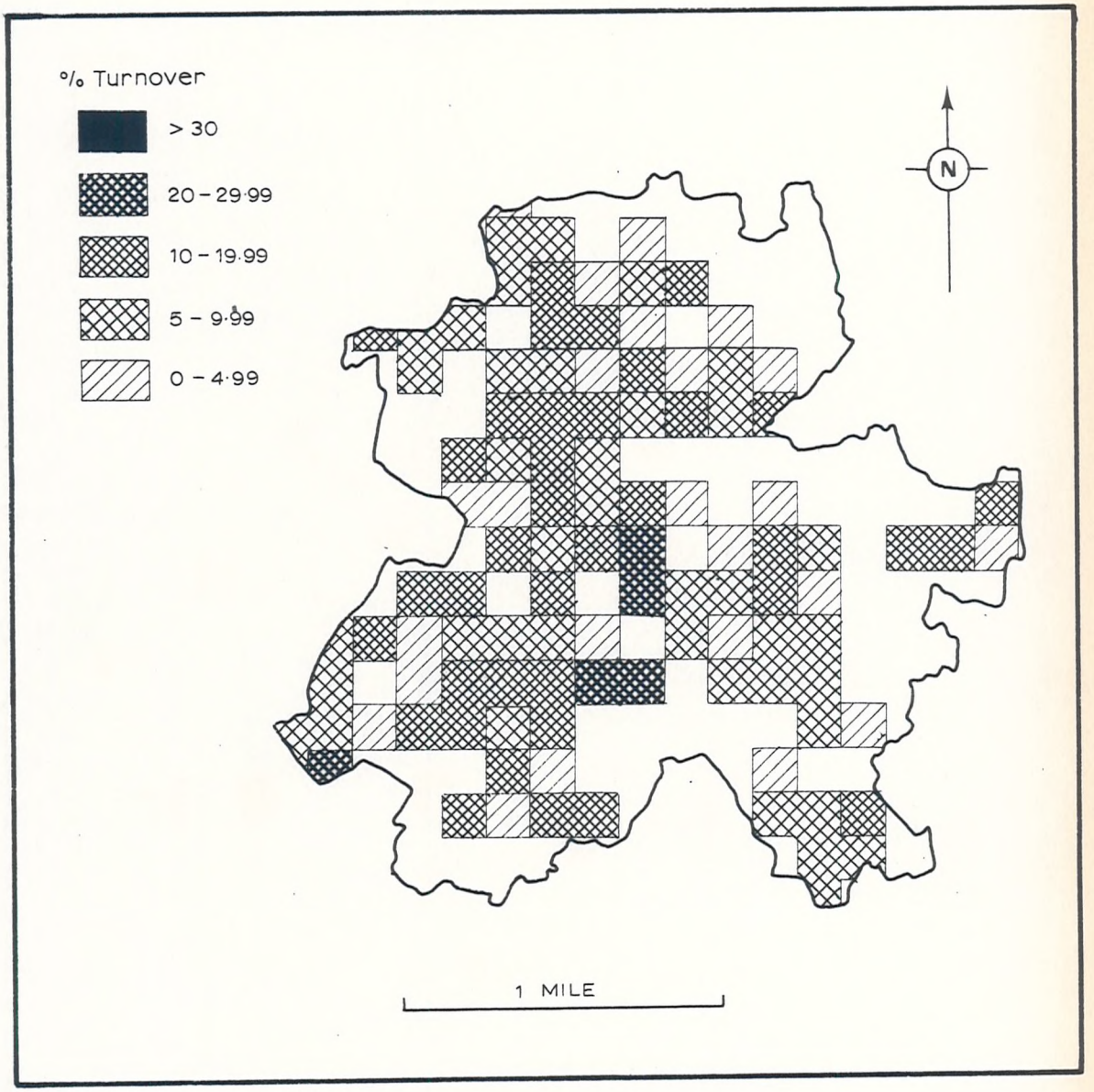

FIGURE 8.1 The spatial pattern of dwelling-occupant turnover -

(e) Taunton

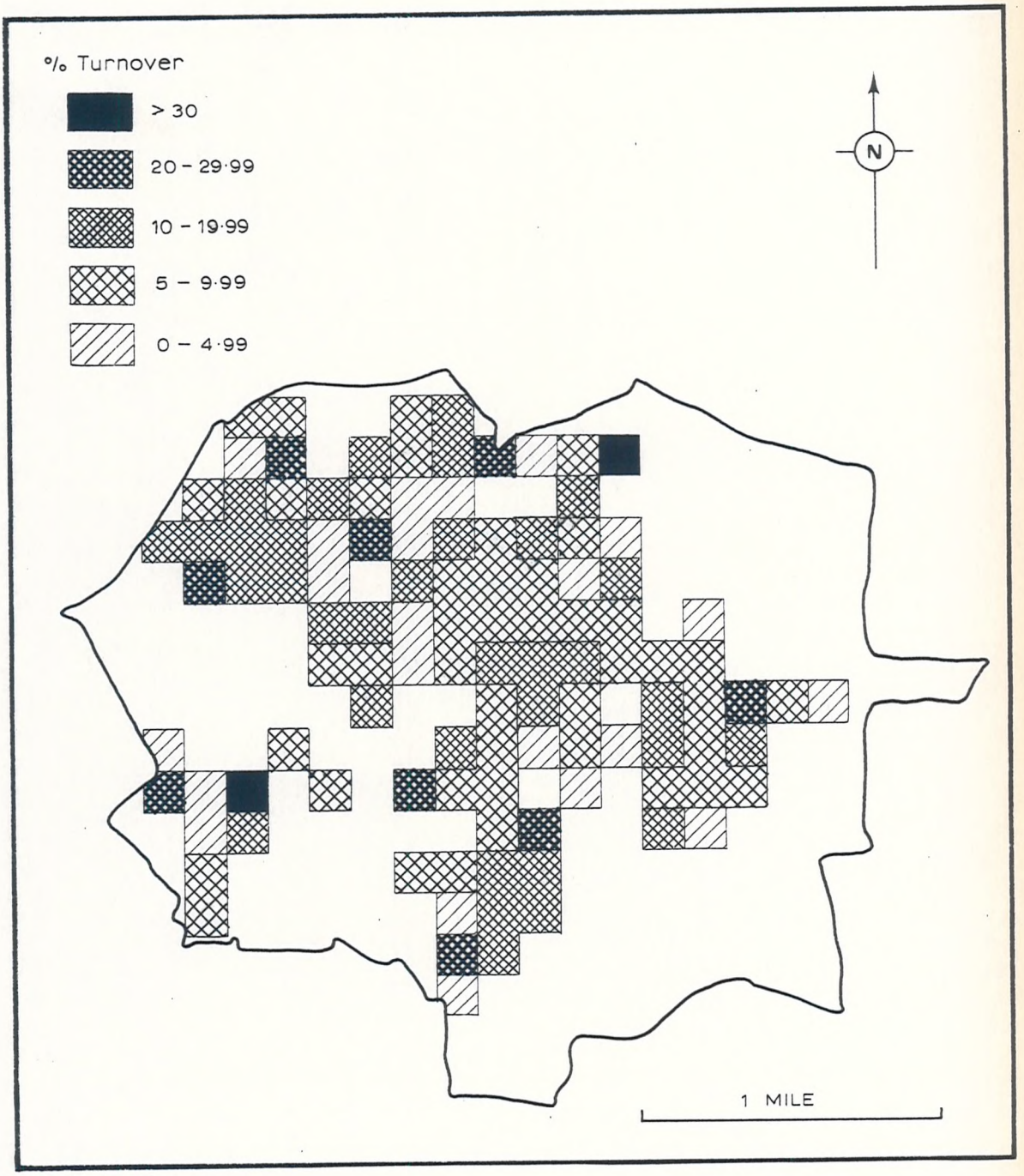

FIGURE 8.1 The spatial pattern of dwelling-occupant turnover -

(f) Winchester

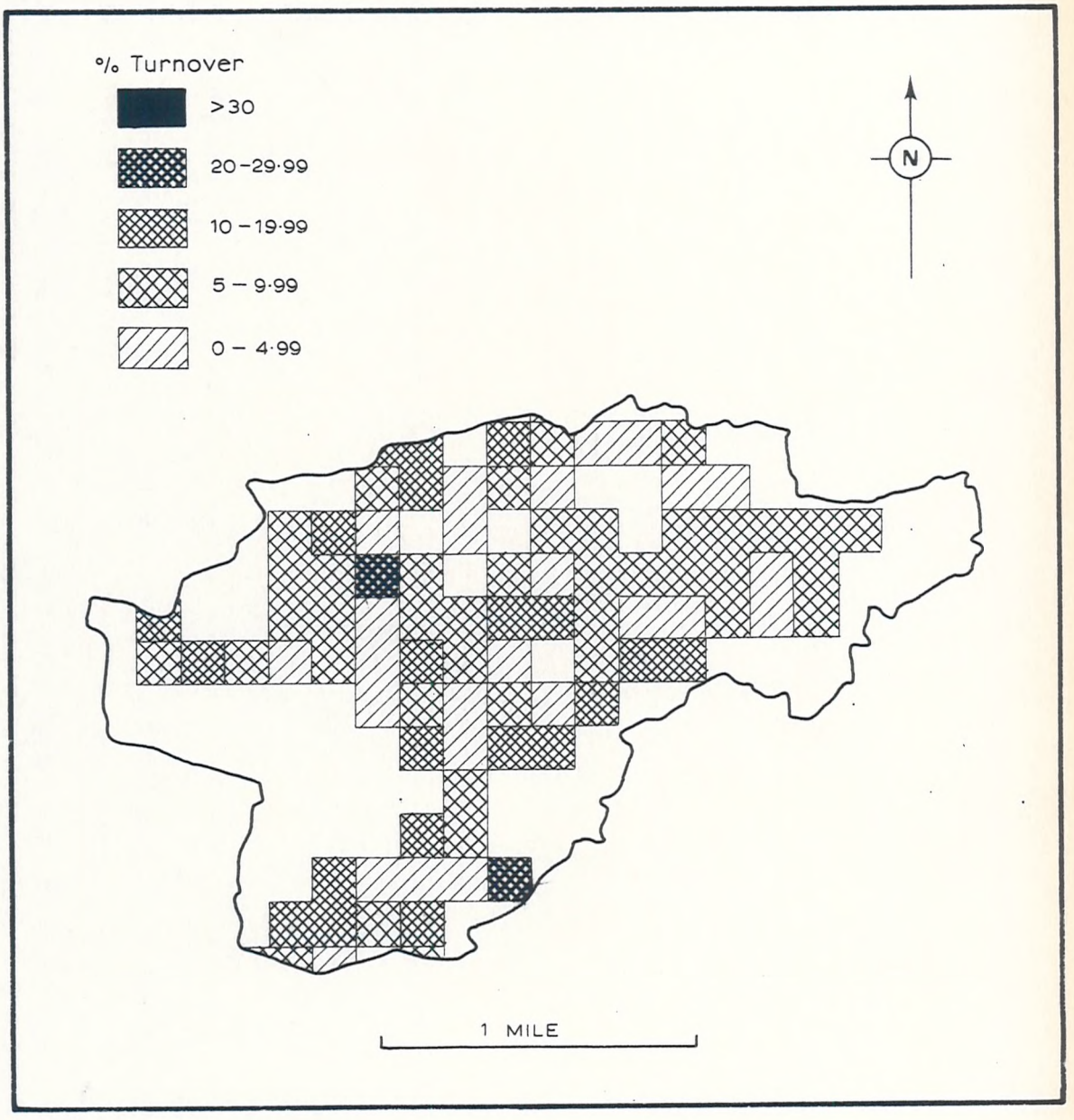

FIGURE 8.1 The spatial pattern of dwelling-occupant turnover - (g) Yeovil

In all seven towns, the percentage of total occupier-ratepayer units located in each square was calculated; similarly, the number of units changing hands in each square was calculated as a percentage of the total number of dwellings recording a change of occupier. The product-moment correlation coefficient (r), was used to test how closely the two sets of figures approached a linear relationship[4]. The coefficients resulting from the analysis ranged from a value of +0.64 in Yeovil to a value of +0.88 in Chichester (Table 8.1). Using the Student's 't' Test, all values were found to be significant above the 99.9% confidence level, thereby substantiating the hypothesis. Thus, as the number of dwellings per square increased, so also did the number of units recording a change of occupier.

This inter-relationship did not, however, totally explain the observed pattern of turnover in the seven towns. By squaring the correlation coefficients to obtain coefficients of determination, it appeared that only between 40% and 68% of the spatial variation in turnover was attributable to difference between the squares in the density of dwellings. To identify those squares in which the level of turnover was higher or lower than expected, the percentage of total dwellings changing hands for every square was plotted against the appropriate percentage values of the total dwelling stock. A regression line of best fit was applied to the distributions, using the least squares method. The standard error of the estimate for each regression line was then calculated in order to measure the deviation of the individual squares from the general trend[5]. Every square in each of the towns was classified into one of seven standard error groups (Table 8.2).

The group representing areas with turnover levels close to the expected rate contained the largest number of squares; this was to be expected since the data approached a Gaussian distribution (Table 8.3).

TABLE 8.1 Product-moment correlation coefficient (r), measuring the relationship between the number of dwellings recording a change of occupier and the total number of dwellings in each square.

Town	r	r^2	't' value	degrees of freedom	significance level
Bridgwater	+0.72	0.508	8.24	63	99.9%
Chichester	+0.83	0.689	13.21	79	99.9%
Newbury	+0.66	0.436	8.63	97	99.9%
Salisbury	+0.78	0.608	23.63	139	99.9%
Taunton	+0.76	0.577	21.87	107	99.9%
Winchester	+0.78	0.608	12.96	106	99.9%
Yeovil	+0.64	0.420	7.90	88	99.9%

TABLE 8.2 Standard error groups revealing the deviation of the actual from the expected pattern of turnover

(1) Squares located more than 2.5 x standard error above the regression line	Squares in these three groups had increasingly higher than expected levels of turnover
(2) Squares located between 2.5 x standard error and 1.5 x standard error above the regression line	
(3) Squares located between 1.5 x standard error and 0.5 x standard error above the regression line	
(4) Squares located between 0.5 x standard error above the regression line to 0.5 x standard error below the regression line	Squares in this group had levels of turnover close to the expected rate
(5) Squares located between 0.5 x standard error and 1.5 x standard error below the regression line	Squares in these three groups had increasingly lower than expected levels of turnover
(6) Squares located between 1.5 x standard error and 2.5 x standard error below the regression line	
(7) Squares located more than 2.5 x standard error below the regression line	

TABLE 8.3 The number of squares classified in each standard error grouping

Town	>+2.5	+2.5 to +1.5	+1.5 to +0.5	+0.5 to -0.5	-0.5 to -1.5	-1.5 to -2.5	>-2.5
Bridgwater	1	3	14	26	17	4	
Chichester	2	4	14	38	19	3	
Newbury	2	2	15	56	22	3	
Salisbury	2	8	20	78	27	3	2
Taunton	2	7	19	43	30	4	2
Winchester	2	8	24	42	24	5	1
Yeovil	2	2	16	49	19	2	

TABLE 8.4 Types of housing area associated with squares recording higher or lower than expected rates of dwelling-occupant turnover

Town	Types of housing found in squares located at > +2.5 x standard error	Type of housing found in squares located at > -2.5 x standard error	Type of housing found in squares located at -1.5 to -2.5 x standard error
Bridgwater	1.		2,3.
Chichester	1,2.		3,4.
Newbury	3.		2,4.
Salisbury	2,3.	3,4.	
Taunton	7.	3.	
Winchester	5,7	4.	
Yeovil	not classified		3,4.

The numbers in the table refer to the numbers given to the different Housing Type Areas in the towns (See Chapter 6.).

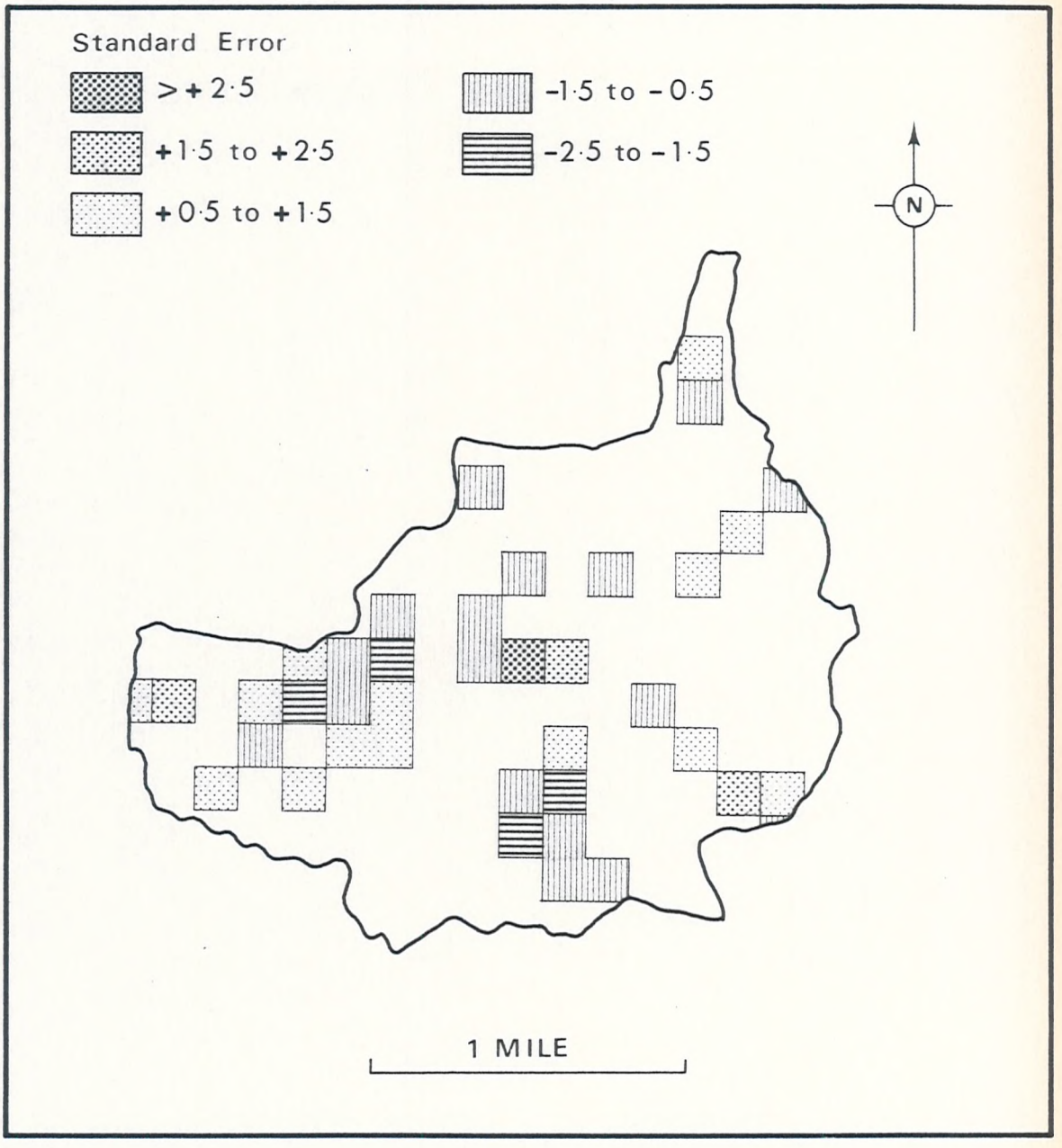

FIGURE 8.2 The spatial pattern of regression residuals - (a) Bridgwater

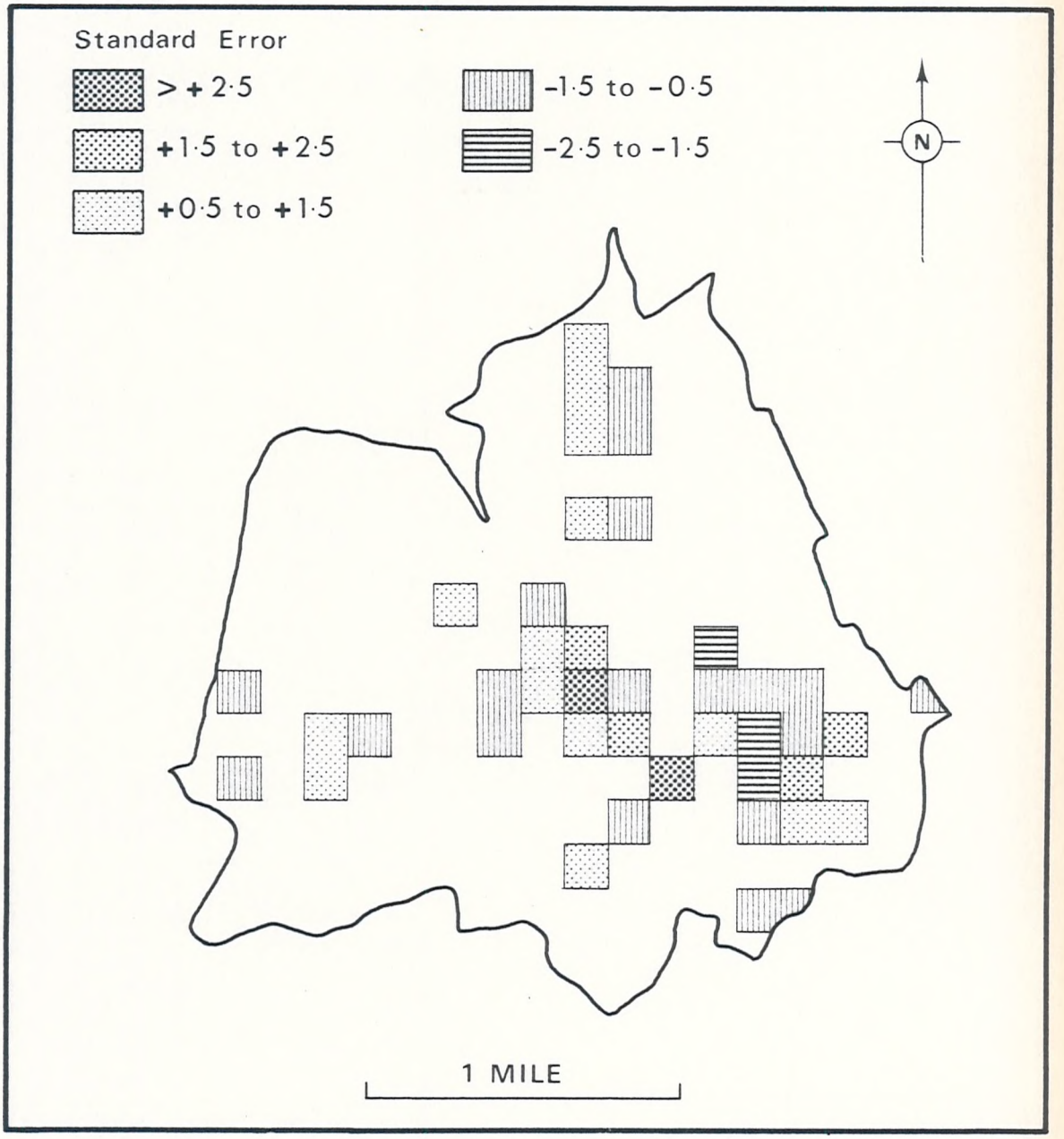

FIGURE 8.2 The spatial pattern of regression residuals - (b) Chichester

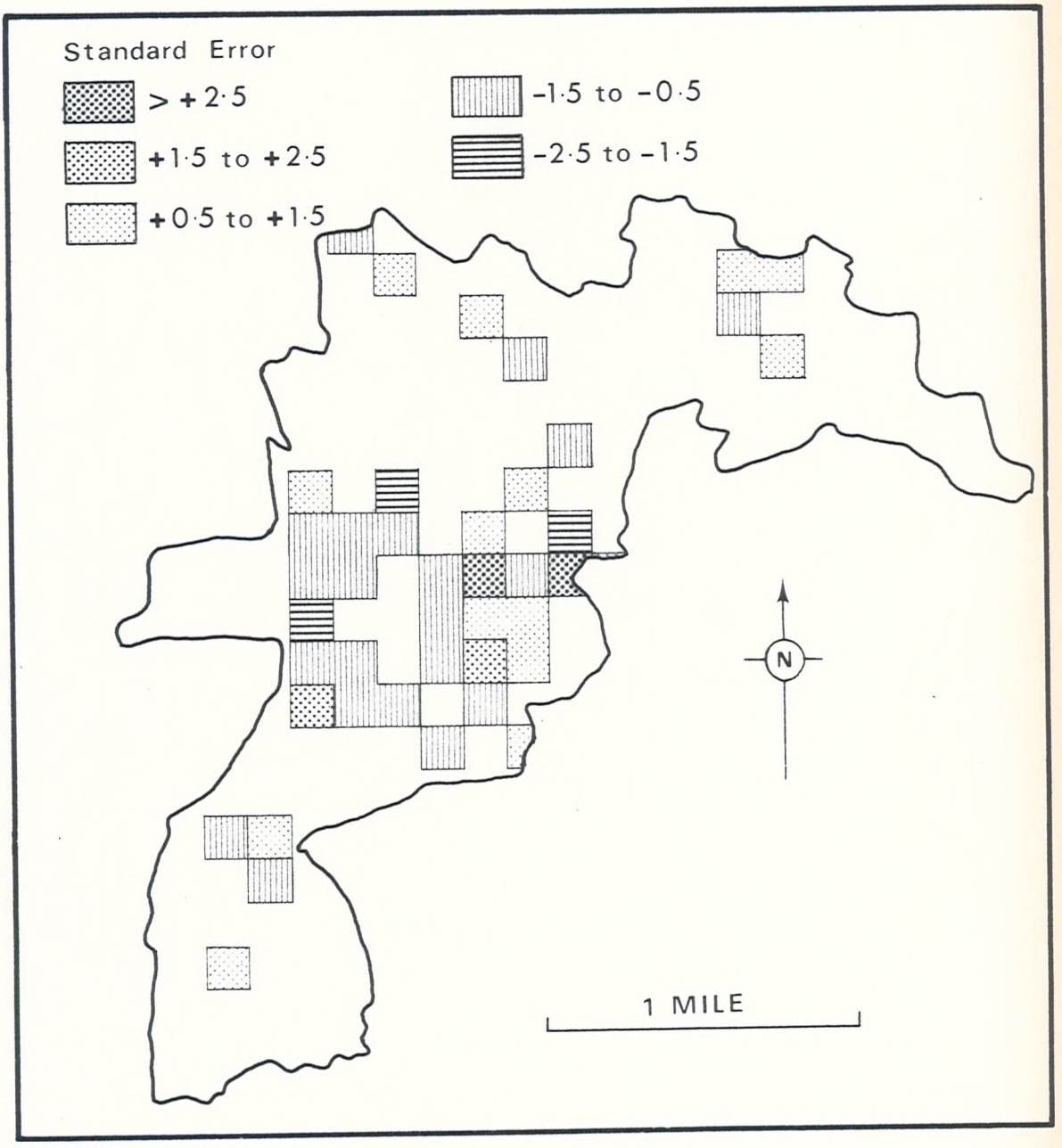

FIGURE 8.2 The spatial pattern of regression residuals - (c) Newbury

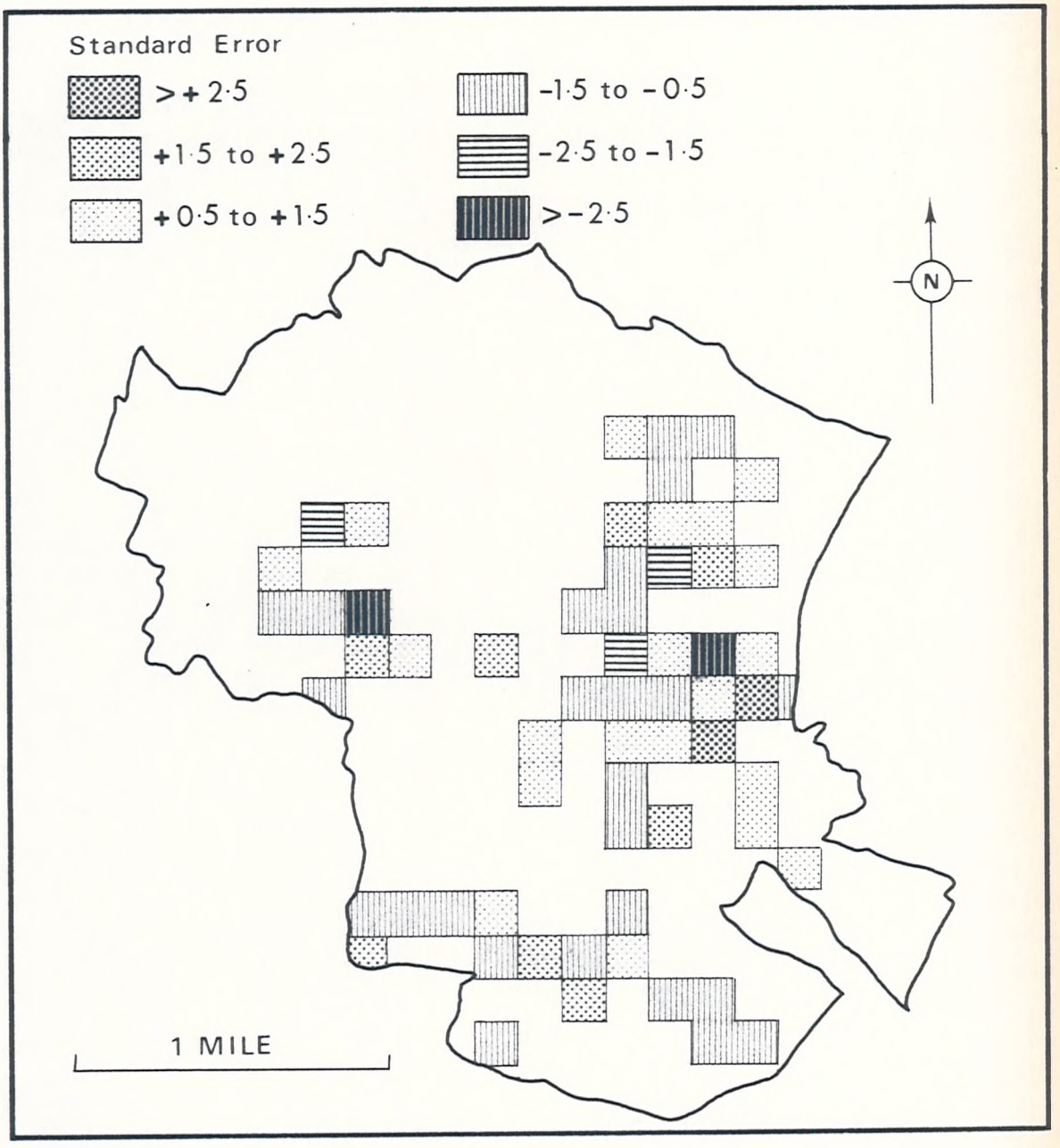

FIGURE 8.2 The spatial pattern of regression residuals - (d) Salisbury

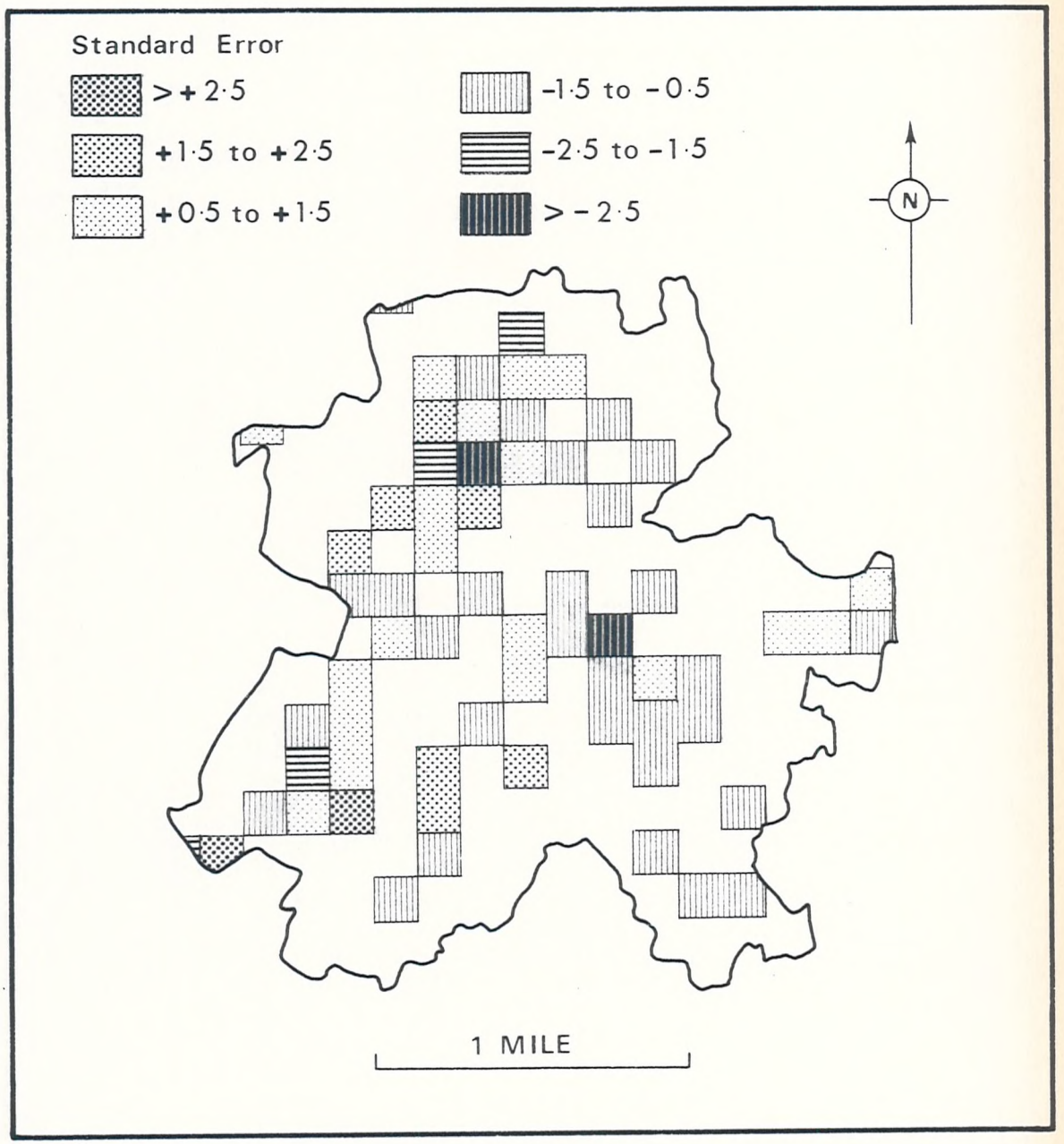

FIGURE 8.2 The spatial pattern of regression residuals - (e) Taunton

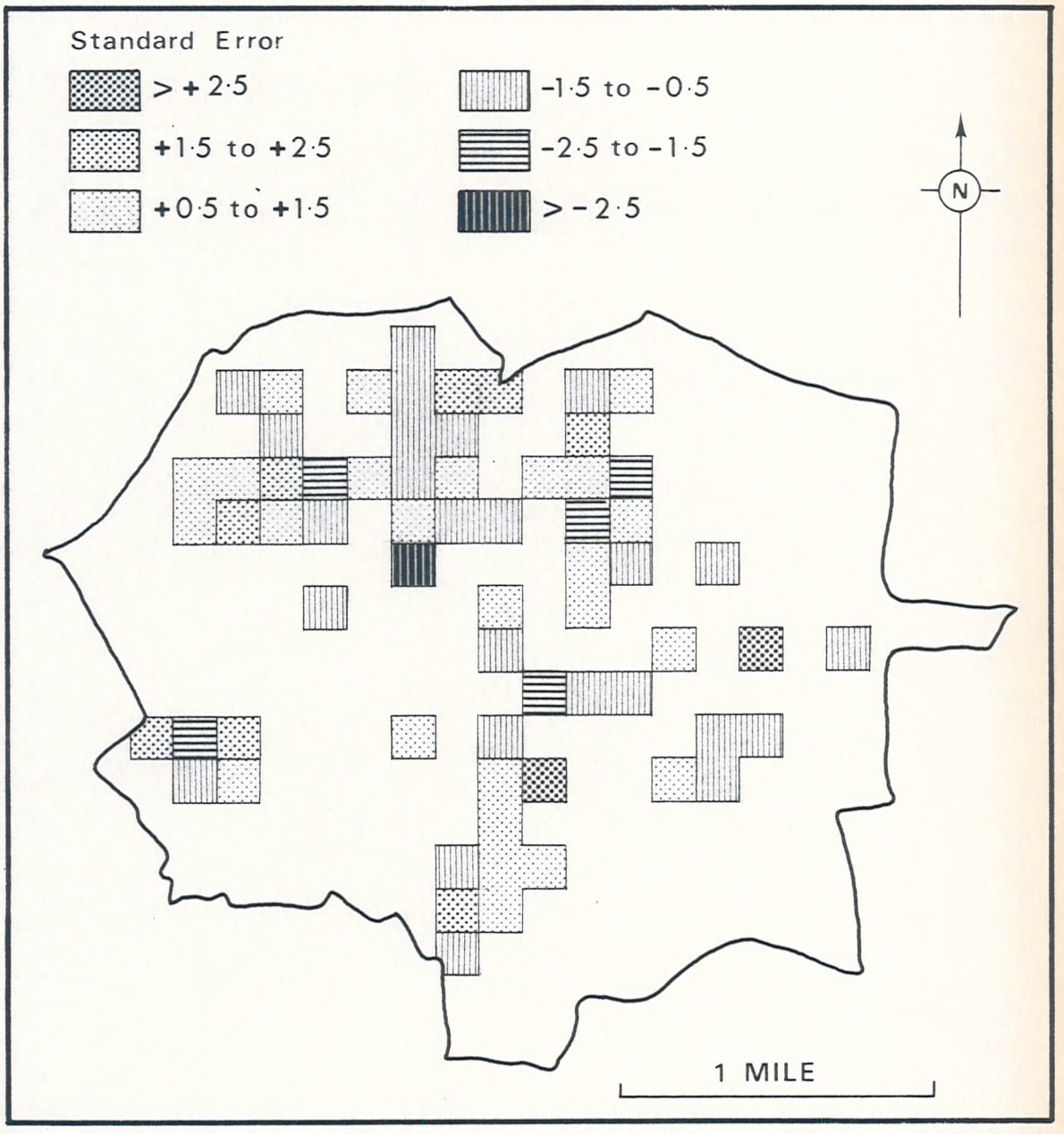

FIGURE 8.2 The spatial pattern of regression residuals - (f) Winchester

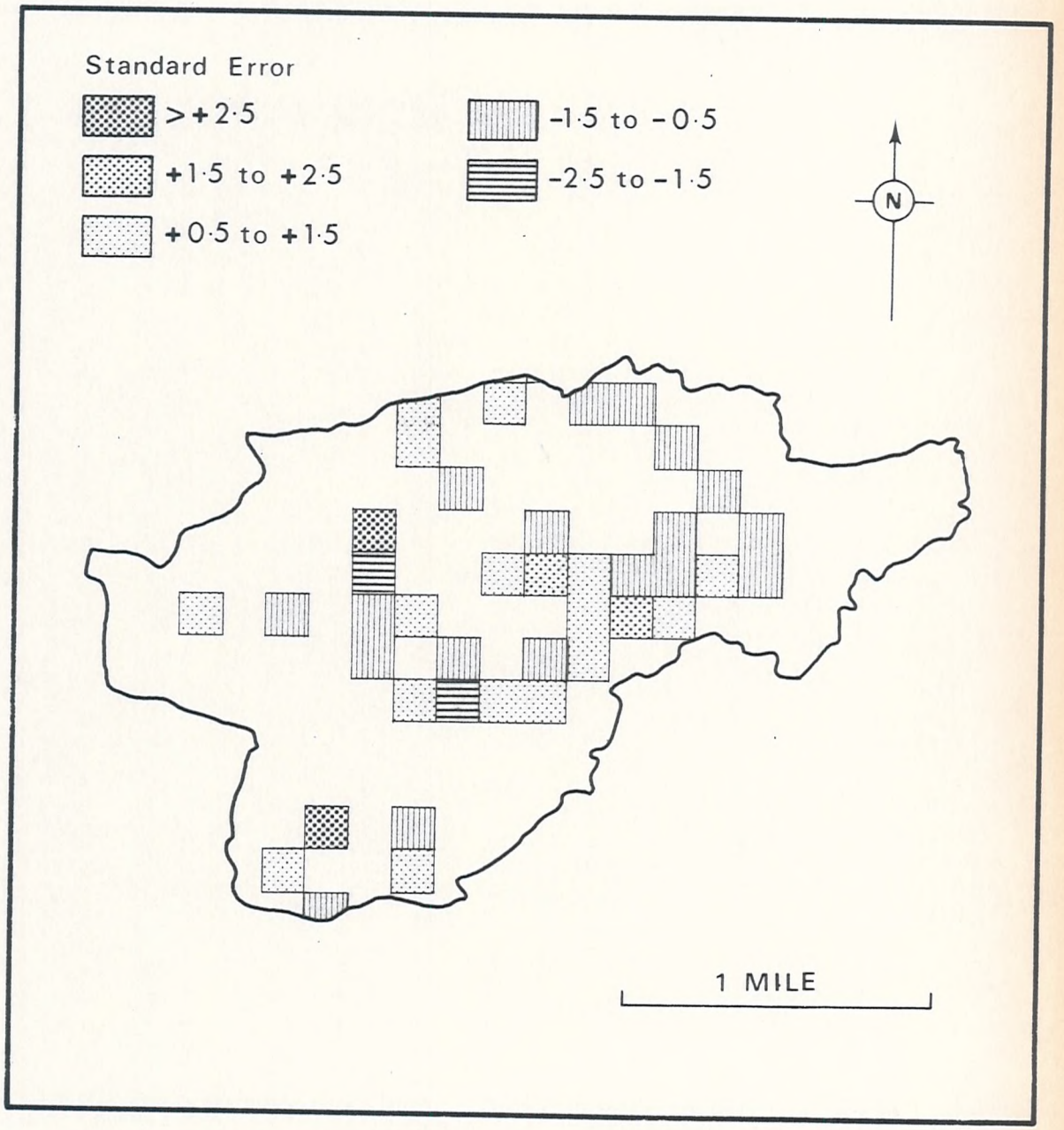

FIGURE 8.2 The spatial pattern of regression residuals - (g) Yeovil

There was slight skewdness, however, as four towns recorded no squares at more than 2.5 x standard error below the regression line. On the other hand, at least one square with a location greater than 2.5 x standard error above the regression line was recorded in each of the towns. The distribution of the groups within the towns were plotted, with the exception of the group containing squares located between +0.5 to -0.5 x standard error. Plotting only the regression residuals emphasised those areas of the towns having either higher or lower than expected rates of dwelling-occupant turnover (Figure 8.2).

Although this second method of identifying the distribution of dwellings recording a change of occupier was an attempt to isolate basic patterns of movement in the towns, the maps failed to reveal any simple variations in the spatial pattern of dwelling-occupant turnover. A few squares within the standard error grouping ± 0.5 to ± 1.5 were adjacently located, and a number of small blocks having a similar trend in their level of turnover could be identified. The largest of these was in Newbury, where the central area of the town was divided into two parts - an eastern segment with turnover rates higher than expected, and a western segment with turnover mostly lower than expected (Figure 8.2c). In none of the other towns were there large areas in which higher or lower than expected turnover rates predominated. Thus, spatial variations in the rate of dwelling-occupant turnover within the seven towns appeared to produce an unstructed pattern.

8.3 A comparison of the spatial pattern of turnover and the location within the towns of different housing type areas

In order to examine the extent to which areas of higher or lower than expected levels of turnover coincided with particular types of housing in the towns, a comparison was made between the location of each standard error grouping and the areas of different housing identified in Chapter 6. This was undertaken by overlaying one map of each town on

the other. No spatial relationships between the two distributions could be determined by this procedure. Squares recording both higher and lower than expected rates of turnover were located within the same housing type area.

The types of housing associated with squares registering the largest positive deviation from the expected level of turnover varied between the towns (Table 8.4). In three (Bridgwater, Chichester and Salisbury), highest rates of turnover were located in areas of mixed housing built before 1914; in Newbury, areas of high turnover comprised flats, maisonettes and terraced houses built either before 1875 or after 1950; and in Taunton, the highest rate of turnover was found in areas of mixed housing built after 1950. Highest turnover in Winchester was associated with two different types of areas, and in Yeovil the highest rates of turnover were found in squares not classified by housing type. The location of squares recording much lower than expected rates of turnover revealed a similarly diverse relationship with dwelling type. There was a tendency in all the towns for lower turnover to occur in areas of housing built between 1875 and 1950, but there was no direct association between low turnover and one particular type of housing area.

8.4 The relationship between the spatial pattern of turnover and dwelling characteristics using analysis of variance

The spatial pattern of dwelling-occupant turnover did not appear to be associated with variations in the housing environments of the towns. It was possible, however, that turnover in occupier-ratepayer units was more closely associated with the characteristics of the dwellings than with the types of area in which they were located. One further analysis was undertaken, therefore, in which non-occupier-ratepayer units were eliminated and the characteristics of dwellings with occupier-ratepayer status were examined within each standard error grouping[6]. If spatial variations in the rate of turnover were influenced by the location within

the towns of specific types of housing, then it might be assumed that significant differences existed between the proportion of particular housing types in each standard error grouping. Based on evidence from Chapter 7, it might be expected, for example, that the proportion of flats and maisonettes in the total stock of occupier-ratepayer units would be greater for squares grouped above the regression line than for squares grouped below the regression line. Other relationships between turnover and housing characteristics could also be hypothesised from existing evidence. In order to test these assumptions, the data was subjected to the technique of analysis of variance.

Analysis of variance tests for significant differences between any number of sets of data. In this case, the housing characteristic percentages for each square within a standard error group comprised one data set, each town having a total of seven unevenly-sized sets. The total variance of the complete data (comprising percentage values for every grid square in a town), was calculated from the deviation of individual values from the mean value for the complete data. This total variance comprised two parts - variance caused by contrasts in the percentage values within each set - and the variance caused by contrasts in percentage values between sets. The greater the proportion of total variance as measured by the F-ratio caused by contrasts between sets, the more likely it was that significant differences in housing characteristics existed between the standard error groups. If, however, contrasts between groups were no greater than contrasts in individual percentages within each group, then it was necessary to reject the hypothesis.

The detailed results of the analysis are outlined below but, with one or two exceptions, no significant differences were revealed in the proportion of a particular dwelling characteristic between the seven standard error groups. Classifying the grid squares into so many turnover categories was, perhaps, too great a refinement of the data for a relation-

ship between dwelling characteristics and the spatial pattern of turnover to be revealed. Three further groups were examined, therefore, in which the spatial pattern of turnover was increasingly generalised. In the first, (labelled 'b' in Table 8.5), the standard error group +0.5 to -0.5 was eliminated, since it represented squares with turnover rates close to the expected pattern. For the second, the three groups located above the +0.5 standard error level were amalgamated, as also were those above the -0.5 standard error level; the two groups resulting, together with the central group were then analysed, (labelled 'c' in Table 8.5). Finally, only the two large groups above the +0.5 and -0.5 standard error position were examined. F-ratios were obtained for each combination for every dwelling characteristic and their significance levels tested[7].

The following relationships between the spatial pattern of dwelling-occupant turnover and dwelling characteristics was revealed from the analysis of variance. Each characteristic is considered in turn and the mean values for each standard error group are shown in Table 8.6.

(i) Detached houses

In none of these towns were there any significant differences between the seven standard error groups in their proportion of detached houses (Table 8.5(i)a). In Yeovil and Chichester, however, a significant difference in the proportion of detached houses was revealed between squares having higher and lower than expected rates of turnover (Table 8.5(i)c). In both towns, squares recording higher than expected rates of turnover contained greater proportions of detached houses than did squares in the central and lower turnover groups. This result confirm the trend revealed in Chapter 7.

TABLE 8.5 Significance levels for F-ratios of analysis of variance test

(i) Detached houses

Town	All seven S.E. groups a	Six S.E. groups (±0.5 omitted) b	Three S.E. groups (±0.5) (+0.5) (-0.5) c	Two S.E. groups (+0.5) (-0.5) d
Bridgwater	<95.0%	<95.0%	<95.0%	<95.0%
Chichester	<95.0%	<95.0%	97.5%-99.0%	<95.0%
Newbury	<95.0%	<95.0%	<95.0%	<95.0%
Salisbury	<95.0%	<95.0%	<95.0%	<95.0%
Taunton	<95.0%	<95.0%	<95.0%	<95.0%
Winchester	<95.0%	<95.0%	<95.0%	<95.0%
Yeovil	<95.0%	<95.0%	95.0%-97.5%	<95.0%

(ii) Semi-detached houses

Town	All seven S.E. groups a	Six S.E. groups (±0.5 omitted) b	Three S.E. groups (±0.5) (+0.5) (-0.5) c	Two S.E. groups (+0.5) (-0.5) d
Bridgwater	<95.0%	<95.0%	95.0%-97.5%	<95.0%
Chichester	<95.0%	<95.0%	97.5%-99.0%	99.0%-99.9%
Newbury	<95.0%	<95.0%	95.0%-97.5%	<95.0%
Salisbury	<95.0%	<95.0%	<95.0%	<95.0%
Taunton	<95.0%	<95.0%	<95.0%	<95.0%
Winchester	<95.0%	<95.0%	<95.0%	<95.0%
Yeovil	<95.0%	<95.0%	<95.0%	95.0%-97.5%

TABLE 8.5 (contd) ...

(iii) Terraced houses

Town	All seven S.E. groups a	Six S.E. groups (±0.5 omitted) b	Three S.E. groups (±0.5) (±0.5) (-0.5) c	Two S.E. groups (±0.5) (-0.5) d
Bridgwater	< 95.0%	< 95.0%	97.5%-99.0%	95.0%-97.5%
Chichester	95.0%-97.5%	< 95.0%	< 95.0%	< 95.0%
Newbury	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Salisbury	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Taunton	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Winchester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Yeovil	< 95.0%	< 95.0%	< 95.0%	< 95.0%

(iv) Flats and maisonettes

Town	All seven S.E. groups a	Six S.E. groups (±0.5 omitted) b	Three S.E. groups (±0.5) (±0.5) (-0.5) c	Two S.E. groups (±0.5) (-0.5) d
Bridgwater	99.0%-99.9%	99.0%-99.9%	97.5%-99.0%	> 99.9%
Chichester	95.0%-97.5%	< 95.0%	99.0%-99.9%	97.5%-99.0%
Newbury	99.0%-99.9%	99.0%-99.9%	> 99.9%	> 99.9%
Salisbury	< 95.0%	< 95.0%	< 95.0%	95.0%-97.5%
Taunton	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Winchester	> 99.9%	> 99.9%	99.0%-99.9%	> 99.9%
Yeovil	99.0%-99.9%	> 99.9%	95.0%-97.5%	99.0%-99.9%

TABLE 8.5 (contd) ...

(v) Bungalows

Town	All seven S.E. groups a	Six S.E. groups (±0.5 omitted) b	Three S.E. groups (±0.5) (+0.5) (−0.5) c	Two S.E. groups (+0.5) (−0.5) d
Bridgwater	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Chichester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Newbury	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Salisbury	< 95.0%	< 95.0%	< 95.0%	95.0 %–97.5%
Taunton	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Winchester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Yeovil	< 95.0%	< 95.0%	< 95.0%	< 95.0%

(vi) Dwellings built before 1875

Town	All seven S.E. groups a	Six S.E. groups (±0.5 omitted) b	Three S.E. groups (±0.5) (+0.5) (−0.5) c	Two S.E. groups (+0.5) (−0.5) d
Bridgwater	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Chichester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Newbury	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Salisbury	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Taunton	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Winchester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Yeovil	< 95.0%	< 95.0%	< 95.0%	< 95.0%

TABLE 8.5 (contd) ...

(vii) Dwellings built between 1875 and 1914

Town	All seven S.E. groups a	Six S.E. groups (±0.5 omitted) b	Three S.E. groups (+0.5) (±0.5) (-0.5) c	Two S.E. groups (+0.5) (-0.5) d
Bridgwater	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Chichester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Newbury	95.0%–97.5%	< 95.0%	< 95.0%	< 95.0%
Salisbury	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Taunton	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Winchester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Yeovil	< 95.0%	< 95.0%	< 95.0%	< 95.0%

(viii) Dwellings built between 1914 and 1950

Town	All seven S.E. groups a	Six S.E. groups (±0.5 omitted) b	Three S.E. groups (+0.5) (± 0.5) (-0.5) c	Two S.E. groups (+ 0.5) (-0.5) d
Bridgwater	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Chichester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Newbury	< 95.0%	< 95.0%	< 95.0%	97.5%–99.0%
Salisbury	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Taunton	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Winchester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Yeovil	< 95.0%	< 95.0%	97.5%–99.0%	99.0%–99.9%

TABLE 8.5 (contd) ...

(ix) Dwellings built after 1950

Town	All seven S.E. groups a	Six S.E. groups (∓0.5 omitted) b	Three S.E. groups (+0.5) (∓0.5) (-0.5) c	Two S.E. groups (+0.5) (-0.5) d
Bridgwater	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Chichester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Newbury	< 95.0%	< 95.0%	< 95.0%	97.5%-99.0%
Salisbury	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Taunton	99.0%-99.9%	> 99.9%	< 95.0%	< 95.0%
Winchester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Yeovil	99.0%-99.9%	> 99.9%	< 95.0%	95.0%-97.5%

(x) Rateable value of dwellings

Town	All seven S.E. groups a	Six S.E. groups (∓0.5 omitted) b	Three S.E. groups (+0.5) (∓0.5) (-0.5) c	Two S.E. groups (+0.5) (-0.5) d
Bridgwater	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Chichester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Newbury	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Salisbury	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Taunton	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Winchester	< 95.0%	< 95.0%	< 95.0%	< 95.0%
Yeovil	< 95.0%	< 95.0%	< 95.0%	< 95.0%

(ii) Semi-detached houses

As with the previous characteristic, no town revealed a significant difference between the seven standard error groups in their proportion of semi-detached houses (Table 8.5(ii)a). In Bridgwater, Chichester, Newbury and Yeovil, the more generalised pattern of turnover appeared related to the distribution of semi-detached houses; for Bridgwater, Chichester and Newbury, significant differences occurred between the three standard error groups; for Yeovil significant differences occurred between the two standard error groups (Table 8.5(ii)c,d). Higher proportions of semi-detached houses were located in squares with lower than expected rates of turnover in Chichester, Newbury and Yeovil; in Bridgwater, the reverse relationship was found. These trends are illustrated by the averages for each standard error group (Table 8.6(ii)).

(iii) Terraced houses

Only in Chichester was there a significant difference between the seven standard error groups in the proportion of terraced houses they contained (Table 8.5(iii)a). In this town, high proportions of terraced houses were associated with both the highest and lowest turnover groups (Table 8.6(iii). This relationship was not important when the generalised pattern of turnover was examined, but at this level, a significant result was obtained for Bridgwater. In this town, squares with high proportions of terraced houses recorded lower than expected rates of turnover (Table 8.5(iii)c).

(iv) Flats and maisonettes

An association between the spatial pattern of turnover and the distribution of flats and maisonettes occurred in all the towns with the exception of Taunton. This reflected the results found in Chapter 7.

TABLE 8.6 Average housing characteristics for each standard error grouping

(i) Detached houses

Town	+2.5 S.E.	+2.5 S.E. to +1.5 S.E.	+1.5 S.E. to +0.5 S.E.	+0.5 S.E. to -0.5 S.E.	-1.5 S.E. to -0.5 S.E.	-2.5 S.E. to -1.5 S.E.	-2.5 S.E.
Bridgwater	0.0	3.4	10.2	6.8	8.9	9.5	
Chichester	10.7	15.8	32.3	37.6	19.6	18.3	
Newbury	20.0	17.1	23.7	33.4	27.1	16.8	
Salisbury	10.5	34.6	15.6	27.7	29.2	22.5	5.1
Taunton	22.6	8.1	18.4	17.7	19.8	36.2	0.5
Winchester	31.3	50.8	32.9	38.0	29.6	27.5	12.5
Yeovil	11.3	6.8	19.9	29.8	14.0	15.3	

(ii) Semi-detached houses

Town	+2.5 S.E.	+2.5 S.E. to +1.5 S.E.	+1.5 S.E. to +0.5 S.E.	+0.5 S.E. to -0.5 S.E.	-1.5 S.E. to -0.5 S.E.	-2.5 S.E. to -1.5 S.E.	-2.5 S.E.
Bridgwater	0.0	46.7	44.7	16.8	22.8	29.7	
Chichester	7.7	16.9	16.9	26.4	36.5	25.1	
Newbury	15.8	38.7	29.7	25.3	39.0	46.4	
Salisbury	12.3	33.0	25.2	20.4	27.2	27.1	36.4
Taunton	47.6	12.8	31.4	29.9	24.9	9.1	26.7
Winchester	14.8	16.4	15.2	10.6	19.5	21.0	31.7
Yeovil	35.4	6.8	25.2	28.9	43.5	41.3	

TABLE 8.6 (contd) ...

(iii) Terraced houses

Town	+2.5 S.E.	+2.5 S.E. to +1.5 S.E.	+1.5 S.E. to +0.5 S.E.	+0.5 S.E. to -0.5 S.E.	-1.5 S.E. to -0.5 S.E.	-2.5 S.E. to -1.5 S.E.	-2.5 S.E.
Bridgwater	72.1	15.7	31.1	64.9	53.5	60.2	
Chichester	48.9	47.2	19.8	16.4	22.7	43.1.	
Newbury	16.3	8.4	14.4	23.6	14.4	34.4	
Salisbury	47.3	25.0	39.9	29.0	23.3	32.5	38.3
Taunton	0.0	67.9	30.7	40.2	40.5	37.2	70.6
Winchester	7.4	9.2	32.9	34.7	29.5	34.9	55.8
Yeovil	12.5	57.3	40.7	21.9	28.3	40.6	

(iv) Flats and maisonettes

Town	+2.5 S.E.	+2.5 S.E. to +1.5 S.E.	+1.5 S.E. to +0.5 S.E.	+0.5 S.E. to -0.5 S.E.	-1.5 S.E. to -0.5 S.E.	-2.5 S.E. to -1.5 S.E.	-2.5 S.E.
Bridgwater	27.9	23.1	5.6	3.7	0.7	0.2	
Chichester	28.3	17.4	20.1	5.8	6.9	3.7	
Newbury	43.1	15.4	20.8	5.7	0.8	1.4	
Salisbury	28.9	6.7	14.3	9.1	7.3	2.7	3.4
Taunton	0.0	9.6	8.6	8.1	4.2	0.3	2.2
Winchester	46.4	10.9	15.1	8.7	2.7	5.1	0.0
Yeovil	26.8	28.3	7.3	4.7	3.0	1.6	

TABLE 8.6 (Contd) ...

(v) Bungalows

Town	+2.5 S.E.	+2.5 S.E. to +1.5 S.E.	+1.5 S.E. to +0.5 S.E.	+0.5 S.E. to -0.5 S.E.	-1.5 S.E. to -0.5 S.E.	-2.5 S.E. to -1.5 S.E.	-2.5 S.E.
Bridgwater	0.0	11.1	8.4	7.4	14.1	0.4	
Chichester	3.8	2.6	10.7	16.2	15.6	5.1	
Newbury	4.8	20.4	11.3	12.1	18.7	1.0	
Salisbury	1.0	0.7	5.0	13.9	14.0	15.2	17.8
Taunton	29.8	1.6	10.9	4.7	10.6	17.2	0.0
Winchester	0.0	12.5	8.6	5.6	17.2	11.4	0.0
Yeovil	13.9	0.7	7.0	14.5	11.4	1.1	

(vi) Dwellings built before 1875

Town	+2.5 S.E.	+2.5 S.E. to +1.5 S.E.	+1.5 S.E. to +0.5 S.E.	+0.5 S.E. to -0.5 S.E.	-1.5 S.E. to -0.5 S.E.	-2.5 S.E. to -1.5 S.E.	-2.5 S.E.
Bridgwater	44.2	27.4	4.1	22.7	6.3	8.5	
Chichester	35.6	32.0	16.2	15.7	19.3	6.9	
Newbury	19.5	7.7	9.6	17.6	8.5	5.5	
Salisbury	28.0	14.8	33.6	22.8	16.9	0.0	0.0
Taunton	0.0	24.9	12.6	20.9	17.5	0.0	7.5
Winchester	6.4	1.7	20.3	16.6	13.2	20.0	0.0
Yeovil	7.6	24.8	12.6	6.3	6.7	2.7	

TABLE 8.6 (Contd) ...

(vii) Dwellings built between 1875 and 1914

Town	+2.5 S.E.	+2.5 S.E. to +1.5 S.E.	+1.5 S.E. to +0.5 S.E.	+0.5 S.E. to -0.5 S.E.	-1.5 S.E. to -0.5 S.E.	-2.5 S.E. to -1.5 S.E.	-2.5 S.E.
Bridgwater	51.2	3.9	25.1	36.9	37.9	53.5	
Chichester	16.3	16.4	18.2	20.3	20.0	41.8	
Newbury	21.5	4.1	21.4	14.7	17.7	62.9	
Salisbury	58.8	32.7	28.1	21.8	35.5	34.4	50.0
Taunton	0.3	46.1	28.3	29.0	27.2	26.8	42.8
Winchester	21.9	8.7	33.7	34.1	30.6	22.6	89.2
Yeovil	0.0	24.7	43.3	22.8	30.8	39.3	

(viii) Dwellings built between 1914 and 1950

Town	+2.5 S.E.	+2.5 S.E. to +1.5 S.E.	+1.5 S.E. to +0.5 S.E.	+0.5 S.E. to -0.5 S.E.	-1.5 S.E. to -0.5 S.E.	-2.5 S.E. to -1.5 S.E.	-2.5 S.E.
Bridgwater	4.6	1.9	47.4	21.9	46.6	34.3	
Chichester	11.5	36.4	30.5	38.0	41.4	48.7	
Newbury	11.6	15.7	16.8	29.9	37.3	27.2	
Salisbury	1.9	38.3	24.3	32.7	33.7	60.8	50.0
Taunton	0.7	11.2	40.9	35.8	44.1	64.6	48.2
Winchester	26.2	39.6	23.3	27.6	37.0	21.6	89.2
Yeovil	9.0	19.2	28.6	49.2	57.5	57.9	

TABLE 8.6 (Contd) ...

(ix) Dwellings built after 1950

Town	+2.5 S.E.	+2.5 S.E. to +1.5 S.E.	+1.5 S.E. to +0.5 S.E.	+0.5 S.E. to -0.5 S.E.	-1.5 S.E. to -0.5 S.E.	-2.5 S.E. to -1.5 S.E.	-2.5 S.E.
Bridgwater	0.0	66.8	23.4	18.5	9.2	3.7	
Chichester	36.6	2.3	35.2	26.0	19.2	2.8	
Newbury	47.3	72.3	52.2	37.8	36.5	4.4	
Salisbury	11.3	14.2	14.0	22.7	13.9	4.8	0.0
Taunton	99.0	17.8	18.2	14.3	11.2	8.6	1.1
Winchester	45.4	49.9	25.7	19.2	19.1	19.9	0.0
Yeovil	83.3	2.7	15.4	21.6	4.9	0.0	

(x) Rateable value of dwellings

Town	+2.5 S.E.	+2.5 S.E. to +1.5 S.E.	+1.5 S.E. to +0.5 S.E.	+0.5 S.E. to -0.5 S.E.	-1.5 S.E. to -0.5 S.E.	-2.5 S.E. to -1.5 S.E.	-2.5 S.E.
Bridgwater	35	58	76	54	53	57	
Chichester	103	78	103	108	93	67	
Newbury	80	85	86	89	83	67	
Salisbury	72	93	79	92	93	89	71
Taunton	87	61	72	76	69	84	51
Winchester	133	129	130	105	111	88	80
Yeovil	86	63	77	89	77	74	

In Bridgwater, Chichester, Newbury, Winchester and Yeovil, a significant difference in the proportion of these dwellings was found between all seven standard error groups (Table 8.5(iv)a). The average group values illustrate the trend of increasingly higher rates of turnover associated with increasingly larger proportions of flats and maisonettes(Table 8.6(iv)). In Salisbury, this relationship was revealed only at a generalised level, where significant differences occurred between the two standard error groups in the proportion of flats and maisonettes they contained (Table 8.5(iv)d).

(v) Bungalows

Only in Salisbury was there a significant difference between the two standard error groups in the proportion of bungalows which they contained (Table 8.5(v)d). Squares with lower than expected rates of turnover contained a higher proportion of bungalows in their dwelling stock (Table 8.6(v)).

(vi) Dwellings built before 1875

In none of the towns was a relationship revealed between the spatial pattern of turnover and the distribution of the oldest type of dwelling (Table 8.5(vi)).

(vii) Dwellings built between 1875 and 1914

Only in Newbury was there a significant difference between the seven standard error groups in the proportion of dwellings built between 1875 and 1914 which they contained (Table 8.5(vii)a). A higher proportion of these dwellings was found in the standard error group -1.5 to -2.5 than in any other group (Table 8.6(vii)).

(viii) Dwellings built between 1914 and 1950

In Newbury and Yeovil, significant differences were recorded between the two standard error groups in their proportions of interwar dwellings (Table 8.5(viii)c,d). In both towns, lower than expected rates of turnover

were associated with higher proportions of interwar dwellings, confirming a trend revealed in Chapter 7.

(ix) Dwellings built after 1950

Only in Taunton and Newbury were significant differences obtained between the seven standard error groups in their proportions of post-1950 dwellings (Table 8.5(ix)a). In both towns, squares grouped in the highest turnover category contained the greatest proportion of new dwellings (Table 8.6(ix)). In Newbury, a significant difference was revealed only between the two standard error groups, indicating that squares containing greater proportions of post-1950 dwellings were those recording higher than expected rates of turnover (Table 8.5(ix)d).

(x) Rateable value of dwellings

In none of the towns was a relationship revealed between the spatial pattern of dwelling-occupant turnover and the distribution of rateable values (Table 8.5(x)).

8.5 Summary

The spatial pattern of dwelling-occupant turnover in the seven towns was examined by plotting the percentage of dwellings changing hands in each grid square and also by identifying those squares recording higher and lower than expected rates of turnover. Neither method revealed large areas of the towns to be characterised by high rates of turnover and spatial variations in the rate of turnover appeared to be randomly distributed. No relationship was ascertained between the pattern of movement and the location of different types of housing area. On the other hand, some association was apparent between the level of turnover and the existence within any square of a particular type of dwelling. In all but one town, squares containing a high proportion of flats and maisonettes were more likely to record high rates of turnover than squares where these types of dwellings were absent. Of much less importance in explaining

the distribution of higher than expected rates of turnover was the location of detached houses and of dwellings built after 1950. Lower than expected rates of turnover were associated, to some extent, with the location of semi-detached houses and interwar dwellings.

REFERENCES

1. See Chapter 6, page 101
2. See Chapter 6, page 103
3. For example, in a square with 266 dwellings, 27 of them had to record a change of occupier in order to register a turnover rate of 10.0%; if one less unit changed hands (26 units), then the square recorded a turnover rate of between 5.0% and 9.9%. When a square contained only 10 dwellings, on the other hand, the same situation produced a different result. If one dwelling recorded a change of occupier, the rate was 10.0%; however, if one less dwelling changed hands, in other words none, then that square had a turnover rate of less than 5.0%.
4. Although the distribution of both the occupier-ratepayer units in each square and the occupier-ratepayer units changing hands in each square did not form a perfect normal distribution, the degree of approximation was close enough for a correlation analysis to be undertaken.

   The correlation coefficients were calculated using an Olivetti 101 Electronic Desktop Computer, programme no. 132 'Coefficients of linear correlation and rate of regression'. This is published by British Olivetti in their Programme Library.

REFERENCES (Contd) ...

5. Regression coefficients were printed as part of the above programme. The regression data is collated in Appendix E.

6. This involved re-sorting the computer cards to eliminate the non-occupier-ratepayer units in each square and the recalculation of all the percentages.

7. These calculations were undertaken using the Olivetti Programme 101, programme no. ST1001 'One-way analysis of variance - unequal sized sets', published in the programme library by British Olivetti Ltd.

CHAPTER 9 Conclusions, explanations and comments

The purpose of the study was to analyse the pattern of dwelling-occupant turnover within the occupier-ratepayer sector of the sample towns in terms of the characteristics and location of those dwellings changing hands. A number of towns with similar growth rates were examined in the hope of discovering how far patterns of turnover were common to all, and small urban centres were chosen in order to illuminate a field of study somewhat neglected in the literature. Arising from the research presented in the preceding chapters, a number of conclusions, together with possible explanations, can be made concerning the pattern of movement within the towns. Detailed explanation of the patterns demands further research which it was not possible to undertake within the constraints of this project. A final comment on the value of the research programme concludes the investigation.

9.1 An assessment of the results

Several distinct results were obtained concerning the pattern of dwelling-occupant turnover in the seven sample towns.

(i) With the exception of Salisbury, rates of turnover within the occupier-ratepayer sector of each town were remarkably similar, since a difference of only 2.0% separated the six remaining towns[1]. The much lower rate of turnover in Salisbury is difficult to explain, as the characteristics of its population and rate of additions to its housing stock were very similar to the other towns[2]. Possibly, financial contraints on housing access operated to a greater extent in Salisbury than elsewhere, but this and any other suggestions need deeper examination. The difference in the type of population living in Bridgwater as compared to the other towns did not appear to be reflected in the rate of turnover recorded for that town[3].

(ii) A high degree of consistency between the towns was also recorded for

the location and characteristics of dwellings changing hands. In all the towns, the type of housing area in which a dwelling was located appeared to have little association with the level of turnover[4]. Thus, following Cave's argument, it seemed that the local housing environments of the sample towns were not sufficiently unsatisfactory to induce high rates of movement[5]. Indeed, anyone acquainted with these towns would probably consider them among the most pleasant in the country. It is difficult therefore to conclude that other small towns would record a similar lack of association between turnover and location, since they might contain a larger industrial sector. It must be noted, in fact, that the industries which are situated in the sample towns tend to be adjacent to areas of council housing, whose residents have less opportunity to actively indicate a dislike of their surroundings. An analysis of requests for transfers by council tenants might highlight the degree to which the local environment does influence population mobility in these and similar towns[6].

(iii) The different physical characteristics of dwellings were significantly associated with variations in the rate of turnover. High rates of movement were recorded for flats and maisonettes in all the towns and the spatial pattern of turnover appeared greatly influenced by the location of these dwellings[7]. This repeats the findings of Moore in his study of Brisbane, although in that case both publicly- and privately-owned flats were included. In the present study, some care is needed in interpreting the pattern since it may possibly have resulted from the format of the data source. Although the majority of occupier-ratepayer units were owner-occupied, a minority formed part of the private rented sector. Flats and maisonettes are characteristic dwellings of that sector and thus the high rate of turnover recorded for these units may reflect the general level of mobility of that sector[9]. Observations, however, revealed that a proportion of the flats and maisonettes in the towns were part of modern purpose-built blocks constructed for leasehold sale.

High turnover rates occurred also in these dwellings. Detailed inquiry into the tenure status of occupiers is required in order to solve this problem.

Irrespective of the tenure of flats and maisonettes, the reasons for the high rate of movement in these dwellings requires explanation. It is possible that the accommodation offered by such dwellings is inadequate for most households, who may have been forced to accept it because of its relative cheapness. Lack of privacy, space and a garden are constraints which come readily to mind. Thus, at the first opportunity, households move to more satisfactory housing. On the other hand, the high rate of movement in flats and maisonettes may reflect the suitability of the accommodation for people who are more mobile than the average household. Single persons and young married couples in professional occupations, who need to move frequently for promotion, may prefer a flat or maisonette since they are usually spared the trouble of maintaining the exterior and garden. Similar reasons, together with the smaller size of the accommodation, may also recommend such dwellings to retired people with enough income to move. Some households are extremely mobile after retirement and seem to find the upheaval of constantly moving one way of passing the time[10]. The population structures of the towns revealed higher than average proportions both of professional people and of old people[11]. Probably, it is the combined movement of more mobile households and of those who find flats and maisonettes unsatisfactory which accounts for the higher rates recorded for these types of dwelling. These suggestions, however, require verification by further research.

(iv) In some of the towns, other dwelling types were also associated with high rates of turnover. Detached houses recorded higher than expected rates of movement in two towns[12]. Such dwellings are usually more expensive to buy than other types of housing and thus by implication

the occupants tend to command both larger incomes and easier access to institutional finance. Households living in detached houses may therefore find it easier than households occupying other types of housing to translate their desires for alternative accommodation into an actual move. On the other hand, no relationship between the social class of a dwelling (as measured by the rateable value), and variations in the level of turnover revealed rates of turnover to increase with the value of the dwelling[13].

A number of towns recorded higher than expected rates of turnover in dwellings built after 1950 and in Newbury and Taunton the distribution of these dwellings throughout the town appeared to be associated with the spatial pattern of turnover[14]. Higher rates of movement in this group are to be expected since an over-proportionate amount of finance is available for these dwellings[15]. Despite the lack of credit for older properties, dwellings built before 1875 also recorded higher than expected rates of turnover[16]. It may be that a number of these dwellings fall into the private rented sector and that, as with flats and maisonettes, higher rates of turnover reflect the mobility pattern of that sector. Possibly, however, the market price of these dwellings is relatively low in order to compensate for the restricted availability of mortgages, and thus they are bought outright as a first step into the housing market from which households may soon move on to more modern accommodation. The extent to which the prestige value of many of these older dwellings affects their turnover is uncertain.

(v) Those dwellings recording lower than expected rates of turnover might perhaps be considered the typical dwelling of the average 'man in the street' - semi-detached and terraced houses, bungalows, dwellings built between 1875 and 1950. Since most of these dwellings probably provide adequate if unluxurious accommodation, the turnover rates may reflect the behaviour of households who move only when absolutely necessary.

9.2 Further research possibilities

In discussing the results of the investigation, some reasons have been proposed for the pattern of dwelling-occupant turnover revealed in the sample towns between 1967 and 1968. Only by undertaking further research would it be possible to substantiate any of these suggestions or to discover other factors which might have influenced the pattern of household movement. The original programme envisaged that some further work would be undertaken, but certain factors intervened to force a curtailment of the investigation. The most important of these was the nature of any future analysis.

In order to fully examine the reasons underlying the pattern of movement in the towns, it would be necessary to move from an investigation of the dwellings to an examination of the occupiers of those dwellings. This could only be achieved satisfactorily by undertaking some form of questionnaire survey. Only the occupants of flats and maisonettes could indicate whether they acquired that accommodation through choice or because it was all they could afford (such information might be helpful in the present argument over the value of flats as a form of housing in this country). Only by comparing the characteristics of households living in dwellings with high rates of turnover with those occupying dwellings with low turnover rates could some idea be gained as to the reasons behind this difference. Only by analysing the reasons for household movement in Salisbury as compared with the other towns might it be possible to discover why turnover in that town was lower than elsewhere.

The difficulties of conducting a questionnaire survey have been fully discussed in Chapter 3[17]. At this later stage of the investigation, the selection of a sample of dwellings would be relatively simple since all the private dwellings changing hands in the towns had been identified.

It would also be possible to stratify the sample according to the type of dwelling. The major problem arose over the manpower required for such a survey. Only one person was available to conduct interviews, many of which would necessarily be during the evenings and at weekends. In order to relate the results to the information already gathered, it would have been preferable to conduct interviews in all seven towns. Each interview would require some considerable time in order to collect data not only on the characteristics of the households at a given address, but also on their aspirations and expectations towards housing, their reasons for moving, and their attitudes towards their present accommodation. Prior to undertaking the survey, a questionnaire would have had to be designed and tested in the field.

The combined effect of these demands suggested that the task was beyond the means of a single investigator working without resources and within a limited period of time. At the same time as this problem was being considered, the author was offered the chance of collaborating with others on a similar research topic which involved a questionnaire survey incorporating many aspects of housing that the author was interested in pursuing[18]. Far greater resources were available for this second project and the opportunity of joining a research team was unlikely to be repeated. It appeared therefore more realistic to terminate the investigation at the stage that had been reached and use the knowledge gained to assist others in a new venture than to continue the research under unsatisfactory conditions.

9.3 Postscript

It is almost inevitable that the results of a small research project produce more questions than answers concerning the topic under discussion. In this project particularly, it could be claimed that a great deal of time and effort was expended on data collection and manipulation in order

to highlight an aspect of the urban scene contributing neither knowledge of great value to the development of the field nor suggestions for solving any of the current social problems of our cities. To fulfil either of these criteria would, however, require almost superhuman qualities of a single investigator working within a two-to-three-year period. No single person can absorb all the knowledge and practice all the skills necessary to provide real solutions to the complex problems involved in understanding population migration. On the other hand, such a situation does not immediately reduce the efforts of any individual researcher to a meaningless exercise. Rather, the value of a small project should be measured perhaps more by the opportunity it provides for the training and development of the investigator than by the type of information extracted from the analysis. From this viewpoint, three aspects of the project deserve consideration.

It is said that we learn by making mistakes. Perhaps the greatest mistake of this particular project was the decision to study so large a number of towns. Although this approach is essential for developing a body of theory concerning population movement, in this case the project developed into a series of repetitive actions at the expense of new information. The results indicate that a sample of three or four towns would have been sufficient to produce conclusions concerning dwelling-occupant turnover in small, slow-growing towns. However, it was not possible to pre-judge the results before commencing the research, but in future it would be preferable to undertake this type of research only if more than one researcher was available. Under those conditions, it would be possible not only to spread the load of repetitive work but also to explore those questions provoked by the initial analysis.

A geographer proposing to study population mobility within the urban housing market is faced with a topic tangential to the major focus of his discipline. Much of the literature is economic or sociological

in its emphasis and access to some data sources requires communication with planners and other local government officials. Thus, such a topic offers opportunities for the researcher to broaden his outlook after the somewhat rigid confines of a first degree course. Although there is at present considerable upheaval in our approach to learning with the development of inter-disciplinary subjects, we are perhaps in danger of replacing one set of inflexible subject compartments by another. To what extent, for example, will the student of environmental science appreciate the influences of both the physical and social sciences on some aspects of his subject? Such a question may seem far removed from the research project under discussion, but by introducing the investigator to topics outside her immediate training, the study has stimulated interest in the whole field of current educational practice.

The 'housing shortage' in Great Britain has proved so far to be one of the insoluble problems facing successive governments. Past legislation has been both complex and contradictory and any assessment of alternative proposals demands expert knowledge of the subject. Most households have little information except that gained by experience with which to judge the merits or consequences of political decisions in this field. Although no expert, the investigator's level of understanding in this difficult field has undoubtedly been increased by the opportunity which this project has given her for reading about, and discussing, various aspects of the subject. It must be hoped that the knowledge so gained will, in the future, prove useful in promoting a sensible housing policy in this country, even at so insignificant a level as the ballot box.

REFERENCES

1. Chapter 7, page 163

2. Chapter 4, page 78

3. Chapter 4, page 78

4. Chapter 8, page 201

5. Cave,P.W. (1969) 'Occupancy duration and the analysis of residential change' Urban Studies 6, 58-69.

6. It would be necessary to examine the requests made by tenants rather than the actual transfers that had taken place since the local authority will not allow transfers for what they consider trivial reasons.

7. Chapter 7, page 173; Chapter 8, page 210

8. Moore,E.C. (1969) 'The structure of intra-urban movement rates- an ecological model', Urban Studies 6, 17-33.

9. Turnover in the private furnished rented sector is approximately 50% compared with 7%-8% for the population as a whole. See Donnison,D.V. (1967) The Government of Housing (Harmondsworth: Penguin Books) 210.

10. The author spent ten years in a south coast retirement town. It was noticeable that certain retired households continually moved, usually within a confined area of the town and often within the same block of flats.

11. Chapter 4, pages 67-70

12. Chapter 7, page 175

13. Chapter 7, page 176

14. Chapter 7, page 175; Chapter 8, page 217

15. Chapter 4, page 85

16. Chapter 7, page 175

17. Chapter 3, pages 45-48

18. This project was the Housing and Labour Mobility Study undertaken by the Department of Geography, University College London, and sponsored by the Joseph Rowntree Memorial Fund

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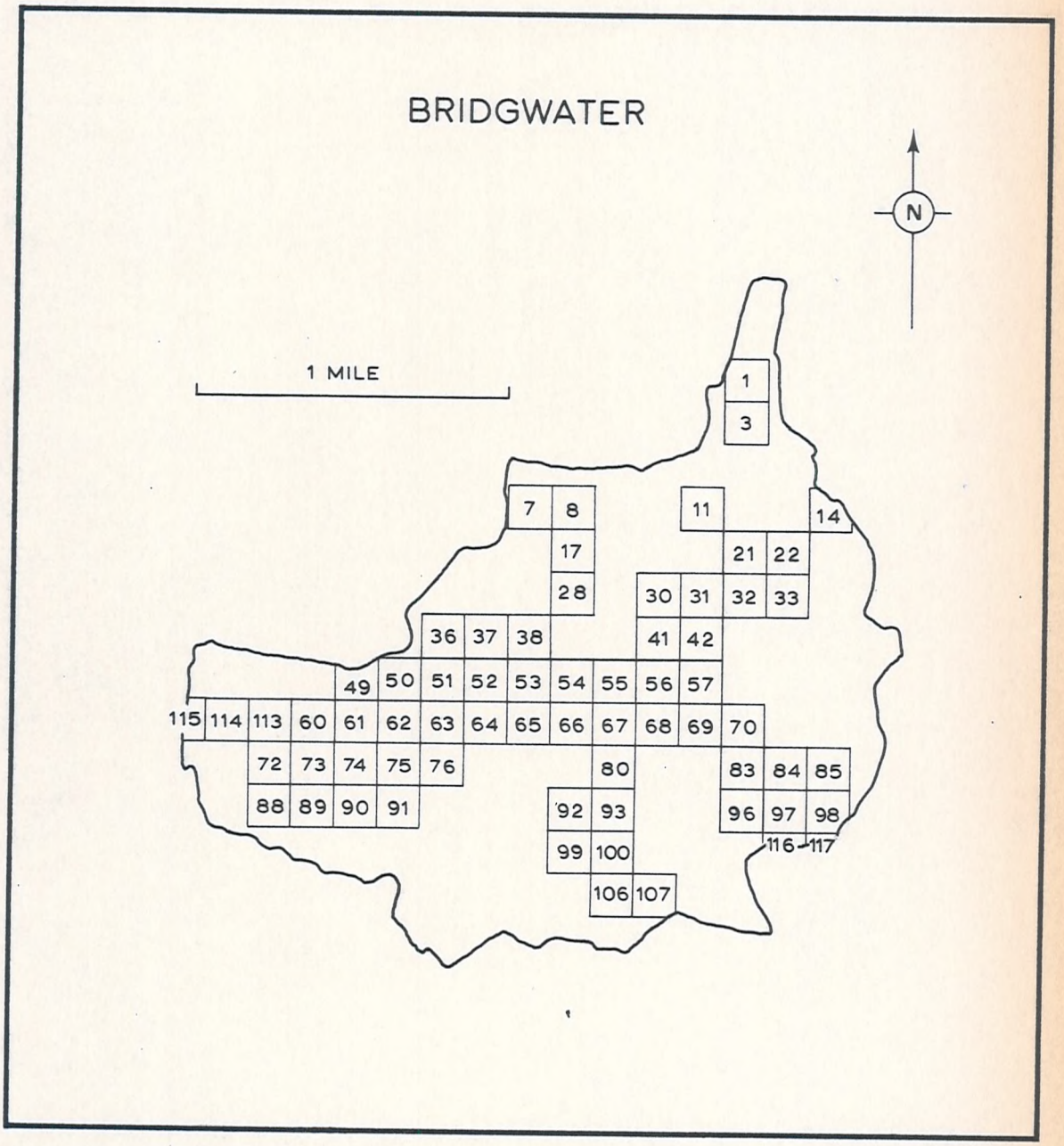
APPENDIX A

Grid-square location maps of the seven towns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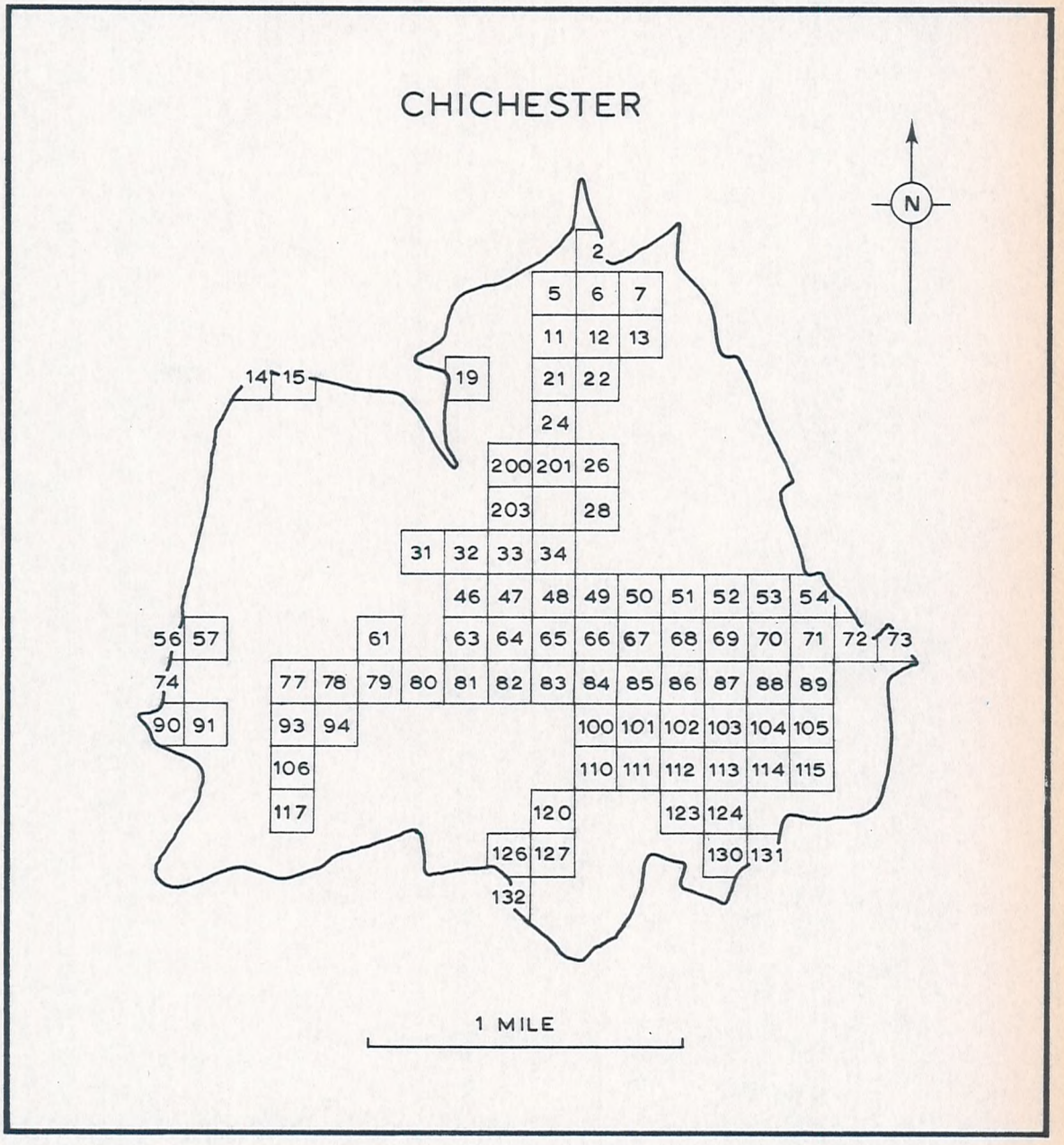
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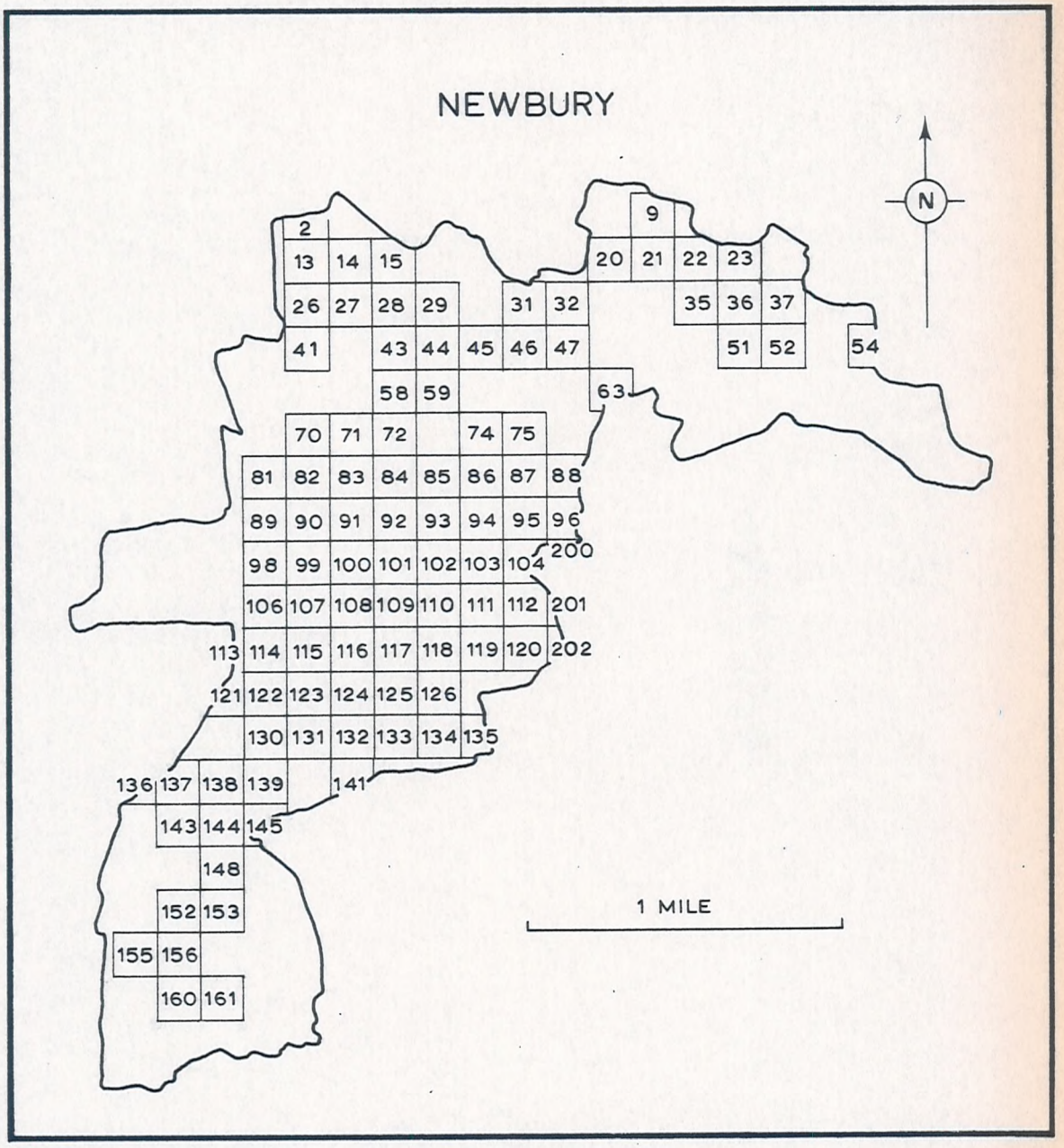
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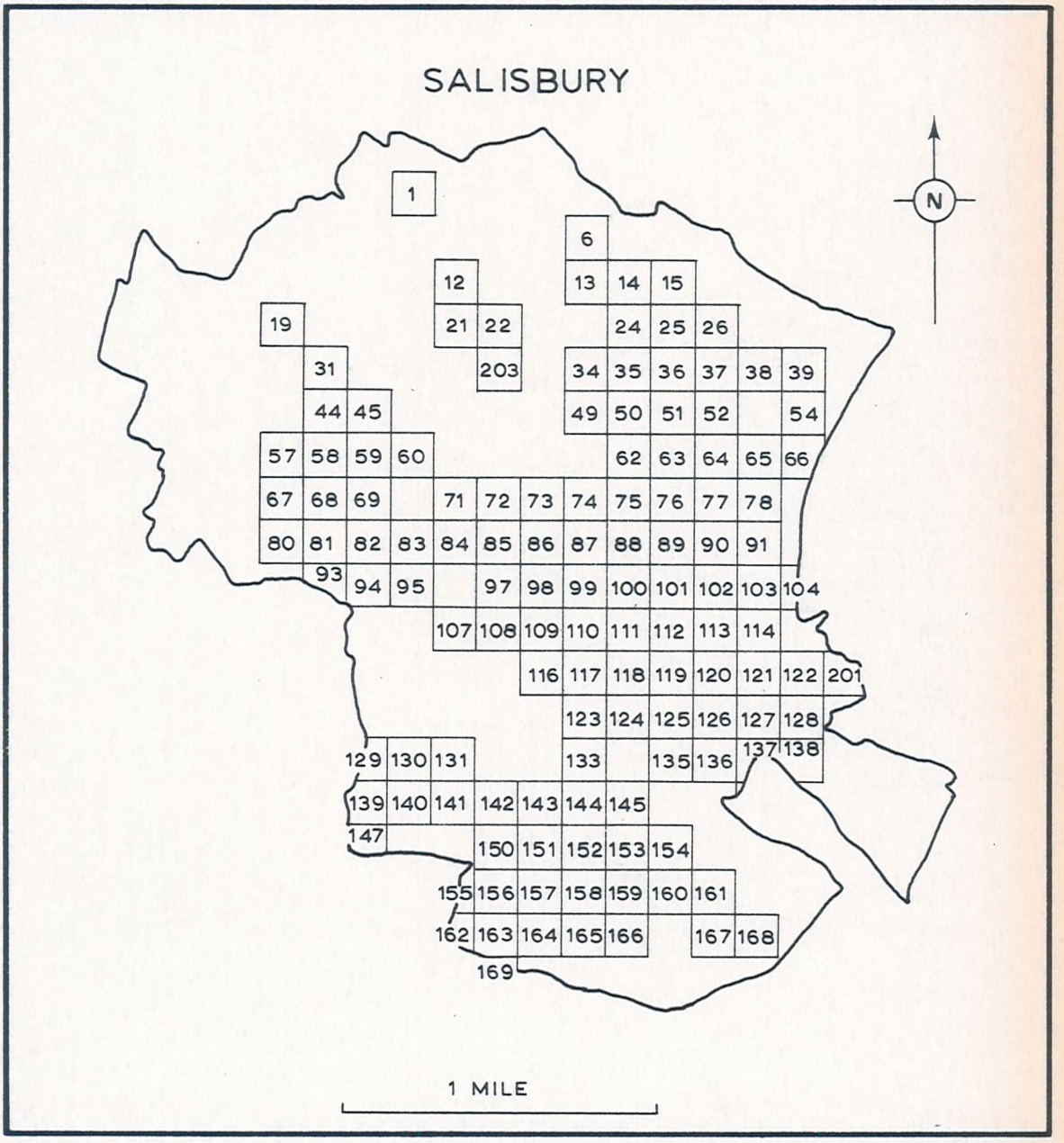
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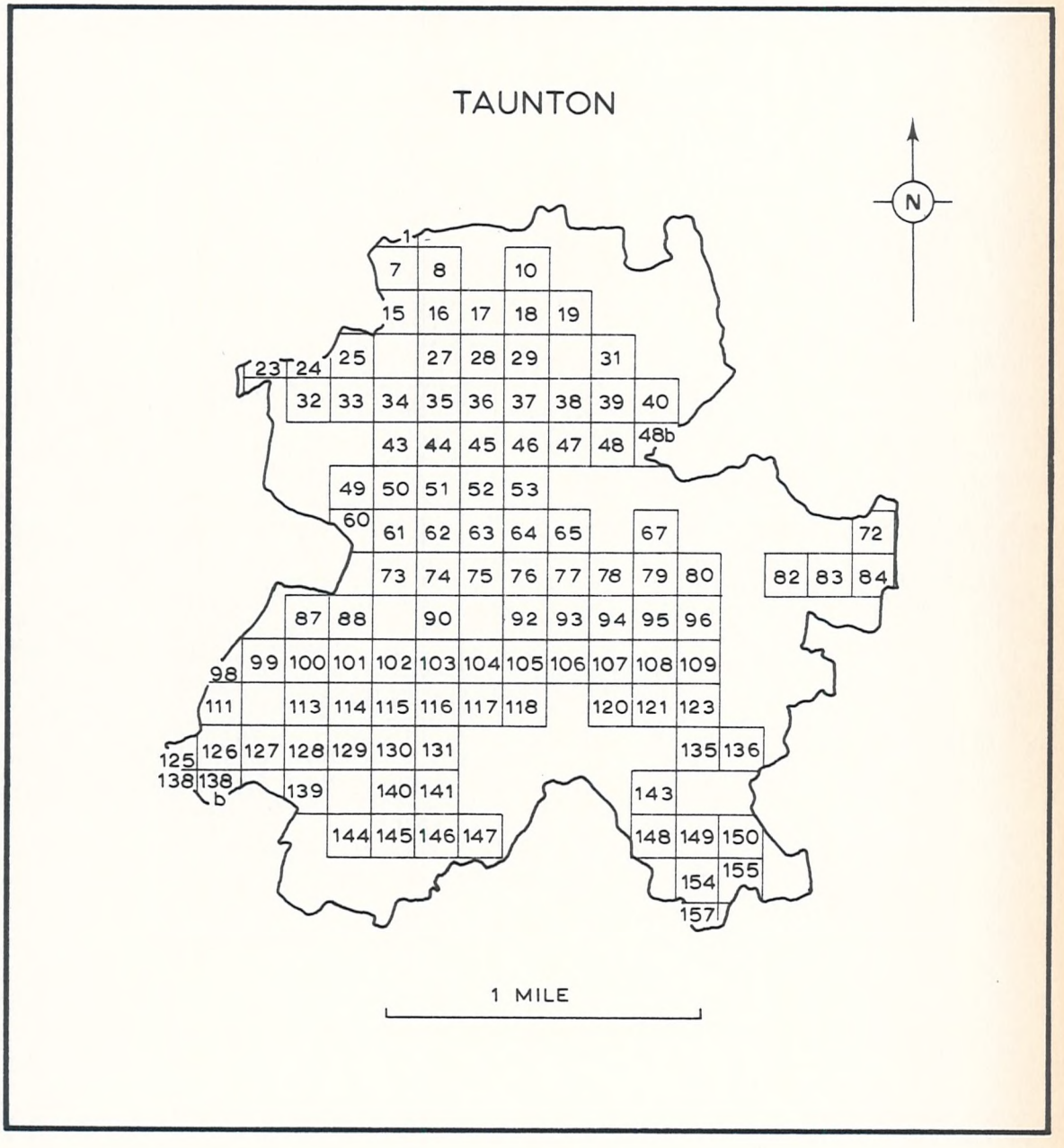
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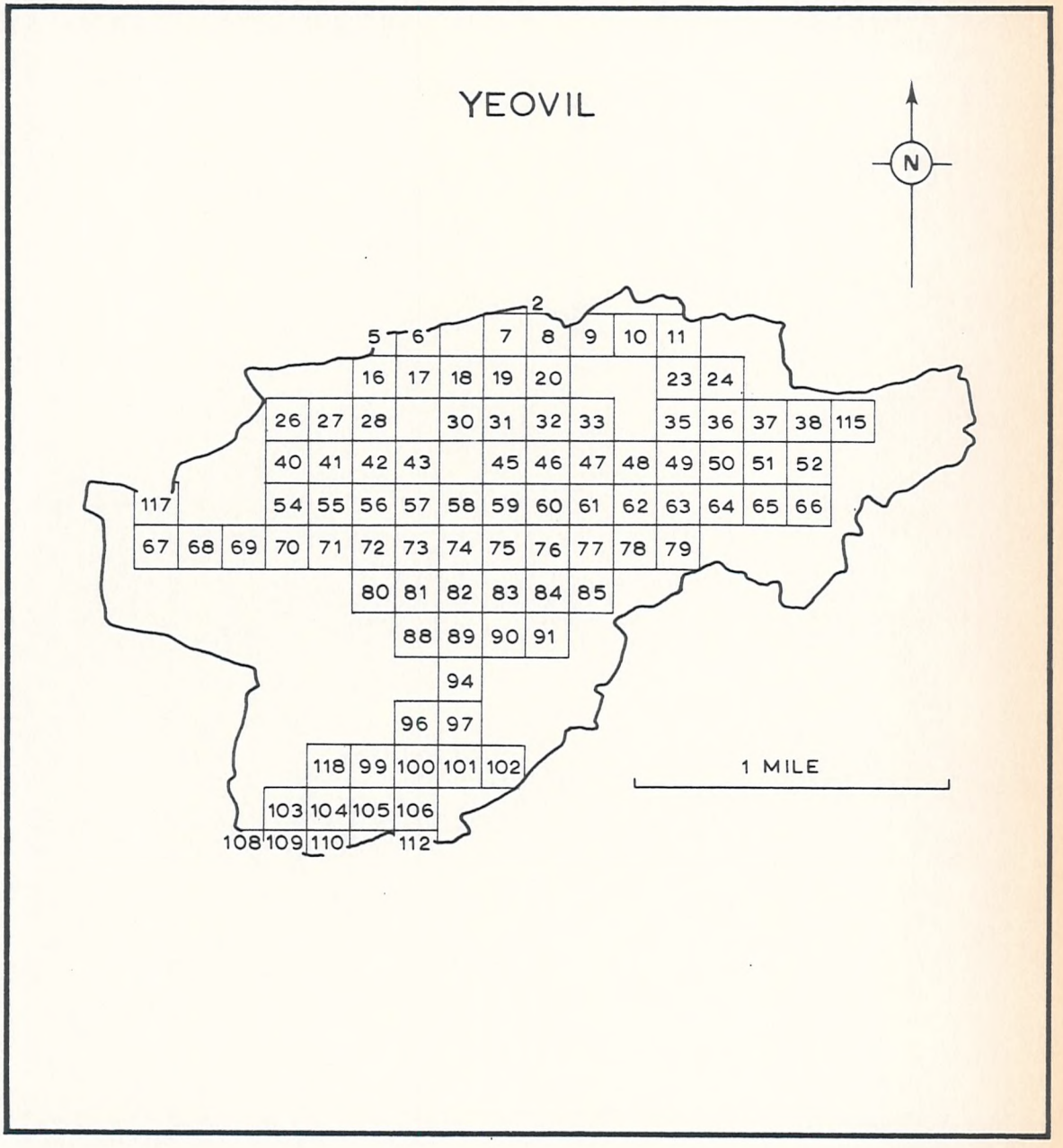
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APPENDIX B

Reprint from 'Housing and Planning Review' July - August 1970

Reprinted from Housing and Planning Review, July—August 1970

Rating Accounts as a Source of Data for the Rented Private Housing Sector

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(Department of Geography, University of Southampton)

The growing public concern over housing, as evidenced in some measure by the campaign of the 1970 General Election and the impact of voluntary organisations like Shelter, has highlighted certain deficiencies in the availability and quality of data necessary for a proper appraisal of the national housing situation. This inadequacy applies not so much to the public housing sector, where detailed records are required to be kept by every local authority, but rather to the private sector. Here there is a marked shortage of information, particularly about the composition of the existing stock as measured in terms of dwelling type, age, valuation and tenure characteristics. It is not unreasonable to argue that data of this nature is fundamental to an accurate evaluation of the present housing situation and its concomitant problems. This paper attempts to explore the local authority rating account records as a possible source of housing data and to demonstrate in a single housing sector, namely that of rented private dwellings, the light cast by such data[1].

The traditional source of housing data is the census. For the chosen housing sector, however, the information contained therein is particularly limited. The 1961 and 1966 censuses contain fairly detailed information on household amenities, but this information is only published for England and Wales as a whole and for the conurbations and standard regions[2]. At the local authority level, the only relevant data is found in the county reports and this merely relates to the total number of rented private dwellings, both furnished and unfurnished. The same is true for the enumeration district returns that can be obtained from the Registrar General. Attempts have been made to augment this meagre data by taking sample surveys. One such, the Rowntree Trust Housing Study, was a survey of the whole country, and for the housing sector under discussion it collected information about building type, number of rooms and the availability of amenities[3]. Surveys such as this are all very well, but sampling is a laborious and time-consuming activity which inevitably has its limitations so far as the interpretation of the collected data is concerned.

Local authority rating records, in the form of valuation lists, have been exploited by some social researchers for their information on dwelling type and rateable value[4]. Far less used, however, is the rating account record. The rating accounts are the record of rate payments made in each local authority during one financial year. Information about all rated property is usually either stored on a separate card for each property, with in some instances the record for several years being kept on the one card, or each property account is collated into an annual volume. For residential properties this recorded information concerns not only details of payment (instalments, rebates, arrears, etc.), but, as in the valuation list, it also includes a statement of the rateable value and a brief description of the dwelling type (house, bungalow, maisonette or flat). In addition, the address of the ratepayer is given, and this address may or may not coincide with the address of the property. Where the two addresses agree, it might be inferred that the ratepayer is the owner-occupier of the dwelling, but where they are different then it is likely that the property is rented and it is the non-occupying owner who pays the rates. A third tenancy arrangement is possible, of course, namely that of a rented dwelling for which the rates are paid by the tenant. Such an arrangement is occasionally indicated in the rate account by the specific recording of the owner's name as well as that of the ratepayer. There are a few rating authorities, such as Salisbury M.B., which clearly distinguish between owner-ratepayer and tenant-ratepayer rented properties. Unless this distinction is made, then those tenant-ratepayer properties will appear as having an owner-occupier. A comparison of the data collected from the rate accounts of a sample of towns in Southern England with that given in the 1966 Sample Census gives some indication of those tenanted private dwellings that might pass undetected in this way (Table 1). The relatively greater number of owner-occupied dwellings derived from the rating accounts of those five towns in the sample where no distinction is made between the two types of tenancy suggests that about 7 per cent of the private housing stock is being mis-classified. If the owner-ratepayer tenancies taken from the rating accounts are expressed as a percentage of all the private tenancies recorded in the 1966 Sample Census, the impression gained is that for most towns there are rather more owner-ratepayer than tenant-ratepayer rented dwellings. (Table 2).

What might appear to be a surprisingly large proportion of owner-ratepayer tenancies is directly attributable to Section IV of the General Rate Act. Paragraph 55 states that owners of hereditaments valued at £56 or less per annum may be held directly responsible for the payment of the rates, whilst the succeeding paragraph allows the owner of any tenanted hereditament, regardless of rateable value, to pay the rates provided the rent is collected at less than three monthly intervals[6]. Due to the provisions of Paragraph 55, therefore, it would seem that many of the rented properties identifiable in the rating accounts are in fact the smaller and poorer constituents of that housing sector, although the impact of Paragraph 56 might be to prompt a leavening of better quality dwellings.

Since it is clear that the rating accounts generally do not permit an identification of the total stock of rented private dwellings, the ultimate value of this data source might be brought into question. Three points would seem to be pertinent at this juncture. Firstly, it seems more than likely that the accounts permit a reasonably full enumeration of those rented properties for which the rates are paid by the landlord. In short, a significant housing subsector can be isolated. Secondly, it might be conjectured that the identified tenancies are distinguished not only by their ratepaying characteristics, but due to the effects of the General Rate Act, they may be distinctive in terms of some physical attributes (*vide infra*). Thirdly, it must be said that, provided the limitations are fully recognised, a little data is better than none, and such data should be especially cherished if it can be widely accumulated without an undue expenditure of time and effort and if it is readily available on an annual basis.

The remainder of this paper seeks to demonstrate the harnessing of this rate account data to the investigation of the isolated housing subsector in the sample of six towns. In order to give the study greater depth, information about location, rateable value and dwelling type was extracted not just for the chosen tenanted properties but for all private dwellings, an important part of the exercise being to compare the characteristics of the subsector with those of the private housing stock as a whole. In order to achieve a more detailed description of each property, two other readily available sources of information were utilised, namely the Ordnance Survey 1:1,250 plans and the statutory Age of Building map held by the local planning office. From the 1:1,250 plans, those dwellings broadly described as "houses" in the rating accounts could be classified as detached, semi-detached and terraced, whilst the Age of Building map enabled each dwelling to be assigned to one of four age groups, pre-1875, 1875–1914, 1914–1950 and post-1950[7]. As a result of using the rating

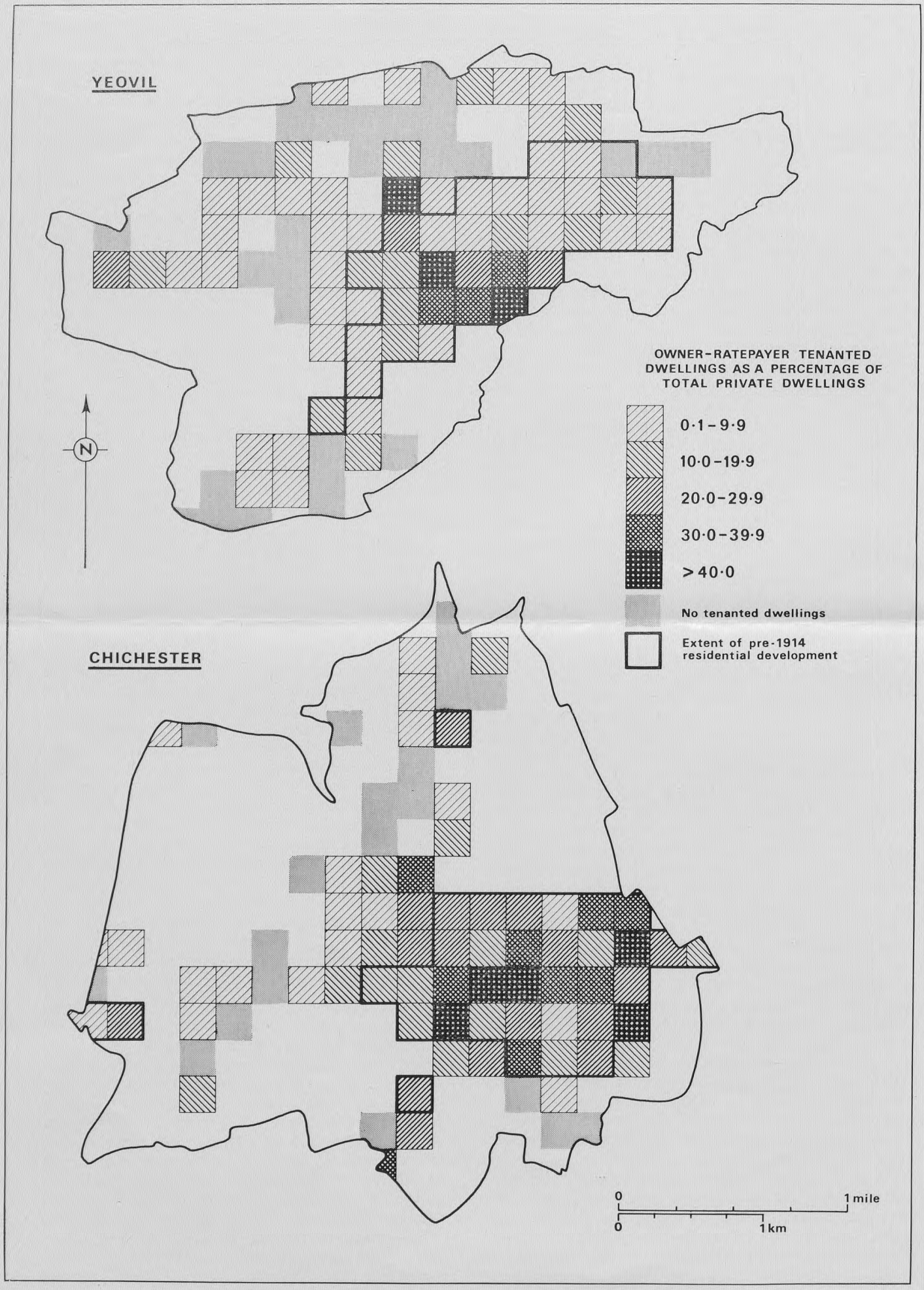

FIGURE 1. The distribution of owner-ratepayer rented dwellings in two sample towns.

Rating Authority	DWELLING TYPE					AGE OF BUILDING				RATEABLE VALUE				
	Flat	Terraced House	Semi-D House	Detached House	Bungalow	pre - 1875	1875-1914	1914 - 1950	post -1950	<£30	£30-59	£60-89	£90-119	>£119
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Bridgwater M.B.	9·7	81·6	5·9	1·3	1·2	54·3	33·7	10·3	1·5	48·2	40·2	7·6	2·9	0·8
Chichester M.B.	21·1	52·8	18·9	5·4	1·6	45·3	40·1	11·9	2·3	8·4	62·3	21·2	5·7	2·2
Newbury M.B.	16·8	53·4	21·6	6·8	0·9	46·3	37·4	10·3	5·4	4·6	58·6	21·6	12·9	2·5
Salisbury M.B.	26·4	59·5	6·5	4·9	2·5	50·5	37·8	10·0	1·5	13·9	55·9	18·9	6·5	4·5
Taunton M.B.	28·1	57·9	8·7	4·4	0·7	39·7	51·6	7·4	1·1	18·9	57·5	14·9	6·1	2·8
Yeovil M.B.	38·6	46·7	9·3	3·5	1·9	41·2	38·3	16·5	3·8	20·1	48·9	20·8	6·9	3·0

TABLE 3. An analysis of the composition of the owner-ratepayer rented subsector (by dwelling type, age and rateable value).

Rating Authority	Total subsector dwellings as % of total private dwellings	DWELLING TYPE					AGE OF BUILDING				RATEABLE VALUE				
		Flat	Terraced House	Semi-D House	Detached House	Bungalow	pre - 1875	1875 -1914	1914 -1950	post -1950	<£30	£30 - 59	£60 - 89	£90 -119	>£119
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Bridgwater M.B.	12·6	30·6	17·9	2·8	2·9	2·6	31·3	13·2	4·7	1·0	37·6	13·6	3·4	2·4	4·9
Chichester M.B.	17·7	35·1	28·9	18·9	4·7	2·8	37·2	28·4	5·9	2·3	77·3	41·7	16·4	3·9	1·7
Newbury M.B.	14·7	27·3	29·2	10·1	4·5	1·3	38·4	21·6	5·6	2·7	54·5	33·3	12·8	4·7	3·9
Salisbury M.B.	10·3	26·0	14·7	3·0	2·9	3·0	21·0	10·9	3·6	1·4	35·8	18·2	7·6	2·5	3·6
Taunton M.B.	12·0	46·6	14·7	4·3	3·9	1·3	27·9	16·9	2·9	0·8	53·7	17·8	6·8	3·5	4·5
Yeovil M.B.	8·2	38·8	10·8	2·6	1·7	1·6	33·3	9·1	3·4	1·9	43·0	14·2	5·2	2·1	3·0

TABLE 4. Owner-ratepayer rented dwellings as a percentage of total private dwellings (by dwelling type, age and rateable value).

Subsector	Total subsector dwellings as % of total private dwellings	DWELLING TYPE					AGE OF BUILDING				RATEABLE VALUE				
		Flat	Terraced House	Semi-D House	Detached House	Bungalow	pre -1875	1875 -1914	1914 -1950	post -1950	<£30	£30 - 59	£60 - 89	£90 - 119	>£119
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Owner-ratepayer	10·3	26·4	59·5	6·5	4·9	2·5	50·5	37·8	10·0	1·5	13·9	55·9	18·9	6·5	4·5
Tenant-ratepayer	15·8	18·4	58·3	11·7	9·1	2·3	44·7	41·2	12·6	1·4	7·8	53·1	24·8	12·1	2·0

TABLE 5. A comparison of the composition of the rented private housing subsectors in Salisbury M.B.

Rating Authority	Owner-occupied		Privately Rented		Rented from Council	
	C%	R%	C%	R%	C%	R%
Bridgwater M.B.	42·2	49·7	14·0	7·9	41·4	43·0
Chichester M.B.	45·0	56·6	19·9	12·3	29·3	31·0
Newbury M.B.	52·0	59·6	16·2	10·2	25·1	30·0
Taunton M.B.	45·6	52·0	12·5	7·1	37·7	40·6
Yeovil M.B.	47·4	56·1	11·7	5·0	37·0	38·7
Salisbury M.B.	50·3	52·7	22·0	18·5	27·5	28·7

C% = dwellings as a % of total dwellings (Sample Census, 1966)
R% = dwellings as a % of total dwellings
(Rating account records, 1967/8)

TABLE 1. The tenure of dwellings in a sample of six towns in Southern England.

Rating Authority	Owner-ratepayer tenancies as % of total private tenancies
	%
Bridgwater M.B.	50·6
Chichester M.B.	62·3
Newbury M.B.	65·4
Salisbury M.B.	34·8
Taunton M.B.	61·0
Yeovil M.B.	43·8

TABLE 2. Owner-ratepayer tenancies as a percentage of total private tenancies.

accounts and these ancillary sources, it was possible for one person to obtain in just over a week a fairly detailed description of the private housing stock of a town having a total population of about 25,000 persons.

Table 3 summarises an analysis of the subsector properties in terms of dwelling type, age and rateable value. As a general rule, the majority of the dwellings are terraced houses, with flats constituting the second most common dwelling type and with a proportion of these possibly representing sub-divisions of larger terraced houses. In Yeovil the relatively low incidence of terraced houses in the subsector is seemingly compensated by an unusually large occurrence of flats, whilst in Newbury there are rather more semi-detached houses than flats. In all the towns roughly 80 per cent of the subsector properties were built before 1914, particularly before 1875, and as might be expected from the aforementioned provisions of the General Rate Act, most of the dwellings have rateable values of less than £60 per annum, the general level being especially low in Bridgwater.

Table 4 analyses the subsector in terms of the complete stock of private dwellings. From this it will be seen that about one-third of the private flats in these towns are subject to owner-ratepayer tenancies, and that in all but one case this proportion is markedly greater than that for terraced houses, despite the fact that there are more terraced houses than flats actually within the subsector (Table 3). As a general trend, it is observed that with increasing rateable value a smaller percentage of the total private housing stock is accounted for by these tenanted dwellings. So far as age of building is concerned, about one-third of all the private dwellings built before 1875 fall within the subsector, and a decreasing proportion of the overall private housing is included in each successive age-group. Figure 1, using a grid of 0·25 kilometre squares, gives an impression of the spatial occurrence of the subsector properties within two of the sample towns, and this too emphasises the concentration of owner-ratepayer rented dwellings in the more central and older parts of the town structure.

Although Table 2 would suggest that Salisbury is exceptional in that it has a relatively high incidence of tenant-ratepayer rented properties, the detailed record-keeping of this rating authority provides a rare opportunity to compare the composition of the two private rented subsectors (Table 5). There are proportionately more semi-detached and detached houses in the tenant-ratepayer subsector, and the slightly higher level of rateable values would seem to reflect this greater incidence of houses as opposed to flats. As for age of building, just over 85 per cent of the dwellings in each subsector date from before 1914, but differences are observed in the relative importance of the pre-1875 and 1875–1914 building periods, the latter being more significant in the tenant-ratepayer subsector. In short, then, this one case study does suggest some slight differences in the make-up of the two subsectors, and that the general quality of housing in the tenant-ratepayer subsector is somewhat better.

This study has demonstrated that by using the rating account records it is possible to isolate and investigate at least a significant part of the rented private housing sector[8]. The analysis has shown that this subsector of owner-ratepayer tenancies is made up largely of the older and poorer dwellings of the town and that the properties tend to be highly localised in the areas of Victorian and Edwardian terrace development, where the original dwelling units are rented both as a whole and as flat subdivisions. A particular advantage of the rating accounts which needs to be stressed is that they permit investigations of the subsector to be carried out at regular intervals of a year or more. Such temporal comparisons could shed much light on the general decline in rented private property and also on its changing composition.[5]. On the other hand, a major limitation of these accounts as a source of data for this particular housing sector is that the prevailing method of record-keeping allows only one facet of the sector to be identified with any confidence. There are only a small number of authorities which at present keep their rating records in such a way that it is possible to easily extract information on both owner-ratepayer and tenant-ratepayer tenancies. It is a pity that there is not more conformity both in the range of information kept by the rating authorities and in the manner in which that information is recorded. If nation-wide standardisation could be achieved, perhaps following the example of Salisbury M.B. so far as detail is concerned and taking advantage of computer data storage, then the rating accounts would become an extremely valuable source of data, not just for this neglected housing sector, but for the housing stock as a whole.

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4. **Institute of British Geographers Study Group in Urban Geography,** *The Social Structure of Cities* **(Liverpool Conference, September 1966). The papers by D. T. Herbert and G. Gordon demonstrate the use of valuation lists in the study of residential areas.**
5. **The sample comprises six towns which have similar growth structures; they were selected as part of a more extensive investigation of housing being conducted by Nathalie A. Baldock. The data used in this analysis is taken from the 1967–68 rating accounts.**
6. *General Rate Act*, **1967. This compulsory rating of the owners of hereditaments valued at less than £56 per annum is known as "compounding".**
7. **The Age of Building map for Taunton classified dwellings as pre-1875, 1875–1914, 1914–1939 and post-1939.**
8. **It goes without saying that the rating accounts also permit the isolation and investigation of the owner-occupied housing sector, but the extracted data is subject to the same limitations of classification as were mentioned earlier in this paper.**
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APPENDIX C

The characteristics of housing in each grid-square comprising the housing type areas of each town.

BRIDGWATER - Housing Area Type 1.

	Det. houses %	Semi-Det houses %	Terr. houses %	Flat & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
31		1.3	95.3	3.3		79.3	20.0	0.6		24
41		8.8	76.4	14.7		52.9	45.5	1.4		53
54			69.8	30.1		55.5	38.1	4.7		34
56		3.7	84.1	12.6		84.1	15.8			32
57			98.5	1.5		100.0				31
64			76.9	23.0		84.2	15.8			33
65			78.8	18.4	2.7	62.1	21.6	16.2		30
66		2.2	75.0	22.7		84.1	15.9			40
69	0.6	0.6	97.2	1.3		70.0	22.4	7.4		26
70			100.0			61.7	23.4	14.8		28
	0.1	1.6	85.2	12.7	0.2	73.4	21.8	4.5		30

BRIDGWATER - Housing Area Type 2

	Det. houses %	Semi-D. houses %	Terr. houses %	Flat & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
7			87.5		12.5		50.0	37.5	12.5	43
8			100.0			3.4	96.5			35
11	3.3	13.3	80.0		3.3		86.6	13.3		38
14			100.0					100.0		53
17	1.2	20.0	75.0	2.5	1.2	22.5	50.0	26.2	1.2	38
21			100.0			22.9	77.0			40
22		2.9	97.0			6.8	0.9	92.1		46
28			90.0	10.0		12.5	25.0	62.5		33
30		4.1	95.8			4.1	86.6	13.3		38
33		3.7	96.2				25.9	74.0		43
36	5.3	16.9	72.3	2.6	2.6		46.4	53.5		46
37			100.0				100.0			58
38			100.0				100.0			58
42			100.0			32.2	67.7			29
50		39.4	60.5			8.6	79.3	10.4	1.7	53
51	0.5	2.5	96.9			20.2	79.8			40
53			100.0			22.9	77.0			40
52		14.2	85.7				100.0			58
63	7.6	33.8	49.2	9.2		1.5	98.4			67

BRIDGWATER - Housing Area Type 2 contd.

	Det. houses %	Semi-D houses %	Terr. houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
67		3.2	96.7			17.7	82.2			32
68			100.0				100.0			47
80	4.9	13.5	45.6	13.5		37.0	59.2	3.7		53
83			97.4	2.5		6.4	6.4	87.0		37
84			93.7		6.2			87.5	12.5	76
93	13.0	16.2	69.1	6.8	0.8	7.3	66.6	24.5	2.6	45
99	16.9	9.2	73.7			12.3	66.1	7.6	13.8	55
100	4.5	8.4	82.4	4.5		1.2	62.3	35.0	1.2	52
106			100.0				26.6	73.3		40
107	7.8	39.4	44.7		7.8		28.9	71.0		54
	2.2	9.1	85.8	1.5	1.1	4.3	60.0	33.7	1.9	43

BRIDGWATER - Housing Area Type 3

	Det. Houses %	Semi-D. houses %	Terr. houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
1	7.1	78.5			14.3			100.0		74
49	29.3	65.2			3.4	1.7	1.7	96.5		90
61	6.0	90.4	3.6					100.0		83
62	7.7	86.5		3.8	1.9	3.8	30.7	57.7	7.7	84
73	21.2	71.2	1.2		6.2	1.2		86.2	12.5	91
74		100.0						96.1	3.9	77
88		58.8	32.3		8.8			100.0		112
90	23.8	57.1	9.5	4.7	4.7			100.0		99
92	14.0	70.2	3.5	3.5	8.7	5.2	1.7	89.4	3.5	79
	12.21	75.3	5.5	1.3	5.3	1.3	3.8	91.7	3.6	87

BRIDGWATER - Housing Area Type 4

	Det. houses %	Semi-D. houses %	Terr. houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
89	51.9	36.5	11.5				3.8	96.1		114
91	73.3	6.6		20.0		6.6	6.6	86.6		120
	62.6	21.6	5.7	10.0		3.3	5.2	91.4		117

BRIDGWATER - Housing Area Type 5

	Det. houses %	Semi-D houses %	Terr. houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
32		14.3	85.7			28.5	21.4		50.0	49
72	21.3	42.6		3.2	32.8			39.3	60.6	92
75	16.6	60.6	10.0	13.3			60.0		40.0	95
85	4.7	33.3	44.0		17.8			13.1	86.9	65
97		66.1	5.6	4.5	23.7				100.0	67
113	18.8	58.4	9.9		12.8				100.0	91
114	10.2	73.9	6.3		9.5				100.0	85
115	13.3	77.8	8.8						100.0	85
116			81.8		18.1				100.0	59
	9.4	47.4	28.0	2.3	12.7	3.1	9.0	5.8	81.9	76

BRIDGWATER - Housing Area Type 6

	Det. houses %	Semi-D houses %	Terr. houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
96					100.0				100.0	54
98	1.3	32.8	9.5		56.2				100.0	67
117		13.8	22.2		63.9				100.0	85
	0.4	15.6	10.6		73.4				100.0	68

CHICHESTER - Housing Area Type 1

	Det. houses %	Semi-D houses %	Terr. houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
49	2.6		76.3	21.0		97.3	2.6			48
65	0.7		54.5	43.9	0.7	35.6	3.8	12.1	48.5	92
66	10.8		43.3	45.9		72.9	5.4		21.6	70
83	4.6		53.1	42.2		51.1			48.8	99
84	8.6	1.7	41.4	48.2		74.1	17.2	8.6		85
85	4.1		54.1	41.6		83.3	12.5	4.1		55
86	3.8		73.1	23.1		100.0				55
100	2.6		41.8	55.5		91.1		7.9		53
	4.7	0.2	54.7	40.2	0.1	75.7	5.2	4.0	14.8	69

CHICHESTER - Housing Area Type 3

No.	Det. houses %	Semi-D. houses %	Terraced houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
13	26.1	39.1	4.3	26.1	4.3	17.4	60.8	21.7		121
22	4.9	86.9	8.2				95.1	1.6	3.2	66
24	29.4	11.7	41.1	17.6		5.8	11.7		82.3	107
51	18.1	53.0	20.5	7.2			87.9	12.0		64
52	15.1	24.5	54.7		5.6		43.4	9.4	47.1	81
53	45.0	45.0		10.0		15.0	45.0	40.0		81
72	17.0	48.6	25.5		12.7	8.5	67.8	19.4	4.2	61
78	11.6	4.6	74.4	4.6	4.6	20.9	6.9	6.9	65.1	107
110	8.1	20.4	20.4	46.9	4.3	10.2	44.9	14.3	30.6	86
114	31.9	55.3	10.6		2.1	17.0	78.7	4.2		52
115	3.2	33.3	58.7		4.7	22.2	7.9	4.7	65.1	79
120	19.3	29.0	12.9	38.7		6.4	77.4	16.1		63
127	32¼	36.6	8.4	21.0	0.6	1.4	47.8	47.8	2.8	83
132	60.0	20.0		13.3	6.6		50.0	50.0		120
	22.7	36.9	22.6	15.2	3.1	11.9	51.4	16.5	20.0	82

CHICHESTER - Housing Area Type 4

No.	Det. houses %	Semi-D. houses %	Terraced houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
48	2.4	10.3	84.3	0.9	1.9	44.1		55.4	0.5	61
103	6.6	4.6	88.0		0.6			98.0	2.0	65
	4.5	7.4	86.2	0.5	1.3	22.0		76.7	1.2	63

CHICHESTER - Housing Area Type 5

No.	Det. houses %	Semi-D houses %	Terraced houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
6	70.0	10.0			20.0			80.0	20.0	164
7	73.3	13.3			13.3	13.3		26.6	60.0	141
14	91.3				8.7			82.6	17.4	154
12	36.6	26.4		9.7	27.7	1.4	18.0	58.3	22.2	136
15	85.2				14.8			55.5	44.5	100
19	73.3				26.6			73.3	26.6	140
21	57.9	7.9	10.5	10.5	13.1	10.5	21.0	42.1	23.7	136
63	7.5	27.8	7.5		57.5			71.2	28.7	106
64	29.4	5.8	23.5		41.1	17.6	17.6	64.8		87
74	66.6				33.3			100.0		153
77	38.8	2.7			58.3	2.7		91.7		90
80	50.7	16.4		9.6	23.3		18.0	46.5		139
81	50.0	10.0	24.0	8.0	8.0	14.0		62.0		112

CHICHESTER - Housing Area Type 5 (contd)

No.	Det. houses %	Semi-D houses %	Terraced houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
93	75.0	16.6		8.3		8.3		75.0	16.6	125
94	75.0	12.5			12.5		18.7	68.7	12.5	140
106	69.2				30.7	23.1		76.9		136
117	70.0				30.0			100.0		115
126	74.1	22.2			3.7	3.7	3.7	66.6	25.9	115
	60.8	9.5	3.6	2.5	23.4		5.4	69.0	20.1	127

CHICHESTER - Housing Area Type 6

	Det. houses %	Semi-D houses %	Terraced houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
26	24.0	56.0	8.0		12.0	16.0	8.0	76.0		92
28	21.6	75.7			2.6	5.4	45.9	48.6		86
32		72.7			27.2			81.8	18.1	82
33	33.9	45.9		11.7	39.3			88.2	11.7	73
34	20.0	70.0	10.0					100.0		66
46	19.1	54.4			26.5			88.2	11.7	101
47	3.3	49.0	11.7	12.4	23.5	3.3		62.2	33.3	93
70	11.5	42.3	19.2		26.9	19.2	9.6	71.1		71

CHICHESTER - Housing Area Type 6 (contd)

No.	Det. houses %	Semi-D houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
111	20.0	64.3	5.0	9.0	1.7	25.0	3.3	70.0	1.7	103
123	30.7	46.1	23.7			7.9	15.4	76.9		77
124	27.9	60.5		4.6	6.9	4.6	27.9	67.4		92
130	4.9	80.5	7.3	4.9	2.4	2.4	12.2	39.6	46.3	114
131	18.1	80.5			1.3			100.0		134
	15.8	61.4	6.5	3.3	13.1	6.4	9.4	74.7	9.6	91

CHICHESTER - Housing Area Type 7

No.	Det. houses %	Semi-D houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
5	27.7			66.6	6.6		24.2	39.4	60.6	156
11	54.8		3.2	35.5	6.5		48.4	22.6	29.0	169
	41.3		1.6	51.1	6.5		24.2	30.9	44.8	162

CHICHESTER - Housing Area Type 8

No.	Det. houses %	Semi-D houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
2	22.2			5.5	72.2			38.9	61.1	167
56	27.3				72.7				100.0	85
57	3.5	39.3			57.1				100.0	81
61	10.5				89.5				100.0	115
79	50.0			8.3	41.6	4.2			95.8	131
	22.7	7.8		2.7	66.6			7.7	91.4	115

CHICHESTER - Housing Area Type 9

No.	Det. houses %	Semi-D houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
200	100.0								100.0	130
201	100.0								100.0	130
203	65.5	32.5							100.0	124
	88.5	10.8							100.0	128

NEWBURY - Housing Area Type 1

No.	Det. houses %	Semi-D houses %	Terr. houses %	Flats & maison. %	Bung. %	Pre-1875 %	1875-1914 %	1914-1950 %	Post-1950 %	R.V. £
31	5.2		89.5		5.2	94.7		5.2		44
32	2.0	34.0	60.0		4.0	64.0		4.0	32.0	57
44	7.3	24.4	53.6	14.6		75.6	24.4			63
43	38.7		48.4	12.9		67.7	3.2	6.4	22.6	69
45	16.4	11.9	53.7	16.4	1.5	68.6	22.4	8.9		56
46	4.0		96.0			44.0	66.0			40
58	2.1	4.2	93.6			91.5	8.5			51
70	9.0	13.6	68.2		9.0	50.0	31.8	4.5	13.6	47
72	4.4	15.5	60.0	15.5		71.1	26.6	2.2		53
75		22.5	77.5			45.0	40.0	15.0		43
84	4.0	16.9	61.3	16.9	0.8	68.5	17.7	11.3	2.4	59
86		6.4	90.3	3.2		64.5	32.2		3.2	40
88	12.9	11.1	68.5	3.7		46.3	42.6	9.2	1.8	42
	8.2	12.3	70.8	6.4	1.3	65.5	24.3	5.1	5.1	51

NEWBURY - Housing Area Type 2

No.	Det. houses %	Semi-D houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
71		22.8	65.7	5.7		11.4	71.4	2.8	8.6	48
82	3.3	42.5	45.3	6.1	2.7	18.7	60.2	14.3	6.6	61
81	18.7	54.2	16.6	4.2	6.2		54.2	35.4	10.4	78
83	13.9	50.4	26.3		9.3	10.8	66.3	20.5	2.3	68
87	5.1	7.6	83.9	3.4			97.5	2.5		40
95	8.6	24.1	67.3			9.2	78.4	4.9	7.4	52
96	11.1	37.5	51.5			1.4	70.8	26.4	1.4	62
98	28.7	34.6	35.6		0.9		75.2	22.7	1.9	71
200	10½2	41.0	35.9	5.1	7.7	2.5	87.2	5.1	5.1	55
	11.1	34.9	47.5	2.1	2.4	6.0	73.4	15.1	4.5	59

NEWBURY - Housing Area Type 3

No.	Det. houses %	Semi-D houses	Terr. Houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
14	43.5	22.6		29.0	4.8	46.7	11.3	8.1	33.9	111
27	9.1	50.0		40.9		50.0	50.0			94
29	3.5	8.8	49.1	38.6		52.6		5.3	42.1	67

NEWBURY - Housing Area Type 3 (contd)

No.	Det. houses %	Semi-D. houses %	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
102	18.3	21.1	22.9	37.6		22.9	36.7	8.2	32.1	76
104	16.4	10.6	23.5	43.5	5.8	31.8	3.5	14.1	50.4	76
118	13.8	11.7	17.0	31.9	25.5	17.0	14.9	12.7	55.3	88
139	18.5	7.4	33.3	25.9	14.8	11.1	33.3	14.8	40.7	119
	17.6	18.9	20.8	35.3	7.3	33.3	21.4	9.0	36.3	90

NEWBURY - Housing Area Type 4

No.	Det. houses %	Semi-D. houses %	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
21	21.0	5.2	47.3		26.3	7.9	39.5	26.3	23.3	61
28	14.3	46.4	39.3			50.0	10.7	39.3		63
47	8.6	54.3	20.0		14.3	25.7		2.8	71.4	76
63	20.0	36.0	36.0		9.0	40.0		20.0	40.0	84
85	6.6	36.6	40.0	16.6		53.3		46.6		55
90	30.6	32.6	34.7		2.0	18.3	28.5	42.8	10.2	69
92	14.1	28.1	45.3	10.9	1.5	43.7	28.1	23.4	4.7	57
94	15.7	70.6	3.9	77.8	1.9	11.7	27.4	50.9	9.8	81
99	18.6	28.0	46.6	2.6	4.0	34.6	8.0	6.6	50.6	71

NEWBURY - Housing Area Type 4 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
101	18.0	40.0	34.0	4.0	4.0	28.0	22.0	30.0	20.0	73
103	35.3	38.2	14.7	4.4	7.3	19.1	36.7	11.7	32.3	86
106	21.0	53.0	21.0	4.0	1.0		52.0	48.0		74
110	26.9	46.0	7.9	17.5	1.6	17.4	50.8	11.1	20.6	90
112	17.5	77.0	4.0			17.6	17.6	44.6	9.4	73
136	25.0	12.5	25.0		37.5	8.3	37.5	12.5	41.6	76
137	35.5	48.4	16.1				54.8	32.2	12.9	77
144	34.2	54.3	5.7		5.7	4.3	27.1	61.4	7.1	91
156	66.6	33.3				5.5	22.2	22.2	50.0	103
201	42.8	57.1					28.5	19.0	52.4	96
	24.9	42.0	23.2	3.0	5.8	20.3	25.9	28.0	20.8	72

NEWBURY - Housing Area Type 5

No.	Det. Houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
74	33.3	25.0	33.3		8.3			100.0		75
89	19.4	77.7			7.8		2.7	97.2		90
97	42.3	46.5			11.5			82.7	17.3	96
100	29.6	53.7	14.8		1.8	14.8	3.7	81.5		92
113	15.4	84.6						100.0		71
114	17.9	62.9	11.2					100.0		94
115	38.7	49.6			14.8		1.3	93.2	5.7	101
123	33.3	20.8	12.5	4.2	29.1			91.6	8.3	90
126	14.3	75.5			10.2			75.5	22.4	92
	27.1	55.1	7.9	0.4	9.5	1.6	0.8	91.3	5.3	89

NEWBURY - Housing Area Type 6

No.	Det. houses	Semi-D. houses %	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
37	73.3	13.3			13.3			86.6	13.3	90
52	100.0							92.8	7.1	100
54	82.3				17.6			100.0		90

NEWBURY - Housing Area Type 6 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
131	85.7		14.3			4.7	19.0	66.6	9.5	160
132	68.4	21.0			10.5			78.9	21.0	160
160	76.9				23.1			100.0		153
161	92.3				7.7			100.0		190
	82.7	4.9	2.0		10.3	0.7	2.7	89.3	7.3	134

NEWBURY - Housing Area Type 7

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maisonˢ	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
12	34.4	34.4			31.2			12.5	87.5	100
20	18.5	43.2	19.7		18.5		38.3	32.1	29.6	69
35	18.5	74.1			7.4				100.0	95
109	35.9	43.3		1.3	20.5	2.7	2.7	15.4	82.0	95
111	26.9	46.3	7.9	17.4	1.6	17.4	50.8	11.1	20.6	90
116	44.0	12.0	22.0		22.0	10½0	16.0	32.0	42.0	88
117	18.2	52.7	3.6	25.4				53.6	46.4	103
119	30¼4	26.1		21.7	17.4				100.0	93

NEWBURY - Housing Area Type 7 (contd)

No.	Det. houses %	Semi-D. houses %	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
121		91.6	8.3						100.0	94
122	10.3	65.5		3.4	20.7			17.2	82.7	83
124		75.0			25.0				100.0	90
125	12.5	65.0		2.5	20.0			48.7	51.2	94
134	16.0	80.0			4.0			8.0	92.0	104
135	12.5	81.2			6.2			18.7	81.2	98
143	29.1	43.1			27.4		25.5	45.1	29.4	83
202	50.0	25.0			25.0	5.0		5.0	90.0	94
	22.3	53.6	3.8	2.9	17.4	2.2	8.3	18.7	70.8	92

NEWBURY - Housing Area Type 8

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
9		44.4			55.6			44.4	55.6	63
13	16.6	11.1			72.2				100.0	101
22	2.5	8.9		2.5	86.1		1.2	3.7	94.9	93
36		47.4			52.6		10.5	36.8	52.6	83

NEWBURY - Housing Area Type 8 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
130	29.0	3.2	9.7		58.0	3.2	12.9	19.3	64.5	112
133	29.4	11.7	2.9		55.9		5.8	32.3	61.7	97
141	45.0				55.0				100.0	102
	17.5	16.7	1.8	0.4	62.6	0.5	4.4	19.5	75.6	93

NEWBURY - Housing Area Type 9

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
23		9.2	27.7	55.4	7.7				100.0	93
26				100.0					100.0	100
51	12.2	9.7	7.4	75.6		2.3	19.5	4.9	73.1	90
93	9.8	1.9	15.7	70.6	1.9	15.7	3.9	25.5	54.9	89
	5.5	5.2	11.4	75.4	2.5	4.5	5.8	7.6	82.5	93

NEWBURY - Housing Area Type 10

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
15	69.2	5.1			25.6			2.5	97.4	109
41	75.7	5.4	10.8	5.4	2.7	21.6	8.1	18.9	51.3	110
108	43.2	2.7	48.6		5.4	10.8	2.7	45.9	40.5	111
120	64.5	35.5							100.0	105
145	87.5		6.2		6.2	6.2			93.7	123
148	87.5		12.5			8.3	20.8	29.1	41.6	107
152	71.5	9.5		19.0					100.0	140
153	80.0	20.0					8.0	56.0	36.0	120
155	100.0								100.0	115
	75.4	6.7	8.7	2.7	4.4	5.2	4.4	16.9	73.4	115

SALISBURY - Housing Area Type 1

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
1	10.0			70.0	20.0	90.0		10.0		57
34	33.3	13.3	26.6	53.3		20.0		26.6	53.3	101
65	18.5	14.8	14.5	48.1	3.7	48.1	3.7	3.7	44.4	99
110			23.5	76.5		100.0				59
117		12.0	4.0	76.0	8.0	56.0		8.0	36.0	92
118	11.2	12.9	19.3	56.4		51.6	37.1	11.3		81
122	25.0			75.0		8.3	25.0	8.3	58.3	108
	14.0	7.5	12.5	65.0	4.0	64.1	9.4	9.9	27.6	85

SALISBURY - Housing Area Type 2

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
80	17.1	15.8	67.1			58.5	41.5			56
93	29.4	17.6	50.9		1.9	62.7	37.2			72
97		2.6	73.3	24.1		94.8	5.2			40
100	4.7		64.3	30.9		100.0				48
107			100.0			100.0				21
108	14.0	44.0	30.0	8.0	4.0	92.0	8.0			69

SALISBURY - Housing Area Type 2 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
109			76.0	23.9		100.0				59
111			53.8	46.2		100.0				44
112	0.9		86.8	12.6		100.0				38
113	3.4	12.9	56.0	27.6		58.5	18.1	1.7	20.7	59
114	10.5	18.4	40.8	30.2		65.8	5.3	13.1	6.8	91
116	7.1	7.1	66.6	19.0		59.5	28.6		11.9	85
119			80.2	27.6	0.9	98.3	0.9	0.9		42
125	1.7		77.6	19.9	0.8	88.8	10.3	0.9		48
126			98.4		1.6	98.4		1.6		40
128	35.1	5.4	54.0	2.7	2.7	27.0	2.7		70.3	101
131		27.5	55.0	5.0	12.5	35.0	2.5	22.5	40.0	85
136			94.4	5.5		100.0				53
138			90.0	10.0		90.0		10.0		43
127	23.6	12.7	27.3	25.4	10.9	25.4	29.1	36.6	9.1	80
142	12.5	18.7	62.5		16.5	34.4	12.5	21.9	31.2	78
	7.5	9.1	70.2	15.4	2.8	79.5	10.1	5.4	9.0	62

SALISBURY - Housing Area Type 3

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
49	56.2		43.7				87.5	12.5		110
73			86.6		13.3		86.6	13.3		43
74	17.0	36.1	29.2	12.7	4.2		89.3	10.6		86
75	27.5	36.7	19.3	17.4			96.3	3.6		90
77	0.8	7.1	90.4	1.5		25.4	62.6	11.9		49
81	15.6	33.7	36.3	11.7	2.6	14.3	71.4	14.3		55
83	25.4	22.0	44.0	11.8	1.7	5.1	74.4	11.8	13.5	81
84		7.1	92.8				100.0			54
85	3.1	6.5	86.4	3.8		16.3	74.8	8.9		48
86	1.7	3.5	92.9		1.7	8.8	87.6	3.5		41
87			83.3	16.6			100.0			62
88	2.9	15.2	76.1	5.8		2.7	97.1	0.7		63
89	5.6	9.8	64.1	19.7	0.7	16.2	83.1	0.7		72
90	2.6	13.3	72.0	12.0			100.0			53
91	16.3	13.9	18.6	39.5	2.3		86.0	11.6	2.3	75
94	3.9	15.1	63.6	6.1	1.0	41.4	48.5			45
95	11.7	9.4	63.3	13.3	2.3	36.7	47.6	15.6		54
98	0.9	3.1	91.4	3.6		36.5	63.1	0.4		43
99			100.0				100.0			43
101	1.5		84.4	14.1		28.8	71.1			62
102	2.3	4.6	86.2	6.9		5.7	91.9	2.3		45
103	16.0	8.8	37.6	36.0	1.6		98.4	1.6		77

SALISBURY - Housing Area Type 3 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
120	1.5	1.5	89.4	6.6	0.8	38.3	60.9	0.8		40
144	9.1	9.1	54.5	18.2	9.1		72.7	27.3		101
152	29.7	2.7	56.7	10.8		10.8	64.8	2.7	18.9	103
153	5.8	8.8	76.6	8.8		38.2	57.3	4.4		66
166		50.0	33.3	19.4			94.4	5.5		71
167	23.1	15.4	56.4		5.1		82.0	17.9		85
	10.0	11.9	62.1	10.5	1.5	11.6	80.3	6.4	0.7	64

SALISBURY - Housing Area Type 4

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
14	21.7	78.3						100.0		97
19	13.3	73.3			13.3	6.6		86.6	6.6	89
21	44.4	33.3			22.2	16.6	38.8	22.2	22.2	94
22	46.1	15.4			38.4	7.7	12.8	17.9	61.5	108
24	18.8	71.0		5.8	4.3			94.2	5.8	105
31	17.4	55.4	26.1		7.2	9.1		89.1	1.8	84

SALISBURY - Housing Area Type 4 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
35	25.9	70.1		2.3	1.3		1.3	97.4	1.3	101
36	31.9	38.3		13.8	15.9			32.9	67.0	100
38	17.8	55.3			26.8			10.7	62.5	80
45	23.2	68.3		1.2	8.5	8.5	1.2	81.7	8.5	93
50	25.3	67.8		6.9				100.0		113
51	12.5	87.5						100.0		106
54		50.0			50.0				100.0	83
57	27.9	53.5		9.3	9.3		23.2	44.2	32.5	98
58	29.5	54.5		9.1	6.8		2.3	86.3	11.4	96
59	19.4	41.6	8.3	22.2	8.3		2.7	72.2	25.0	92
60	12.5	50.0	25.0		12.5			100.0		80
66	16.4	59.0		1.6	22.9			19.6	80.3	77
67	25.4	71.2	1.7		1.6			64.5	37.5	98
68	28.5	47.6	5.9	9.5	8.3		14.3	79.7	5.9	89
69	7.1	57.5	0.8		33.6			100.0		89
72	1.7	33.3	56.1		8.7		1.7	98.2		61
77	6.1	90.9			3.0			100.0		98
78	16.6	45.2	11.9	9.5	16.6	4.7	52.4	30.9	11.9	97
82	8.7	52.4	26.2	10.6	5.8	12.6	34.9	52.4		75
121	25.7	34.3	14.3	20.0	8.5	11.4	62.8	2.8	25.7	100
136	40.0	60.0							100.0	98

SALISBURY - Housing Area Type 4 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & Maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
139	48.6	26.3		2.7	22.2		1.4	40.2	58.3	99
140	8.4	57.6		1.6	32.2			100.0		89
150	2.7	29.7	64.8		2.7			62.1	37.8	76
151	28.5	40.8	12.2	10.2	8.1		63.3	16.3	20.4	96
158	43.9	40.9	1.5	4.5	9.1		71.2	28.7		112
160	17.8	57.5	20.5		4.1		15.1	78.1	6.8	96
161	37.1	12.9	30.6		22.5		41.9	43.5	14.5	87
165	16.6	63.8		19.4			22.2	77.7		101
168	23.1	15.4	56.4		5.1		82.0	17.9		85
	24.9	50.9	10.4	4.3	12.5	10.4	16.4	59.0	21.2	90

SALISBURY - Housing Area Type 5

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
6	92.8				9.1	35.7		64.3		161
12	75.0	12.5			12.5	37.5	25.0	12.5	25.0	125
13	88.2	11.7						100.0		120
37	68.7	18.7			12.5				100.0	121
62	40.3	54.8		4.8			24.2	79.0		127
63	51.2	43.1		3.2	2.4		4.1	95.9		126

SALISBURY - Housing Area Type 5 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
64	66.0	33.9						100.0		143
123	53.8		23.0	23.0		100.0				125
124	74.2		3.2	22.6		100.0				135
133	84.6			15.4		100.0				152
143	73.3	13.3			13.3			100.0		130
145	91.3				8.7	91.3			8.7	116
147	90.0	10.0					5.0		95.0	101
155	100.0							61.5	38.5	185
156	95.0			5.0				70.0	30.0	172
157	72.1		6.9	13.9	6.9		32.5	51.1	9.3	160
159	78.6		13.9	7.1			30.9	4.4	64.3	121
162	75.0			25.0				58.3	41.6	137
163	100.0							100.0		186
184	82.7	10.3			6.9			96.5	3.4	148
201	80.0				20.0	13.3	40.0	13.3	33.3	111
	77.7	9.8	2.2	5.8	4.5	22.7	7.7	47.9	21.7	139

SALISBURY - Housing Area Type 6

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
15	7.7	15.4			76.9			23.1	76.9	90
25		6.2		14.6	79.1			10.4	89.5	90
26	5.1	12.6			83.5			17.7	83.5	92
39		10.7			89.2			10.7	89.3	90
44	13.3	21.2	20.4		42.5			86.6	13.4	77
129	16.0	16.0	12.0		56.0	24.0		64.0	12.0	90
130	13.3	13.3			73.3	13.3		8.0	66.6	97
137	7.1		28.5		64.3		7.1	85.7	7.1	77
141	23.8	33.3			42.8			100.0		90
169	28.1	7.7			69.2			100.0		108
203	23.1		23.1		53.8			100.0		96
	14.7	12.4	7.6	1.3	66.0	3.4	0.6	37.8	48.2	90

TAUNTON - Housing Area Type 1

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
75			56.6	43.3		100.0				32
76	2.7		66.6	30.5		100.0				36
92	1.4	1.4	74.6	22.5		49.3	49.3	1.4		31
103	5.8	10.1	42.0	42.0		76.8	13.0	10.1		61
104		2.8	51.4	45.7		97.1	2.8			42
105			33.3	66.7		90.9	9.1			32
117	20.0		48.0	32.0		100.0				56
118	17.7	13.3	37.7	31.1		100.0				80
	5.9	3.4	51.3	39.3		89.2	9.3	1.5		46

TAUNTON - Housing Area Type 2

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
63		1.3	53.2	45.4		18.2	81.8			47
88	7.5	5.0	22.5	65.0		17.5	70.0	10.0	2.5	85
	3.7	3.1	37.9	55.3		17.8	75.9	5.0	1.3	66

TAUNTON - Housing Area Type 3

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
10	3.3	25.5	65.5	1.1	3.3		28.8	66.6	4.4	62
25	10.9	43.6	40.0	5.4		9.1	87.3	1.8	1.8	69
27	8.7	35.0	46.7	4.3	5.1		58.4	39.4	2.2	62
29	5.2	31.0	41.2		22.4	18.9	31.0	50.0		53
32	2.8	11.4	77.1	8.5		17.1	82.8			43
34	2.1	10.8	84.7	2.1			80.4	3.2	16.3	62
35	2.3	10.5	83.0	1.7	2.3		82.4	5.8	11.7	54
36		17.3	75.8	5.9		16.1	61.0	20.3	2.5	44
37	1.6	15.0	70.9	12.3			84.4	15.6		47
40	15.6	21.8	59.6				81.2	15.6	3.1	38
43			92.7	7.2			96.3	3.6		40
44			100.0				100.0			37
45		3.0	85.6	10.6		3.0	96.9			42
46		37.2	47.0	14.7		11.7	51.9	36.2		60
48	10.0		90.0					100.0		64
49		1.8	91.7	6.4		40.3	37.6		31.2	43
51	9.1	30.9	56.3				92.7	7.3		66
52		7.8	75.0	17.1		26.3	72.3	1.3		34
62	6.7	18.6	54.2	20.3		49.1	50.8			71
64			88.8	11.1			100.0			42
73	2.1	43.7	47.9	4.1	2.1		41.6	52.1	6.2	74

TAUNTON - Housing Area Type 3 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
74	0.5		99.4			18.7	70.3	10.9		35
77	0.7	3.8	93.8	1.5		10.4	83.0	6.5		42
78		33.3	66.6				30.1	69.8		61
79		8.0	90.0		2.0	90.0		10.0		32
90		10.5	89.4			31.5	68.4			31
93	1.4	1.4	74.6	22.5		49.3	49.3	1.4		31
94			93.0	6.9		23.4	76.5			30
95			96.6	3.3		34.4	65.5			33
96		6.2	87.5			27.1	45.8	27.1		41
106		2.7	81.6	15.6		61.4	35.7	2.7		42
107			100.0			72.3	27.8			33
108	1.5	16.2	80.6	0.7	0.7	55.8	29.4	14.7		43
116	3.7	13.2	69.8	13.2		48.1	6.6		45.3	58
121	7.0	33.3	58.6		1.0	47.4	10.1	38.4	4.0	68
123		34.3	59.3	6.2			53.1	31.2	15.6	61
135			100.0				100.0			43
	2.6	14.0	76.3	5.1	1.0	20.0	59.7	16.6	3.7	46

TAUNTON - Housing Area Type 4

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
50	15.1	21.2	27.3	34.8	1.5	4.5	63.6	25.7	4.5	84
61	14.6	15.8	39.0	12.1	18.3	24.4	50.0	21.9	2.4	86
101	43.0	20.8	34.1	1.9		29.1	6.3	62.0	2.5	87
102	25.7	20.6	42.8	11.4		40.0	5.7	54.3		121
120	41.9	6.4	41.9	9.6		29.0	41.9		29.6	103
131	29.5	21.5	25.0	17.0	4.5	4.5	35.2	35.2	25.0	88
140	26.1	19.5	6.5	36.9	10.8	15.2	55.0	8.6	28.2	113
143	40.0	40.0	6.6	13.3		6.6	86.6	3.3	3.3	114
144	20.8	29.1	4.1	45.8			87.5	12.5		101
	28.5	21.6	25.3	20.3	3.3	17.0	47.9	24.8	10.3	99

TAUNTON - Housing Area Type 5

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
7	35.3	58.8	5.8					92.6	7.3	104
8	12.5	67.5		12.5	12.5	10.0	2.5	87.5		95
16	18.5	62.9			18.5		3.7	81.4	14.8	95
17	6.2	93.7						100.0		68

TAUNTON - Housing Area Type 5 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
18	13.6	83.3			3.0		1.5	98.4		73
19	13.1	72.1			13.1			86.8	13.1	76
38	20.0	66.6		13.3				100.0		70
39	7.2	87.9	4.8			4.8		93.9	2.4	62
47	12.1	84.8	3.0			3.0	9.0	87.8		73
67		65.5	34.4					100.0		70
72		74.3			25.6			64.1	35.9	93
80	8.0	84.0	8.0					96.0	4.0	57
83	34.1	63.4			2.4		2.4	75.6	21.9	96
98	33.3	50.0			16.6			100.0		75
99	41.6	41.6			16.6		8.3	75.0	16.6	80
100	37.6	60.8			1.4			100.0		113
109	1.9	48.0	50.0					80.7	19.2	68
136	9.3	44.1	9.3				11.6	88.3		82
148	14.5	60.3	10.6	0.7	13.7			74.0	25.9	88
154	43.9	54.9			3.4			100.0		100
155	29.4	70.5						82.3	17.6	94
157	27.5	68.9						100.0		100
187	13.0	73.9	6.5		6.5		2.1	78.2	19.5	80
	18.8	66.9	5.7	1.1	7.5	0.8	1.8	67.5	9.9	83

TAUNTON - Housing Area Type 6

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
1	40.7	33.3			25.9			44.4	66.6	100
15	65.7	34.2						71.4	28.5	119
23	42.0	4.0	12.0	14.0	28.0		32.0	56.0	12.0	93
65	100.0							100.0		131
82	54.8	43.8		1.3		1.3	5.4	42.4	50.6	94
84	46.3	26.8			26.8		2.4	63.4	34.1	102
87	76.4	23.5						58.8	41.1	114
113	63.6				36.3			100.0		111
114	49.5	1.0			50.5			46.4	53.5	111
115	54.5	6.8	2.2	13.6	22.7	9.1	22.7	31.8	34.1	125
130	62.3	3.3	1.6	6.5	26.2	6.5	6.5	21.3	65.5	120
138	75.0				25.0			83.3	16.6	106
141	79.1	16.6			4.1	33.3	16.6	45.8	4.1	139
145	61.7	2.1	22.2	10.6	4.2	10.6	23.4	46.8	19.1	121
149	40.9	25.7	10.6	4.5	18.2	4.5	15.1	40.9	39.4	96
	57.5	14.7	3.2	3.4	17.2	4.3	8.3	56.3	31.0	112

TAUNTON - Housing Area Type 7

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
24		38.4			61.5				100.0	95
28	20.4	12.2	59.1		8.1		12.2	16.3	71.4	83
48b			100.0						100.0	60
111	1.1	32.2	56.0		10.0		1.1	1.1	97.7	66
125		36.1	12.0	18.0	33.7	18.0	8.4		73.5	69
126	4.8	39.0	9.0		21.9		7.3	41.4	51.2	93
128	12.6	35.2	1.4		50.7		1.4	53.5	45.0	87
129	41.8	38.3			19.8		0.7	1.4	97.8	99
138b	3.4	56.9			39.6				100.0	75
146	19.2	23.0	26.9		30.7	34.6	3.8	19.2	42.3	66
147	17.8	25.0	32.1		25.0	14.2	21.4	7.1	57.1	84
150	19.3	41.9	1.5		35.4			48.3	51.6	102
	11.7	31.5	24.9	1.5	26.4	5.8	4.7	15.7	73.8	81

WINCHESTER - Housing Area Type 1

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
72			56.5	43.4		69.5	30.4			56
84	6.6		30.0	63.3		100.0				77
85		5.2	36.8	57.9		92.1	7.9			88
	2.2	1.7	41.1	54.9		87.2	12.7			73

WINCHESTER - Housing Area Type 2

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
57	3.8		92.3	3.8		44.2	55.7			56
58	7.7	1.5	72.3	18.4		64.6	35.3			56
59	0.9	2.9	78.4	17.6		65.7	34.3			54
60		4.3	86.9	6.5	2.1	73.9	23.9	2.2		59
69	4.7	7.8	75.0	12.5		73.4	23.4		3.1	86
70	6.2	4.6	64.0	25.0		87.5	12.5			84
71		3.3	70.0	26.6		86.7	6.6	6.6		52
73	1.5	1.5	92.4	4.4		51.5	43.9	4.5		45
74	5.7	20.0	60.0	5.7	8.6	45.7	40.0	2.8	11.4	59
83	12.5	5.0	70.0	10.0	2.5	72.5	20.0	7.5		92

WINCHESTER - Housing Area Type 2 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
87	5.8	4.8	80.6	8.7		67.0	32.0		0.9	56
98	9.3	51.5	18.7	17.1	3.1	71.8	21.8	1.5	4.6	126
99	5.3	5.3	84.0	5.3		79.8	17.0	3.2		59
100	9.4		78.8	11.1		96.4			3.5	69
101	3.4	3.4	65.5	20.6		89.6	10.3			110
116			96.1	3.8		100.0				121
118	8.8	6.6	76.6	8.3		46.6	46.6	1.6	5.0	45
149	14.2	2.8	71.4		11.4	65.7	22.8		11.4	80
160			93.9	6.0		48.4	51.5			46
	5.2	6.6	75.1	11.2	1.8	70.0	27.0	1.5	20.0	80

WINCHESTER - Housing Area Type 3

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
38	6.5	3.2	88.5				100.0			59
39	1.8	7.4	74.1	16.6		1.8	75.9	7.4	14.8	57
40	9.1	36.3	52.5	2.0		7.0	80.8	4.0	8.1	85
41	2.3	90.7	4.6	2.3			100.0			54
48	5.2	57.0	21.9	15.8		1.7	89.9	8.7		87

WINCHESTER - Housing Area Type 3 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
49	5.6	34.5	57.8	1.8		0.6	96.2	3.1		75
50	5.2	57.0	21.9	15.7		1.7	89.9	8.7		87
51	2.3	6.9	81.6	9.2		31.0	62.1	1.1	5.7	73
52		45.3	54.7				100.0			52
56	1.5	13.8	77.3	7.4		11.3	85.2	3.4		58
61			80.9	9.5	9.5	28.5	61.9		9.5	35
67	3.8	30.4	63.8				42.8	52.2		96
68			100.0				100.0			33
75	1.9		98.1				100.0			35
81	3.8		96.1				100.0			58
88	45.0		50.0				55.0	30.0	15.0	94
90	32.2		58.1		9.7	29.0	32.2	25.8	12.9	77
91	28.0	8.0	64.0				68.0	32.0		82
103	30.7	26.9	15.3	15.3	3.8		84.6	11.5	3.8	45
114	42.4	36.3	6.0	15.1		12.1	63.6	18.2	6.0	136
119	4.0	2.0	91.9	2.0			98.9	1.0		44
120	20.3	74.0	5.5				62.9	31.4	5.5	61
129	30.7	30.7	6.7	31.7		28.8	53.8	17.3		133
138	31.5	31.5		36.8			84.2	5.2	10.5	153
139	31.5	31.5		35.8	1.0		84.2	5.2	10.5	153
140	13.0		39.1	47.8			95.6		4.3	74
147	10.5		89.4				100.0			62
	13.6	22.3	52.2	10.4	1.5	6.2	72.4	10.2	3.2	78

WINCHESTER - Housing Area Type 4

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
55	13.1	31.5	55.3				13.1	86.8		80
131	16.6	33.3	38.3	16.6				100.0		52
	14.9	32.4	46.8	8.8			6.6	93.4		66

WINCHESTER - Housing Area Type 5

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
1	100.0							66.6	33.3	140
5	93.3	6.6					20.0	73.3	6.6	132
10	66.6	7.4			25.9	11.1	14.8	44.4	29.6	145
15	69.5	8.7		17.4	4.3	4.3	34.8	43.4	17.4	150
16	70.0	30.0					80.0	20.0		180
17	93.7				6.2		25.0	62.5	12.5	270
18	60.0			40.0			50.0	40.0	10.0	206
19	75.7				24.2			75.7	24.2	136
35	60.8	4.3		34.7		8.7	26.1	56.5	8.7	190
36	75.0				25.0			71.4	28.5	175
37	85.7			14.3			47.6	52.4		213
53	100.0						10.0	20.0	60.0	271
54	42.1	47.3	10.5					100.0		130

WINCHESTER - Housing Area Type 5 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
66	44.4	55.5						94.4	5.5	147
89	60.0	8.0		32.0			32.0	34.0	34.0	153
93	100.0							100.0		187
97	90.0				10.0	10.0	20.0	50.0	20.0	136
104	35.4	38.4	16.1	6.4	3.2		16.1	64.5	19.3	127
106	100.0							100.0		127
108	90.0			5.0	5.0		5.0	85.0	10.0	154
110	100.0							45.4	54.5	237
112	94.7				5.2		10.5	57.9	31.5	167
113	80.0				20.0			80.0	20.0	150
122	91.6				8.3	8.3	8.3	83.3		152
132	69.2	15.4		15.4				61.5	38.4	140
137	31.5	47.3			21.0			84.2	15.7	96
141	92.8				7.1		71.4		28.5	163
145	60.8	4.3			34.7		21.7	73.9	4.3	191
150	100.0							93.7	6.2	159
	77.0	9.4	0.9	5.6	13.1	1.4	17.0	63.2	17.4	166

MANCHESTER - Housing Area ..Type 6

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
4	10.7	15.4			73.8			58.4	41.5	85
12	2.1	33.3			64.5			37.5	62.5	89
13	23.6	22.3			53.9			59.2	40.8	96
14	18.3	42.6			39.0		1.2	42.6	56.1	92
20	47.8				52.2			65.2	34.8	127
21	27.7	22.2			50.0	5.5		38.8	55.5	103
107	51.7				48.3			100.0		113
	26.0	19.4			54.6	0.8		57.4	41.6	100

MANCHESTER - Housing Area Type 7

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
22	15.6	3.1		46.8	31.2	6.2	3.1	9.4	81.2	95
28	31.2		11.2	57.5	1.2	1.2	20.0	7.5	71.2	125
47	23.6	18.4	23.6	34.2			2.6	42.1	55.2	135
130	1.7	26.8	21.4	50.0		14.3	12.5	23.3	50.0	107
	18.1	12.1	14.1	47.5	8.1	5.4	9.5	20.6	64.4	115

WINCHESTER - Housing Area Type 8

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
1A	100.0							7.8	92.2	177
23	10.2	64.1			25.6		2.5	7.8	89.7	89
24	39.6	26.8			34.1			24.4	75.6	121
25	30.7	53.8			15.4				100.0	97
30	95.8	4.1						8.3	91.6	127
31	37.6	51.4			10.3				100.0	97
32	20.2	57.4							100.0	102
33	30.7	56.8	1.1		11.3		1.3	21.6	77.3	101
34	78.8			13.4	7.8			7.8	92.2	145
42	100.0								100.0	186
43	100.0								100.0	139
45	57.1	4.1	4.1		34.7				100.0	107
92	82.0	18.0					36.3		63.6	155
148	11.4	20.0	57.1	8.5	2.8	8.5	5.7	17.1	68.5	144
	56.7	25.4	4.4	1.6	11.9	0.6	3.3	8.1	87.9	129

YEOVIL - Housing Area Type 1

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
59	34.1	4.5	29.5	25.0	4.5	39.7	15.9	43.2	1.1	83
67	19.0	28.5		38.1	14.2	61.9	4.7		33.3	90
76			54.4	45.5		100.0				38
78			54.9	45.0		52.1	45.0	2.8		34
84	42.3		15.4	38.4	3.8	50.0	15.4	26.9	7.6	99
96	20.0	13.3	36.6	30.0		53.3	40.0	3.3	3.3	70
	17.1	6.6	33.5	39.4	3.3	61.6	21.0	10.9	6.5	64

YEOVIL - Housing Area Type 2

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
45	25.0		71.4	1.7	1.7	58.9	10.7	30.3		42
74		5.8	72.5		21.5	72.5			27.4	42
	12.5	2.9	71.9	0.9	11.7	65.7	5.3	15.2	13.8	42

YEOVIL - Housing Area Type 3

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
35	13.8	33.8	50.7		1.5		58.4	41.5		66
36	2.3	44.8	46.0	6.8			90.8		9.2	53
47	1.3		92.1	6.3			100.0.			56
48	14.3	26.6	57.1		1.9	32.4	23.8	40.9	1.9	52
49	16.5	9.7	70.8	0.9	1.9	18.4	54.3	24.3	2.9	56
50	2.8	3.7	91.5				99.0	0.9		52
51	3.6		96.3			0.9	98.2	0.9		44
52	4.2	29.8	65.9				65.9	25.5	8.5	56
60	12.8	12.8	52.5	20.5	1.2	15.3	47.4	32.0	5.1	71
61	0.5		97.1	2.3		5.1	94.8			58
62		1.6	96.7	1.6		16.1	77.4	4.8	1.6	32
64	1.1	8.2	75.3	15.3		34.1	62.4	3.5		47
65	7.8	28.1	56.2	7.8			67.2	31.2	1.5	63
66		6.9	88.4	4.6			93.0	6.9		47
77			91.9	8.0		13.1	86.8			35
79		12.2	82.9	4.8		36.5	60.9	2.4		41
81	5.4	37.2	49.0	8.2		3.6	50.0	43.6	2.7	55
82		54.9	41.4	3.6			45.0	54.9		63
83		25.0	57.1	17.8		16.0	67.8	16.0		58
85			71.8	28.1		35.9	64.0			48

YEOVIL - Housing Area Type 3 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
88		40.6	53.1	6.2			62.5	37.5		51
89	2.4	19.6	75.4	1.8	1.6	1.2	76.7	21.4	0.6	59
90	8.6	1.7	75.8	13.8		41.3	55.1	3.5		64
94	14.7	26.2	34.4	24.6		21.3	40.9	11.4	26.2	73
	4.7	17.6	69.6	7.6	0.4	12.1	68.4	16.8	2.6	52

YEOVIL - Housing Area Type 4

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
2	9.1	90.9						100.0		91
6	28.9	60.8		2.8	5.8		1.4	50.7	46.3	92
7	22.8	64.2			7.0			27.4	72.6	90
8	18.1	73.3	1.9		6.6			87.6	12.3	78
9	4.0	45.6		16.0	34.4			100.0		64
10	2.0	66.0			32.0			68.0	32.0	73
11	9.5	60.3			30.1		4.7	28.5	66.6	77
16		100.0						100.0		76
17	25.6	48.7			25.6			97.4	2.5	89

YEOVIL - Housing Area Type 4 (contd)

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
19	34.2	45.7	11.4		8.5		2.8	97.1		98
23	44.2	54.8			1.4		2.8	92.0	4.2	88
27		100.0						100.0		88
28		100.0						100.0		47
31	10.0	50.0	30.0		10.0			100.0		94
32	18.3	45.0	19.7		16.9		19.7	21.1	59.1	83
33		92.8	7.1					100.0		94
41	35.0	64.9						65.9	34.0	98
54	29.7	57.1	9.5	1.1	2.3	2.3	27.3	66.6	3.5	93
55	8.3	69.4	13.8	6.9		2.7	20.8	26.3	50.0	95
56	21.0	47.3	10.5	21.0			52.6	44.7	2.6	111
57	27.4	62.9	4.8	3.2	1.6					89
63	12.3	69.2	10.7	7.7		15.4	29.2	55.3		69
70	7.5	75.0			17.5			100.0		82
72	17.9	71.8	7.7		2.5			100.0		79
80		100.0						100.0		56
91	30.0	36.0		26.6	6.6	3.3		76.6	20.0	106
	16.1	67.0	5.5	3.7	5.7	1.6	7.9	74.7	15.7	84

YEOVIL - Housing Area Type 5

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
5	100.0							100.0		235
18	81.8				18.1			100.0		109
20	81.8	9.1			9.1			100.0		100
30	34.5		27.2	12.1	6.1	6.1	39.4	54.5		125
46	32.3	29.9	26.1	3.1	9.2	3.0	6.1	70.7	20.0	74
69	19.3	8.7	7.0		64.9	5.2		87.7	7.0	76
71	30.5	22.1	4.2		43.1		4.2	95.8		81
75	41.1	8.8	23.5	29.4		2.9	55.8	38.2	2.9	112
97	69.0	16.6		11.9	2.3		19.0	50.0	30.9	121
99	60.7	25.0			17.8		25.0	71.4	3.5	97
100	17.6		41.1		41.1	41.1		47.0	11.7	90
101	100.0							100.0		230
102	60.0				40.0	40.0		60.0		133
103	52.1	8.6		17.4	21.7			95.6	4.3	116
104	38.7	6.4	16.1	6.4	32.2		16.1	80.6	3.2	120
105	52.1	14.0		2.8	30.9		11.2	66.1	22.5	97
106	40.5	30.9			28.5		23.8	40.4	35.7	110
108	46.1				53.8			69.2	30.7	100
109	31.2	6.2			62.5			78.1	21.8	88
110	36.3	6.0			57.5		48.4	51.5		113
115	53.8		46.1					53.8	46.1	80
	49.9	9.6	9.6	4.1	26.8	4.9	12.5	57.2	12.4	108

YEOVIL - Housing Area Type 6

No.	Det. houses %	Semi-D. houses	Terr. houses	Flats & maison.	Bung.	Pre-1875	1875-1914	1914-1950	Post-1950	R.V. £
26	100.0								100.0	108
68	64.7	14.7	11.7		8.8	29.4	8.2	8.2	52.9	96
112	61.5				38.4				100.0	118
117	75.0	25.0							100.0	125
	75.3	9.9	2.9		11.8	7.3	2.2	2.2	88.3	111

APPENDIX D

Calculations for the X^2 test of association

(1) X^2 test of association between dwelling form and dwelling-occupant turnover.

	Detached houses	Semi-detached houses	Terraced houses	Flats & maisonettes	Bungalows
Actual number of dwellings in each category	523	652	914	462	210
Expected number of dwellings in each category	505	754	1049	191	296
Difference between actual and expected number	+18	-102	-135	+271	-86

$$X^2 = \frac{18^2}{505} + \frac{102^2}{754} + \frac{135^2}{1049} + \frac{271^2}{191} + \frac{86^2}{296}$$

$$X^2 = 0.6 + 15.9 + 17.3 + 384.5 + 24.5$$

$$X^2 = 442.8$$

Degrees of freedom = 4

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(2) X^2 test of association between dwelling age and dwelling-occupant turnover.

	Pre-1875 dwellings	1875-1914 dwellings	1914-1950 dwellings	Post-1950 dwellings
Actual number of dwellings in each category	501	801	754	714
Expected number of dwellings in each category	433	881	901	546
Difference between actual and expected number	+68	-80	-156	+168

$$X^2 = \frac{68^2}{433} + \frac{80^2}{881} + \frac{156^2}{901} + \frac{168^2}{546}$$

$$X^2 = 10.7 + 7.3 + 26.0 + 51.7$$

$$X^2 = 95.7$$

Degrees of freedom = 3

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(3) X^2 test of association between rateable value of dwellings and dwelling-occupant turnover.

	Dwell's less £30	Dwell's £30-£59	Dwell's £60-£90	Dwell's £90-£120	Dwell's £120-£149	Dwell's £150 and over
Actual number of dwellings in each category	100	721	737	797	254	152
Expected number of dwellings in each category	80	797	736	755	216	177
Difference between actual and expected number	+20	-76	+1	+42	+38	-25

$$X^2 = \frac{20^2}{80} + \frac{76^2}{797} + \frac{1^2}{736} + \frac{42^2}{755} + \frac{38^2}{216} + \frac{25^2}{177}$$

$$X^2 = 5.0 + 7.2 + 0.0 + 2.3 + 6.7 + 3.5$$

$$X^2 = 24.7$$

Degrees of freedom = 5

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(4) X^2 test of association between dwelling form and dwelling-occupant turnover with flats and maisonettes excluded.

	Detached houses	Semi-detached houses	Terraced houses	Bungalows
Actual number of dwellings in each category	523	652	914	210
Expected number of dwellings in each category	451	676	940	232
Difference between actual and expected number	+72	-24	-26	-22

$$X^2 = \frac{72^2}{451} + \frac{24^2}{676} + \frac{26^2}{940} + \frac{22^2}{232}$$

$$X^2 = 11.2 + 0.9 + 0.7 + 2.1$$

$$X^2 = 14.9$$

Degrees of freedom = 3

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(5) X^2 test of association between age of dwellings and dwelling-occupant turnover excluding those dwellings built after 1950.

	Pre-1875 dwellings	1875-1914 dwellings	1914-1950 dwellings
Actual number of dwellings in each category	501	801	745
Expected number of dwellings in each category	401	815	831
Difference between actual and expected number	+100	-14	-86

$$X^2 = \frac{100^2}{401} + \frac{14^2}{815} + \frac{86^2}{831}$$

$$X^2 = 24.9 + 0.2 + 8.9$$

$$X^2 = 34.0$$

Degrees of freedom = 2

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(6) X^2 test of association between the rateable value of dwellings and dwelling-occupant turnover, excluding dwellings rated between £120 and £149.

	Dwell'gs less £30	Dwell'gs £30-£49	Dwell'gs £60-£89	Dwell'gs £90-£120	Dwell'gs £120 and over
Actual number of dwellings in each category	100	721	737	797	152
Expected number of dwellings in each category	78	790	724	742	173
Difference between actual and expected number	+22	-69	+13	+55	-21

$$X^2 = \frac{22^2}{78} + \frac{69^2}{790} + \frac{13^2}{724} + \frac{55^2}{742} + \frac{21^2}{173}$$

$$X^2 = 6.2 + 6.0 + 0.2 + 4.1 + 2.5$$

$$X^2 = 19.0$$

Degrees of freedom = 4

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(7) X^2 test of association between age of dwellings and dwelling-occupant turnover excluding flats and maisonettes.

	Pre-1875 dwellings	1875-1914 dwellings	1914-1950 dwellings	Post-1950 dwellings
Actual number of dwellings in each category	397	642	703	557
Expected number of dwellings in each category	340	731	791	437
Difference between actual and expected number	+57	-89	-88	+120

$$X^2 = \frac{57^2}{340} + \frac{89^2}{731} + \frac{88^2}{791} + \frac{120^2}{437}$$

$$X^2 = 9.5 + 10.8 + 9.8 + 3.3$$

$$X^2 = 33.4$$

Degrees of freedom = 3

APPENDIX E

Statistics for plotting regression lines

Statistics for plotting regression line and grouping squares according to their location above or below regression line.

Town	standard deviation of the distribution of turnover	regression coefficient a	regression coefficient b	standard error of the estimate
Bridgwater	1.29	0.28	0.81	0.89
Chichester	1.32	-0.18	1.15	0.73
Newbury	1.06	-0.03	0.99	0.80
Salisbury	0.79	0.01	0.99	0.49
Taunton	0.76	0.14	0.85	0.49
Winchester	0.72	0.12	0.94	0.44
Yeovil	0.97	0.10	0.90	0.75