

Knockdown-rebuild in Sydney: addressing household and place in a study of residential choice and local change

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Abstract

There is a considerable wealth of urban research that addresses questions of residential mobility and social change in neighbourhoods and suburbs. A major methodological challenge in analysing this mobility and its impact on local areas is bringing together household-level and aggregated area-level data. This paper addresses this methodological issue in the context of research about knockdown-rebuild (KDR) in Sydney. KDR is the demolition and replacement of detached dwellings by owner-occupiers. Using a database of Development Applications submitted to 30 local councils in Sydney in the last 5 years, over 6,000 applications for KDR were identified and mapped using GIS.

A survey was sent to the whole sample, including questions about the motives to undertake KDR. KDR activity can be seen across all parts of Metropolitan Sydney, and therefore our interest focusing on whether, and how, the spatial context in which KDR interacts varies from place to place. To this end, the paper poses the following question: *how applicable is it to utilise the profile of place as a means to both perform and contextualise analysis?*

To construct and analyse different contexts a socio-economic profiling exercise was undertaken, the details of which are provided in this paper. Four distinct locational typologies (or 'KDR-markets') were identified and these are attributed to the survey returns. In doing so, the applicability of using area profiling techniques to describe changing urban dynamics can be assessed. We discuss the validity of this approach in this paper alongside reporting survey findings contextualised against these typologies.

Introduction

Across Sydney (NSW) between 2004 and 2009 a little over 6,500 detached dwellings were demolished by households for the purposes of building a new single detached dwelling. This activity is termed Knock Down Rebuild (KDR) and accounted for almost 16% of the 41,000 new dwelling starts during the same period (ABS: 87310.0). However, unlike most new residential development, the KDR process operates in a fragmented way. Even where there are concentrations rates of KDR are never more than 2 to 3 per 50 existing dwellings. Thus, whilst KDR represents a substantial component of suburban renewal, it is fragmented in nature. Simply put, whilst KDR may represent a relatively major trend in the overall production of new dwellings, its geographical dispersal across the city may serve to dilute its influence at the local level.

The underlying rationale behind the research presented in this paper is an exploration of the potential that different processes driving KDR activities exist in different locations across the city. In framing the analysis in this manner the paper explores the applicability of utilising the spatial context in which KDR is occurring as a means to both contextualise and further complement analysis of urban process.

Firstly this paper sets out a brief literature review to frame the rationale underpinning the research. The literature review covers some of the central theories on urban change and the reasoning behind the use of locational derived typologies as a mode of analysis in its own right. Next the methodology behind the creation of a bespoke geography (referred to as “markets”) is set out. This market geography is then utilised to assess a selection of survey findings against macro level (whole of survey) findings and also against a geography derived from the distance from the Sydney’s Central Business District. Finally, the conclusion reflects on the outcome of the analysis and sets out further areas of research development.

Literature Review

Physical changes to the housing stock of an urban area are telling indicators of wider social and demographic change. A recurrent theme in studies of gentrification is the practice of middle-class households moving into run-down old houses in working-class inner-city neighbourhoods and remodeling these houses as a means to improve their home and consciously contribute to a wider process of local area regeneration (Smith 1996).

While regeneration of a local area is often policy driven, our interest in this study is in market led renewal, which can be understood as the cumulative outcome of reinvestment by a large number of individual households. Decisions made by individual owner-occupiers about reinvestment in their own homes are influenced by a range of social and economic factors including household income and health constraints (Reschovsky and Newman 1991; Montgomery 1992; Rubin 1993), housing consumption preferences (Munro & Leather, 2000; Whitehand & Carr, 2001) and financial risk and gain considerations (Gyourko and Saiz 2004: 240). Such decisions also need to be understood in their local area context; an owner who chooses to reinvest in a house that is located in a low-value area that shows no signs of overall renewal may be taking a significant financial risk (Lucy and Philips 2000: 8). In many of these studies, the decision to reinvest in one’s existing dwelling is typically considered against an alternative measure to improve their housing conditions by moving home.

KDR is a distinctive and increasingly popular subset of home-improvement activity. As opposed to more subtle forms of reinvestment such as renovation or alterations, through complete replacement of old houses with new ones, KDR can have a more radical impact on the social and physical character of existing urban areas (Wiesel et al. 2011).

There is a long standing academic tradition amongst both geographers and sociologists for the application of place based typologies to describe and demarcate locations of differing urban functionality. Perhaps the most famous historical precedent is Park, Burgess and McKenzie’s concentric ring conceptualisation of Chicago (1925) which split the city into different functions (zones of transition, suburbia and central business district). Such ridged spatial demarcation techniques were, largely, superseded by area profiling from the mid 1970’s onwards. Area profiling uses varying methods to group Census derived variables into statistically robust collections that describe the majority population composition of a locale. More recently these ‘geodemographic’ techniques have

been augmented with other (non-Census derived) data such as consumer credit card data, edited information from the electoral role and residential sales price trajectories (Lupton, et al. 2011).

One of the central, technical, criticisms of such geodemographic approaches to area profiling stems from the fact that, whatever profile is derived, it tends to reflect the dominant population profile and thus suppresses the potential influences and local nuances shaped by subgroup dynamics. This is an unfortunate artifact of the ecological fallacy (Robinson 1950, Openshaw 1984) and has direct relevance to the research presented in this paper. In the context of this research the fragmented nature of KDR, it's occurrence within already "built out" locations, could therefore serve to conflate the profile of the KDR households with the longer term residential households.

Recent work on the utilisation of place typologies as a means to analyse population dynamics (Dennett and Stillwell, 2010) suggests that their usefulness should only be limited to their ability to '...provide a method for summarisation...' (p.519) for such dynamics and a means to derive a '... useful backdrop...' (ibid) for contextual and descriptive purposes only. Mindful of these debates the analysis presented will therefore be careful not to conflate the *overall* profile of place with the processes driving KDR *in totality* but moreover to consider whether, even with these stated limitations, the drivers of the KDR process contain subtly different profiles when considered contextually.

Methods: Building a geography of KDR activity

This section presents the methodology behind the creation of a place orientated geography that is subsequently utilised to frame components of the survey. The process involved the collection and geocoding of KDR activity from Local Government Authority Development Application (DA) records in Sydney (covering the period 2004-2009). Although activity is recorded across the metropolitan area, we were interested in identifying whether particular parts of the city and housing submarkets have been subject to greater or lesser levels of individual lot renewal. In so doing, we aimed to isolate the key drivers of KDR and relate that to the different market contexts across the metropolitan area. In order to do this, a combination of Principle Components Analysis and K-Means clustering has been used to help tease out different types of KDR markets, or more importantly, the different contingent processes for which some form of KDR might be the outcome.

In this regard, it is important to stress that this focus on process concerns how the activity relates to broader social and economic restructuring of the city, rather than an interest in the built form outcomes of KDR. Whether the outcome was a \$5m beachfront home in Bondi or a \$300k project home on the site of an old fibro or weatherboard property in Fairfield (or even a \$1 million property in Granville see <http://smh.domain.com.au/real-estate-news/knockdown-rebuild-is-changing-the-face-of-sydney-20110527-1f8im.html>) is not of specific interest for this paper rather the focus is on the household engaged in the KDR process. This analysis presented, therefore, intends to provide a framework for discussion rather than comprehensive picture and explanation of KDR activity in Sydney.

Since the analysis is seeking to sketch out a framework the *specific* motivations driving households to initiate KDR across the city is unknown. What can be done, however, is to consider potential socio-economic and market characteristics of the localities where knockdown rebuild activity seems to be more prevalent compared to those areas where activity has, to date, been more limited in order to begin to assess potential drivers of change.

All census collector districts (CDs) in the 30 LGAs for which we have DA data provide the macro-level geography of our analysis. In the first stage a Principle Components Analysis (PCA) was deployed to identify whether different combinations of underlying socio-economic variables describing differences between indicative KDR locations existed within this macro-level geography. As with any PCA approach, a series of variables are identified, based upon an initial consideration of factors that may be potentially significant and help to explain a component of the relationships shaping KDR activity. As demonstrated in Table 1 these include indicative or proxy measures which seek to understand the possible role of housing market dynamics and underlying land values, household characteristics, ethnicity and degree of population stability within localities.

Table 1: Variables included in the initial Principle Components Analysis

Variable	Data source	Why variable is potentially of interest
Underlying sales value of lots	NSW Valuer General dataset; represented as a smoothed weighted average to control for varying lot sizes, 2001-2009	<ul style="list-style-type: none"> Higher/rising land values might encourage KDR to realise potential ground rent? Actual ground rent relative to other options in housing submarket (for example new land and build packages on the fringe) makes KDR viable/attractive?
Median age (of household head)	2006 ABS Census	<ul style="list-style-type: none"> Non first time buyers/established homeowners more likely to be in a position/have sufficient equity built up to enable KDR activity? Potential option for households looking to downsize at retirement?
Median household income		<ul style="list-style-type: none"> Extent to which KDR activity is related to income levels/more prevalent amongst certain income groups?
Average household size		<ul style="list-style-type: none"> Housing/family size driving the need for provision of larger dwelling through KDR?
Proportion of households with children		<ul style="list-style-type: none"> KDR tied to helping meet requirements of growing family? KDR enabling families to up-scale housing
Proportion of households where non-English is the primary language at home		<ul style="list-style-type: none"> Extent to which KDR might reflect cultural diversity in suburbs with significant activity, where households moving up the housing ladder may be doing so in-situ, retaining ties to their communities
Proportion of households at same address (a) one year ago and (b) five years ago		<ul style="list-style-type: none"> Extent of 'churn', i.e. in/out movement of households in localities where KDR activity is taking place: areas in transition or stable neighbourhoods?

Given that each variable is recorded under different measurements and scales, a Z score technique was used to enable levels of any potential association to be determined. This standardisation aligns all means around 0 (with positive and negative values derived from standard deviation from the mean). Correlation between the variables was then assessed using a Bivariate test (Pearson's Coefficient) to determine whether certain market conditions and socio-demographic contexts are more or less associated with KDR activity. Table 2 compares locations where KDR has occurred to locations where it has not. At the macro-level the correlations coefficients both support the stated hypothetical drivers of KDR (table 1) as well as lead to a number of further considerations. Broadly, those CDs where KDR activity has taken place have on average higher market values, have older population profiles, and have higher incomes than CDs where KDR has not been noted over the time period. KDR locations are also home to larger households and families with children compared to non-KDR locations. KDR neighbourhoods also reflect considerable stability, with significantly less turnover of population. There is also a higher propensity for a non-English language to be spoken at home in KDR locations.

Table 2: Macro Correlations with Locations of KDR

Variable	KDR Activity	KDR Locations	Non KDR Locations
Underlying Sales Value	.196 ^{**}	\$300,000	\$650,000
Median Age	.139 ^{**}	38	36
Median Household Size	.195 ^{**}	2.8	2.5
Average Household Income	.253 ^{**}	\$1,340	\$1,212
English not primary language	.033 [*]	29%	26%
Families with Children	.294 ^{**}	53%	41%
Persons in different place 1 Year ago	-.207 ^{**}	12%	16%
Persons in different place 5 Years ago	-.232 ^{**}	31%	39%
Correlation Coefficients (** significant at 0.01, * significant at 0.05) and average profile statistics			

Such characteristics are perhaps to be expected, and to a large degree simply pick up a number of necessary preconditions for KDR activity to take place. Firstly, the one for one nature of this suburban renewal activity, which is the focus of interest in this paper, points towards majority homeownership localities, with single dwellings and lots of sufficient size to facilitate demolition and construction of a new property. Secondly, the process involves significant capital outlay, including the effective discounting of the to-be-demolished property on the site. This inevitably tends activity towards households with relatively healthy incomes as well as a substantive asset base, and similarly points towards older households who have, through the passage of time, built up equity. Thirdly, a key driver to 'upsized', and further capitalise 'in-situ', rather than moving up (or downsizing) within the market through geographical relocation, will be attached to changing family needs and preferences where propinquity remains central to purchase decisions. As such, this macro-level analysis may largely reflect more family oriented, owner occupied suburbs that provide the necessary preconditions for this kind of individual, lot-based suburban renewal.

In seeking to draw out whether the neighbourhood and socio-demographic characteristics of KDR localities are essentially uniform across the city, or – as would be expected in a large, complex metropolitan city with a range of spatially discontinuous drivers of residential demand and consequent housing submarket activity – whether different factors may hold relative significance across different spaces, the above analysis was re-worked using LGAs grouped according to their relative locations across the Metropolitan Area (see Table 3). This uses the locally understood classification of Sydney into its inner, middle and outer rings, and as such employs an assumption that suburbs grouped within bands of similar distance from the CBD and thus which, in simple economics terms, may be assumed to have similar underlying values, have been established and built out at similar times and therefore under similar social, economic and political contexts (Figure 1 sets out this geography).

Although this breakdown provides further spatial insight into KDR activity, it essentially does so by reflecting the broader housing market, income and socio-demographic characteristics of the city in general. However, the particular strength of association between KDR and stable, family oriented localities in the inner and middle ring, and the stability of those localities, relative to areas within those defined geographies where KDR has not been recorded are instructive. This stage of analysis also allows consideration of variation of activity between LGAs. Again, the headline observation at the LGA level is a broad level of similarity in key driving factors across authorities within their 'ring' classifications, but with a number of LGAs demonstrating a number of distinct characteristics. The latter shall be reflected upon below in the final stages of this initial analysis, where a more nuanced consideration at this local level has been attempted.

Up to this stage, our analysis has highlighted a number of core characteristics of localities where KDR is taking place compared to those where it is not, and some variation in the strength and nature of those drivers has been seen at the LGA level and within the banded geographies of the inner, middle and outer rings. However, consideration at these scales has not been particularly successful in easing out a classification of factors that will further our understanding by capturing the role of drivers within particular contexts. This appears to be particularly so in the Middle Ring LGAs, where the analysis has suggested that there is not one predominant driver or characteristic (i.e. there is a range), but it has not been able to evidence what these different factors are. In order to do so, two further exploratory analyses were carried out.

The first was to extend the PCA analysis approach down to the CD level. Here, only CDs where KDR activity has been recorded are included, with the aim being to establish a profile and compare similarities and differences within these data. This seeks to discover whether different drivers of KDR can be identified at a more local level. A weakness of drilling PCA analysis down to this spatial scale is that it tends to produce very specific classification schema and inevitably only includes collections of the variables pre-determined given their presence within the analytical framework. Although three components (sets of variables, see Table 4) that explain the overall variance of the data were identified, none of the components could be explained across all variables. This tends to signify that there is a strong degree of commonality between the variables – as would be suggested by the broad similarities in market and socio-demographic characteristics in the Metropolitan level analysis – in which case the components are in effect drawing out 'outliers' within the data.

Table 4: PCA output based on KDR activity areas only

Component	% of variance	cumulative %	Component characteristics
1	34.93	34.93	Locations with significant levels of in-migration over last 5 years. Smaller households and those without children.
2	22.79	57.72	Locations with very high levels of large, younger, family households and non-English spoken in the home
3	22.70	80.43	High value, high income locations

Although table 4 would suggest that these three components are effective in explaining 80 per cent of the variance seen, it is important to remember that this is simply within rather than across the data, which limits translation of components spatially. An attempt was made to align the Z score criteria of the component profiles above with CDs meeting those criteria; however this enabled little more than 11 per cent of CDs where KDR activity has taken place to be classified. Given the fact that KDR activity has been extensive and spread across a wide range of housing markets, it would appear that this form of analysis struggles to transcend the 'noise' within the data at this spatial scale. Given this limited success, a second less statistically rigorous methodology was enrolled to explore whether different drivers and characteristics could be teased out across different geographies. A K-Mean cluster analysis can be seen as a more forceful classification process because it attempts to classify and group all data elements selected. A core criticism of this approach is that the potential number of data groupings is selected by the researcher which introduces a degree of subjectivity to the analysis.

Since the previous PCA had identified 3 groupings and a fourth (everything else) this was seen as justification to utilise 4 groupings in the cluster analysis.

Table 5 provides a ‘traffic light’ summary of the relative strength of each variable for these clusters. Cluster 1 (103 of the 2232 CDs with KDR activity) scores particularly highly on sales value, household income and median age, and illustrates a negative relationship with non-English being spoken in the home. As such ‘**premium**’ will be used as shorthand for this cluster. Cluster 2 (853 of 2232 CDs) is likely to reflect much of the background ‘noise’ that the Factor Analysis struggled to differentiate. This group is defined by relatively affluent locations with stable populations and a high presence of families with children. In other words they exhibit strongly the ‘**generic**’ characteristics of KDR locations without further distinguishing features that would set them apart from the other cluster. Cluster 3 (595 CDs) captures areas with higher levels of in-migration and thus less stable populations. Furthermore, this group exists in areas which are *relatively* cheaper (based on average sales prices) than proximate neighbourhoods, suggesting that this cluster might be picking up in-movers utilising KDR to upgrade (‘**improvers**’). Cluster 4 (681 CDs) picks up stable, less affluent locations with larger households, younger age profiles, and a greater propensity for non-English to be spoken at home (‘**new generation**’). Thus cluster 2 appears to correspond with component 1 and cluster 4 with component 2 of the Factor Analysis.

Table 5: K-Means Clustering output (values presented are standard deviation from mean)

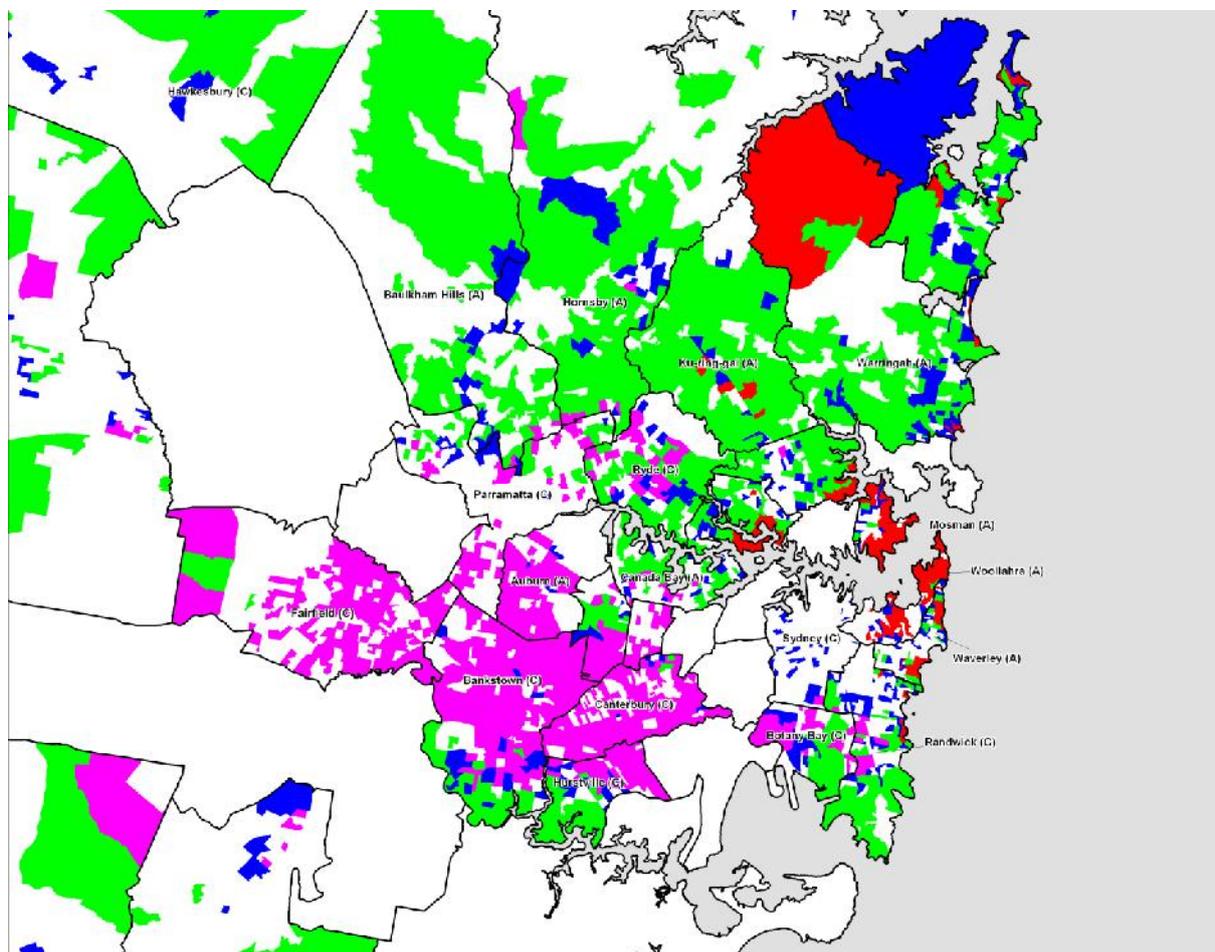
Variable	1 - Premium	2 - Generic	3 - Improver	4 – New Gen
Sales Value	3.89626	.27479	-.20153	-.17326
Median Age	.56644	.29129	.40475	-.16307
Median Income	2.08734	.84926	-.37618	-.61045
Household Size	.15790	.57638	-.53307	.65275
English not spoken at home	-.69264	-.45733	-.59523	1.32348
Persons in Families with Children	.20665	.75564	-.45223	.54809
Persons not in same location 1 year ago	-.03689	-.55634	.35798	-.55123
Persons not in same location 5 years ago	-.06379	-.59914	.36466	-.61274
Numbers of CDs Classifiable	103	853	595	681

When transposing these clusters onto Sydney’s Metropolitan geography (figure 2 and table 6), it should be reiterated that this analysis only shines light upon the locations where KDR has been happening; it does *not* profile the actual households carrying out KDR activity in those locations. It may well be that the characteristics of a household and the drivers shaping their decision to engage in knockdown rebuild in a ‘premium’ locality may more appropriately align with improver or new generation clusters. Thus clusters are not mutually exclusive, and such analysis simply provides an exploratory yet nonetheless useful exercise that wells us something about the relative functions and trajectories of locations where KDR activity is happening compared to where it is not. To provide a broad geographical breakdown of our four clusters, a breakdown scribing these categories by inner, middle and outer rings was carried out. Much of the spatial distribution presented reflects the broader housing market and socio-demographic characteristics of the city.

The ‘premium’ cluster, whilst the smallest component of activity (6 per cent) accounts for 31 per cent of total KDR activity within the high value, higher income inner ring locations. These are Sydney’s ‘dress circle’ suburbs, and in markets such as Woollahra, Waverley and Mosman represent the reworking of the city’s most prestigious addresses. At its most extreme, KDR is seen where properties already valued in their millions are purchased (at that price) for the opportunity to acquire the land and opportunity to create individual, architect-designed mansions. ‘Generic’ localities are prevalent across all three zones, and account for almost half of activity in the outer ring. Whilst a broad spread can be seen, clumps of activity can also be seen, and it might be expected that these groupings tend to tease out elements of this cluster towards other classifications. As noted, core defining characteristics are stability and prevalence of larger households; these are suburbs where families may grow old-in situ.

One locality of interest is Strathfield. Although coming through as 'generic' in the cluster analysis, this high value, high income outpost in central west Sydney has a longstanding history as a preferred location and is potentially better aligned with 'premium' KDR localities. Consolidation of its appeal has escalated through proximity to top schools and identification of a 'golden mile' in the suburb, where property desirability is defined by its location in relation to a series of premier streets. As with 'premium' localities closer to the city centre and harbour, the housing market comprises properties where even solid, multi-million dollar properties are sold on the basis of the future potential of the land on which they sit. Redevelopment of these lots represents re-investment and further capitalisation spatially fixed on a select number of streets. Does this suggest a form of hyper-gentrification, stretching capitalised ground rent towards the full potential rent on offer from the wealthy households in competition for the best locations in this neighbourhood? Or is this a highly localised and specific manifestation of excess investment and capitalisation in response to perceived externalities tied to that neighbourhood?

Figure 2: Distribution of KDR Markets (blank areas represent LGAs where DA information wasn't supplied)



KDR Market Profile

- Premium
- Generic
- Improver
- New Generation

Table 6: Cluster groups by inner, middle and outer ring location

	Inner Ring	Middle Ring	Outer Ring	Grand Total
Premium	270 (31%)	60 (2%)	46 (2%)	376 (6%)
Generic	307 (35%)	1275 (43%)	1262 (49%)	2844 (44%)
Improver	198 (23%)	187 (6%)	868 (34%)	1253 (19%)
New generation	95 (11%)	1464 (49%)	404 (16%)	1963 (31%)
Total (KDR cases)	870	2986	2580	6436

The 'improver' cluster arguably picks up localities that ascribe more to associations with 'traditional' gentrifying behaviour. Here, KDR is taking place in areas that demonstrate relatively lower values relative to their subregional housing markets, for example parts of Botany Bay within the popular Eastern Suburbs, and fringe areas around Manly on the North Shore. Also conducive to parallels with gentrification are the household characteristic profiles indicated by the cluster analysis – generally smaller households and fewer families with children. The significant element of in-migration also stands out against the strong tendency for stability in other KDR clusters. On the Upper North Shore, the extensive KDR activity seen in blue ribbon Ku-ring-gai may also point towards KDR activity as a means for younger households to access the housing market in relatively high value areas. The locations where KDR has occurred demonstrate a significantly younger profile than the Local Government Area overall.

Whilst the analysis presented above has been relatively successful in drawing out place defined geographical differences between areas of KDR activity, it has raised further questions concerning the underlying dynamics of the KDR process. Essentially this section has sketched out a geographical framework that can be fleshed out and unpacked further via the application of more detailed analytical techniques. The following section briefly attempts this via the utilisation of select survey findings.

Triangulating the geographies

This section assesses the applicability of a place based analysis of KDR activity using a simple test. Responses derived from question in a survey mailed out to all 6,500 KDR addresses are analysed in their macro context, by the inner, middle and outer geographies presented earlier and finally by their market groupings. By approaching the analysis in this manner the simple question is whether shifting the scale of analysis produces greater resolution in the identification of some of the drivers and processes shaping the KDR process.

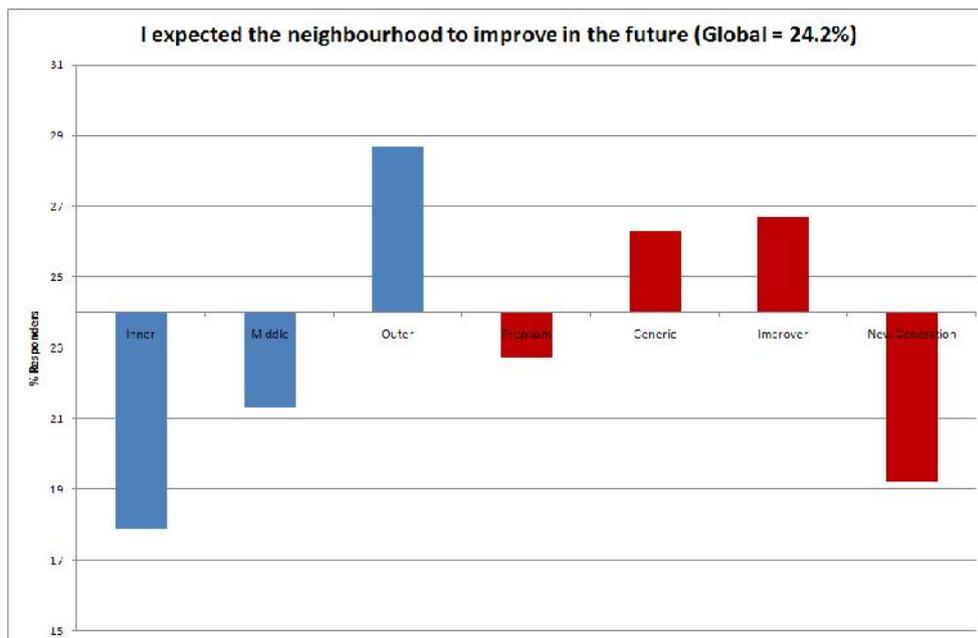
Four questions from the survey are presented, two pertaining to the respondent's perception of neighbourhood quality and two to the property they produced. Figures 3 through 6 present these based around the global average (respondents agreeing with the statement expressed as a percentage of total respondents) and the same percentages for each of the geographically defined distributions. Prior to setting out this analysis it is useful to consider the interplay of survey returns by the two geographies in order to ascertain whether one form of market response may be influencing the responses derived using the ring geographies. Table 7 sets out this interplay with the percentage of responses reported as column totals. From this it is evident that there are distinct relationships between the market forms and the ring geographies; 71% of all Premium market responders were derived from Inner Ring locations, 80% of Improvers from the Outer Ring and 82% of New Generation from the Middle Ring. The Generic market responders were split relatively equally between Middle and Outer Ring locations with only a handful from the Inner Ring. Does this analysis suggest that there may be a commonality of survey question responses between market form and market location?

Table 7: Percentage of Survey Respondents by market form within Ring Geography location (column percentage – dominant market form underlined)

	Premium	Generic	Improver	New Generation	Total
Inner Ring	<u>71%</u>	3%	5%	0%	7%
Middle Ring	21%	47%	14%	<u>82%</u>	46%
Outer Ring	8%	50%	<u>80%</u>	18%	47%
Total	100%	100%	100%	100%	100%

Figure 3 sets out the percentage of responders agreeing with the statement “... I expected the neighbourhood to improve in the future”. Whilst this question can be interpreted as a both an assessment of neighbourhood quality and also a proxy for the perceived future price growth it is interesting that less than a quarter of responders saw this statement as resonating with their reasons to conduct KDR. Distinct differences can be seen between the rings defined responses and those derived from their majority defined market cohorts.

Figure 3: Percentages of respondents agreeing with the statement: “I expected the neighbourhood to improve in the future”.

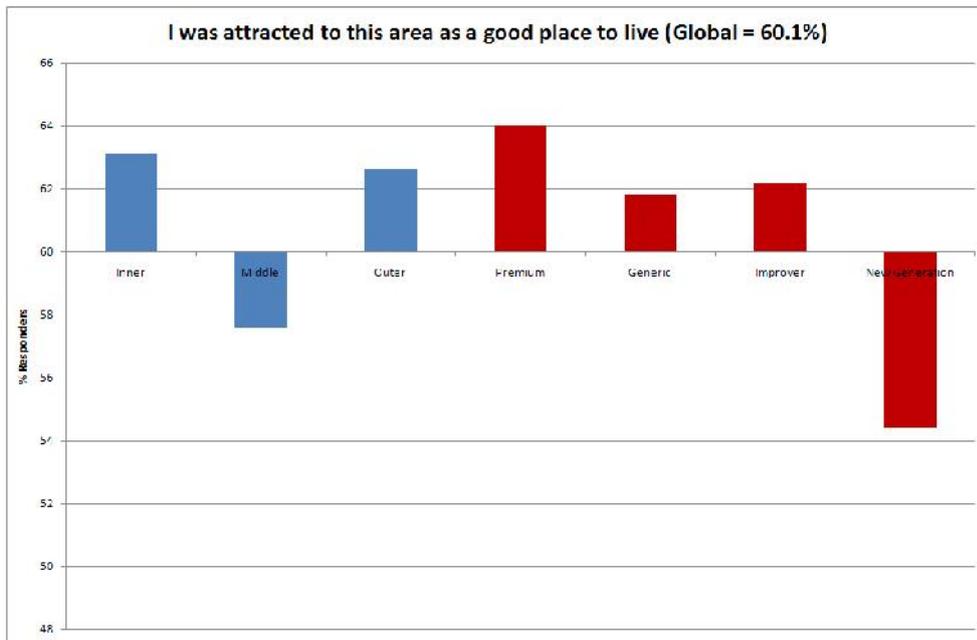


The lowest level of respondents (17.9%) who agreed with this statement were from Inner Ring locations coupled with this the number of responders from these location’s dominant (Premium) market form was also lower than the average (22.8%). This finding probably has little to do with any pessimistic outlook and more to do with the fact that these locations are already positioned at the top end of the market and well served by a range of amenities. The lower than average number of responders agreeing with this statement in the Middle Ring locations (21.3%) appears to be being shaped by the above average response for the Generic and below average response from the New Generation markets. This in itself is instructive as it indicates that within the Middle Ring locations the two dominant market forms may contain households with differing perceptions of neighbourhood quality and assumed housing value outcomes. One potential observation is that cohorts within the New Generation market may be assessing the role of neighbourhood in a subtly different manner to those in the Generic market form. Finally, it is also evident that the considerably higher (28.8%) number of responders agreeing with this statement in the Outer Ring locations is driven by a

combination of the Generic and Improver market forms suggesting that those households performing KDR may be assessing their investment against a longer term improvement in amenity.

A much higher overall response rate was derived from those agreeing with the statement "... I was attracted to this area as a good place to live" (figure 4). Interestingly, under this assessment of location quality the Inner and Outer Rings were assessed as providing a good place to live whilst the Middle Ring locations were less so. Similarly to the analysis of the previous statement the number agreeing who were in the Premium market form appears to be driving the overall finding for the Inner Ring, although this maybe being slightly tempered by the more marginal forms also within these locations.

Figure 4: Percentage of respondents agreeing with the statement: "I was attracted to this area as a good place to live".



In comparison, the Middle Ring areas achieved a marginally lower response (57.9%) then the others and this largely appears to have been driven by the considerably lower level of agreement (54.3%) deriving from within the New Generation market form. Such a finding again suggests that a component part of the demand for KDR amongst the New Generation market form isn't as driven by direct assessments of neighbourhood quality.

Moving to analysis of the property produced under the KDR process, figure 5 sets out the percentage of respondents agreeing with the statement "... [ijt (KDR) allowed us to increase the size of the house". Whilst just over half of the total respondents stated that this was the case those in the Inner Ring locations were considerably less likely to (44%). This, in part, is probably driven by a combination of factors including the possibility that the property that was knocked down was already built to the maximum feasible size and scale for the lot containing it. Many of the Local Government Authorities operating in the Inner Ring locations will have set maximum permissible development sizes benchmarked against the older stock in these locations. This said the Premium Market form registered a slightly higher level of agreement (50.7%); implying that within the constraints applied there remained some capacity to upscale from the original built form.

A rather contradictory tension is identifiable from the interplay between the marginally higher level of agreement (50.3%) derived from those in the Outer Ring locations and the below average level from the Improver market form (47.1%). Given this market's distributional relationship to Outer Ring locations suggests that either locations where Improver activity is concentrated contain elements of planning constraints serving to influence overall property size, or that the components of the Improver market themselves have their aspirations limited by financial constraints. Since Improver locations contained some of the lowest sales prices identified in the Cluster Analysis (table 5), thus indicating a

certain “budget” element to the process, the suggestion here is that it is the later of these two influences that are serving to limit these aspirations.

The New Generation market form contained by far and away the highest level of responders agreeing with this statement (55.7%), notably in converse to the lower levels of agreement identified previously. This suggests that a component of the demand driving the KDR process amongst this market grouping is specifically orientated to the product outcome over and above decisions influenced directly by neighbourhood assessment. Whilst this is not to say that such location based considerations are not of importance to this market form it does suggest that other factors may be at play in shaping the demand for this group’s preferences.

Figure 5: Percentage of respondents agreeing with the statement: “It (KDR) allowed us to increase the size of the house”.

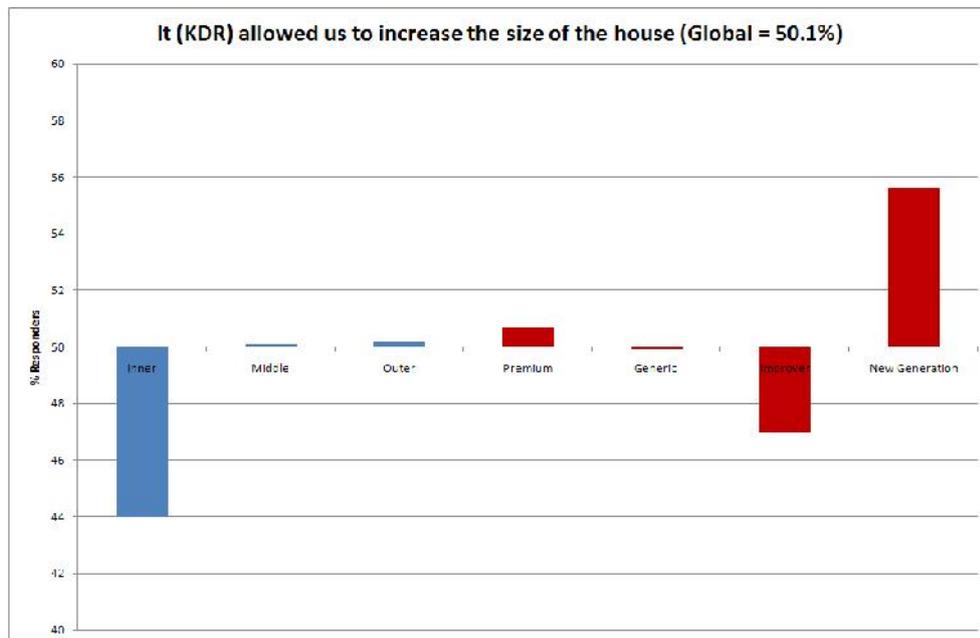
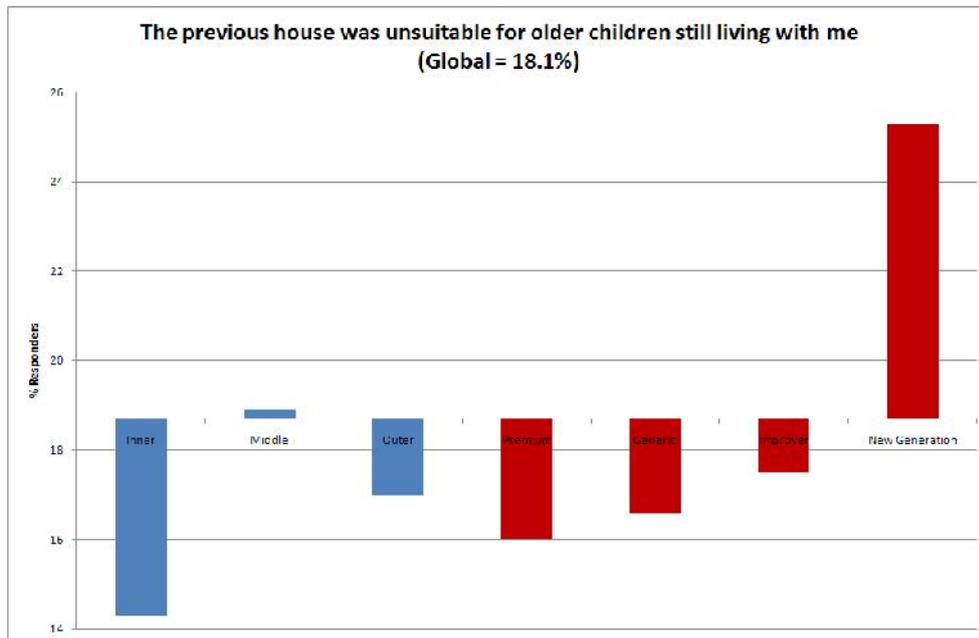


Figure 6 attempts to identify one of the reasons that may be driving this preference by considering the percentage of responders agreeing with the statement “... [i]f the previous house was unsuitable for older children still living with me”. Whilst the overall level of agreement with this statement was the lowest of all the questions presented (18.1%) it should be noted that the question didn’t define what was meant by “older children” and thus represents a subjective assessment by the survey respondent. So whilst the lower level of agreement with this statement may be due to the individual respondent’s assessment of what constitutes “older children” (over 15 years old, over 20 years old?) it can also be seen as potentially illustrative of the overall scale of this growing form of housing demand.

Across the ring defined geographies it is notable that it is only in the Middle Ring locations where a marginally higher level of agreement to this statement is achieved. This is undoubtedly driven by the New Generation market form, with over a quarter (25.6%) in agreement. Further to this the range difference between the Generic market form’s level of agreement to this statement and the New Generation’s is 9.1% (16.5% compared to 25.6%) meaning that households in locations definable as New Generation are 35% more likely to consider KDR as a means to develop a property to provide housing options for older children.

Figure 6: Percentage of respondents agreeing with the statement: “The previous house was unsuitable for older children still living with me”.



The change in the geographical frame yielded greater resolution on the question concerning the size of new properties in the Middle Ring locations, namely that New Generation market segment placed greater emphasis on the need to redevelop to provide for older children still living with them. Under a strictly economic assessment, based on decreasing land values as distance from the city centre increases (and with the vast majority of New Generation activity taking place in cheaper locations, as demonstrated in the Cluster Analysis), such activity would appear to make less sense as the building of larger properties runs the risk of over capitalisation of the asset. However by articulating the response to the question by introducing an element of geographic framing attempting to capture location’s socio-economic profile goes a *little* way to aid a more nuanced understanding of differential processes driving KDR.

Conclusions

One of the stated aims of this paper was to consider whether the KDR phenomenon in Sydney is being driven by single or multiple processes. This has been undertaken through an in-depth discussion of the methods utilised to derive an analytical frame through which to amplify the profile of the places where KDR has occurred. In doing so the brief analysis presented has identified a distinct spatial sub-trend within the survey data which might have been overlooked if the approaches outlined had not been utilised.

This paper has therefore also demonstrated the utility of place profiling as a research method which can be used to frame and contextualise survey findings. Whilst there is little novelty in such approaches, and indeed such analysis has formed a corner stone of much geographical orientated research into urban dynamics, their usefulness in providing yet another lens through which the researcher can triangulate other findings should not be overlooked. Recent work by Watkins (2008) and Hinks and Wong (2010) on housing market dynamics in the UK reiterate such discussions. They have proposed that such analysis can form the basis from which a more pluralistic and pragmatic working arrangement between quantitative and qualitative approaches could be achieved. The analysis presented here, specifically the treatment of the areal profiles as a framing device and not an end in their own right, contributes to these discussions.

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