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THE SIGNIFICANCE OF SOCIAL INFLUENCES AND ESTABLISHED HOUSING VALUES

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Investment in housing represents the largest single source of wealth for individuals and has an important role in the macro economy. Traditional economic indicators cannot always observe the degree of purchaser and vendor willingness and therefore consideration should also be given to characteristics of buyers and sellers in the marketplace. This study draws the disciplines of housing research and demography closer and looks to social indicators for an insight into residential housing markets.

This research analyses changes in the value of established residential house prices in Brisbane and the influence of variations in social structure on a longitudinal time series basis. It is primarily concerned with three important cross-sectional variables: location, time and human behaviour. Values for established residential housing in Brisbane, Australia are analysed from 1976 to 1996. Demographic variables from five censuses conducted during this period are included in the analysis. A conceptual model based on 'Social Area Analysis' is proposed using Principal Components Analysis and then Multiple Regression Analysis assesses the relationship with established residential house values.

The results confirmed the existence of strong linkages between social constructs and established house prices. Significantly the dimension known as Socio-economic Status was closely associated with higher priced suburbs and this relationship has strengthened considerably. The importance of Age constructs in relation to house values was also acknowledged and can be broken down even further into various age categories. While it is acknowledged that established house values are significantly influenced by external economic and political factors, this research confirmed that serious consideration must also be given to social factors and demographic variables.

Despite the range of potential applications the use of demographic information has been predominantly restricted to household population forecasts considered essential when estimating future demand in a given area, for which the demographic data is ideally suited (Runnels, 1989). However when analysts are looking towards the future in relation to housing and investment, demographic statistics are increasingly acknowledged for their significant contribution towards an in-depth understanding (Hill & Petersen, 1994). For example, statistics concerning income levels are extremely useful for comparing different life-cycle stages including the formation, maturing and dissolving of the traditional family (ABS, 6523.0, 1999). Acknowledging and rationalizing the high level of neglect on the two fields of housing research and demography collectively known as 'housing demography', Myers (1990) concluded the absence of combined studies is primarily due to (a) the division of separate agendas between these two fields of research and/or (b) limitations in data availability and analysis. This study addresses these obstacles and makes a real and worthwhile contribution to the combined field of social area analysis *and* housing research.

This research analyses changes in the value of established residential house prices in Brisbane and the influence of variations in social structure on a longitudinal time series basis. It is primarily concerned with three important cross-sectional variables: location, time and human behaviour. Changes in spatial patterns and property values for established residential housing are analysed for Brisbane, Australia from 1976 to 1996 including data from five censuses conducted during this period. It proposes a conceptual model based on 'Social Area Analysis' and uses demographic variables to increase the understanding of established residential house values.

Previous Research

Earlier studies have established that short-run forecasting is difficult and long-term forecasting practically impossible in the analysis of housing markets without considering changing demographic factors (see, for example, Berson, 1997). These factors affect the type and level of demand by suburban residents with consideration given to low-density housing, homogeneous neighbours, peace, quiet, nature and out-of-doors, traditional values, a slow pace and the absence of traffic congestion (Brower, 1996). Consequently a higher value is often reflected by the residents' *willingness-to-pay* to live in these suburbs, suggesting a close relationship exists between social indicators and the price of established housing. However previous research has not been entirely successful in establishing empirical links between these factors and intra-metropolitan price variations (Potepan, 1996).

Property researchers and demographers from varying disciplines have attempted to *bridge the gap* between urban housing markets and demography. Generally the results of these amalgamated studies have been met with mixed success. It is often surprising to those in other fields that research into residential house prices is relatively new and is yet to be fully established, although it has changed 'tremendously' over the past several years (Jaffe, 1997). Although substantial research has focussed on variations between cities at the inter-metropolitan level there has been a lack of attention in developing the relatively small body of knowledge at the intra-urban or metropolitan scale and an overall lack of concern (Maclennan & Tu, 1996).

A literature review suggested that research into Australian housing markets has been restricted for three primary reasons. Firstly, the high cost of accessing reliable and accurate data traditionally collected and tabulated by statutory government authorities has generally been too cost-prohibitive for private organisations and research individuals/teams to meet. Prior to the relatively recent use of computer databases by statutory government authorities in Australia, property sales transaction records were manually recorded in a laborious and time-consuming manner on paper records with accompanying *cost of access* restrictions. Secondly, in comparison with many western countries, Australia's rate of development and urbanization has been relatively slow and lags behind overseas cities primarily due to this country's relatively small population and the comparative vast size of the continent. Finally, urbanization in Australia has occurred over a relatively short time frame in comparison to most western civilizations and is still considered a 'young' country. These factors have severely hindered most long term studies into fully developed social networks and residential property markets in Australia, although progress over the last forty years from a global perspective has increased significantly and forms the basis for this research.

Social Area Analysis

The area of study known as 'Social Area Analysis' or 'Social Geography' gained momentum in the latter half of the 20th century and has been of keen interest to geographers, sociologists and economists. The majority of high profile social area analysis studies have been undertaken in the United States with minimal changes since the original concept of describing the socio-economic structure and spatial distribution of urban populations was initially proposed (Murdie, 1969). This remains the general scenario in today's research environment.

Social Area Analysis is premised upon the application of Principal Components Analysis (PCA) and forms part of the foundation for this research. This technique interprets the underlying structure of a broad data set using a smaller set of underlying dimensions or factors. Principal Components Analysis has been acknowledged for its powerful ability to collapse multiple demographic variables into a smaller set of uncorrelated factors which allow the analyst to easily distinguish between residential areas (Megholugbe, Hoek-Smit & Linneman, 1996). Simply explained, Principal Components Analysis seeks to do precisely what humans have been engaged in throughout history, that is to make order out of the apparent chaos of the environment (Child, 1990). As a statistical technique used for examining housing markets, Principal Components Analysis has proven its merits as an effective method for uncovering, disentangling and summarising patterns of correlations within a data set (Heikkila, 1992).

It is generally accepted that modern social area analysis originated with researchers in California interested in defining intra-metropolitan community areas (Johnston, 1971). Shevky & Bell (1955) produced the first landmark study based on Los Angeles. Continuing on with this research, Murdie (1969) produced the model in Figure 1 representing the concept of layered social dimensions or constructs and the relationship with real estate being the Physical Space. This diagram can be described as an "Idealized spatial model of urban ecological structure and change" whereby the model concentrated upon showing how identified social dimensions are spatially distinguished (Murdie, 1969, p.8). Importantly the unique spatial location of each property location is retained as a central component of the model - two parcels of lands cannot have the same location or be identical.

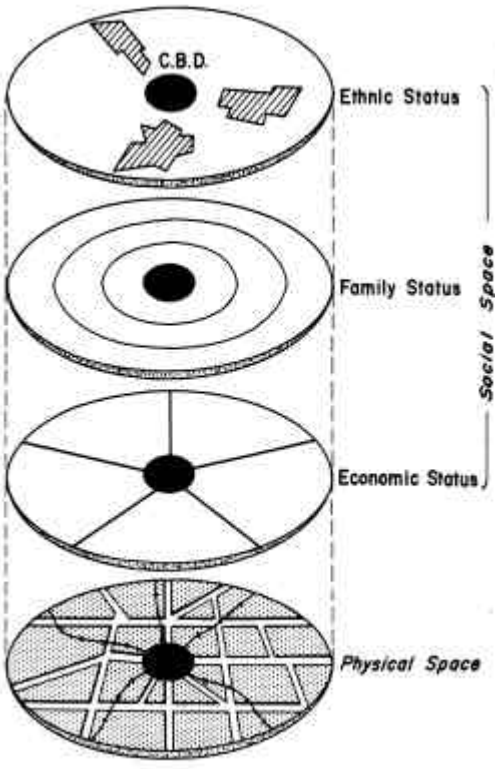

Figure 1 – Dimensions of Formal Social-Geographic Space (Murdie, 1969, p.8)

The research by Shevky and Bell (1955) concluded three main dimensions were evident in most urban cities as follows:

1. Socio-economic Status (measured by income, education, occupation type, etc.)
2. Family Status (measured by age, household type, marital status, etc.)
3. Ethic Status (measured by country of birth, other languages spoken, etc.).

This original research procedure has been duplicated numerous times and the independent studies have supported the existence of these three dimensions:

- Seattle, USA (Schmid & Tagashira, 1964)
- Melbourne (Jones, 1965).
- Toronto (Murdie, 1969)
- Sunderland (Robson, 1969)
- Chicago (Rees, 1970)

Importantly studies into Social Area Analysis were pursued to gain a better understanding of how urban structure varied on a spatial basis and why. The model in Figure 1 indicated the content and placement of the social constructs (Economic Status, Family Status, Ethnic Status) in the upper layers were influenced by the location of the infrastructure in the bottom physical space layer. This type of model assisted planning for future urban growth although the concept rarely progressed further in relation to other variables.

Research Design

The conceptual model for this research is presented in Figure 2 being a modification of the original Figure 1 model. The roles of the social dimensions have been reversed as indicated by the red arrows and Figure 2 becomes a 'top-down' model. The emphasis now placed upon the relationship between established house prices in the bottom layer *and* social dimensions in the upper layers. The impact of external factors (e.g. interest rate changes, political implications) cannot be ignored and are represented by the blue arrows as 'other factors'.

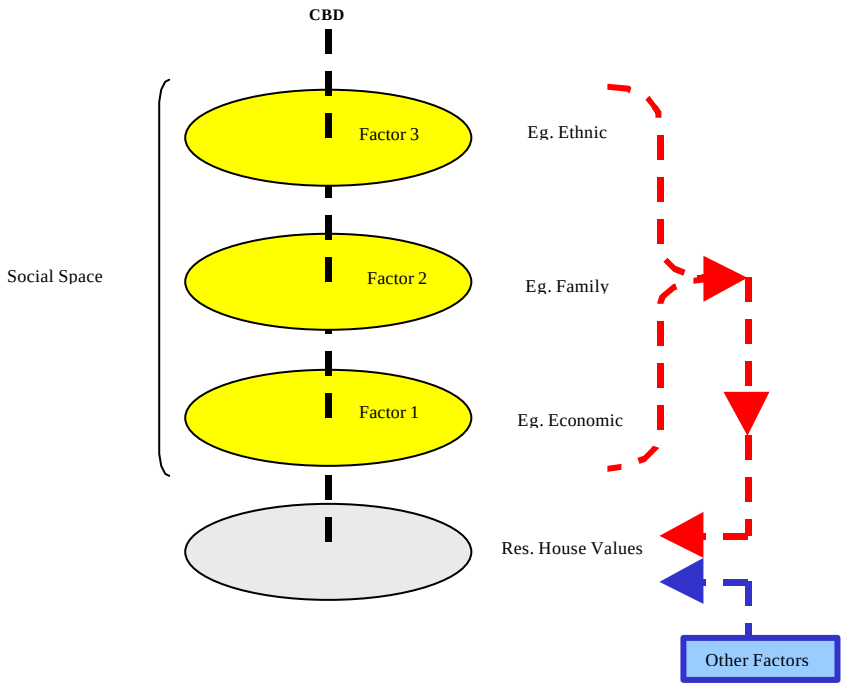

Figure 2– Research Model (adopted from Figure 1)

This research draws attention to the following questions:

Question 1: *What changes have occurred within the social structure of suburban Brisbane during the period 1976 to 1996?*

Question 2: What is the relationship between social constructs and established residential housing values?

To address these research questions, a two-stage approach was adopted to analyse established house sale prices and demographic data in Brisbane. For the first question a Principal Components Analysis (PCA) was conducted identifying social dimensions from five censuses conducted in Brisbane between 1976 and 1996 (inclusive). To address the second question a Multiple Regression Analysis (MRA) was undertaken regressing the factor scores from the PCA (as independent variables) *against* established residential house prices (dependent variable).

The analysis was restricted to sales of established residential houses and limited to improved properties with total land area not exceeding 2000m^2 located in suburban Brisbane. This limitation excluded properties such as rural-residential where the land was the significant component of the overall property value. Furthermore only suburbs which had reached advanced urbanization were retained therefore decreasing the impact of vacant land supply. The house sales data was supplied by the Department of Natural Resources and the Real Estate Institute of Queensland. The census data was sourced from the Australian Bureau of Statistics.

Analysis

Stage One - Principal Components Analysis

Principal Components Analysis is a statistical technique reducing the dimensionality of a data set into factors or dimensions (Dunteman, 1989). PCA has the ability to transform an original set of variables into substantially smaller sets of uncorrelated data. The initial stage of this analysis was limited to census variables and used PCA to assemble social constructs based on Figures 1 and 2. Demographic variables were sourced from five censuses between 1976 and 1996 conducted by the Australian Bureau of Statistics - refer to Appendix A. Up to 46 variables were available for each PCA although 1981 was the only census with a slightly reduced variable list. After the initial PCA was conducted the factors were rotated using Varimax rotation to highlight the differences between each factor. A summary of the PCA results is presented in Table 1 and lists the identified dimensions for each census year. Explanation of the factor names are presented in Appendix B. Following the initial PCA only factors with Eigenvalues exceeding 1.0 were retained. Those factors showing significant loadings on selected variables were allocated names with the remaining factors retained but unnamed (due to lack of significant loadings on variables). The factors from each census were assembled in descending order according to their ability to explain variations in the data set with the detailed results presented in Appendix C. The total number of suburbs included in the analysis gradually increased over this period when separate suburbs were acknowledged as urbanized and added to the database.

Table 1 – Results of 1976-1996 Principal Components Analysis
('X' denotes factor exists but is unnamed)

	1976	1981	1986	1991	1996
Total Suburbs	98	120	121	121	123
Factor 1	Family	Family	Family	Family	Family
Factor 2	Socio-economic	Socio-economic	Socio-economic	Socio-economic	Socio-economic
Factor 3	Age	Older Generation	Ethnic	Ethnic	Employment
Factor 4	X	Middle Age	Age	Middle Age	Older Generation
Factor 5	X	X	X	Employment Tenure	X
Factor 6	X	X	X	Income	Occupation
Factor 7	X	X	X	X	Ethnic
Factor 8	X	X	X	X	X
Factor 9	X		X	X	X
Factor 10	X		Older Generation	X	
Factor 11			X	X	
Factor 12				X	

A notable aspect of Table 1 is Family Status listed as the first factor and accounting for the largest variance, with Socio-economic Status clearly the 2nd factor. The balance of the factors indicate the process of demographic change that occurred over this 20 year period. The significance of age factors was apparent and evident in each census. At this stage the existence of Ethnic Status in the 1986, 1991 and 1996 censuses generally supported the original Shevky and Bell (1955) concept of three original dimensions, although Ethnic Status is clearly not as strong as the first and second factors. In some respects allowances should be made for the lagged urbanization of Brisbane in contrast to Los Angeles, appearing to lag about forty years behind the American counterpart. The balance of factors in Table 1 are closely connected to employment, occupation and income.

Stage Two - Multiple Regression Analysis

The original factors from the PCA were retained as factor scores and then entered into the Multiple Regression Analysis as independent uncorrelated variables. The median value of established housing for each suburb was also entered for each census year as the dependent variable. The factor scores were then regressed against established house prices with the results presented in Table 2. For the detailed results from the analysis refer to Appendix D.

Table 2 – Results of 1976-1996 Multiple Regression Analysis

	1976	1981	1986	1991	1996
Total No. of Factors	6	5	7	7	6
Adjusted R^2	74.07%	76.62%	71.49%	74.12%	79.67%
Family	-0.5566	-0.1985	-0.3441		0.1526
Socio-economic	0.5553	0.7174	0.6166	0.7051	0.7302
Age	-0.1577		-0.0988		
Occupation					0.1779
Older Generation		-0.3908			-0.1680
Middle Age		0.2332		-0.2001	
Income				0.1792	
Employment					-0.2755
Factor 5	0.1424				
Factor 6			-0.2725		
Factor 7		0.1220		-0.1053	
Factor 8	0.2462		0.1606		
Factor 9			0.1342	0.3060	0.3384
Factor 10	0.1812		-0.3243	0.1478	
Factor 12				0.2457	

Overall the regression analysis indicated social dimensions accounted for approximately 75% of the variation in suburban house prices, rising to nearly 80% for 1996. Although Family Status was confirmed the number one factor in the PCA due to the lifecycle influence in most suburbs, its level of importance in the MRA diminished significantly in relation to house prices. This could be attributed to various factors including:

- changing social landscape in the last fifteen years with increases in sole person and single parent households
- sharp decreases in fertility rates and wider acceptance of childless families
- moving away from the 'typical' household incorporating a married couple and children.

The results presented in Table 2 clearly support the increasing role of Socio-economic Status in each census year. Suburbs with higher rankings in socio-economic status exhibited a strong positive correlation with house prices. From 1981 the significance of the 'age' variable in society is evident being supported by the Older Generation, Middle Age and Age factors. Employment, Income and Occupation are all directly associated with household income and provided one-off contributions to the models in specific years. The remaining unnamed factors were acknowledged for their contribution to each model but were not interpreted due to inconsistent loadings on individual demographic variables.

Research Findings

Following the data analysis each research question can be addressed. Although consideration must always be given to externalities or other factors as indicated in Figure 2, it has been demonstrated that a relationship exists between established house values and social constructs or dimensions. These constructs have been in a continual state of change in response to variations in household composition and society at large.

Question One

The dimension described as Family Status represented the largest proportion of variation in Brisbane suburbs and is clearly evident in all five censuses following the Principal Components Analysis. Concentrating on lifecycle criteria such as general age brackets and marital status, this construct is a viable means of distinguishing between selected suburban areas. Unless the lifecycle process alters significantly Family Status should remain an important dimension in future research. Socio-economic Status has been confirmed as the second important factor with the demographic variable of financial income with close ties to housing affordability. There is substantial evidence of Family Status and Socio-economic Status existing as social constructs in Brisbane between 1976 and 1996, lending strong support to the Social Area Analysis theory of Shevky and Bell (1955). The only contention lies with the third dimension of Ethnic Status which was not clearly represented as the 3rd factor. Nevertheless, Ethnic Status was confirmed in some format for the 1986, 1991 and 1996. Possibly the high multi-culture nature of Australia resulted in a large proportion of residents from overseas evenly distributed throughout Brisbane which lessened the significance of this construct using Social Area Analysis.

Question 2

After entering the social dimensions (representing demographic variables) as independent variables into the Multiple Regression Analysis, approximately 75% of variation in house prices could be explained. This result was consistent for all five censuses, reaching 79.67% for the 1996 census. The strongest influence in all five censuses was from Socio-economic Status, positively associating Brisbane suburbs with higher house prices. The contribution to the model from Socio-economic Status gradually increased over time indicating a closer relationship in 1996 between established house prices and socio-economic variables such as income placing additional emphasis on housing affodability. Interestingly the contribution of Family Status to the model has generally decreased. Furthermore, various age dimensions (e.g. Older Generation, Middle Age) have increased in importance and this trend should continue into the future. Although yet to effectively influence house prices or trends the growing significance of age was clearly evident throughout these research results.

Conclusion

This research confirmed the existence and stability of Social Area Analysis dimensions over an extended time series. It also highlighted the increased affordability of high-income earners in regard to higher value housing, possibly assisted by the deregulation of the banking industry in the 1980s with relaxed lending requirements (e.g. lending up to 100% of valuation). Households with higher socio-economic status in the form of income were able to increase mortgage loans and purchase established housing in increasingly expensive suburbs, therefore strengthening the link between socio-economic status and house prices.

It has also been demonstrated that demographics have a distinct role to play in the analysis of established housing markets. No longer should the two disciplines remain separated as links have been firmly established. While it is acknowledged that the level of house prices is influenced by a myriad of economic, political and social influences, this research has highlighted the important role played by social influences. The social construct referred to as Socio-economic Status was clearly identified throughout the research and is central to housing market research. In this process the close relationship between house values and income levels were also highlighted. Furthermore age dimensions such as the Older Generation are becoming increasingly evident and with increasing implications for future housing markets. This age construct has the potential to significantly influence demand for future housing services (both new and established) and in turn housing prices, and catering to the needs of this group should benefit those with the foresight to anticipate and adapt to this demographic change. For example, perhaps the design of the four bedroom + study house will revert back to the original two bedroom dwelling to suit smaller older families, in turn showing a higher capital return for investors. Only time will provide the real answers but research into the field of 'housing demography' provides a valuable and often underestimated insight into residential housing markets.

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Appendix A – Variables adopted for Principal Component Analysis

	Description	1976	1981	1986	1991	1996
Income	Male Income – First Quartile	✔	✔	✔	✔	✔
	Male Income – Second Quartile	✔	✔	✔	✔	✔
	Male Income – Third Quartile	✔	✔	✔	✔	✔
	Male Income – Fourth Quartile	✔	✔	✔	✔	✔
	Female Income – First Quartile	✔	✔	✔	✔	✔
	Female Income – Second Quartile	✔	✔	✔	✔	✔
	Female Income – Third Quartile	✔	✔	✔	✔	✔
	Female Income – Fourth Quartile	✔	✔	✔	✔	✔
Occ.	White Collar Workers	✔	✔	✔	✔	✔
	Professional Workers	✔	✔	✔	✔	✔
	Tradespersons	✔	✔	✔	✔	✔
Employment	Self-employed	✔	✔	✔	✔	✔
	Employee	✔	✔	✔	✔	✔
	Unemployed – Male	✔	✔	✔	✔	✔
	Unemployed – Female	✔	✔	✔	✔	✔
	In Workforce	✔	✔	✔	✔	✔
	Married	✔	✔	✔	✔	✔
Educ	Postgraduate Education	✔		✔	✔	✔
	Degree Education	✔		✔	✔	✔
	Skilled Vocational Education	✔		✔	✔	✔
Age	Between 0 to 4 years	✔	✔	✔	✔	✔
	Between 5 to 9 years	✔	✔	✔	✔	✔
	Between 10 to 14 years	✔	✔	✔	✔	✔
	Between 15 to 19 years	✔	✔	✔	✔	✔
	Between 20 to 24 years	✔	✔	✔	✔	✔
	Between 25 to 29 years	✔	✔	✔	✔	✔
	Between 30 to 34 years	✔	✔	✔	✔	✔
	Between 35 to 39 years	✔	✔	✔	✔	✔
	Between 40 to 44 years	✔	✔	✔	✔	✔
	Between 45 to 49 years	✔	✔	✔	✔	✔
	Between 50 to 54 years	✔	✔	✔	✔	✔
	Between 55 to 59 years	✔	✔	✔	✔	✔
	Between 60 to 64 years	✔	✔	✔	✔	✔
	65 years and over	✔	✔	✔	✔	✔
Ethnic	Australian Citizen	✔	✔	✔	✔	✔
	Born Overseas	✔	✔	✔	✔	✔
	Speak 2nd Language	✔		✔	✔	✔
Relig.	Anglican	✔		✔	✔	✔
	Baptist	✔		✔	✔	✔
	Catholic	✔	✔	✔	✔	✔
Tenure	Own current dwelling	✔	✔	✔	✔	✔
	Purchasing current dwelling	✔	✔	✔	✔	✔
	Renting current dwelling	✔	✔	✔	✔	✔
	Reside in detached dwelling	✔	✔	✔	✔	✔
	Reside in Flat or Unit or Townhouse	✔	✔	✔	✔	✔
House-holds	Average residents per dwelling	✔	✔	✔	✔	✔

Appendix B – Explanation of Factor Names

Factor Name	Most Common Variables with High Loadings	Description
Age	Individual age brackets, Median household data	Based purely on various age brackets including middle aged, younger generation, older generation, children
Employment	Unemployed Males, Unemployed Females, Percentage of workers	Influence of employment characteristics.
Employment Tenure	Employee, Self-employed	Influence of employment tenure.
Ethnic	Australian citizens, Born overseas, Speak 2nd language	Multicultural societies segmented by race.
Family	Age, Married, Workers, Accommodation type, Average residents per household, Household type.	Typical family lifecycle usually including young children
Income	Income brackets only	Influence of income only
Middle Age	Specific Age Brackets	Approx. 45-59 years.
Occupation	Professional, White collar, Tradesperson, Skilled vocational,	Classification within the workforce.
Older Generation	Specific Age Brackets	Approx. 60 years and over
Socio-Economic	Male income, Female income, Higher education,	Relates to the earning capacity of individuals in household.

Appendix C – Results of Principal Components Analysis

		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11	Factor 12
1976	**Variables with loadings >0.6**	19	8	6	1	1	2	1	0	2	1		
	Eigenvalues	16.40	6.52	5.57	3.20	1.87	1.56	1.31	1.26	1.14	1.08		
	Proportion of Total Variance (%)	33.46	13.31	11.38	6.53	3.82	3.19	2.67	2.56	2.33	2.20		
	Factor Name (Status)	Family	Socio-economic	Age	--	--	--	--	--	--	--		
1981	**Variables with loadings >0.6**	9	7	13	2	3	1	1	1				
	Eigenvalues	13.80	5.45	3.86	2.76	2.29	1.46	1.33	1.00				
	Proportion of Total Variance (%)	35.37	13.97	9.91	7.08	5.87	3.74	3.40	2.57				
	Factor Name	Family	Socio-economic	Older Gen.	Middle Age	--	--	--	--				
1986	**Variables with loadings >0.6**	12	11	3	5	1	1	1	0	1	6		
	Eigenvalues	13.89	9.69	6.04	3.58	2.39	1.81	1.52	1.30	1.26	1.04		
	Proportion of Total Variance (%)	28.34	19.77	12.33	7.31	4.88	3.70	3.11	2.65	2.57	2.11		
	Factor Name	Family	Socio-economic	Ethnic	Age	--	--	--	--	--	Older Gen.		
1991	**Variables with loadings >0.6**	13	5	4	3	2	3	1	1	4	1	1	1
	Eigenvalues	12.89	8.32	5.59	4.36	2.30	2.00	1.98	1.59	1.39	1.31	1.08	1.02
	Proportion of Total Variance (%)	26.31	16.99	11.40	8.91	4.69	4.08	4.05	3.24	2.83	2.68	2.21	2.08
	Factor Name	Family	Socio-economic	Ethnic	Middle Age	Employ. Tenure	Income	--	--	--	--	--	--
1996	**Variables with loadings >0.6**	15	9	5	3	2	2	3	1	0			
	Eigenvalues	14.81	9.34	6.02	4.17	2.10	1.71	1.53	1.41	1.07			
	Proportion of Total Variance (%)	30.22	19.05	12.29	8.50	4.29	3.49	3.11	2.88	2.19			
	Factor Name	Family	Socio-economic	Employ-ment	Older Gen.	--	Occupat-ion	Ethnic	--	--			

Appendix D – Multiple Regression Analysis Results

	Factor	Factor Name	Coefficient	Std Error	*T* Statistic	P Level
1976	**Factor One**	Family	-0.5566	0.0517	-10.7666	0.0000
	Factor Two	Socio-economic	0.5553	0.0517	10.7416	0.0000
	Factor Three	Age	-0.1577	0.0517	-3.0498	0.0030
	Factor Five		0.1424	0.0517	2.7553	0.0071
	Factor Eight		0.2462	0.0517	4.7620	0.0000
	Factor Ten		-0.1812	0.0517	-3.5048	0.0007
	Intercept ($)	100518	**Adjusted R^2:**	74.07%		
	N (suburbs):	98	**F Value:**	47.19 (0.0000)*		
	R^2:	75.68%	**Standard Error:**	10483		
1981	**Factor One**	Family	-0.1985	0.0443	-4.4789	0.0000
	Factor Two	Socio-economic	0.7174	0.0443	16.1852	0.0000
	Factor Three	Older Generation	0.3908	0.0443	8.8173	0.0000
	Factor Four	Middle Age	0.2332	0.0443	5.2623	0.0000
	Factor Seven		0.1220	0.0443	2.7518	0.0069
	Intercept ($):	104798	**Adjusted R^2:**	76.62		
	N (suburbs):	120	**F Value:**	79.01(0.0000)*		
	R^2:	77.60	**Standard Error:**	12492		
1986	**Factor One**	Family	-0.3441	0.0488	-7.0587	0.0000
	Factor Two	Socio-economic	0.6166	0.0488	12.6493	0.0000
	Factor Four	Age	-0.0988	0.0488	-2.0262	0.0451
	Factor Six		-0.2725	0.0488	-5.5901	0.0000
	Factor Eight		0.1606	0.0488	3.2941	0.0013
	Factor Nine		0.1342	0.0488	2.7535	0.0069
	Factor Ten	Older Generation	-0.3243	0.0488	-6.6523	0.0000
	Intercept ($):	101652	**Adjusted R^2:**	71.49%		
	N (suburbs):	121	**F Value:**	43.981 (0.0000)*		
	R^2:	73.15%	**Standard Error:**	13587		
1991	**Factor Two**	Socio-economic	0.0705	0.0464	15.1834	0.0000
	Factor Four	Middle Age	-0.2001	0.0464	-4.3198	0.0003
	Factor Six	Income	0.1792	0.0464	3.8587	0.0002
	Factor Seven		-0.1053	0.0464	-2.2682	0.0252
	Factor Nine		0.3060	0.0464	6.5890	0.0000
	Factor Ten		0.1478	0.0464	3.1828	0.0019
	Factor Twelve		0.2457	0.0464	5.2901	0.0000
	Intercept ($):	166372	**Adjusted R^2:**	74.12%		
	N (suburbs):	121	**F Value:**	50.11 (0.0000)*		
	R^2:	75.63%	**Standard Error:**	21518		
1996	**Factor One**	Family	0.1526	0.0408	3.7393	0.0003
	Factor Two	Socio-economic	0.7302	0.0408	17.8865	0.0000
	Factor Three	Employment	-0.2755	0.0408	-6.7493	0.0000
	Factor Four	Older Generation	-0.1680	0.0408	-4.4639	0.0001
	Factor Six	Occupation	0.1779	0.0408	4.3580	0.0000
	Factor Nine		0.3384	0.0408	8.2896	0.0000
	Intercept ($):	158657	**Adjusted R^2:**	79.67		
	N (suburbs):	123	**F Value:**	80.68 (0.0000)*		
	R^2:	80.69	**Standard Error:**	17508		

(* denotes level of probability)