Journal of African Real Estate Research

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Journal Of African Real Estate Research

The Journal of African Real Estate Research is the official refereed journal of the African Real Estate Society (AfRES). The journal publishes different aspects of applied real estate research in the African context. Papers cover a broad array of issues related to land, improvements and the associated rights in the African context. It also covers industry issues and education/curriculum design.

The target audience are real estate academics in Africa and beyond and aims to be a source of recent research findings. A double-blind review process ensures its quality and usefulness as research material.

Contents

Editorial

Welcome to the first issue of the 2012 edition of the Journal of African Real Estate Research. The Journal has undergone a number of changes in different ways: Stephen Brown who edited the first issue has moved on from RICS after tirelessly supporting AfRES and African researchers. My tenure as editor started last year when I transitioned from a 14-year stint at the Royal Institute of Technology in Stockholm to Wits University in Johannesburg, where I hope to join a new generation of African academics committed to increasing the profile of real estate education and research on the continent.

Thanks to the support provided by IRES, ERES and IREBS, AfRES have sustained its activities with conferences in Bagamoyo, Johannesburg, Lagos, Naivasha and Windhoek. In 2012 it will be in my native Ghana. Papers from these events are an emerging source of material for the journal, thanks to the tireless efforts of the different conference organizers in the different countries with the continuous financial support of Prof Karl-Werner Schulte and IREBS. Thanks also to members of the reformed editorial board who have given generously of their time to review the papers.

The first paper by Roby Simons of Cleveland State University and Aly Karam of Wits University profiled attendees of the AfRES conference in 2008. This paper underscores the urgent need to boost the capacity of African Universities to produce PhD graduates. Some benefits will be better quality programs, increased numbers of real estate graduates and increased research output about African real estate. The paper also recaps the history of AfRES, which is good for anyone who is new to the organisation. An important need is to write a series of sequels to this paper to track the evolution of the AfRES conferences.

The second paper by Rexford Assasie Oppong of the Kwame Nkrumah University of Science and Technology and Andre Brown of the University of Liverpool used the case of Kumasi (Ghana) to highlight the role of individuals and private equity as a source of financing for aspects of urban regeneration in Ghana. A consequence of the redevelopment process is the loss of architectural heritage. A fundamental inference from this paper is the on-going difficulty of accessing real estate loans in Ghana.

The third paper by Anthony Owusu-Ansah of the University of Aberdeen Business School analyses the determinants of housing values in Kumasi (Ghana). One value of this paper is that users of valuations can understand how the physical and locational attributes of houses affect its value in one urban area in Ghana. Hopefully there will be follow-up studies in other areas in Ghana to better understand the nature of the housing market. I also find this paper appropriate for teaching an introductory class in Applied Econometrics in an African context.

Roby Simons authored the fourth paper on community development and land rights in Africa. This paper highlights the complex interface of communal ownership of land, tribal governance, housing finance and institutions of the nation states that these tribes belong to. One important issue the author points to is the development of economic activity outside of the tribal areas which undermine their economic importance. Without effective rural development policies that equalise economic opportunity, the well-known phenomenon of rural-urban migration will continue.

This edition concludes with a paper by Oluseyi Adegoke and a team of researchers in Nigeria. They draw attention in this paper to variations that occur in valuations due to differences in qualitative analysis of similar market information. Again, this paper not only informs readers of the nature of valuation in an emerging market context. It also provides empirical evidence to support discussion in a real estate valuation class.

I hope this and subsequent collections of papers resume the effort by AfRES to provide a platform to discuss and present high-quality African real estate research that would inform practitioners and academics alike. I am interested in hearing from readers on their views of this and subsequent editions.

Samuel Azasu

Journal of African Real Estate Research
EDITORIAL POLICY AND SUBMISSION GUIDELINES

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Purpose and scope of the journal

The journal aims to grow into becoming the best source of research on African real estate, providing high quality research papers to academics and practitioners alike. The journal is broad in the scope of subjects it covers. Topics relating to land markets, valuation, property and asset management, real estate development, real estate finance, corporate real estate, facilities management, real estate company management and real estate education (all in an African context) will be considered.

Review of Articles

Each submission will first be reviewed by the editor for suitability. Once the editor approves a paper, it is then assigned anonymously by the editor to two specialist referees. These referees will submit detailed referee's report regarding whether the paper can be published in its current form, revised or rejected. Under normal circumstances, referees would be required to submit their reports within four weeks; the turn-around time for papers is approximately six weeks. Howev-

er, this may not be the case if a referee declines to review a particular paper and the editor finds it difficult to identify a replacement reviewer. To facilitate the refereeing process and communication, email is the preferred procedure for submission of papers.

Each issue will attempt to reflect a diversity of property topics. The final decision on the content of specific issues will be made by the editor and his assistant. One issue per year may be devoted to a special topic, with a guest editor appointed. Special issue topics will be determined by the editorial board and announced with sufficient lead-time.

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2,1

Professional Real Estate Activities and Academic Journal Importance among African Scholars:

A Snapshot of the 2008 African Real Estate Society Meeting

Authors Robert A. Simons[1] and Aly Karam[2]

Abstract This research reports on real estate activities undertaken by participants in the African Real Estate Society's conference held in Johannesburg in August 2008, who are the real estate thought leaders of Africa. Attendees' credentials, career path, and professional activities are addressed, including time spent on various activities, including teaching publishing, and consulting. Respondents are largely multilingual middle-aged males with a master's degree that listened to rather than presented research. There were more practitioners (40%) than academics (33%) or entrepreneurs (28%) in attendance. Academics typically taught four classes a year and published an article a year. Respondents reported working 36 hours a week. The survey also identified the top real estate Journals read by attendees, headed by the Journal of Real Estate Research, Real Estate Economics and Journal of Real Estate Finance and Economics. African scholars also preferred Appraisal Journal, JREPM, IRER, JREPE and JREL over six other journals.

Keywords Academic conference, Benchmark, Journal Ranking, Professional behavior, Survey, Time.

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INTRODUCTION

Academic conferences, seminars and workshops are an excellent venue for exchanging information, and also serve as a useful place for gathering data on emerging professions. In this paper we present the real estate activities undertaken by the participants in the African Real Estate Society's annual conference (AfRES) held in Johannesburg in August 2008. We look at who the participants are, their credentials, their career path, their professional activities and whether they are pure practitioners or academics, or a combination of both. It is important to know how much time they spend in different activities, and to what extent academics also practice, and if practitioners teach and/or do academic work. In a field such as real estate one needs to get the right mixture of practitioners and academics to ensure that they both benefit from learning from each other. A main focus is to report on the real estate journals read by the AfRES attendees, and compare this to results from other real estate journals, over time.

The number of participants and their background, activities, and profession, acts as an underlying measure of the strength of the conference. This study provides a baseline for evaluating future changes at AfRES concerning the participants and their engagement in academic and professional activities. This includes how they spend their time and their research output.

The study is organized as follows: we recap the history of AfRES, followed by a literature review of research on the scholarly activities of real estate thought leaders (professors and practitioners), including publishing and teaching as well as the importance of real estate journals. Next, we describe the AfRES 2008, followed by the survey methodology. The participant demographics, their teaching, research, and consulting activities are discussed next, followed by the journal ranking, which is the focal point of this research. The results are set forth by themselves, and are also compared (ordinally) to several other published studies. Finally, the authors close with comments on future research.

A brief history of AfRES

The African Real Estate Society (AfRES) was founded in the mid-1990s, and the first recorded scholarly meeting was held in Johannesburg,

South Africa 1997. After a few skipped years, subsequent meetings were held in South Africa, Kenya, Uganda and Tanzania. There has been an annual meeting every year since 2006[3].The meeting in Johannesburg was the 8th annual meeting.

After the 2008 meeting in Johannesburg featured in this article, AfRES meetings were held in Lagos, Nigeria (2009) and Naivasha, Kenya (2010). English is the language of scholarly presentations and communication, although there is consistently a small group of French speakers attending AfRES.

AfRES is organized into three chapters that cover the African Continent. The southern chapter is based in South Africa, and includes Zimbabwe, Namibia and other nations. The West Africa chapter is based in Nigeria, and includes scholars from Ghana and other nations. The East African Chapter includes Kenya, Tanzania and Uganda, and also includes scholars from Burundi and other nations. African nations north of the Sahara have not participated much in AfRES, and recently they were invited to join the MENARES group based in the Middle East. The annual AFRES meetings now rotate on a scheduled basis between the three chapters.

AfRES conference themes and papers typically address real estate investment, development, housing markets, capital markets, public sector and infrastructure, finance and asset securitization, and land rights, tribal land and formal land registration. AfRES is governed by a board of directors drawn from all three chapters. There were 11 directors as of October 2010. AfRES also appointed an executive director in 2010[4]. Each of the three AfRES chapters also has a governing body.

LITERATURE REVIEW

There are at least seven articles since 1995 that deal directly or indirectly with real estate scholarly activity, and publishing in/ ranking of real estate journals. These have dealt primarily with US academics. For example, Diaz, Black and Rabianski (1996) looked at 30 journals, and their importance for professors' promotion and tenure. They used surveys to determine that Real Estate Economics (REE,

3. http://www.afres.org.za/conferen.htm
4. The first AfRES Executive Director is Mr. Akin Olawore.

formerly AREUEA) was the leading academic outlet, with The Appraisal Journal (TAJ) as the leading industry outlet. To the authors' knowledge, no articles have dealt with conferences and their attendees, more specifically, with African scholars in the real estate field.

Webb and Albert (1995) surveyed over 150 Financial Management Association members on a number of real estate academic activities, including journal rankings. Both finance faculty and those identifying themselves as real estate faculty were queried. Among real estate faculty (N=about 75), the 12 leading journals existing at that time were determined based on a weighted index (1-5 scale, with higher ranks having a lower score) as well as name recognition. The five highest ranking journals, in order, were Real Estate Economics (REE), Journal of Real Estate Research (JRER), Journal of Real Estate Finance and Economics (JREFE), Journal of Urban Economics (JUE) and Land Economics (LE). The Appraisal Journal (TAJ) was ranked 7th, and Journal of Real Estate Literature (JREL) was ranked 12th.

Redman, Manakyan, and Tanner (1998, 1999) used citations (instead of surveys) to determine their rankings for the 1990-1995 period. Their results showed that Real Estate Economics (REE) is the most cited journal among real estate publications, followed closely by the Journal of Real Estate Finance and Economics (JREFE) and the Journal of Real Estate Research (JRER). A temporal analysis reveals a shift in citations away from the traditional economics and practitioner-oriented journals to the academic real estate journals. The fourth journal they evaluated, the Journal of Urban Economics (JUE) was ranked second, by some measures.

Hardin, Liano, and Chan (2006) also used citations, and concluded that the vast majority of publications in real estate journals came from REE, JREFE and JRER, in that order. Gibler and Ziobrowski (2002) used surveys and found the same rankings among these top three real estate journals.

Finally, Weeks, Finch, and Hardin (2007) studied real estate chairs, and the journals they published in, both before and after appointment. Their research included a survey of real estate chairs, and then provided rankings based on the respondents' stated publication outlets, a hybrid approach which is similar to using citations. Of the 14 journals tracked, the top three (in order, and tightly clustered together) were

REE, JRER, and JREFE. JREL was fourth, JREPM and JREPE were 7th and 8th, respectively. Urban Studies (US) was 10th and the Journal of Property Management (JPM) was ranked 12th in this study. To summarize the peer reviewed literature on importance of real estate journals, the number of journals is generally known, and surveys are a commonly accepted way to extract the data on journal importance.

DATA COLLECTION AT AFRES 2008 IN JOHANNESBURG

The first author was asked to come and assist in organizing and implementing the 2008 AfRES meeting in Johannesburg (leading from behind). The call for papers had occurred, and over 65 abstracts had been submitted, apparently enough for two tracks at the two day conference. The Schools of Architecture and Planning and Construction Economics at the University of the Witwatersrand, including the second author and another faculty member, made available 12 undergraduate students to assist in putting the conference together[5]. A decision was made to gather data in written form from attendees, and a survey form was prepared and pre-tested. The purpose was two-fold: create a baseline that could be used to gauge progress at the emerging AfRES organization (at this point in its 8th year), and determine the attendees' real estate activities, to be compared with the teaching, publishing, and consulting among other real estate thought-leader communities. A final reason for the questionnaire is to test the exposure of the attendees to the international journals and knowledge.

The data were collected from people participating in the AfRES conference. There were several methods of obtaining the written questionnaire. One way was by e-mail prior to the conference (under five responses were obtained this way). An equally small number of the respondents brought their completed surveys to the conference and handed them in to the students conducting the survey. The bulk of the surveys were handed out and subsequently collected by students then and there at the conference. Each student was given questionnaires and were instructed to ensure that participants filled them out completely and handed them back to the students for coding. Prizes (free

5. Special Thanks to Professor Francois Viruly, and to students Edgar Semenya (team leader), Kgomotso Seone, Ayanda Magqaza, Aasif Bamjee, Nokwazi Skosana, ThusoKoboyatau, Lerato Mphahlele, Learel Gulston, Bathobile Mahlobo, Ofentse Morake, Thulisiwe Mthembu and Sarah Miles.

copies of academic books) were offered to respondents as an inducement to participate. A high percentage of the conference attendees did respond to the students' persistent data gathering efforts. A total of 66 completed survey responses were obtained, out of a total conference attendance (excluding student participants) of 120. The response rate was 55.0%[6]. Some of the data (about 50 responses) were initially presented to AfRES attendees at the conclusion of the meeting. The rest were collected over the coming weeks, and coded by students.

AfRES Conference Attendance

Before the 2008 AfRES conference, 52 people registered and paid to present a paper. However, only 40 papers were actually presented[7]. This caused organizational issues with scheduling the tracks, and last minute flexibility was required to maintain critical mass at the breakout sessions. Hence, it is interesting that a large number of people just came to attend the conference and listen to the presentations. Netting out multiple presentations and authors, only about half to two-thirds of attendees presented a paper, meaning there were more spectators than presenters. This differs substantially from other real estate conferences (for example, the American Real Estate Society (ARES) where over 75% of attendees present a paper or participate on a panel.

RESPONDENT CHARACTERISTICS

It is important to note that the African Real Estate Society is a young organization; this probably explains the average age of 43 years for the survey respondents. Majority of the attendees were male (80 percent), which underscores the importance of trying to attract more females to have a properly balanced academic society. An interesting finding is that over 50 percent speak two languages or more (the average number of languages spoken is 2.5), and about 50 percent are able to conduct their professional activities in two languages. Altogether, they have an average of ten years in the real estate field.

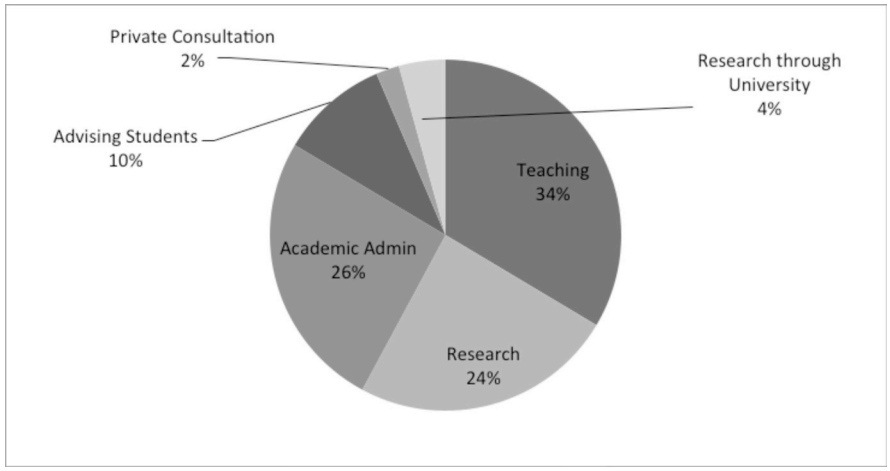
It is interesting to note that the majority (40%) of the attendees were practitioners, followed by (self-identified practicing) academ-

6. A total of 177 persons registered for the conference, but only 135 attended, an attrition rate of just less than 25%. Of the 135 persons in attendance, 15 were students or conference staff.
7. There were 68 abstracts submitted, and of these 39 submitted their paper in advance for refereeing and also to be in the competition for different paper awards. There was one "walk on" paper.

ics (33%). This group was followed closely with people identifying themselves as entrepreneurs (28%). The pure academics (a subset of academics) came in with the smallest percentage of attendance with only eight percent. This shows the importance the practitioners and the entrepreneurs (68%) attach to attending conferences and listening, and hopefully learning, from what they hear and see at AfRES.

Of the 66 respondents to the questionnaire, we find (see Figure 1) that 41% of the attendees had a Master's degree. Attendees with a Bachelor degree were 20%. People with a Ph.D. were only 18% of the attendees. There were 15% of the attendees whom had a Higher National diploma. The other six percent were mainly with graduate diplomas, or an LLB.

Figure 1: Highest Education Degree Earned.



It is interesting to note that it seems that there are some holders of a Ph.D. who do not identify themselves as academics; accordingly, there are practitioners and academic practitioners that might have earned a Ph.D[8].

8. The percentage of Ph.D.s at AfRES is much lower than at ARES, where the figure is generally accepted to be over 80%.

Academic and Real Estate Activities of Respondents

Those identifying themselves as academics, (N=30) teach a median of 4 courses per year and have an average of 28 students per class. They are technologically savvy and all use power point and overhead projectors. This is a good indication that the institutions where they teach have moved into adopting modern technology for teaching aids. This group also has Ph.D. supervisory capacity, with 11 of them supervising students at the Ph.D. level. This is somewhat surprising because Ph.D. programs in real estate are fairly rare, so they must be supervising students in Planning, Business / Management and other disciplines. With an increased of number of Ph.D. holders' participating in the conference, it is hoped that more research-oriented papers would be presented in the near future. This would increase the academic based knowledge along with the mix of weak and strong, practitioner-oriented papers presented.

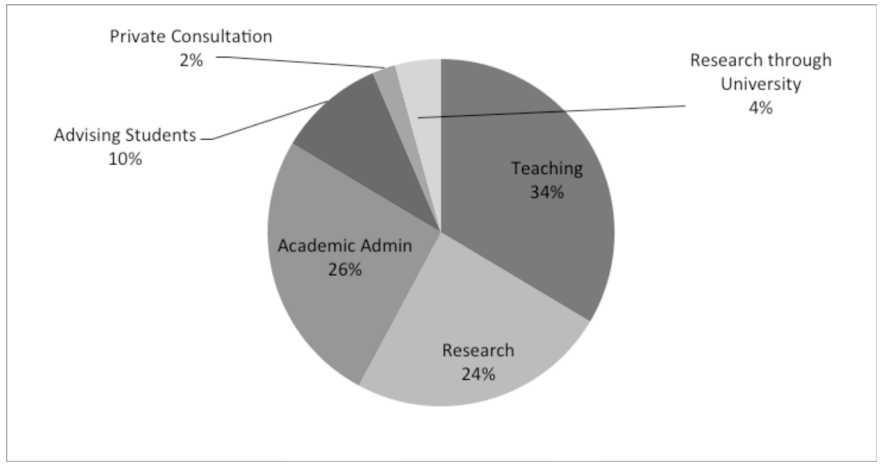
Diversity enriches the conference. Of the people attending the conference, 16 were pursuing higher degrees, of which two are Ph.D.s. An increase in higher degrees gives a broader academic base for the conference, and brings academic diversity to the conference. Also, practitioners obtaining higher degrees can assist in bringing theory closer to practice, thus enriching both practice and hopefully theory.

Only a third of the academics have taken a sabbatical. With respect to publishing scholarly work, on average, the active academic respondents stated that they published 2.3 articles per year over the preceding 2 years. This is higher than the finding of Webb and Albert (1995), that slightly over half (54%) of academics responding to their questionnaire published one article every two years. According to their paper, their numbers might have been biased downward; nevertheless, academics attending the AfRES conference fare well in comparison. This could be related to the fact that not all academics can attend conferences in some African countries and only the active ones (and those with access to financial resources) would make it a point to attend. Publishing rates among all academic respondents (N=30) averages 1.3 publications per year, more in line with Webb and Albert (1995).

Again this group of academics also engaged in 3.3 consulting projects during the past year (all 8 of the respondents). From data below (Figure 2) we can see that they are spending sufficient time in doing

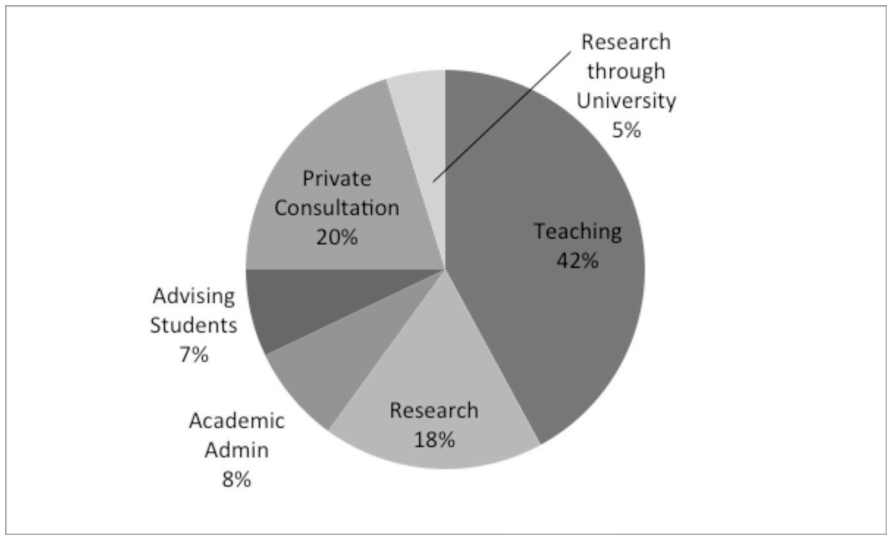
research and very little time in consulting; this probably explains the steady number of publications. The questionnaire did not inquire as to the content of the published articles, but it would be interesting to see if their consulting work contributed to their publication.

Figure 2: How Academics Spend Their Time



It is interesting to note that academics with consultancy practice (see Figure 3, N=13) spend a large portion of their time in teaching, larger than pure academics. Understandably they do much less in research (18% vs. 34%), advising students (6% vs. 10%) and in general academic administration (8% vs. 26%). Also interesting to note is that the percentage of research conducted through the university is the same, at four percent. Overall, survey respondents stated that they worked an average of 36 hours per week (N=19) with academics reporting more working hours than those that are primarily consultants.

Figure 3: How Academics With Consultancy Practice Spend Their Time



Of the respondents, there are 25 who identified themselves as "practitioners with no teaching and no research". Nevertheless when asked about their time, we find that some of them spend around five to ten percent of their time either on advising students or research through the University.

Another group, almost a quarter of the respondents, (N = 16) identified themselves as "practitioners with some teaching and no research". Their response regarding how they manage their time, we find that despite the "no research" in the question, some of them did research and advised students. On average they spent 60 percent of their time on their practice. It is interesting to see the benefit to this group of participants in subsequent conferences. The question concerning how they spend their time did not yield sufficient data for any kind of analysis.

Respondents' Local Real Estate Market Knowledge

One set of questions also inquired as to whether respondents were able to gauge the strength of their local real estate markets, both in general terms, and for cap rates and mortgage (bond) lending rates. In general, 77% of respondents were able to rank the strength of their local property markets, using an ordinal scale. When more de-

tails were sought, however, the number of respondents declined substantially, especially for informal and specialty market segments.

Table 1 contains the survey results, by real estate market sector, for respondents able to provide cap rates. Formal housing was the best recognized market, with about half the respondents able to provide cap rates. Other segments, such as retail, office, and even informal housing were known to only about a third of the respondents. Lesser sectors such as hotels were only known to about a quarter of the respondents. Thus, many survey respondents possess substantial local knowledge that could be pooled and made available, in more standardized and reliable form, to AfRES members for future research.

IMPORTANCE OF PEER-REVIEWED JOURNALS TO AFRICAN SCHOLARS

Moving along to the other main focus of this research, in line with Webb, Hardin and others, we asked attendees to rank peer-reviewed real estate journals. The results reflect the responses of 47 participants (74% of the total number of survey respondents, and 39% of AfRES 2008 attendees) who provided journal rankings. Like Webb and others, we used a 1-5 scale where 1 was the highest ranking, 4 the lowest and 5 meant the respondent did not know of this journal at all. We also tracked the highest ranking journals (those ranked either 1 or 2). These results are shown at Table 2. The list included American journals as well as a few European (JPM) and some from Africa / South Africa (ActaStruclilia, Journal of African Real Estate Research, and Development Southern Africa). Some are quite new (JARER and others moderately new (JREPE).

The highest ranked real estate journal among African scholars was the Journal of Real Estate Research (JRER), which had a score of 2.68. JRER is followed by JREFE and REE, both with scores of 2.83. The Appraisal Journal (2.98) and Journal of Real Estate Portfolio Management (3.04) rounded out the top 5. The International Real Estate Review (IRER, 3.30) JREPE and JREL followed with 3.36 and 3.51 respectively. The lowest ranked journals were DSA and ActaStructilia with 4.64 and 4.87. This could be partially explained by the fact that these journals have limited geographic exposure and are not geared exclusively towards real estate, although they do provide an outlet for some real estate research. There is a relatively new Journal

for African Real Estate Research which should cover that gap as it would be mainly dedicated to covering property issues on the African continent.

Table 3 compares the results of the AfRES members, with three other studies: Weeks, Hardin (2007), Redman *et al* (1999), and Webb and Black (1995). Only ordinal rankings are compared and real estate journals also examined in the current study are in bold/ red. There is also a time element to the analysis because some journals are newer than others. JRER is ranked highest by AfRES respondents and ranked second highest for Hardin's (2007) ranking and also by Webb and Black in their 1995 ranking. Other members of the ARES family of Journals (JREPM, JREL, JREPE), and IRER-affiliated with AsRES (Asian Real Estate Society), also did quite well among African scholars. They may be more familiar with these journals considering that ARES is the oldest established organization and several participants might also be members in ARES or attend their conferences regularly.

CONCLUSIONS AND FUTURE RESEARCH

This research has presented reports on real estate activities undertaken by participants in the African Real Estate Society's conference held in Johannesburg in August 2008, who are the real estate thought leaders of Africa. Attendees' credentials, career path, and professional activities are addressed, including time spent on various activities, including teaching publishing, and consulting, and market knowledge. Respondents to the 2008 AfRES survey are largely multilingual middle-aged males with a masters degree that listened to rather than presented research. There were more practitioners (40%) than academics (33%) or entrepreneurs (28%) in attendance. Academics typically taught four classes a year and published an article a year, with all respondents reporting working for 36 hours a week. Of the 66 survey respondents, about a quarter have a Ph.D., and many have a consultancy. Publishing rates in peer-reviewed journals are between 1.3 and 2.3 articles per year, comparable with other scholarly communities.

This survey also identified the top real estate journals read by attendees, which are: Journal of Real Estate Research, Real Estate Economics and Journal of Real Estate Finance and Economics. African scholars also preferred Appraisal Journal, JREPM, IRER, JREPE and JREL over six other journals. Many survey respondents (30% to

50%) possess substantial local real estate market knowledge on cap rates that could be pooled and made available, in more standardized and reliable form, to AfRES members for future research.

Finally, the authors suggest that this study can serve as a baseline for future comparison, and that AfRES members be re-sampled in the next few years to determine growth trends of real estate knowledge and activities among members. Theme of the conference can be evaluated, and participants should be asked to evaluate sessions in the future.

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Table 1: Respondents Familiar With Key Local Market Rates Of Return

Sector	Number providing cap rate	Percent able to provide cap rate
Formal For Sale Housing Market	33	50%
Formal Housing Rental Market	29	44%
Formal Office Market	22	33%
Formal Retail Market	25	38%
Informal Housing For Sale	21	32%
Informal Rent Market Housing	19	29%
Informal Office Market	20	30%
Mortgage Bond Market- Residential	21	32%
Mortgage Bond Market Commercial	20	30%
Hotel Touring Market	15	23%

N=66. Source: Authors' Survey

Table 2: AfRES Attendees' Real Estate Journal Rankings

Rankings 1-5 scale, with 1 top score	Journal Name		Number Rank	# ranking 1 or 2	% ranking 1 or 2
2.68	Journal of Real Estate Research	JRER	1	31	66%
2.83	Real Estate Economics	REE	2	30	64%
2.83	Journal of Real Estate Finance & Economics	JREFE	3	28	60%
2.98	The Appraisal Journal	TAJ	4	26	55%
3.04	Journal of RE Portfolio Management	JREPM	5	22	47%
3.30	International Real Estate Review	IRER	6	22	47%
3.36	Journal of Real Estate Practice & Education	JREPE	7	19	40%
3.51	Journal of Real Estate Literature	JREL	8	22	47%
3.51	Journal of Property Management	JPrM	9	18	38%
3.70	Journal African Real Estate Research	JARER	10	17	36%
3.98	Urban Studies	US	11	14	30%
4.00	Housing Studies	HS	12	16	34%
4.64	Development Southern Africa	DSA	13	5	11%
4.87	ActaStructilia	AS	14	4	9%

Source: Authors survey AfRES 2008
N=47, 74% of attendees answered journal survey questions on a scale of 1-5 scale with 1 best.

Table 3: Overall Real Estate Journal Ordinal Rankings Over Four Studies

Ranking	This research at AfRES 2008	Weeks, Finch & Hardin 2007	Redman, Manakyan & Tanner 1999	Webb & Albert 1995
1	***JRER***	***REE***	***REE***	*REE*
2	***REE***	***JRER***	**JUE**	***JRER***
3	***JREFE***	***JREFE***	***JREFE***	***JREFE***
4	***TAJ***	***JREL***	***JRER***	JUE
5	***JREPM***	JHE		LE
6	***IRER***	UE		JHR
7	***JREPE***	***JREPM***		***TAJ***
8	***JREL***	***JREPE***		REAA
9	***JPrM***	LE		REI
10	***JARER***	**US**		RER
11	US	JRSUE		REF
12	***HS***	***JPR***		***JREL***
13	***DSA***	JPIF		
14	***AS*** JHR			

Source: cited works, author(s)
Bold/ italics= journals examined in this research

JAfRER
2,1
AFRES
AFRICAN REAL ESTATE SOCIETY

Teardowns, Upgrading And An Emerging Paradigm Of Building Property Finance In Kumasi, Ghana

Authors R.A. Oppong and A. Brown[1]

Abstract

Purpose – The purpose of the research is to show that at present most major cities in Ghana are undergoing massive teardowns and re-developments apparently for effective land use and cost effective buildings. Issues of teardowns and redevelopments are common and global involving the option theory of development timing of investment. This paper presents emerging practices of teardowns and re-developments occurring in some parts of the city of Kumasi, Ghana. The processes of teardowns and redevelopment in Kumasi resemble but subtly differ from what happens in other parts of the world such as Europe and North America.

Design/ methodology/ approach – Using a mainly qualitative method research design focused on the Central Business District (CBD) of Kumasi, this paper partly draws on the options theory of development timing approach to better understand teardowns and redevelopment in Ghana.

Findings – The paper highlights the legal challenges of teardowns and redevelopment in Kumasi and typical amongst the findings is that teardowns and redevelopment in Kumasi are financed by individuals engaged in small and medium scale businesses.

Research limitations/ implications – The paper is limited by information on established incomes in the study areas. Information on income levels in a developing country such as Ghana tends to be unreliable. This limitation should however not render observation made questionable, since living circumstances of families usually correlate with statistically known income levels.

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Practical implications – This paper concludes that the findings from this research could provide a better understanding of teardowns and redevelopment, as well as inform general urban policy issues in Ghana and sub-Saharan Africa in general. Again, the lessons from Kumasi can provide better understanding of the Kumasi property market for further research.

Originality/ value – This paper for the first time introduces teardowns (Busie) and redevelopment commonly found along the main arterial roads for the first time in Kumasi and Ghana in general. The paper establishes that the process of teardowns mostly affects traditional and old buildings on prime urban lands, resulting in the loss of historical architecture and cultural artefacts. Notwithstanding, the decisions about what, when and where to redevelop urban buildings generally remain difficult because issues of teardowns and redevelopment have not been studied in Ghana. And, the triggers of teardowns and redevelopment in Kumasi remain unknown.

Keywords Teardowns, Upgrading, Redevelopments, Option theory, Kumasi, Ghana.

INTRODUCTION

Ghanaians have a strong sense of continuity through generations and duties to those following on and therefore generation feels obligated to assist the next in their housing accommodation (Tipple *et al.* 1998). Ghanaian traditional houses - *abusuafie* (family house) until recently were considered embodiments of the spiritual wellbeing of family members as well as 'safe havens' and therefore were not easily demolished or sold irrespective of geographical locations (Korboe, 1992). However, nowadays the situation is changing; commercial activities take place on almost every available space and there is the gradual tendency toward invading and converting various low and medium class residential buildings mainly family houses into other uses and as a result, residents are forced by economic circumstances, to relocate to different parts of the city and in the process. Original land spaces and structures are taken over by high rent yielding properties such as shops, offices and mixed commercial/ residential development even though the latter land use type is an emerging phenomenon. Economic activities in general and petty commodity trading in

all kinds of goods in particular, are visible in various parts of Ghanaian cities, particularly in the Central Business District (CBD) and along major transportation arterials (Adarkwa and Oppong, 2005).

This paper introduces teardown and redevelopment - *busie*[2] as it is locally termed. Teardowns and redevelopments in the Central Business District (CBD) and other parts of Kumasi bear semblance to what has been documented elsewhere in literature; nonetheless, there are subtle differences. It is not uncommon for any serious observer to notice anomalies of teardowns and redevelopment in Kumasi. Land use patterns and Building rules and regulations, for example, building heights and building sight lines seemed abused. The replacements of torn down building appear too large for the original lots with no conscious efforts of car parking provision and climatic considerations.

The pertinent questions this paper seeks to address are: who finances teardowns and redevelopment and how are teardowns and redevelopments financed? What are the triggers of teardowns and redevelopment? What does the law say about what, when and where to redevelop urban buildings? What is the general perception (of whom?) of teardowns and redevelopments? This paper contends that an understanding of this change process is critical for a more meaningful management and sustainable development of Kumasi and other cities of Ghana. This paper is structured into six main sections. Following this introduction is a brief overview of teardowns and redevelopments and theoretical framework. The third section presents a portrait of Kumasi and the study areas. The fourth section systematically describes the research methodology and strategies used, followed by a discussion of the data whilst the last section deals with conclusion. This paper does not seek to use the mathematical models of the option theory to quantify any results but possibly use it to qualitatively explain teardowns and redevelopments in Kumasi. The next section therefore outlines the option theory amongst others as it provides a useful insight, which is partly employed in explaining the teardowns and redevelopment later in this paper.

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LITERATURE REVIEW

Rationalising Teardowns and Redevelopments: Behaviours and Theories

The rationale behind teardowns and redevelopments are numerous and varied. Various theories, including the Option values theory have been used by Quigg (1993) and others to empirically explain redevelopment and land use changes. Options, according to Ho, Hui, and Ibrahim (2009) is concerned with decisions to invest in real or tangible assets. It is the right but not the obligation to take a future action and a contract giving a buyer the right to buy or sell an underlying asset at a specific price on or before a specific date. This paper has the difficulty of replicating the mathematical models of option approach used to explain behaviour of real estate market; the simple reason being the dearth of systematic data and census data is always fraught with problems in Ghana. Sometimes teardowns and redevelopments are plausible approaches for redeveloping existing areas and increasing density. Redevelopment has benefits in that it typically adds to a city's tax base by replacing old buildings with higher-priced homes, and it may deter urban sprawl by allowing people who prefer new homes to build nearer the city centre (Tachieva, 2010; Ballinger, 2006).

Even though teardowns and redevelopments generally carry a lot of economic benefits (Rosenthal, 2008; 1999) they, however, have cost consequences in the sense that, increasing home prices and taxes may force some existing residents to move elsewhere (Weber *et al.* 2006). Teardowns and redevelopments are often disruptive, particularly in built-up areas as in the case of all new constructions. Teardowns and redevelopments create noise and interfere with local traffic patterns through the erection of roadblocks. New homes resulting from teardowns and redevelopments are normally of such contrasting styles that they overwhelm older buildings and destroy a neighbourhood's character (Bruegmann, 2005). Teardowns and redevelopments could have adverse environmental impacts as the new buildings may block valuable daylight into neighbouring homes (Dye and McMillen, 2007). Again, neighbourhood liveability is diminished as trees are removed, backyards are eliminated, and sunlight is blocked by "towering" new structures built up to property lines (Ballinger, 2006). Teardowns and redevelopment could affect architectural heritage and socioeconomic diversity especially in urban areas (Lewis, 1996; Richards, 1990).

In spite of the disadvantages described above, one good thing about teardowns and redevelopments and redevelopments is that they represent infill growth: to transportation, air quality, support for community services and economies of scale for infrastructural development in addition to the taxation benefits mentioned at earlier on in this section[3]. The next section reviews options and other theories that explain behaviours in the real estate markets concerning redevelopments.

The option values theory according many authors including Shilling *et al* (1990), Quigg (1993), Sing and Patel (2001) as well as Schatzki (2003) can explain redevelopments or land use change decision-making. Options values in academic literature include capital-investments and natural resources as well as urban land use (Quigg, 1993). On the capital-investment side of option theory, decisions involve the choice of both the timing of investment and the option to wait to develop (Warner *et al.* 2006). It is argued that, landowners decide the time to change use, for example, from residential to commercial use. Capozza and Li (1994) assert that since land is a fixed asset, developers therefore choose the optimal time to convert or redevelop. Land is valued as an option, for which the underlying asset is the building that potentially would be built on it (Quigg, 1993). Option contracts have been used by real estate developers as a way of gaining control over site in order to resolve uncertainties since dynamic flexibilities in real estate development project include option to defer investment, option to choose the scale and timing of the development and tenant mix option and sequential development (Sing and Patel, 2001). Again, Sing and Patel (2001) have argued that, in the development timing option model, a parcel of land is likely to remain undeveloped so long as there is value in waiting than the value of the developed land less the cost of constructing an optimal scaled building thereon.

This is supported by Quigg's assumption that a landowner's decision to exercise the option to develop is triggered if and only if the value of the developed land is equal to or exceeds the combined value of vacant lands and waiting options (Quigg, 1993). It is also argued that real estate market participants and landowners rationally and reasonably use option contracts to set prices of land in such a way that they can minimize income variance and at the same time ensur-

3. This point is a valid reminder from the anonymous reviewer(s).

ing that developers exercise option (Sing and Patel, 2001). Experts have provided reviews to the capital-investment that decisions vary with fundamental intensity when developments are site-specific and new developments occur at varying densities and rents can rise or fall with time or distance from the centre of the city (Warner *et al.* 2006; Capozza and Li, 1994).

On the production-side, Smith (1987) uses his classical rent-gap theory to explain the phenomenon in the sense that capital flows and the productivity of human settlements tend to attract capital towards the development of such areas. In other words, an inflow of investments would fuel teardowns and redevelopments implying that less investment or "devolution" of the inner city capital would result in the neglect of its related properties. In addition, inner city land prices also fall relative to land prices on the periphery. According to Smith (1987b), when the rent-gap is wide, developers and other stakeholders will see the potential profit to be obtained by developing them for new residents as a way of closing the gap. The need to close the rent-gap is primarily to achieve a higher and more productive use of land. Other writers including Harvey *et al.* (1999), Davis (1994) and Clark (1995) tend to support the framework provided by the production-side framework.

On the other hand, the consumption-side theory emphasises the need to understand the characteristics of the people who drive teardowns and redevelopments in order to better understand the process. It is argued that the socio-economic characteristics of these people are such that in a service-based economy, they would desire to be within the proximity of their work places (see, for example, Osland and Thorsen, 2008). These are the young and successful businessmen/women with a relatively high disposable income and service oriented jobs in the urban core. While this may have limited application to the contemporary situation in Ghana, it could still be useful in understanding the unfolding process of teardowns and redevelopments using this framework. Other proponents of the consumption-side theory include Wetzel (2001) and Alejandrino (2000).

Global briefs of Teardowns and Redevelopments

Redevelopment, tearing down of old buildings and substituting new ones for the old buildings worn out by age, blight and/ or change of use; structural problems, bad layout, poor maintenance, poor environment;

and in both in areas affected by traffic congestion is not new and comes with challenges (Schwab, 2011; Shaw and Robinson, 2010; Foden *et al*, 2010; Morris, 1997). Teardown and redevelopment in downtown city areas in the advanced and emerging economies in Europe, USA and south eastern Asia is referred to as "regeneration""upgrading""transformation""renewal""modernisation""gentrification" or "improvement" in different locales. For the purposes of this paper upgrading and redevelopment are synonymously and interchangeably used.

Ballinger (2006) characterizes teardowns and redevelopment as about community character, smart growth, affordable housing, economic and demographic shifts, and ever-changing housing preferences. Older homes are demolished and replaced with new scale of structures, to enhance the character of existing neighbourhoods (Bruegmann, 2005). Sometimes demolitions are the appropriate approach for redeveloping existing areas and increasing density. Redevelopment benefits a city because it typically adds to a city's tax base by replacing old buildings with higher-priced homes, and it may deter urban sprawl by allowing people who prefer new homes to build nearer city centres (Ballinger, 2006). Singapore, a tropical country with an emerging economy has had for several years, in particular through its' project of spatial and housing upgrading; modernised, sanitised and regulated its eclectic and often poor quality housing, and the chaotic streets, lined with hawkers, to create a thoroughly 'modern' nation (Hobson, 2006). It is argued that most of Singapore's housing upgrading schemes had been underpinned by the option development theory, even though, the option theory does not necessarily minimise risk and produce a more accurate estimate (Ho *et al.* 2009).

Additionally, there have been teardowns and redevelopment schemes across the United Kingdom and Northern Ireland in recent times. For example, the opportunity to redevelop the Titanic quarter arose when the giant Harland and Wolff Ship building company in Belfast shrank greatly in size- employing a mere 300 people, compared to the 40,000 at its height – abandoning most of the docks, and leaving one mile of valuable waterfront development land (RUDI, 2008). The Titanic Quarter was designed to redevelop the historic Queen's island into a community centred on genuine social interaction and shared values. The Titanic Quarter redevelopment turns the Queen's island as the engine room for the Belfast city's growth and economic prosper-

ity, while building on and celebrating the maritime history of the area. Many listed and historic structures are preserved in the midst of high-scaled demolition (The Titanic Quarter Regeneration in Belfast, 2007).

Another example from the UK is Liverpool, north-west of England. Liverpool beating Bristol, Birmingham, Cardiff, Newcastle-Gateshead and Oxford to win the coveted prize-2008 European Capital of Culture attracted increased capital-investment. A massive regeneration programme began to revamp a ten year Delivery Plan and the Housing Delivery Proposal by the Liverpool City Council to boost the profile of the city under the New Deal for Communities (NDC) Programme started in 1998 (Foden *et al*, 2010; Russell *et al.* 2009). The most prominent areas benefited from the programme are the historic core comprising the Liverpool One (City Centre), Albert Docks (civic and cultural), the University of Liverpool (University of Liverpool, 2008) and the Kensington areas situated immediately east of Liverpool City Centre. Kensington was chosen as the most deprived area in Liverpool after various debates by the civil society and city authorities. At the time it was designated, Kensington had 4,200 households and 5,050 old primarily residential buildings, mainly developed between 1830 and 1914, with 83% of the stock consisting of terraced housing in dense blocks sandwiched between three arterial routes between the City Centre and the motorway network (Kensington, 2010). Ownership of the housing stock was mixed. The Government of the United Kingdom committed approximately £2billion to 39 partnerships over a 10 year period to close the gap between the selected neighbourhoods and the rest of the country (Kensington, 2010). A central aim was to stabilise and change the housing market. The housing market was especially undermined by the recession of the 1980s, which affected the social composition and took the economic heart from the Kensington area (Russell *et al.* 2009).

Local perspective: focus on Kumasi; Ghana

Several authors including Patel (1984), Tipple *et al.* (1998), Olanrewaju (2001), Njoh (2006), Jenkins *et al.* (2007), Ingwe *et al.* (2008), Loo (2008) and Solomon (2009) have reported on urban re-development in most African and Third World countries over the years. Notably, the common theme of redevelopment programmes in major cities of Africa and other developing countries addresses transport and road infrastructural deficiencies and crises in old, indigenous core areas of the cities, and in

the outer spontaneous settlements that house low-income earners. In Ghana, teardowns and redevelopments may not be occurring at a very fast pace but it is still occurring in various settlements in forms which have not yet been studied extensively for us to clearly understand their form and dynamics. Some inner city areas in the five large centres of Accra, Tema, Kumasi, Sekondi-Takoradi and Tamale; particularly their CBDs, appear to be undergoing massive re-development for effective land use and cost effective buildings, which involves massive demolishing and financing of the projects.

In Kumasi, for example, the CBD and other sub-centres appear to be redeveloping individual properties, particularly along major arterials, to accommodate new office and commercial uses. In virtually all the cases, the original uses were the traditional poor and low-income residential housing which appear to have been neglected for many years but are located on prime land. It is within the context of the foregoing that a major precinct within the CBD was studied in order to provide some answers to the questions raised in this paper. Teardowns and redevelopments in Kumasi, in its generic sense, simply refers to a physical, social, economic or cultural phenomenon through which inner city neighbourhoods are converted into more affluent middle class communities. The conversion is achieved through renovation, remodelling or refurbishment which results in increased property values and the relocation of the poor. Deteriorated portions of human settlements including areas of architectural or historic importance are attractive for teardown and redevelopments in Kumasi's CBD.

Redevelopment, in the advanced economies is not considered as merely demolishing without due consideration of planning laws and physical implications. However, in the case of Kumasi, planning laws appear not to be taken seriously in the teardown and upgrading processes. It is not uncommon to find buildings of redevelopment disregarding "Stop Work; Produce Permit" order by Kumasi Metropolitan Assembly (KMA). Article 258 under Act 527 of the 1992 Constitution of Ghana establishes and empowers the Land Commission to advise the Government of Ghana, local authorities and traditional authorities on the policy framework for the development of particular areas of Ghana to ensure that development of individual pieces of land is co-ordinated with the relevant development plan for the area concerned in the interest of public safety, public order, public morality, public health, town

and country planning and development or utilization of any property in such a manner as to promote public benefit (The Ministry of Justice, 2005). That notwithstanding, teardowns in Kumasi appeared to have greatly altered existing land use patterns resulting in constant disruption of water and electricity supply, drainage flow; parking/open spaces; dislocation of people and property and litigation amongst individuals and families. Our initial checks with the Ashanti Regional Town and Country Planning Department revealed that land use planning in Kumasi has been based on the 1963 outline of town planning scheme with virtually no updates (Oppong, 2011).Kumasi as in the rest of the Ashanti Region has a local governance and traditional land ownership structure based on chieftaincy or kingship which can be problematic, requiring government interventions.

KUMASI AND THE STUDY AREAS

The Kumasi metropolis with a population of 1,170,270; almost a third (32.4%) of the region's population, is the most populous district in the Ashanti Region of Ghana (Ghana Statistical Service, 2005). Kumasi is attractive to a large population partly due to the fact that it is the regional capital, with a vibrant commerce base in Ghana. As far back as 1921, there were about ten identifiable ethnic groups in Kumasi, which included immigrants from Sierra Leone and Togo and other considerable non-African population; it was estimated in 1960 that one-sixth of all the immigrants that arrived in Ghana settled in Kumasi (Ghana Statistical Service, 2005; Arhin, 1992; Konadu-Agyemang, 1991). A special study in 1990 revealed that persons from all the ten regions in Ghana as well as immigrants from neighboring West African countries are found in Kumasi (Anarfi *et al.* 2003; Abdulai, 1999).

Administratively, Kumasi consists of a "built up" area and a suburban district of about 55 small settlements, varying in population from 200 to 2,000. The city has a total area of 57 square miles. The "built up" area is 16 square miles, about one-quarter of the total area. Present boundaries of the city have been fixed as a result of various ordinances establishing the administrative boundaries of Kumasi (Arhin, 1992). The growth of Kumasi like other cities in Ghana has been sporadic, hardly conforming to planning rules, partly due to the effect of 'absorbing' a number of small settlements within its periphery but out of its jurisdiction. For instance, areas which were small communities before 1970 have grown

into densely populated residential areas with 20,000 - 40,000 people to become part of the city of Kumasi (Ghana Statistical Service, 2005).

For the purposes of this paper, seven neighbourhoods in the CBD of Kumasi were chosen as case studies due to the magnitude of teardowns and redevelopment schemes. This paper restricts the sample to teardowns and redevelopments along arterial roads in the selected neighbourhoods. The study areas are grouped into: Low Density High Class (Suntreso-North and South); High Density Middle Class (Adum, Bantama, Asafo and Amako) and High Density Low Class (Oforikrom/ Afful Nkwanta, Suame and Ayigya). Table 1 compares household income, housing density and house prices and rents as well as commercial rents from the selected study areas obtained from primary and secondary sources in May/June, 2011.[4]

Table 1: Shows household income, housing density and house prices and rents as well as commercial rents from the selected study areas

Comparison Construct	Study Areas		
	Low Density High Class	High Density Middle Class[5]	High Density Low Class
Household income[6]	Excluded	Excluded	Excluded
Housing density/ occupancy rates	1-3 houses per hectare/ 1.7 persons per room, 50 persons/ hectare	3-5 houses per hectare, 3.9 persons per room 100 persons/ hectare	5-7 houses per hectare 6-8 persons per room 200 persons/ hectare

4. In response to anonymous reviewer (s) comments, academic and experts in Kwame Nkrumah University of Science and Technology as well as building industry professionals in Kumasi were contacted through emails and telephone in Ghana for primary data. Also, Eric Yeboah of Department of Civic Design, University of Liverpool and Anthony Owusu-Ansah of Aberdeen University who are both PhD research students and Land Economy degree holders were consulted for primary and secondary data. The consultation unravelled the difficulties in obtaining sophisticated database on the real estate market in Ghana.

House prices in USD[7]	Between $276,583.00 and $419,145.00	Between $1,763,000.00 and $2,518,586.00	Between $173,793.00 and $231,724.00
House rents in USD	Between $135.00 and $350 per month	Between $20.00 and $66.00 per month	Between $10.00 and $12.00 per month
Commercial rents in USD	$131.00 per month per 16m2 shop/office space	$1,385.00 per month per 5.4m2 shop space and $3,324.00 per 9.6m2 per shop space	$40.00 per month per 17.64m2 shop space
House types	2-5 bedroom single-storey (self-contained) with high quality finishes shared sanitary	Multy-storey (compound) with multiple chamber and living room with without sanitary facilities or 2-bedroom flat	Silgle-storey (compound) of multiple 1-bedroom with shared or facilities in amorphous layouts.

Source: Authors' Field Survey (2011)

5. The presence of run-down low rent yielding properties and the high demand for commercial property developments in High Density Middle Class areas apparently account for the 'unrealistic' high house prices and commercial rents.

6. The survey excluded questions on incomes because information regarding incomes in Ghana as in most less sophisticated economies tend to be unreliable and therefore intelligent guesses were made by observing the life-styles of the research questionnaire respondents and the study areas in general. However, The Ghana Statistical Services notes Average annual household income in Ghana is about GH¢1,217.00 whilst the average per capita income is almost GH¢400. With an average exchange rate of GH¢0.92 (¢9,176.48) to the US dollar prevailing in June 2006, the average annual household income is US$1,327 and the average per capita income is US$433 (Section 9.8). There are regional differences with Greater Accra region recording the highest of GH¢544.00 whilst Upper West and Upper East regions had less than GH¢130.00. Urban localities had higher per capita income than rural localities. The three main sources of household income in Ghana are income from agricultural activities (35%), wage income from employment (29%) and income from self employment (25%). Remittances constitute less than 10 percent of household income. The annual estimated total value of remittances received in Ghana is GH¢547,571 million whilst the estimated total annual value of remittances paid out by households is GH¢231,344 million which represents 42 percent of all remittances received (Ghana Statistical Services, 2008: viii).

7. Conversion rate: 1 Ghana Cedis (GHS) = 0.65697 USD, www.exchange-rates.org/converter/GHS/USD accessed on 22nd May, 2011.

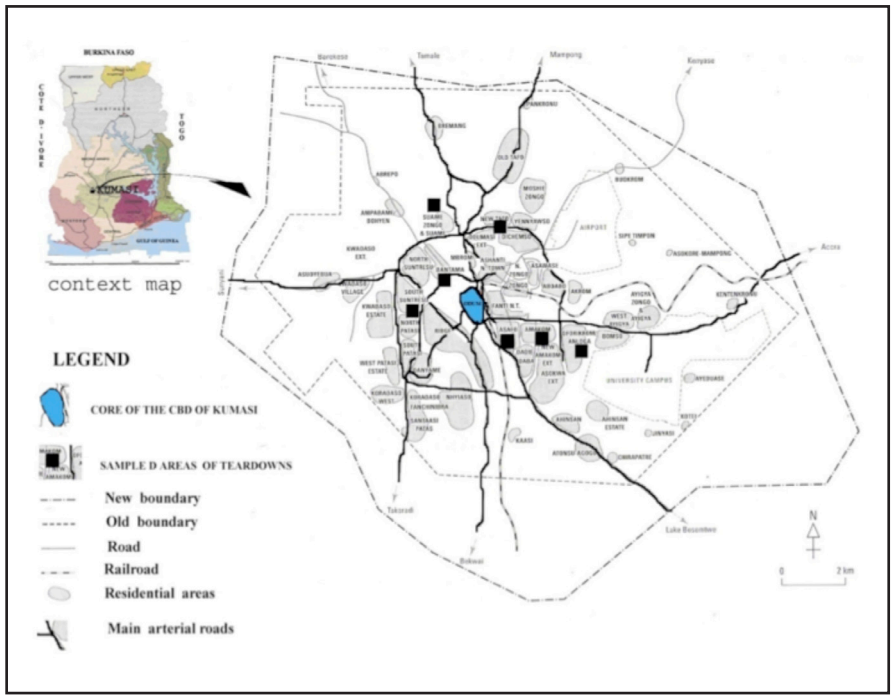
METHODOLOGY AND TECHNIQUES OF RESEARCH

Our research used mainly qualitative research methods and techniques. Since architectural research *a priori* combines methods (Groat and Wang, 2002) our qualitative approach is minimally nestled with quantitative data. Collecting quantitative research data about teardowns and real estate development in Ghana is very challenging. It was discovered during the course of this research that standards used in the real estate market are based on European and American models. Ghana has no reliable data on housing and real estate markets. Census data in Ghana could not be used[8] as is the case elsewhere (Quigg, 1993). We therefore used case studies, a questionnaire survey and focus group strategies to collect primary data from the field. The main research was carried out in 2007 and 2008. Additional data was gathered in May/June 2011 to fill in gaps. The research participants were home/land owners, local residents; developers (financiers)[9] of teardowns and redevelopments in seven purposively sampled neighbourhoods of the CBD of Kumasi (figure 1).

8. Censuses in Ghana are always fraught with problems. Results are always disputed. The 2010 Population and Housing Census conducted on September 26, 2010 as the reference point has had its provisional figures challenged as not credible and cannot be relied upon for successful planning and policy implementation (www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=202282 and; www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=202581).

9. The developer/financiers are small and medium scale businesses engaged in the trade and commerce/general merchandise.

Figure 1: Map of Kumasi showing major suburbs and the seven (7) selected areas of study where teardowns and redevelopments are happening.



Case Studies

The objects of our study (teardowns and redevelopment buildings) were focused on purposively sampled 37 individual buildings at various stages of upgrading and redevelopment in their 'real life context from the neighbourhoods: Suntreso = 3 buildings; [O] Adum (core of the CBD) = 5 buildings; Bantama = 10 buildings; Asafo = 4 buildings; Amakom = 4 buildings; Suame = 5 buildings; and Oforikrom/Afful Nkwanta = 6 building. Figure 1 provides geographical locations of the above-mentioned study neighbourhoods in the CBD of Kumasi selected for this paper. For ease of identification, the 37 buildings were those visible along main roads in the selected study areas within June –August, 2008. The data that emerged was triangulated to explain the causal link (Groat and Wang, 2002) of teardowns and redevelopments through theory, narratology (Adarkwa and Oppong, 2007), field survey (site visits and administration of semi-structured questionnaires) and one focus group discussion.

Semi-structured questionnaires

The subject matter of this research is new in Ghana, and therefore, it was deemed appropriate for data collection and administration to be done in person instead of relying on research assistants. The use of e-mail and telephone was kept to a minimum in the collection of data. 200 out of 500 questionnaires were administered at random due to difficulty of recruiting participants who apparently viewed the research as a means of soliciting information for government, perhaps, because the data collection coincided with the presidential and parliamentary electioneering campaigns in Ghana and that perhaps led to the 40% response rate[10]. Denzin (1978) argued that methods are triangulated when many methods are combined. In order to increase the validity and inferential power of the findings, our 200 responses came from research participants who were different from the 37 cases and focus groups.

The research participants did not overlap but the semi-structured questionnaire which consisted of 19questions formed the basis of focus groups interviews and discussions did to some extent explored questions such as: would you prefer old/traditional buildings to be demolished for new onesand for what reason (s) would you want old traditional buildings to be demolished for new ones? The questionnaire was divided into three sections and took approximately 15 minutes to complete. Section one concentrated on the personal profile of respondents whilst section two sought information on transformation of traditional buildings. Section three of the questionnaire asked respondents to indicate their willingness to participate in a focus group discussion. The questionnaires excluded questions on incomes because information regarding incomes in most less sophisticated economies tends to be unreliable and therefore intelligent guesses were made by observing the life-styles of the respondents and the study areas in general.

Focus group, Narratives and Photographs

The use of focus groups to gain insights into the dynamic relationships of attitudes, opinions, motivations, concerns, and problems re-

10. The questionnaire administration was time-bound (June –August, 2008) to enable analysis to be carried in the University of Liverpool, UK.

lated to human activity has seen a notable growth in recent years (See, for example, Zaretsky, 2011; Halcomb *et al.* 2007; Freeman, 2006; Catterall and Maclaran, 1997; Folch-Lyon and TrostSource, 1981). Focus groups usually employ purposive sampling where cases are not selected randomly but are selected as a group due the nature the research question(s). Focus group interviews as a qualitative research technique is widely used in private industry, where it is considered essential to understanding the psychological and behavioural leanings of consumers to identify ways and means to influence behaviours. For our research, focus groups[11] and individual meetings were carried out with the aim of understanding, as systematically as possible, through narratives,: the triggers of teardowns and redevelopment, the legality of teardowns and redevelopment ; what, when and where to redevelop urban buildings and the general perception of teardowns and redevelopments. Photos of teardowns and redevelopments from the selected neighbourhoods were used in a ten-minute power-point presentation to give focus group participants vivid descriptions to facilitate their understanding of teardowns and redevelopment experiences.

As researchers, we sat in the focus group meeting, listened and took notes at the same time after initial questions on why teardowns and redevelopments in Kumasi were put to the participants for discussion. Participants gave individual narratives in response to the question in a conversational fashion, providing extremely critical data for analysis. The focus groups enabled this research to build up a detailed understanding of the dynamics, especially the legality of teardowns and redevelopments. The ideas and attitudes narrated during the focus group meeting were broad and varied, there were plenty of personal preferences and opinions but the participants generally shared views that reflected economics as the driver behind teardowns and land use conversion in the CBD of Kumasi. In order to more ac-

11. The Focus Group was made up of individuals: 1 academic, 2 building industry professionals, 1 Metropolitan assembly member, 1 banker and 2 developer/builders and 1 physical planner. Individuals were invited to a two-hour launch meeting in the Kwame Nkrumah University of Science and Technology where one of the authors works as lecturer. Invitees were given briefings beforehand on the essence of the meeting to enable them prepare notes on teardowns and redevelopments. Meetings were methodically designed based on conversation techniques to allow the participants to give narratives on teardowns in a free-flowing conversational fashion. The interviews were recorded by written note taking and audiotaping at the same time.

curately understand some participants' personal preference and address political and sensitive issues, the researcher met some members of the focus groups separately for additional discussions.

Data Analysis and Validity

All the interviews were transcribed verbatim and analysed inductively for terms and phrases that indicate manifested perception of teardowns and redevelopments. Statistical analysis is both valuable and desirable particularly for suggesting indicators of significance and prevalence. However, authors including Sayer (1984) and Yin (1989) caution researchers to be mindful of its limited capacity for understanding and explaining social behavior. Therefore, the University of Liverpool Statistical Packages for Social Scientists (UoL SPSS 16 and 17) were used to generate simple frequencies for analysis of the 200 questionnaires collected as primary data.

Even though statistical significance of data obtained from the sampled 200 questionnaires and 37 building sample is not ascertained in this paper, subjectivity and potential problems of construct validity in this study was addressed by cases chosen in preference to one. The data that emerged by employing these methods and strategies are discussed in the next section.

FINDINGS AND DISCUSSION

Financing Teardowns and redevelopments in Kumasi

The study reveals the developer/financiers of teardowns and redevelopments and upgrading are mainly middle-income earners[12]. They are mostly private people with less sophisticated educational backgrounds from elementary, Junior and Secondary High Schools. The study also reveals that funds from formal sources, for example, banks and corporate institutions for teardowns and redevelopments and upgrading exercises are not popular; a scenario which is typical of the indigenous private sector in most African countries (Aryeetey *et al.* 1997). High interest rates deter borrowers. Only 8.1

12. Middle income earners in Ghanaian terms are successful businessmen and women as well as young professionals with a relatively high disposable income and service oriented jobs in the urban core (Adarkwa and Oppong, 2005).

per cent (Table 2) of the respondents admitted to have taken loans from the banks; majority of the developers raised money through the informal sector where lending rates appear to be acceptable or negotiable Three (8.1%) redeveloped buildings were financed by a loan from bank with high compound interest rate of 22%. A developer claimed he traded off his "goodwill money"[13] of GH¢50,000.00 (US$33,080.60)[14] as collateral for a loan to complete the ground floor of a torn down single-storey building for a proposed three-storey building that was rented to a bank. Majority of the developers (financiers) interviewed had not borrowed from banks and were not prepared to do so. As shown in Table 2, sixty per cent of the respondents rely on money earned through regular business activities and others (32.4%) use remittances from family members abroad mainly in Europe and North America.

Difficult access to capital prolongs the gestation period of teardowns and redevelopment processes. As a result, most of the projects are executed in incremental fashion. The study discovered that the average construction time varies from 5 to 10 years. A finished phase is rented out and the money accruing from rentals are used to finance the next phases of teardowns and redevelopments.

Drive and general perception of teardowns and redevelopments

13. Money (inducement) paid by prospective tenants to landlords before taking occupation of property. The goodwill money does not count against rent and also non-retrievable at the end of the tenancy. The good will money ranges from US$200.00 to US$350.00 for residential houses and US$662.61 and $1984.84 for shops and offices in commercial properties. Notably, development events in Ghana have overtaken the Rent Act 220 of 1963 enacted 48 years ago and therefore the Act has lost its usefulness of monitoring and regulations. However, subsequent revisions of the Rent Act 220 into Rent Control Law (1986) PNDC 138, and as amended by Law 163 have not been enforced over the years. Recently, The Council of Indigenous Business Association (CIBA) made up of small business enterprises urged government to streamline and enforce the Act due to the unrealistic high amount of money paid as rents to property owners. There have been claims that tenants are required to make two to ten years of advance payment.

14. The exchange rate for the Ghanaian Cedi was based on http://coinmill.com/GHS_USD.html last updated on May 16, 2011 from Bloomberg.

Table 2: Sources of Funds for teardowns and redevelopments of sampled buildings (N-37) in the study areas

Sources of Funds	No. of Buildings	Percentage (%)
Business activities (small and medium scale businesses[SMSBs])	22	59.5
Family Overseas Remittance	12	32.4
Bank Loan	3	8.1
Total	**37**	**100.0**

Source: Authors' Field Survey – 7 selected study areas in Kumasi, March/April 2007/8

Perceptions of teardowns and redevelopments appeared mixed. The focus group made of academics, practitioners as well as developers were in agreement that teardowns and redevelopments have economic benefits to individual land and property owners and the city of Kumasi as a whole, but, the developments should be guided by rules and regulations. One of the focus group participants noted that:

"...in Kumasi all open spaces are sold out for buildings... green patches in the city are fast going away, old buildings are demolished and glazed buildings put in their places. Twenty years ago the situation was not like this. For instance, in 1997/98, there used to be green in front of the Architectural and Engineering Services Limited (AESL) building in Kumasi but today all the trees are cleared for car parking lots with no single tree. Just go everywhere in Kumasi and you see that that trees are being cleared for buildings. The planning authorities seem to do nothing about the situation, they should direct the developments in the city, where should be green and so on, but they have no say...it is like, some powerful person of Kumasi Metropolitan Assembly decides what should be done in Kumasi and that's it! You can see personality traits in the development of Kumasi...Not from planning point of view" (sic) (Anon. Focus Group, 2008).

Another in response said:

"Ghana has seen some development in recent times. There are beautiful buildings in our cities but we still have a long way to go because our architecture and for that matter most of our buildings are not environmentally friendly. We do not plan the buildings well and people build anyhow...and in Kumasi it is just a reflection of the nation... indiscriminate building practices abound in Kumasi. Kumasi was believed to be the Garden City of West Africa but there are no trees and the Chief Executive Officer took it up to beautify the city ... about four years ago to plant trees and flowers in [traffic circles] in the city of Kumasi as a start. As part of the beautification programme, the KMA embarked on a massive decongestion exercise where unauthorized structures in the city were demolished, especially the one along main streets... The programme has not really received the needed responses from the public because of the demolition exercise (Anon. Focus Group, 2008).

Quigg's (1993) assumption that a landowner's decision to exercise the option to develop is triggered if and only if the value of the developed land is equal to or exceeds the combined values of vacant lands and waiting options appeared not to be the case in Kumasi. The driving force stems from the fact that, first, the owners and tenants in those buildings have not resisted attempts or efforts to tear down, to redevelop or to rehabilitate decrepit buildings in the study areas simply because they do not have any other viable alternatives to their run-down, ram-shackled and ill-ventilated houses. Second, the general view is that, the injection of capital through the teardowns and redevelopment of old buildings is seen as means of creating space for economic ventures and modernising the city. As a result replacement buildings have external walls made of glass and glazing instead of the traditional mud or cement block wall (Figures 2 and 3). The focus group meeting appeared to agree that the architecture resulting from teardowns does not respect climatic conditions since it uses excessive glass and glazing in a warm-humid climate. For example, one of the focus groups said:

"The teardowns are full of gross indiscipline...People build anyhow, there is no systematic development. Architects are the worst offenders. Our architects are not helping the situation either. You find architects building in unmapped/ unapproved areas in the city... again, transfers of planning and development oriented Metropolitan Chief Executives (MCEs) shortly after assumption of office have been major setbacks to the city's and Ghana's development as a whole"(Regional Planning Of-

ficer, Town and Country Planning Dept. Kumasi, 2008).

Table 3 shows 56 percent of the respondents were of the view that

Figure 2: Teardowns and redevelopment graduates at various levels of completion along a major road in Kumasi.

Figure 3: Teardowns and redevelopments graduate with excessive glazing in the process with and inadequate parking space and greening.

Figure 4: Landmark building (Unicorn house) undergoing teardown and redevelopment in Adum, Central Business District of Kumasi

Figure 5: A three- storey commercial building that has replaced torn down single- storey building.

Table 3: Drivers of Teardowns and redevelopments in Kumasi

Perception	No. of Respondent (N=200)	Percentage (%)
Economic Reasons	112	56.0
Restoration / Maintenance	5	2.5
Modernist/ Postmodernist Attraction	83	41.5
Total	**200**	**100.0**

Source: Authors' Field Survey, March/April 2007/8

the predominant reason for teardowns and redevelopments is financial whilst 42 percent of the respondents perceived the old buildings as outmoded and that for Kumasi to look modern, the old buildings must give way to new and more attractive ones especially, those along the main roads (figure 2-5). A little fewer than 3% of respondents perceived teardowns and redevelopments as necessary for restoration and maintenance (Table 3). The ramifications of teardowns and redevelopments bear semblance to teardowns and redevelopment schemes across the advanced and emerging economies as indicated elsewhere in this paper. For example, teardowns offer the opportunity to redevelop devalued properties. But it brings about housing displacement and economic disorientation of the poor as well as loss of traditional architecture. The developers appeared to put a higher premium on land than buildings. In teardowns and redevelopments processes, our study revealed that original residents are displaced to the peri-urban areas of Kumasi.

Teardowns and Legality

The research revealed that most of the teardown and redevelopment activities did not have legal backing. Teardowns and redevelopments appeared to have violated city planning ordinances as the planning office from the Town and Country Planning Department revealed dur-

ing the focus group discussion. However, findings from the study areas were mixed: some family- owned properties undergoing teardown and upgrading were found to operate on non-statutory lease agreements of twenty-five years. However, further investigations revealed that the legal processes involved have not been duly pursued because the developers consider the processes cumbersome, non-transparent and time wasting even though it is required by law under Part I of Legislative Instrument (L.I.) 1630 of National Building Regulations (1996). The L.I.1630 clearly spells out what developers need to do during erection, alteration or extension of buildings. For instance, Regulation 3(2) states inter alia:

> "No approval shall be granted to any applicant who does not have a good title to the land, and, for the purpose of this regulation, good title shall be in accordance with certificate issued by the Chief Registrar of Land Title or any other agency so authorised" (The National Building Regulations,1996:7).

Little over fifty-one percent of the buildings teardown and redevelopment did not have building permits and lease agreements. Forty-one percent indicated that lease agreements and building permit acquisition were not relevant: examples of typical reasons given by the respondents included:

a. lease and land title application involve too many people who demand huge sums of money at every stage and yet do very little and;
b. teardowns and redevelopments flaunt the building rules and regulations without punishments from the city authorities.

Informants who pleaded anonymity revealed that most developers do bribe some miscreants within the city authority set-up to carry out teardown related activities. One informant remarked:

"There are many buildings that building inspectors come and write "Stop Work; Produce Permit by order Kumasi Metropolitan Assembly (KMA)" because the buildings do not have architectural drawings approved by the Town and Country Planning Department, or are too close to the road or the lease expired...but "work" never stops and the building inspector(s) will also stop visiting the building sites because developers offer pecuniary tokens to designated building inspectors and works continue unabated".

An idea of the situation of building permits acquisition and lease

agreements on the 37 building sample is summarised in Table 4 below.

Teardowns and Economics

In virtually all the cases of teardowns studied, the major reason for teardown was because the buildings had deteriorated to such an extent that there necessarily had to be some external infusion of capital into the area to rehabilitate the subject buildings in line with Smith's (1987) assertion that an inflow of investment-capital would fuel redevelopment for higher rents. The owners and tenants in those buildings have not resisted attempts or efforts to demolish and redevelop run-down buildings simply because they do not have any other feasible alternatives. The general view is that, the infusion of capital through the redevelopment of selected buildings is seen not only as an investment but also as a way of carrying out several years of neglected building maintenance. The foregoing appears to be the general perception because more than 56 per cent of the respondents were of the view that the reason for teardowns and redevelopments are deeply rooted in economics. Their simple explanation is that since some adjoining redeveloped properties are attracting very high returns, they must also ensure that their properties are redeveloped so that they can also enjoy similar returns. This then partly explains why several old houses in the study areas are being demolished to make way for properties which will ensure more efficient use of space and maximum profits in returns. However, property owners appeared

Table 4: Frequency of Building Permits acquisition and Lease Agreements based on the 37 building sample

Construct	Frequency	Percentage (%)
Teardown and redevelopment with lease and building permit	3	8.1
Teardown and redevelopment with no lease and permit	19	51.4
Lease and permit not relevant	15	40.5
Total	**37**	**100.0**

Source: Authors' Field Survey (2011)

flexible in exercising options and timing to redevelop run-down buildings on prime lands. As shown in Table 2 earlier in this paper, Teardown and redevelopment activities are financed by SMSBs and family remittances from overseas and those without any viable funding option would wait or redevelop in phases instead of going for bank loans.[15]

CONCLUSIONS

This study is novel and has attempted to document and contribute to the discussion of teardowns and redevelopments as an emerging practice through qualitative studies in Kumasi, Ghana. In order to better appreciate and understand teardowns and redevelopments, this paper has some literature on option theory of development timing of investment and some conclusions drawn are that, landowners decide the time to change building use from residential to commercial use. Again, since land is a fixed asset, developers choose the optimal time to convert or redevelop because Land is valued as an option, for which building as an underlying asset would be potentially built on. This paper highlights a combination of findings that appear to have impacted teardowns and redevelopment in one way or the other; there is more pressure on urban land; for various uses over the entire CBD of Kumasi. A direct result of this is the changing land use patterns and an adaptation to these change patterns. Closely associated with this is a gradual process of adjustment and in some circumstances, change in taste for building materials mostly glass and glazing. Oppong, (2011) asserts that the process of adaptation to these change patterns brings in its wake changes in teardowns and redevelopments including the

15. This can be likened to what Yao and Pretorius (2009) referred to in a Hong Kong experience where a developable land may be viewed as a perpetual "American" call option on underlying asset that pays "dividends". It is perpetual (no expiration), which allows more flexibility (greater value) and the only reason to exercise is to obtain operating cash flows; land development option can be roughly regarded as "perpetual" because the developer can freely choose the time when land conversion is done and some even wait for decades of years before conversion. (2) there is also a "time to build" effect (exercise is not immediate), and developers cannot observe exact at–completion market value of underlying asset at the time the exercise decision is made (which means added risk in exercise decision). (3) "noisy" value observation of (even current) market value of underlying asset (the to-be-built property): some developers may be more knowledgeable than others (wait longer until exercise); (4) exercise creates new real assets that add to the supply side of the space market (affecting market value of all competing properties), which can increase risk of not exercising (option may effectively "expire" if demand is absorbed by competing development projects).

following:

a. more intensive and better utilization of land including and enhanced configuration of spaces;

b. introduction of new, and hitherto lesser known building materials;

c. modification and, or, refurbishment of existing buildings to attract high yielding rental values;

d. a gradual change in the style and pattern of building facades and streetscapes;

e. an appreciation and experimentation with wider range of colours

f. and an introduction and appreciation of the need for more exotic buildings.

Teardowns and redevelopment in the study areas appeared to be triggered by high commercial rents especially in neighbourhoods (high density middle and high density low class area) that are in close proximity to the core of the CBD of Kumasi. Aesthetics which may be a major consideration in teardowns and redevelopments due the use of exotic buildings materials and The changing pattern of teardowns and redevelopment in the study area for various uses appears to pay no or very little attention to building and city ordinances.

This paper reveals that teardowns and redevelopment in Kumasi are mainly funded by individuals in small-scale businesses and general merchandise. What is unclear however, is how significant the impact as well as the sustainability of the emerging funding paradigm is due to insufficient transaction data in Ghana to develop accurate quantitative models for the real estate markets. But the findings presented in this paper do provide important clues to extend this research to cover more cities in Ghana where teardowns and redevelopments are occurring to inform urban policy framework in Ghana and sub-Saharan Africa in general.

This research primarily sets out to understand the nature of teardowns and redevelopments as well as its mode of financing in Kumasi, Ghana. Perhaps the most interesting findings are:

a. that teardown and redevelopment exercises are mostly driven by economic considerations

b. the teardown and redevelopment activities do not have legal backing simply because developers perceive lease and building permit acquisition as cumbersome. From a real options analysis perspective, the land use conversions and analysis of real options Kumasi are

significantly more complex than typical stylised land development real options encountered in academic literature and research (Yao and Pretorius, 2009) and;

c. many of the building undergoing redevelopments were found to be operating on leases granted decades ago and thus require formal modifications to ensure changes in land use to reflect the global market demands as Ghana pursues a middle-income economy status by 2020.

Finally, this research could not obtain credible evidence of construction cost to estimate the value of the land in the study area and that would be undertaken as future research using real options quantitative models. Again, we speculate that aesthetics and fashion inherently drive teardown and redevelopment exercises as some respondents seemingly share willingness to have modernised and attractive buildings. Fashion is a way to signal wealth, identity and social status as well as expression of aesthetics appeals. In Ghana, for example, building with glass which hither to was a lesser known building material is deemed fashionable. Fashion is a huge determinant in shaping architectural design and it would be pursued empirically in Ghana to ascertain if indeed architects are behind the undisciplined manner in which teardown and redevelopment activities are conducted.

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Examination of the Determinants of Housing Values in Urban Ghana and Implications for Policy Makers

Authors Anthony Owusu-Ansah[1]

Abstract This paper employs the hedonic pricing model to analyse the impact of housing characteristics on residential property values in Kumasi, Ghana, over a six-year period, and analyse the impact of the findings on property rating in Ghana. It is established from the analysis that: the number of rooms, floors, and property age; location of the property; availability of garage, fence wall and swimming pool; and land registration; all influence residential property values in urban Ghana, with the residential class where the property is located having the greatest impact. Employing the Chow Test, the results show that the implicit prices of the housing characteristics are constant over time, so it is justified to pool the data together. Over the six-year period, there has been about 49% increment in property values in Kumasi. The paper provides useful insights regarding the determinants of residential property values in the housing market of urban Ghana – these are very relevant to market participants and professionals in the market. It has also questioned the use of the replacement cost method as the basis of property rating in Ghana since it ignores the value of land on which the property is situated.

Keywords Hedonic pricing model, housing characteristics, Kumasi, residential property values, property rating.

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INTRODUCTION

The importance of the real estate to the socio-economic development of every nation is well documented. Land, for example, is a primary commodity that provides space for human and economic activities and is seen as the sources of wealth and power (Abdulai, 2010). Therefore, it is not surprising that in many countries in the developing world, landed property accounts for about 50% to 75% of the national wealth (Bell, 2006). Real estate forms a major source of revenue for especially local governments in the form of property taxation. In Ghana, property rate alone forms about 60% of local governments' revenues.

Housing is one of the most important sub-sectors of the real estate industry. Liu *et al.* (2002) for instance indicate that out of the various aspects of real estate development in China, commercial housing investment is the largest and the most important. The sub-sector serves as a critical element of households' portfolio. Thus, awareness of its value or price is crucial to the owner, investors and other decision makers. It is partly because of the above that housing plays an important role in mortgage transactions - financial institutions are often willing to grant loans relying on the mortgagor's house or real estate as generally as collateral.

Housing also, constitutes an important component of the real wealth of people who own it. When there is an appreciation of the value of housing, it translates into increases in the real wealth of owners. There is therefore the need to be aware of the value of the real estate concerned. Various studies including Green (1997), Coulson and Kim (2000), Chau and Zou (2000), Wen (2001), Liu *et al.* (2002), Leung (2003), etc have also established the effects of housing investment on a country's economic growth. These studies note that housing investment may stimulate GDP growth more than other types of investment.

Housing is a composite and a very heterogeneous commodity. A lot of macro-economic variables, spatial differences, characteristics of community structure, the environment and neighbourhood amenities affect the housing market (Kim and Park, 2005). Establishing the relationships that exist between residential property values and these physical and locational housing attributes, amenities etc, are very important to valuers, planning authorities and policy makers. For example, when these relationships are established, valuers will be aided accordingly when assigning premium of values to the various housing and loca-

tional characteristics. As a result of this, a lot of studies have been conducted to investigate the relationship that exists between housing prices (values) and housing characteristics. However, such studies are conducted in different locations and geographical regions and so the impact of housing attributes on the price of the property may be different at different geographical regions (Sirmans *et al.*, 2005). Thus, the effect of the housing attributes on house prices relate to particular housing markets or geographical locations and, therefore, it would be unsustainable to argue that a generalisation can be made regarding the effect of housing attributes on house prices.

In the developed housing markets like the USA and UK, a lot of studies have been undertaken to examine the relationship between house prices and housing attributes (see for example, Zietz *et al.*, 2008; Sirmans *et al.*, 2005; Kiel and Boyle, 2001; Benson *et al.*, 1998; Ball, (1973); Grether and Mieszkowski, 1974). In the developing markets also, the use of the hedonic price model to examine housing market dynamics has been very encouraging, with some of the studies coming from Latin America and Asia. Pasha and Butt (1996) for instance empirically analyse the demand for housing attributes in Pakistan by using the hedonic method and among other things find plot size, living space, number of rooms occupied by the house, number of bathrooms in a house and quality indicators to influence house prices in Pakistan.

In Africa also, the application of the hedonic pricing model has had its fair share with most of the studies coming from Nigeria in the West of Africa. Megbolugbe (1986) empirically examines housing trait prices using the hedonic price function and the Box-Cox functional form procedure. Among other things, he finds the means of water supply to the house, nature of road system in a neighbourhood, availability of essential facilities in accommodation, building gross area, number of floors and number of rooms in a building to affect the price one pays for a house in the city of Jos in Nigeria. Arimah (1992a) also estimates the demand for a set of housing characteristics using data from Ibadan, Nigeria. There are a lot of other Nigerian studies with the use of the hedonic pricing model (see for example Bello and Bello, 2008; Bello, 2000; Arimah, 1992b; Megbolugbe, 1991, 1989; etc).

In Ghana however, not much has been done with regards to the application of the hedonic pricing model to examine the relationship

existing between house prices and housing attributes as compared to in Nigeria for instance. One of the few studies that have been found to empirically examine the factors that influence land values in Ghana is the study by Asabere (1981). Asabere (1981) examines the determinants of land values in Accra, the capital city of Ghana, but without consideration to property characteristics. Among other things, he finds the availability of schools and hospitals, and distance to the CBD and the sea, to influence land values in Accra. In the other cities of Ghana, no study has been found and so the relationship between property values and housing attributes is left unexplained. Finding evidence about this relationship will however guide estate agents and the valuation professionals in assigning premiums to the various housing attributes as mentioned above. More so in Ghana, district, municipal and metropolitan assemblies impose property rates on houses and the valuation method prescribed by law for rating purposes is the replacement cost method. This method however, does not consider market dynamics and property characteristics. By finding empirical evidence about how much each housing characteristic influence property values, it will inform the policy makers to know exactly how these characteristics affect housing values and probably adopt the proper method of imposing the property rates instead of just depending on the cost of replacing the house.

In most of the housing studies that examine the determinants of house prices, the data is pooled together over time in order to increase the sample size and hence the degree of freedom. However, such estimation makes one implicit assumption – the implicit prices of the housing attributes are constant over time. Given that the demand and supply factors that determine the prices of houses change over time, this assumption is questionable and needs to be examined and addressed.

In the light of the preceding and using Kumasi, the second capital city of Ghana as the case study, the objectives of the paper are to: (a) examine the assumption of constancy of implicit prices of housing attributes; (b) estimate the magnitude and direction of influence of housing characteristics on property values; (c) determine the extent to which property value has changed over time in Kumasi; and (d) analyse the implications of the findings on property rating in Ghana. A study of this nature in the context of Ghana is notably non-existent.

The rest of the paper is structured as follows: Section 2 discusses the use of the hedonic pricing model as a tool for property assess-

ment and administration. Section 3 also discusses the determinants of property values as evidenced in previous studies. In Section 4, the case study area is laconically described. The research methodology adopted for the study is discussed in Section 5 while the penultimate Section concentrates on data presentation, analysis and discussion. Conclusions are summarised in the last Section.

THE HEDONIC PRICING MODEL AS A TOOL FOR PROPERTY ASSESSMENT

Housing is a composite commodity made up of different physical characteristics as well as locational and neighbourhood attributes. Unfortunately, the housing commodity is sold as a whole and these physical characteristics and neighbourhood attributes are not traded explicitly. The hedonic pricing technique is used as a tool to reveal the implicit prices of these attributes. The hedonic pricing model is based on the premise that the price/value of a good is determined by the utility that the various attributes of the particular product bears. When the property values are regressed on the various housing attributes, the empirical magnitudes of the coefficients of the various attributes constitute the hedonic prices of the various characteristics (Rosen, 1974; Fan *et al.*, 2006; Wilhelmsson, 2009). The willingness to pay for the attributes, therefore, determines the price of the property.

Studies that have applied the hedonic pricing model in housing research have traditionally focused on making inferences about non-observable values of different attributes like neighbourhood amenities such as access to hospitals, schools, air quality and airport noise level (Janssen *et al.* 2001). Wilhelmsson (2000), for instance, uses the hedonic pricing model to assess the impact of traffic noise level on the value of single family houses in Sweden. The studies of Ong *et al.* (2003), Berry *et al.* (2003) and Wilhelmsson, (2009) have extended the research of Wilhelmsson (2000) to cover the physical housing attributes like the number of rooms and bathrooms, living areas and other areas. It has also been used to estimate households demand for various housing characteristics and to construct housing price indices (see for example, Can, 1992; Sheppard, 1999; Wilhelmsson, 2000; Clapham *et al.*, 2006; Wilhelmsson, 2009). Despite the widely used of the hedonic pricing model, some studies have documented some problems of the model to include omitted variable bias, multi-

collinearity, heteroskedasticity, choice of functional form etc (see for example; Abdulai and Owusu-Ansah, 2010; Fan *et al.*, 2006; Malpezzi, 2003; Sheppard, 1999).

One area in which the hedonic pricing model has been beneficial to researchers, practitioners and policy makers in the housing market is the area of assessing the value of properties, especially for rating purposes. Estimating or assessing the value of properties have traditionally focused on the use of conventional valuation methods like the comparable method, the income/investment method, the profit method, the residual/development method, and the contractor's/cost method. However, the use of the hedonic pricing model in assessing property values is now very common in most developed countries. The hedonic pricing model is indeed considered as one of the advanced valuation method in today's valuation practice (Pagourtzi *et al.*, 2003).

One advantage the hedonic pricing model has in assessing property values for especially rating purposes is that it considers both the value of the building itself and the land on which the property is located by retrieving the implicit prices of the various housing and locational attributes from a pool of already transacted/valued properties. In this way, while methods like the replacement cost method ignore the value of the land on which the property is situated and concentrate on only the cost of replacing the building, the hedonic pricing model efficiently determine the contribution of the various housing attributes including the physical land to the value of the property and hence the amount to impose on a property as a tax.

In countries like Latvia, Poland and Denmark, the mass appraisal method which employs the hedonic pricing model is used to assess the value of properties for taxation purposes. In Sweden and Netherlands also, a computerised comparable sales method is used by the help of the hedonic method to assess the values of properties for taxation purposes. Despite the clear advantage of using the hedonic pricing model for property assessment, countries like the Czech Republic and developing countries like Ghana still use the cost approach to assess residential properties for taxation purposes. The problem of using this cost approach to assess properties for rating purposes in Ghana is highlighted at the concluding section.

FACTORS THAT AFFECT RESIDENTIAL PROPERTY VALUES

The determinants of property values can be grouped into many factors. Wilhelmsson (2000) for instance, identifies four main factors that affect demand for properties and hence the price, to include the property's structural attributes, its location or neighbourhood amenities, its environmental attributes and macro attributes like inflation and interest rate. However, for microeconomic and cross-sectional analysis like in this study, the independent variables are limited to property structural characteristics and location in terms of neighbourhood quality and accessibility (Bowen *et al.*, 2001). Even though there are some disagreements on both the direction and magnitude of impact that certain housing characteristics have on housing values, some of them are very consistent in the literature. The location in terms of neighbourhood characteristics and accessibility, the structural property or physical characteristics, are discussed below:

Location

The importance of location in real estate is well known. There is a real estate adage that states that the three most important factors which determine property values are (i) location, (ii) location and (iii) location. Spatially, no two properties are the same and indeed, there is a consensus among valuers that location is the most important factor in property value determination (McCluskey *et al.*, 2000). The importance of location is evident by the fact that location physically fixes a property in space and thereby defines its distance from features such as commercial, transportation and leisure activities. Again, in cases where houses within a particular sub-market or neighbourhood are homogeneous, many of the amenities that are common to those properties are best represented by location (Gelfand *et al.*, 1998). Location is an inherent attribute of a house which directly determines the quality and hence the market value of the house. The theory of housing immobility is premised on location. The locational influences on the value of residential property may arise from a number of sources. These are grouped under neighbourhood quality and accessibility (McClauskey *et al.*, 2000).

- **Neighbourhood Quality**

Neighbourhood may be defined as a geographic area within which there is high degree of use homogeneous or similar between contigu-

ous parcels. Neighbourhood is defined in an economic sense as an area within which relatively the same prices prevail for properties that permit approximately the same types of uses and socioeconomic status. The neighbourhood quality factors that influence residential property values include (a) exposure to adverse environmental factors (b) neighbourhood amenities (c) perceived levels of neighbourhood security etc. Depending on the presence or absence of these amenities, residential properties may reduce or increase in value (Gallimore *et al.*, 1996).

Wilhelmsson (2002) empirically examines the effect that traffic noise has on single-family houses in the Stockholm Municipality and finds that a single-family house that values at SEK 975 000 would be sold for SEK 650 000 if the property is located on or near a highly noise road. Traffic noise in this case reduces single-family property values by as much as 30%. Other empirical studies that have examined the effects of such environmental attributes on house prices and estimated the willingness-to-pay (WTP) for negative externalities include Hughes and Sirmans (1993), Palmquist (1992), etc.

Neighbourhood amenities are the necessary services and attractions within the neighbourhood that makes life easy and comfortable for the inhabitants. If a particular site generally has good and high level of amenities like schools, hospitals, shopping facilities, leisure facilities, road and other transportation networks, etc, then it will be a more pleasant place to live in than other site with less amenity level. It will therefore be expected that higher prices will be paid to stay in such neighbourhoods. As Brigham (1965) note, the level of amenity in a neighbourhood is obviously a qualitative factor. It can therefore be determined subjectively by different individuals. Even though it cannot be measured directly, its value can be measured (Brigham, 1965).

The perceived levels of security in a neighbourhood is determined by factors such as the level of crime, number of drug users in that neighbourhood, etc. (Gallimore *et al.*, 1996). If there is low level of crime and drug users in a neighbourhood for instance, coupled with the presence of police post, the security level will be high and the individuals within the neighbourhood will live in comfort and peace. Property values in such neighbourhood will therefore be higher than other neighbourhoods with less security. This is because all things being equal, consumers are more willing to pay a premium for areas with higher security because of the security and comfort; than for neighbourhoods with less security.

• **Accessibility**

Easy and convenient accessibility within a neighbourhood will determine the price to pay for properties within a particular neighbourhood. Such accessibility measures involve property proximity to market, desirable supporting facilities such as transportation facilities, place of employment, shopping and leisure facilities etc. Generally, locations that afford relatively easy access to various necessary or desirable activities have higher property values than locations that do not have such easy access, with all other things being equal. Accessibility also relates to convenience of moving people and goods from one site to the other by overcoming the use of time and cost. Transportation involves cost and so how easily and convenient people can have access to place of work, recreational and social services will determine the value to pay for a particular location.

Physical Characteristics

The physical characteristics of a house influence the value to be placed on the house. These physical characteristics can be grouped as; accommodation and size; structural improvement and materials used; and age and condition of the structure.

• **Accommodation and Size**

The level of accommodation provided by a house can influence the value or price to pay for the house. Such factors include the number of bedrooms and other rooms, the number of floors, floor size, land area etc. Generally, individual buyers have their own needs, taste and preferences concerning the amount of accommodation. Such accommodation needs, tastes and preferences are influenced by the size of the family, prestige and status of the individual etc. They therefore restrict their enquiries to properties having the number of rooms or size of property that they want. If individuals get the amount and size of accommodation they want, they will be willing to pay higher value for it than they would pay for property with more or less the amount of accommodation they require. As Sirmans *et al.* (2005) find, the number of rooms (bathrooms, public rooms and bedrooms) dominantly affects price in the positive direction. This means that as the number of rooms increase, the price of the property also increases.

• Structural Improvement and Materials Used

The materials that goes into the construction of a property and the structural improvement made to the property affect the price to pay for the property. Physical factors such as the type, style and quality of floor finishes, roof, ceilings etc will influence the amenity to be derived from living in a particular property and hence the price to pay for that property. Structural improvements like the availability of garage, swimming pool, gardens, fence wall etc all affect the value of residential accommodation. Usually, the availability of improvements like swimming pool, garages and gardens in a property will make rational buyers pay higher price for such a property than they will pay for similar property without such improvements, all other things being equal.

• Age and Condition of Structure

The age and condition of a property will also influence the price to pay for the property. In examining the factors that are mostly included in hedonic models to determine house prices, Sirmans *et al.* (2005) find that the age of property influence the value of the property mostly in the negative direction. This is not surprising because as the age of the property increases, the economic value of the property decreases and hence the utility to be derived from the property decreases. Furthermore, homebuyers would have to spend additional money on maintenance when properties are old. They are, therefore, willing to pay a price lower than a new property of similar but new attributes. Apart from the age, the condition of the structure also affects the value to pay for the property. If a property is old but has seen a lot of refurbishment, it will demand higher price than a similar property that has not been refurbished.

In their survey of over 150 hedonic pricing studies of the housing market, Sirmans *et al.* (2005) find garage, number of bathrooms, age of property, house size, number of rooms and house type to be some of the factors that affect residential property values. Table 1 presents some of the variables reported by Sirmans *et al.* (2005) and the number of times they appear as well as the direction they affect house prices. As shown in Table 1, each of the characteristics appears to have a particular direction though in a few instances, goes the opposite direction. For example, 21 of the 40 studies that use the number of bedrooms as an explanatory variable record a positive effect on the price. Nine of them affect the house price in the negative direction and 10 of them have neutral effect. This

means that there are some disagreements on the direction of impact of the number of bedrooms and the same could be observed for the other variables.

Table 1: Factors that affect residential property values

House characteristics	No. of times it appears	No. of positive signs	No. of negative signs	No. of neutral signs
No. of floors	13	4	7	2
No. of bathrooms	40	34	1	5
No. of public rooms	14	10	1	3
No. of bedrooms	40	21	9	10
Garage	61	48	0	13
Age	78	7	63	8
Square Feet	69	62	4	3
Fireplace	57	43	3	11
Pool	31	27	0	4

Source: Adapted from Sirmans *et al.* (2005)

THE HOUSING MARKET IN KUMASI

Kumasi is the second largest city in Ghana and the centre of the seat of the ancient Asante Kingdom. It is the political and administrative capital of the Ashanti Region, and most activities in the northern sector of Ghana are carried out in the city. The presence of both the Asantehene (King and Traditional High Priest of the Asante people) and the Golden stool (apex of cultural and traditional religious structures) in Kumasi (Wilks, 1975) make the city very important, popular and influential in Ghana and Africa as a whole.

The housing market in Kumasi, like other Ghanaian cities is characterised by renting. According to Tipple and Korboe (1998), about 75% of households in Kumasi rent their rooms or houses. The housing market in Kumasi is categorised into three main residential classes. These are the first class, the second class, and the third class residential classes. The first class residential area is also sub-categorised into three. Table 2 provides the various classifications and the areas that fall under each classification.

Table 2: Residential Classes in Kumasi

FIRST (1ST) CLASS

CATEGORY 'A'	CATEGORY 'B'	CATEGORY 'C'
Danyame	Adiebeba	Asokwa New
Government Residential. Area	Adiembra	Amakom
Nhyiaso	Ahodwo	Ayigya
West Nyiaso	Asokwa Residential	Bomso
Ridge Residential Area	Area	Fankyenebra
	Atasomanso	Sisaso
	Daban	
	North Patasi	
	Odeneho Kwadaso	

SECOND (2ND) CLASS

Adoato	Hill	New Town Ejisu Road
Amakom Braponso	Dichemso Extension/	(Nter)
Ampabame	Odumasi KO	North /South Zongo
Anoo / Adamanu	Edwinase/Ehwimasi	North Kwadaso/Kwadaso
Apatrapa	Fumesua	
Asafo / New Asafo /	Kantinkronu/Benimase	Nyiaso Old Tafo
Old Amakom	Kwadaso Estate	Odumasi
Ayeduase /Anwomaso/	Kwadaso South Ext.	Adum (O.T.A/O.T.B)/
Oduom	Kyirapatre/Dompoase/	Bompata
Asokore Mampong	Gyinyasi	Santasi
Bantama	Manhyia Ext.	Suame Kokoto
Buokrom	Mbrom	Suame
Dadiesoaba/ Bimpeh	New Tafo	Suntreso

THIRD (3RD) CLASS

Aboabo	Ayigya	Old Santasi
Abrepo	Boadi/Emena	Old Tafo East And West
Adenyasi	Bohyen	Other Areas
Ahinsan/Old Kaase	Bremang/Nkontwima/	Pankrono/Atafua/
Akrom	Busumura	Tikese
Anomanye/Kropo	Kaasi Proper	Sepe Tipomu
Asabi	Keniako Road/Asawasi	Sepe Aprapram
Asuoyeboa	Kwamo	Tanaso
Atafua	Mpatasie	Tarkwa Markro
Atonsu/Agogo	Nana Bimpomakrom	
Atwima Takyiman/	Nsema/Kokode	
Denkyemuoso	Oforikrom	
Ayigya Zongo/Old	Old Atasomanso	

Source: The Lands Commission, Kumasi. (2010)

The first class residential areas are usually quiet residential areas with various amenities and accessibility factors that make living conducive. Not only are those areas quiet, but are also very close to the CBD, making vehicular and pedestrian accessibility to the CBD very easy. Crime rate in such areas is also very low with the presence of police patrol in the areas. Most of the properties in such areas are single family detached properties. Not surprisingly, the areas are mostly occupied by politicians, top public service officials, the rich and the elites in society. Average land values in such areas ranges between GH¢300,000 to GH¢450,000 per acre and lot sizes tend to be relatively bigger (Kumasi Lands Commission, 2010).

The second class and third class residential areas are characterised by mixed residential properties like semi-detached, flat, and multi-family properties usually referred to in Ghana as the traditional compound houses, dominate. Such compound houses are typically two-storeys with 10 to 15 bedrooms. In such areas, basic amenities like schools, hospitals are available and accessible. However, the third class residential areas are normally condensed, overcrowded and noisy. The crime rate in the third class residential areas is also more than in the second class residential areas. It is therefore expected that land values are higher in the second class residential areas than in the third class residential areas. Plot sizes in second and third

class residential areas are about 0.25 acre. In recent times, Kumasi is rapidly expanding as peri-urban farmlands are being converted into residential plots. Demand for undeveloped residential plot is high. Uncompleted residential buildings in 'new site' are also far outnumbering completed ones.

RESEARCH METHODOLOGY AND SOURCES OF DATA USED

The research approach used for the study is the quantitative research methodology. Specifically, the hedonic pricing model is used to estimate the influence of or the marginal contribution of each property and neighbourhood characteristic to the house value.

The hedonic pricing model

The hedonic model used for this study is of the form:

$$Y_i = \alpha + \sum_{i=1}^{I} \beta X_i + \sum_{i=1}^{I} \gamma D_i + \varepsilon_i$$

where Yi represents the dependent variable, the natural logarithm of the value of the property i. The log transformation of the dependent variable is used because it makes the interpretation of the regression coefficients easy – as the percentage change in the value given a unit change in the housing attribute; allows for variations in the currency value of each housing characteristic; and finally, helps to minimise the problem of heteroskedasticity (Follain and Malpezzi, 1980). β represents the regression coefficients associated with the exogenous independent variables (the housing and locational characteristics), *X* of property *i*. *D* is a matrix of dummy variables, which represents the various residential classes, the availability of garage, fence wall, swimming pool, land registration and the yearly time dummies of property *i*. The stochastic or error term, *ε*, represents all relevant attributes of property *i* that are not captured by the matrixes *X* and *D*. This means that no omitted variable bias problem exists.

Testing for the constancy of the hedonic characteristics prices over time

This assumption of the constancy of the implicit prices of the hedonic characteristics underlying most hedonic studies that pool data together is tested using the Chow Test (Chow, 1960). It is a statistical test of whether the coefficients of the parameters in two different datasets are equal. From the hedonic model above, the data is split into two and assume that

the coefficient estimates are different for each of the datasets.The model for each of the datasets will then become:

$$Y_i = \alpha_1 + \sum_{i=1}^{I} \beta_1 X_i + \sum_{i=1}^{I} \gamma_1 D_i + \varepsilon_i$$

and

$$Y_i = \alpha_2 + \sum_{i=1}^{I} \beta_2 X_i + \sum_{i=1}^{I} \gamma_2 D_i + \varepsilon_i$$

The null hypothesis, H_0, of the Chow test asserts that $\alpha_1 = \alpha_2$, $\beta_1 = \beta_2$, $\gamma_1 = \gamma_2$ That is, according to H_0, all the coefficients (including the intercept) are the same in each of the data groups. This can be tested by using the sum of squares test. Let SSR_C be the sum of squared residuals from the combined data, SSR_1 be the sum of squared residuals from the first data group, and SSR_2 be the sum of squared residuals from the second group. N_1 and N_2 are the total number of observations in each group and k is the total number of parameters. The Chow test statistic under H_0 becomes:

$$\frac{((SSR_C) - (SSR_1 + SSR_2))/(k)}{(SSR_1 + SSR_2)/(N_1 + N_2 - 2k)}$$

This test statistic follows the F distribution with k and N_1+N_2-2k degrees of freedom. If the null is rejected, then it means that the coefficient estimates are different for the different data groups, and so pooling the data together is unwarranted.

Sources of data used

The dataset used for the study comprises of residential property values in Kumasi from the year 2005 to the year 2010, a total of 6 years. Even though transaction data has been mostly used for hedonic analysis, such data is rarely available in Ghana because the property market is not well developed and property transactions are rarely recorded. Admittedly, property value data may not be a true reflection of sample of properties

that may have been sold, but rather of opinions formed by professional real estate valuers. Even though the valuations may not be perfect, they can be analyzed as "unbiased" estimators of the market value of those properties. The hedonic price estimates from an appraisal-based database are unbiased because policy and professional appraisal practice effects can be construed as either random or systematic within the context of the model specification of the hedonic price function. The random effects are contained in the stochastic error term for the hedonic price specification. The systematic effects on hedonic price model tend to operate as a scalar so that log transformation of the hedonic price model estimator leaves the structural coefficient vector for the hedonic price function unbiased (See, Megbolugbe, 1986 for further discussion). Furthermore, the estimated values may be more accurate than opinions of values home owners may form for their properties since the real estate valuers are better informed about the current market prices. The use of the valuation data for this study is therefore not inconsistent with previous studies that have used transaction data (Bourassa *et al.*, 2006) and so does not bias the results.

The data was sourced from various valuation firms, estate agents, and the land sector agencies in Kumasi such as the Lands Valuation Board and the Lands Commission. In all, a total of 20,586 residential property valuations are available for this study. However, not all the property valuations between these periods have been used for the analysis – this is because some of them do not constitute a fully consistent body of data for the purpose of residential property value analysis. Notably, any valuation that does not have data on any variable or housing characteristic is excluded. Again, properties whose valuations may not represent open market value, for example, valuing properties for the purpose of compulsory acquisition are excluded since they are not fair representation of the true value. After cleaning the data, the empirical analysis is based on a total of 18,652 property valuation data between 2005 and 2010 inclusive, with an average of 3,109 property valuations per year.

Table 3 defines the variables contained in the valuations that have been identified in previous empirical studies as the determinants of property values and so used in this study. These variables comprise of both physical property characteristics and locational variables. The physical property characteristics include the number of bedrooms, the

property area, number of floors, bathrooms, public rooms and age of the properties. The residential classes are used as neighbourhood dummies to measure the impact of location on property values. The dummy variables like garage, fence-wall and swimming pool measures the impact that housing amenities have on the value of the house. Land registration as a dummy variable helps to find out the impact that land registration has on property values. Lastly, the yearly time dummies (Year2005-Year2010) help to identify the pattern of residential property values over the 6 year period.

Table 3: Variable definitions

Variable	Definition
Value	This is the open market value estimate for the property. It's natural logarithm is used as the dependent variable.
Bedroom	Number of bedrooms in the property
Propertyarea	The total area occupied by the property
Floor	Number of floors
Bathroom	Number of bathrooms
Publicroom	Number of public rooms which include living rooms, dining rooms and kitchens.
Age	Age of the property
Res_class	The residential class area where the property is situated. This is a dummy variable which takes the value of 1 if a property is located in a particular the residential class, 0 otherwise.
Garage	This is a dummy variable which takes the value of 1 if a property has a garage, 0 otherwise.
Fence_wall	This is a dummy variable which takes the value of 1 if a property has a fencewall, 0 otherwise.
Pool	This is a dummy variable which takes the value of 1 if a property has a swimming pool, 0 otherwise.
Land_registeration	This is a dummy variable which takes the value of 1 if the land on which the property is situated is registered, 0 otherwise.
Year2005-Year2010	This is a dummy variable which takes the value of 1 if the house is valued in a particular year, 0 otherwise.

PRESENTATION OF DATA, ANALYSIS AND DISCUSSION

This section presents and discusses the empirical results obtained from the study. Firstly, the descriptive statistics of the dataset is presented followed by the results from the regression model.

Descriptive statistics

Table 4 below presents the descriptive analysis of the variables used in the regression model. As shown in the Table, the average price over the period is around GH¢125,000. The standard deviation is around 68% of the average price, suggesting that property values are volatile in the city. The lowest transaction price over the period is as low as GH¢65,000 and the highest transaction price (for that matter the most expensive house) over the period is around GH¢820,000. Each house transacted over the period has an average of 4.3 number of bedrooms. The houses with the lowest and highest number of bedrooms have 1 and 12 rooms respectively. The average number of bathrooms, public rooms, floors are are 2.2, 2.8 and 1.4 respectively. That is, the ratio of bedroom to bathroom is around 2:1. The average age of the properties transacted over the period is 35 years with average property area of around 590.3 M^2.

Table 4: Summary statistics

Variable	Mean	Std. dev	Min	Max
Value (GH¢)	124869.9	85517	65,032	820,184
Bedroom (Number)	4.25	2.31	1	12
Bathroom (Number)	2.23	1.66	1	7
Publicroom (Number)	2.81	1.35	1	6
Floor (Number)	1.44	0.65	1	3
Age (Years)	35.19	13.54	10	75
Propertyarea (M2)	590.30	1103.25	12.3	4964.96

The hedonic regression analysis and the Chow Test

Panel A of Table 5 presents the empirical results from the regression pricing model. The estimated coefficients of the variables are presented in percentages with the corresponding t-values in parentheses. The Table

shows three empirical results. The first column shows the variables used in the study. The second column indicates the results from the regression using the entire dataset. The third column shows the results from the regression using the dataset from years 2005 to 2007, whilst the fourth column, shows the results obtained by using the dataset from years 2008 to 2010.

Table 5: Hedonic model estimates

Variable	Coefficient		
	All periods (years 2005-2010)	Period one (years 2005-2007)	Period two (years 2008-2010)
Bedroom	25.4% (3.01)	26.3% (2.53)	26.7% (2.93)
Bathroom	23.5% (8.48)	24.8% (7.42)	24.9% (7.49)
Publicroom	15.7% (13. 69)	13.1% (11.24)	13.4% (11.76)
Floor	6.2% (4.56)	6.3% (2.89)	5.9% (2.87)
Age	-8.6% (-37.01)	-7.2% (-31.27)	-7.2% (-31.34)
Propertyarea	1.23% (1.82)	1.12% (1.67)	1.31% (1.68)
First_class	234.4% (34.81)	235.9% (33.64)	231.2% (32.08)
Second_class	84.8% (32.18)	85.7% (27.45)	86.5% (29.51)
Garage	18.8% (15. 71)	17.3% (14.21)	16.8% (14.97)Has-
Fence_wall	14.2% (9.85)	13.7% (9.36)	13.5% (9.01)
Has_Pool	44.7% (18.64)	43.5% (15.62)	45.1% (18.37)
Registered_land	18.6% (18.07)	18.8% (17.21)	18.9% (17.65)
Adjusted R2	72.4%	69.8%	70.3%
Chow Test Statistic 1.02		P-value 0.114	

As shown in the second column of the Table, the regression model explains approximately 72% of the total variation in property values, which is represented by the R2. This means that about 72% of the variations in property values are actually explained by the model over the

period. Only 28% is left unexplained. This suggests that the model is a good one given a cross-sectional dataset like this one. All the estimated parameters, except propertyarea, are statistically significant at a 5% significance level. This is because all their t-values have an absolute value of more than 1.96, which is the critical value for 95% confidence interval. In the third and the fourth columns also, the model explains approximately 70% of the total variation in property values. This means that only about 30% is left unexplained. That is, combining the datasets increases the explanatory power from 70% to 72%.

By splitting the data into two, the results in columns three and four show that the coefficient estimates for the split datasets are not the same, though a bit similar. However, it is not known whether the differences in the coefficient estimates are statistically significant and so whether the pooling of the data together is unwarranted. The Chow Test discussed in the methodology section is used to test this. The panel B in Table 5 presents the results from the Chow Test. The table shows that the test produces F-statistics of 1.02 with a p-value of 0.114. This means that even at a 10% significant level, we cannot reject the null hypothesis that the coefficient estimates between the two groups of datasets are the same. That is, the difference between the coefficients estimates of the two datasets, together with their intercepts are statistically not significant and so splitting the data into two is not necessary in this study. More so, since the pooling of the data improves the explanatory power as shown in the first column of panel A, there is no need to split the data. This is in sharp contrast to the studies by Berndt and Rappaport (2001) and Pakes (2003) who find a significant parameter inconstancy. Even though no evidence of parameter inconstancy is found in this study, it may mainly due to the relatively short period of time (6 years) used in this study. Perhaps, if the study covers a longer period, the coefficient estimates might have changed.

The results from the combined dataset (column two) show that the numbers of bedrooms, bathrooms and public rooms all have the positive expected. The number of public rooms records a coefficient of 15.7%. This means that as the number of public rooms increases by 1 unit, the value of properties increases by an average of 15.7% in the combined dataset. A unit increase in the number of bedrooms increases property values by an average of some 25.4% and a unit increase in the number of bathrooms increases property values by an average of

23.5%. Thus, in terms of the impact of rooms on residential property values, bedroom has the greatest influence, followed by bathroom; and public room has the least impact. The positive sign supports the argument that as the number of rooms increase, the total area of the property also increases. As the area increases, homebuyers are able to reduce overcrowding in the property and hence increase their utility. This will, therefore, make them willing to pay higher price for the property.

The number of floors also records positive in the combined dataset. The coefficient of 6.2% means that if the number of floors a house has increases by 1, the value of that property increases by some 6.2%. The positive sign supports the argument that as the number of floors increases, the number of rooms and for that matter the total area of the property also increases, and hence increases in the property value. The property area, although insignificant has the expected positive sign. The insignificant of the property area may be due to the fact that the number of rooms and floors have already captured the impact of the total property area on the value of the property.

The age of the property has a negative impact on property values. As the age of the property increases by a year, all other things being equal, the value of the property reduces by approximately 9% in the second column where the entire dataset is used. This is not surprising because as the age of the property increases, the economic value of the property decreases and hence the utility to be derived from the property decreases. Furthermore, homebuyers would have to spend additional money on maintenance when properties are old. They are, therefore, willing to pay a price lower than a new property of similar but new attributes.

The availabilities of a garage, fence wall and pool, are also significant on a 5% level, and the direction of impact is positive if the property has these amenities. If a property has a garage, on average the value of that property is 19% more than if it does not have a garage as shown in the second column. The value of a property with a fence wall is also approximately 14% more than the value of a property without a fence wall. Also, when a property has a swimming pool, the value of that property is about 45% more than the value without a swimming pool. This finding is not surprising because these amenities increase leisure and satisfaction, and hence the willingness to pay more for them.

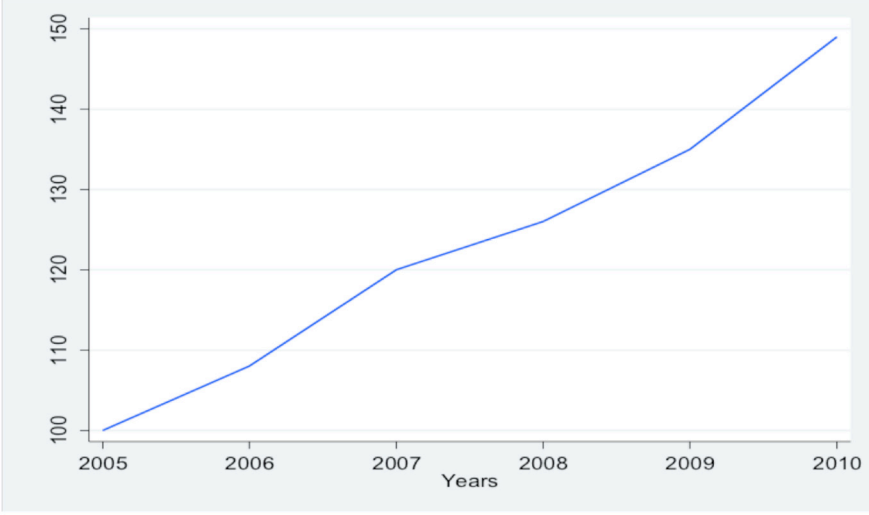
The value of a house situated on a registered land is about approxi-

mately 19% more than the value of house situated on an unregistered land. This is not surprising because when the land is registered, it gives the owner some security of tenure and in case litigation arises as to the ownership of the land, a certificate of land registration settles the case. The location of the property is also found to have the greatest impact on the property values. When a house is located in a first class residential area, the value of that house will be about 234% more than the value of a similar house located in a third class residential area, and 149% (234% - 85%) more than the value of the same house in a second class residential area. Also, the value of a house located in a second class residential area is about 85% more than the value of a house in a third class residential area. These findings are not surprising given the description of the various residential classes in the literature above.

Trend in residential property values over the period

Figure 1 shows the pattern of residential property values over the 6-year study period. The yearly time dummies from the regression model using the entire dataset is used to construct this value trend. The year 2005 is used as the base period and the changes in the property values start from that year. It is clear that in general, residential property values have been rising over the years with an average of about 8.2% every year. Between years 2005 and 2010, house values have risen by about 49%.

Figure 1: Trend in Property values over the period



One striking thing from Figure 1 is the fact that property values have always been increasing despite the global crash in the housing market after the year 2007. This suggests that the housing market in Kumasi, and for that matter in Urban Ghana, is not affected by global economic factors or any external factors. The factors that influence the housing market are localised.

CONCLUSION AND POLICY IMPLICATIONS

This study has employed the hedonic model to investigate the determinants of residential property values in Urban Ghana, with Kumasi as the case study area. Overall, the hedonic model explains approximately 72% of the total variation in residential property values over the six-year period, using the entire dataset. Pooling the data together to do the analysis is necessary and justified because the Chow Test reveals that the coefficient estimate of the housing characteristics are statistically the same over the study period. All the housing characteristics except the property area are statistically significant at a 5% significant level when the entire dataset is considered. This means that with the exception of property area, determinants of property values in Urban Ghana include all the independent variables used in the study namely: number of bedrooms, bathrooms, public rooms, floors; age, residential class; availability of garage, fence wall, and swimming pool; as well as land registration - whether the land on which the property is situating is registered or not.

The residential area where the property is located has the greatest impact on residential property values. The values of properties located in first class residential areas are about 234% and 149% higher than values of properties located in third class and second class residential areas respectively. Also, properties located in the second class residential areas are about 85% higher than similar properties located in the third class residential areas. Number of floors is also found to have the lowest effect on property values. The number of bedrooms affects property values more than the other rooms like kitchen, bathrooms, etc.

Lastly, the values of residential properties have risen approximately 49% over the study period and the values have always been rising despite the crash in the housing market in year 2007 and beyond.

The findings from this study clearly questions the use of the re-

placement cost method as the basis for property rating in Ghana. By using the replacement cost method, the property rates are imposed on the properties based on the cost of the physical structure without due consideration to the value of the land on which the property is situated. This study has however revealed that the residential class where the physical structure is situated, that is, the value of land has the greatest impact on the value of the property. Properties in first class residential areas are about three to four times higher than properties in third class residential areas and properties in first class residential areas are about two to three times higher than properties in second class residential areas. Thus, by not taking into account the value of the land, or considering it arbitrary, the system of imposing property rating in Ghana cannot be considered as fair and the local governments are losing considerable chunk of revenue.

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Community/ tribal economic develpoment and land rights in Africa: A survey

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Abstract Indigenous/tribal land issues are important in a post-colonial environment especially with respect to land use control, economic development, tribal governance and the various attempts to recover land previously controlled by the tribe. Inside the broader tribal context of land ownership, demographics, tribal governance, and housing and economic development, this study also addresses some community land claims made against other tribes or outside entities. This research employed an online survey, with a non-random sample of 136 Afro-centric real estate scholars in 2010. After reporting background information on tribal demographics, respondents stated that 28% had no knowledge of the formal land registration process. A similar percentage could not get a mortgage loan on a house, in part due to the lack of developed mortgage markets. Despite a preponderance of tribal court systems, planning and development review controls were typically held by municipal rather than tribal governance entities. The economics of tribal locations showed only half have reasonable access to basic utility services and/or employment. Also, respondents indicated that tribal or household-level land claims were fairly rare: only 22% of respondents were aware of them and only 30% of claimants got all of their land back.

Keywords Africa, economic development, housing land claims, property registration, tribe.

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INTRODUCTION

Indigenous/ tribal land issues are of keen importance in a post-colonial environment, especially with respect to land use control, tribal governance and attempts to recover land previously controlled by the tribe. Land use control typically means land registration and town planning controls, while economic development includes access to jobs and programs to encourage construction and financing of housing. Land registration and reform can affect the value, the development potential and the use of land (Mattingly, 1991). Ownership and control issues are also important as land use reverts to earlier ownership or compensation is awarded (Weissner, 1999, United Nations, 2006). Community land claims, some of which may be at the national level if tribes are fairly large, may be made against other tribes, the government, outsiders with possession, or a combination. On a more micro-level, household-level land claims are often resolved in tribal courts, rather than municipal ones. The focus of this research is both the economic development factors, broadly defined to include land registration, town planning control, housing programs, access to employment, as well as the tribal land claims.

This research reports the results of an on-line survey of 136 Afrocentric real estate scholars in 2010. Over 80% of these scholars are based in Africa, with the remainder mostly from the UK and US. Initial questions address background information on tribal demographics such as tribal size, extent of tribal town planning control and land registration, housing mortgage and building programs, as well as location relative to economic development. Next, respondents address tribal or household-level land claims, which were found to be fairly rare: only 30 respondents could provide any examples and many of these were actually property or inheritance disputes handled by tribal courts. Of the reported claims, only 30% got all their land back.

This paper is organized as follows: After addressing the literature on African land rights and land claims, with a brief acknowledgement of land claim processes in other lands (Canada, Israel, New Zealand and Australia), the survey sampling plan and research methodology is described. Next, survey results are reported, starting with tribal demographics, prevalence of tribal courts, town planning controls , housing programs, and tribal economics (including competitive advantage of tribal lands and access to economic development/employment); land claim results and evidence are presented last. After a discussion, conclusions and future research suggestions are presented.

LITERATURE REVIEW

This literature review covers land reform, economic development and property rights research in Africa in some detail, as well as land claims elsewhere in summary form.

African Land Claims and Property Rights

Mattingly (1991) looked broadly at land reform issues relating to urban planning, land policy and ownership rights in developing nations, including Africa. He also addressed land reform legislation, recognizing the powerful transformative role of formal land registration, and its potential effect on land use and development and land prices. Grossman (1994) also recognizes the potential effect of redistribution of land to productive outcomes, such as economic development.

Iwarere and Megbolugbe (2008) tested a model for the transfer of economic property rights to existing owners via the "right of occupancy" in Nigeria. This involved a change from informal to formal land markets. Focusing on the Nigerian Land Use Act, the authors describe an evolutionary theory of property rights assignment that recognizes the role of cultural and political forces, while emphasizing economic considerations. The authors find that the behavior of Nigerian landowners in response to the Land Use Act is consistent with rational economic outcomes. It is, however, inconsistent with the expectations of the confiscatory (taken in the general sense) legislation. This research focuses on individual behavior, with no tribal dimensions.

With respect to land distribution programs, Walker (2008) describes the near-complete outcomes of the South African land restitution program, designed to correct equity issues experienced under apartheid. Walker was a regional administrator of the program for a substantial length of time. The national commission, representing the funder, the Republic of South Africa (RSA), processed over 73,000 claims in 15 years, some of which were community-based, although most were individual. Some land claims were rejected, often because of lack of documentation or corroboration that the individual actually resided on the land during the claims period. As a result, 26% of claimants got their land or a similar land back, and 74% got money instead, often at their own request due largely to the passage of time and the level of comfort in their new locations. After the lapse of several decades between the loss of tenure and the option to accept payment, it is not surprising that many

applicants accepted monetary compensation. A few claims resulted in economic development funds being set up for the benefit of a displaced community. The research approach of this work included case studies and summary tabulation of outcomes, which are public record.

Ghyoot (2008) describes the legal foundation and implementation of property valuation for the South African land restitution process. His work builds on that of earlier South African land restitution work by Terbanche (1996). Ghyoot notes that one main basis of the program is to "right a wrong" (affirmative action). The South African government relied upon the 'willing buyer, willing seller' principle and market appraisals (Ghyoot 2008). No property owners were forced off their land, although political persuasion, accompanied by a market price for the property (typically a farm) was applied in some cases. Ghyoot uses a case study technique to provide several examples of valuation examples.

Manirakiza (2010) analyzed the Burundi refugee land claims process. In 1972 and 1993 Burundi experienced a massive outflow of refugees due to unrest and civil wars. When peace was re-established in 2002, people started to repatriate voluntarily but faced land related ownership/occupation issues and problems finding suitable evidence to document their former ownership, since their lands had been "illegally" occupied and redistributed. In 2006, Burundi established the National Commission for Land and other Properties (CNTB). Using 110 completed questionnaires of several stakeholder groups and analysis of archival data to document the land claims process, Manirakiza (2010) found that despite the number of claims resolved, the CNTB process was too slow and many refugees did not get their land back but were instead resettled in "peace villages" on smaller, less productive plots.

Simons and Viruly (2008) interviewed tribal elders when researching tribal property rights in Southern Africa, and contrasted the results to western models of property ownership. Six tribes in South Africa, Botswana, Lesotho, and Swaziland, as well as three overlapping/melded cultures in the region were included. The study concludes that the western concept of bundle of rights applies in parts, but communal rights (which are often not consistent with the private bundle of rights) play a dominant and important role in property decisions and relationships. Communal arrangements implemented and managed by tribal Chiefs in Southern Africa are typically present outside urban areas, often in a dual system, with the tribal systems placing substantial limits on control

and disposition, without offering the potential for conventional financing, and often not offering formal ownership.

Aluko, Omisore and Amidu (2008) investigated land valuation issues in Yorubaland, Nigeria. The focus was not on land claims, but rather on valuation methods for sacred indigenous property, in an UK post-colonial context. The authors set forth valid approaches such as financial compensation or substitution or replacement theories of valuation (Aluko, Omisore and Amidu, 2008: 159). Their research was in the context of compulsory acquisition (takings). Their work is important because Yoruba are prominent survey respondents in this current research.

Tribal Land Claims outside Africa

Simons and Pai (2008) studied the outcomes of the First Nations (indigenous peoples) tribal land claims process in Canada, which was active up through 2005. There is a two-track administrative process. Comprehensive claims are larger scale and less common (under 20 total claims) and address First Nation land claims. A majority of these were successful, and Nations (individual tribes) received title to, and in some cases partial planning rights and control of, large tracts of northern tundra. Specific claims involved smaller tribal claims, only for money. Pooling together claim outcomes, the majority got some economic benefits from staking their claims. 20% of those asking for land were awarded money or similar compensation instead. A special commission was set up by a quasi-governmental agency. Specific claims results were considered non-binding, and financial awards allowed recipients to enter the open market to acquire land if they wished. This recent case study was researched exclusively via the internet.

Kark and Franzman (2010), addressed Turkish, British and Israeli land policies in Israel with respect to legal challenges from Bedouin tribes in the Negev desert region for the return of land they claimed to have owned. The authors trace land title back to ownership by Turkish Sultans over 150 years ago, then forward into the Turkish and British mandate periods and finally to the State of Israel. The Turkish system of limited private land, state ownership, and non-own-able "dead" (mawat) lands is described. This history sheds light on the legal, as opposed to political, status of Bedouin claims on State of Israel and potentially for

Jordan, Egypt and other lands formerly under Turkish and British rule.

Havatzellet Yahel (2006) is an Israeli government land claims lawyer who examines land disputes between the Negev Bedouin and the State of Israel in the context of widespread illegal construction and land use, noting that these disputes create obstacles to the development of the Negev for the benefit of all its inhabitants. The research lays out the Israeli Government's approach to the resolution of the land dispute, through financial settlements. Both ownership claims, with and without written title, have been recognized. Current use claims (regardless of claimed former ownership), based in part upon a look-up table of economic development factors, can also be the basis for compensation. Both monetary and land compensation have been offered, along with related resettlement policies.

Small and Sheehan (2008) and Small (2008) researched aboriginal land rights in Australia, where the recent litigation process to award land back to aboriginal people has been going on for a decade or more. Their metaphysical approach highlights the substantial difference between western and indigenous notions of property rights (see also Roulac, 2008). One main point is that if property is recognized to consist of both material and non-material values, then it cannot be adequately valued in commercial terms alone. Overall, the Australian method for assessing compensation for extinguishing indigenous ownership has been less than satisfactory, with few resolutions and many of those negotiated in secret. Conclusions from this experience provide insight into the dilemma of defining indigenous interests in land by modern commercial terms. The solution probably lies outside the traditional definition of ownership to also incorporate the use of land. Sheehan and Small's work dovetails with Wilson, Du Plessis, and Pienaat (2007), who also addressed Australian land rights, tracing back the notion of aboriginal title through Australian civil process, focusing on dozen or more laws including the *Native Title Act* of 1993 and the more recent *Wik* and *Mabo* court decisions. They point out that freehold title holders cannot be involuntarily displaced, although successful land claimants can be otherwise compensated.

Kashyap (2011) studied the emerging issue of tribal land reform in India. There are hundreds of scheduled tribal groups in India constituting 8.2% of the population, especially in five states in west and central India (Kashyap, 2011). Retaining access to and obtaining own-

ership of their traditional tribal lands are clashing with economic development, including agriculture, forestry and mining interests, and many tribal people have been displaced. Legislation such as the *Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act* of 2006 is also covered, which sets forth criteria for vesting of forest rights, including right to remain or receive compensation.

Fortes (2005) addressed the tribal land issues concerning the Maori in New Zealand, covering the Treaty of Waitangi, and more recent legislation. The Maori seek redress financial compensation and access to formerly tribal lands in various forms, including recognition of customary lands and freehold title. They also seek non-financial cultural returns, including an apology, renaming certain places and admission of the actual land value, regardless of any compensated values, of their land.

Alterman (2010) examined the issue of eminent domain and public taking of private land for public purpose in about a dozen developed countries, none of which are in Africa. While such practices are not necessarily easily transferrable to the African context, the connection can be made to public purpose and procedures used by developed nations where there is considerable variation in the role of the state, definition of compensation, and implementation. This ties in because some condemnation and compulsory acquisition of land for public purposes may work against individuals or groups, and hence is not "Pareto optimal" (at least one person is better off and nobody is worse off), but that public needs can be fairly achieved in order to meet national or local government policy.

To summarize, land reform including redistribution and registration of formerly tribal lands has been connected to economic development, and thus to housing development and access to employment. The tension between indigenous tribal groups and their national governments have been studied in several other countries outside Africa, including Australia, New Zealand, Canada, India, and Israel. Interestingly enough, all of these are formerly British colonies, as is South Africa. A mix of legislation and court decisions, followed by development of land commissions and or valuation procedures has been the typical response. Despite the large number of tribes and a colonial past within the African continent, only Burundi and South

Africa have documented land claim processes, and both of these are individual rather than tribal based. However, several other counties, including Nigeria, have been studied in detail concerning property rights, property valuation, role of tribal courts, and changes to the legal context for informal land.

RESEARCH METHODOLOGY

The data for this research were collected through an internet survey administered in September/October of 2010. A survey form was devised and pretested, including review for language and context that could affect response rates (e.g., the sensitivity of the word "tribe", instead of other formulations). The revised instrument was reformatted and uploaded onto the internet survey website Survey Monkey. An introductory email inviting participation was sent to three slightly overlapping groups: 75 selected African-oriented scholars registered with the policy and networking-oriented Africa Desk website. A total of 70 American Real Estate Society (ARES) members with last names believed to be of African origin, and the African Real Estate Society (AfRES) mailing list with approximately 500 names. The total non-duplicated sample from these sources is 620. The email with the invitation to participate and link to the survey was sent out in late September 2010, and then resent again two weeks later. Preliminary results were presented at the AfRES conference in Kenya in late October 2010. A total of 136 responses were received, giving a response rate of 22%. Because respondents were able to self-select their participation, this should be considered a non-random sample with respect to the population of real estate scholars. However, the sample size is adequately large, and results are interesting and valuable as a data set regarding the topic at hand.

The instrument was structured to address the respondents' personal or professional knowledge of these research questions:

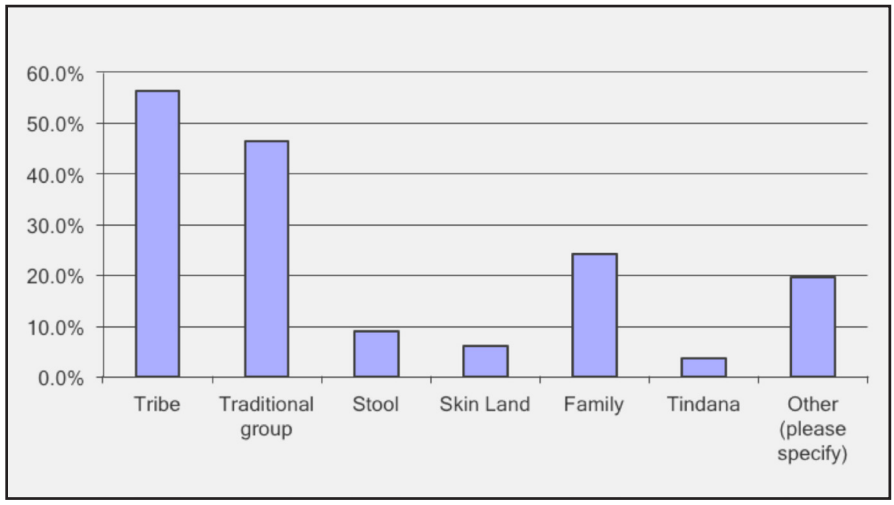
- Is "tribe" the right term?
- Respondent and tribal background data
- Tribal land registration issues
- Tribal housing finance programs
- Role of tribes in justice and planning for urban and rural development for their tribe
- Economic benefits of tribal membership, by place of residence
- Tribal land claims process and outcomes

SURVEY RESULTS

Background on Tribal and National Affiliations

Asked if tribe was the right word to use in this context, a majority (57%) said it was, 47% preferred 'traditional group', with 24% stating 'family' and another 19% combined using the terms skin/ stool land (multiple responses allowed, N=136, See Figure 1).

Figure 1: Preferred terminology for tribe



Source: Author's Survey, 2010

When asked for nation of residence, 56% said Nigeria, followed by Tanzania - 10%, South Africa - 7%, all other African countries (primarily Uganda and Ghana) at 11%, and all nations outside Africa combined 16% (N=121). Not surprisingly, 84% of respondents were of the Black African race.

Although tribal membership is tracked by respondents only slightly more through the father's side, the data reflect almost exclusively the experience of the father's tribe. Over 35 tribes were mentioned, Yoruba (based in Nigeria) was the most common response (38% of all respondents): no other tribe had more than 5% of the sample.

Tribal land and population

This section addresses factors about the tribe and its lands. Respondents stated that 82% of their tribes have a homeland with territory

(n=99). Some of the tribal lands extended beyond a single national boundary, but only in a minority of cases.

In terms of size of tribal lands, 22% were able to provide an estimate of the size of tribal land holdings in square kilometers (SqK). Results range from small size of 75 SqK to large of 650,000 SqK. The average is 50,300 SqK, and the median is 4,400 SqK. Because Yoruba is largest tribe and also dominates the survey, median results should be considered more representative than average for this section, with respect to the 62% of the sample that is not Yoruba. Thus, footnotes are provided below that break out just the Yoruba respondents to determine potential undue influence with respect to the sample.

When asked "How many tribal members live (full time) on the traditional territory?", only 54 respondents (40%) provided an answer. The lowest population reported was 2,000 and the highest was 46 million. The average size was 5.8 million tribal members, and the median tribal population was 1,025,000[2].

When asked "How many tribal members live outside the traditional territory, but in the country?" only36 (27%) respondents answered. The lowest answer was 900 people, with the highest at 80 million people. The average was 4.2 million, and the median was 125,000. Compared to members living on tribal lands, about 1/3 live in the Country but off the traditional territory.

When asked "How many tribal members lived outside the Country, but on a recognized tribal land in another nation?" – 17 respondents (13%) answered. The low response was 100, with the high at 15 million. The average was 1.4 million, and the median was 50,000. Although a statistical comparison is difficult (quite a range of results using average, median and total), this status is clearly a minority situation.

When asked "How many tribal members live outside the country?" 32 (24%) respondents provided an answer. The low answer was 100 people, and the high was 25 million people. The average number in the "Diaspora" was 2.4 million, with a median of 92,500.

To summarize, the most common tribal residence status is living on the tribal lands, followed by living off tribal lands, but in the country. Next is "Diaspora" tribal members, and the least likely group lives on

2. As expected, the average reported population for Yoruba respondents is 10.8 million people, substantially higher than overall.

tribal lands in another country. As indicated, the Yoruba tribe dominates these data. When asked if the respondent personally lives on the tribal traditional lands, about ¼ lived there full time or nearly full time (see Table1), while 11% never visit at all (N=90).

Table 1: Which of the following best describes how often you live on your tribe's lands?

Answer Options	Response Percent	Response Count
All year	21.1%	19
Most of the time (9 months or more per year)	5.6%	5
Split time about equally (~6 months per year)	2.2%	2
Occasionally (3 months or less per year)	17.8%	16
Never live there, but visit frequently	13.3%	12
Never live there, but visit occasionally	28.9%	26
Never live there, never/very rarely visit	11.1%	10

Source: Author's Survey, 2010

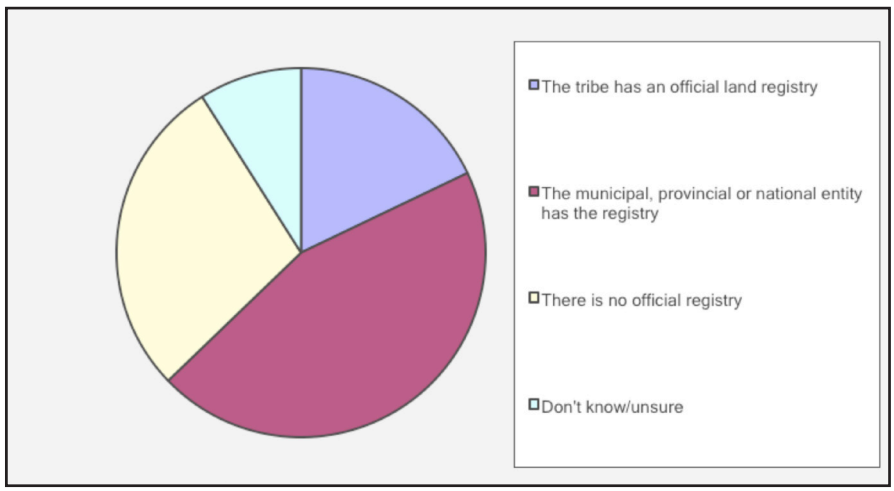
To summarize this section, taking these figures at face value (and assuming no non-respondent bias) the median responses indicate that a tribe of just over one million people resides on tribal lands of 4,400 square kilometers. More tribal members are living on designated tribal lands than (collectively) those living elsewhere in the country, or abroad, either on or off designated tribal lands. This provides enough critical mass to support government-related functions like courts and planning, and development programs.

Tribal land registry and rights

This next section addresses land registration and control. When asked how the tribe originally came to be on their land, 85% got their land through initial settlement, and 12% through conquest (N=81). Concerning the official ownership entity for land, respondents mentioned that 80% of the land ownership was in the tribe's name, 15% in a chief's name, and 5% in the name of the Tribal Council group (N=60).

When asked about property registration on tribal lands, 18% stated that the tribe had an official land registry, 45% said there was a tribal lands registered within the municipal, provincial and/ or national entity, and 28% said there was no official land registry[3]. (See Figure 2, N=78). By western standards, this is a very low level of formality in the property housing markets.

Figure 2: Preferred terminology for tribe



Source: Author's Survey, 2010

Concerning permission to move to and occupy a plot on the tribal land and build a house, about one third equally reported that they would need to get an official land title document from the tribe, or that there was no official document but the tribe keeps an unofficial record, or that it was only required to get the right to lease the plot from the tribe authority/chief (N=54).

Concerning a hypothetical situation for normal improvements to be made to their household plot, participants were asked: "If once you build a house, you want to take down some trees and some old outbuildings, can you do this?", 64% said "Yes, it could be done with no restrictions", and 36% said it could be done only with permission from the Chief, Tribal Council or other authority (N=74).

3. Among Yoruba, 56% said the registry was held by government, slightly higher than the 45% respondents as a whole.

Following the questions about consistent land registration (or the apparent lack of it), the next set of questions dealt with the ability to get a mortgage loan/bond. The real question is whether there a tribal plot and house can provide sufficient collateral/ security for the lender, similar to marketable title associated with land registry. When asked: "If you want to build a house, can you get a mortgage or debt bond on it from a commercial bank?" 58% said it was possible (N=74). A total of 40% stated it was possible to get a mortgage loan even if the house was on leased land (N=72).

With respect to the house or plot serving as collateral for a loan, and whether it could be repossessed by the lender if the borrower/owner does not pay in full, 72% said the plot served as collateral and could be taken by the lender for lack of mortgage payment (See Table 2, N=60). This is typically how banking systems work in developed countries[4]. The form of security available for other remaining 28% of lenders is unclear, but it seems to fall outside normal western banking practice.

Table 2: Type of Collateral required

Answer Options	Response Percent	Response Count
Yes, the house/plot serve as collateral, and it can be taken by the lender	71.7%	43
Yes, the house/plot serve as collateral, but it can NOT be taken by the lender	1.7%	1
No, the house/plot do not serve as collateral, but they can be taken away	5.0%	3
No, the house/plot do not serve as collateral, and they can NOT be taken away	13.3%	8
No, collateral is not necessary	8.3%	5

Source: Author's Survey, 2010

4. For Yoruba, 74% said the property could be put up as collateral, and taken if needed, very similar to respondents as a whole.

When asked: "Is there a tribal bank or government program that will give you a loan to build a house?" 39% of respondents stated that there was a tribal bank or lender (N=71). These types of non-commercial loans may not require collateralization with marketable title to the property.

To summarize, despite that fact that 80% of the land is collectively in the tribes' name, land registration of individual plots on tribal land is much less common than municipal land registration, indicating that tribes yield authority in this area. Since less than half the property is formally registered, it is not surprising that the percentage of houses that can get a mortgage/bond is also quite low (58%). Borrowers in over two-thirds of those locations where mortgages are possible are able to put up houses as collateral in a conventional manner. Still, the conclusion is that on tribal lands less than half can obtain a secured mortgage to build a house. This may serve as a retardant for economic development. Given the mortgage crisis though, lack of availability of debt is not uniformly a bad thing, because it eliminates the risk of mortgage default.

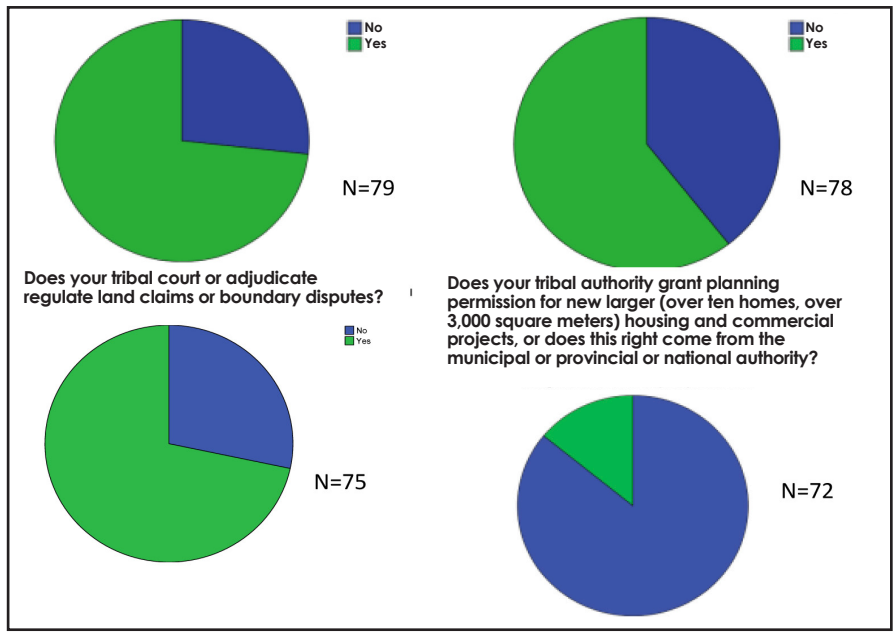
Tribal governance and town planning approval

This next section deals with tribal courts and governance. When asked: "Does your tribal authority have a court system for personal and small civil financial disputes?" 72% of respondents indicated that they have a tribal court (N=79). A total of 59% also have criminal court (N=78). 72% stated that tribal courts can adjudicate tribal boundary disputes (N=75).

With respect to town planning authority, respondents were asked if their tribal authority grants approvals for the development of new larger housing and commercial projects (over ten homes, over 3,000 square meters), or if permission comes from the municipal, provincial and/or national entity. Only 15% of respondents indicated their tribes have planning authority, with the balance of development review taking place at the municipal, provincial, and/or national entity[5] (N=72). Figure 3 shows these results.

5. Among Yoruba, 56% said the registry was held by government, slightly higher than the 45% respondents as a whole.

Figure 3: Role of tribal courts in justice and development planning



Source: Author's Survey, 2010

To summarize, most of the respondents' tribes have active court systems, including both civil and sometimes criminal matters, as well as property boundary disputes. However, this starkly contrasts with the avoidance of town planning and land use control at the tribal level.

Social and economic benefits of tribal membership

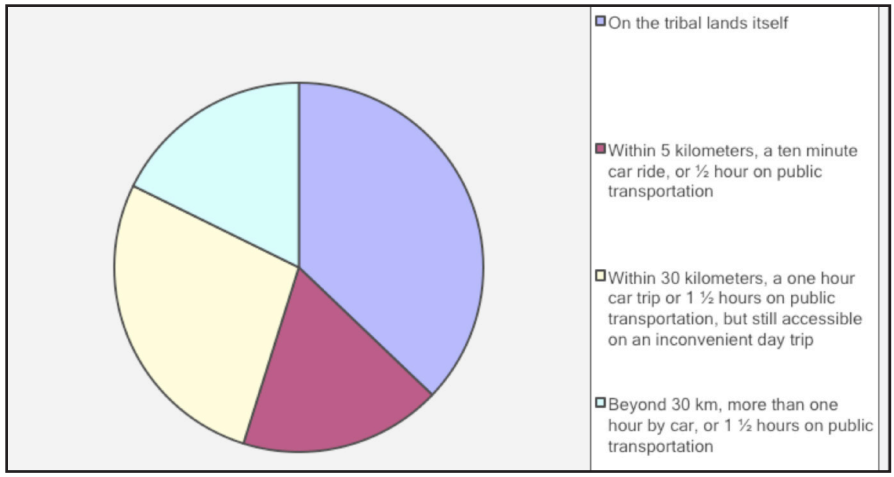
The next set of questions addressed the perceived benefit economic position of the tribe due to the tribal land's location relative to employment, and availability to services such as education, water, sewer and electricity.

With respect to location, 70% of respondents' tribal locations are far away from a main city, have primary schools only and fair to poor utility services i.e. water at central locations only, electricity in most homes, dirt roads, no central sewerage system. A total of 30% said the tribal lands were on the fringe of a main city and have full services (sewer, water, electricity available to all homes, paved roads, internet access, telephones/mobile service)[6], (N=57).

6. Yoruba respondents reported 69% far away from a main city, very similar to the overall sample.

With respect to proximity of tribal lands to commercial services and employment, respondents were asked: "Other than normal personal garden plots, local services and shops, and small part-time hospital clinics, does the tribal land have any basic industry (factories, offices, corporate agriculture, secondary schools, full service hospitals universities, etc?) on the tribal lands itself?" A total of 37% said that basic employment was located on the tribal land, 18% said it was close by, within an easy commute, 27% said employment was over an hour away, and 18% said meaningful employment was more than an hour and ½ away. (See Figure 4, N=62)[7].Thus, only about half the tribal locations are conveniently located relative to employment.

Figure 4: Location of basic employement



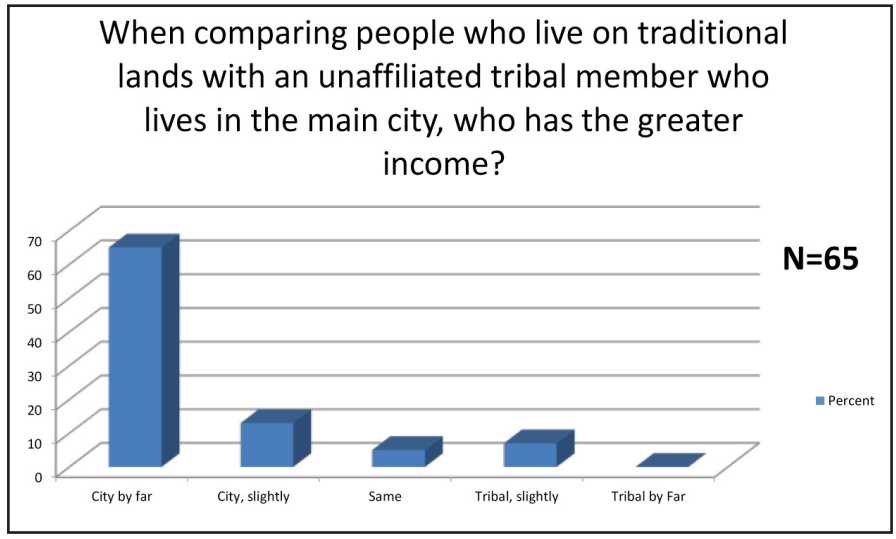
Source: Author's Survey, 2010

In terms of the demographic mix, respondents were asked: "Are the primary occupants of the tribal lands older people and young children, or is there a balanced mix of residents (parents, secondary aged children, young adults, young families?"They told us that 63% had a balanced demographic mix. The rest were evenly split between a markedly older group, and a mix of old and young residents, generally under-represented by working age people (N=59).

7. Yoruba respondents reported 69% were conveniently located to employment, compared to 55% for the general sample.

Finally living on a tribal homeland may have benefits, but it appears these are not economic ones. When asked: Do people who live on traditional lands have below average, average, or above incomes compared with an unaffiliated tribal member who lives in the main city? The vast majority said incomes were lower, and none said tribe residents had higher incomes (see Figure 5, N-65).

Figure 5: Economic benefits of tribal membership by place of residence



Source: Author's Survey, 20101

When asked if this pattern changed when the national economy is thriving or depressed? 56% said no change (N=62). It is unclear from surveys which direction, but it is likely tribal lands are relatively less badly-off and therefore more secure in a down economy, because that's when city jobs are likely to be scarce. Tribal land can also be a place to retire, and may form a type of social security network.

To summarize, tribal locations, as expected, tend to have a more isolated location that is not proximate to employment. Only 30% of tribal locales are urban or urban fringe with full municipal services, and just over half are within an easy commute to employment opportunities. The demographic (age) mix of residents is proportionate to the overall population on only 63% of the respondents' tribal locations, indicating that almost 40% of tribal locations have an imbalance (more young and old

persons) due likely to lack of employment nearby. Not surprisingly, then, living on tribal lands is associated with lower incomes when compared with living in an urban area. Given all the importance of getting land tribal lands, back, there does not appear to be, at this time, any economic advantage for the individual.

Official tribal land recovery claims

Regarding types of land rights asserted by the tribe, respondents were asked: "Which of the following property rights are generally asserted by the tribe over their traditional lands?" The possible responses were: "Own all rights (air, surface, subsurface/minerals/water)" represented 41% of respondents, "exclusive use (hunting, grazing, agriculture, living)" was most common at 59%, "control (planning rights, prevent others from coming on)" was 31%[8], and "disposal (can sell off to other tribal members or to outsiders)" was 54% (multiple responses were possible, N=70, see Table 3 below). Thus, about 60% of tribes represented in this survey have less than complete rights to their land.

Table 3: Which of the following property rights are generally asserted by the tribe over their lands? Choose all that apply

Answer Options	Response Percent	Response Count
Own all rights (air, surface, subsurface/minerals/water)	41.4%	29
Exclusive use only (hunting, grazing, agriculture, living)	58.6%	41
Control (planning rights, prevent others from coming on)	31.4%	22
Disposal (can sell off to other tribal members or to outsiders)	54.3%	38
Other (please specify)		9

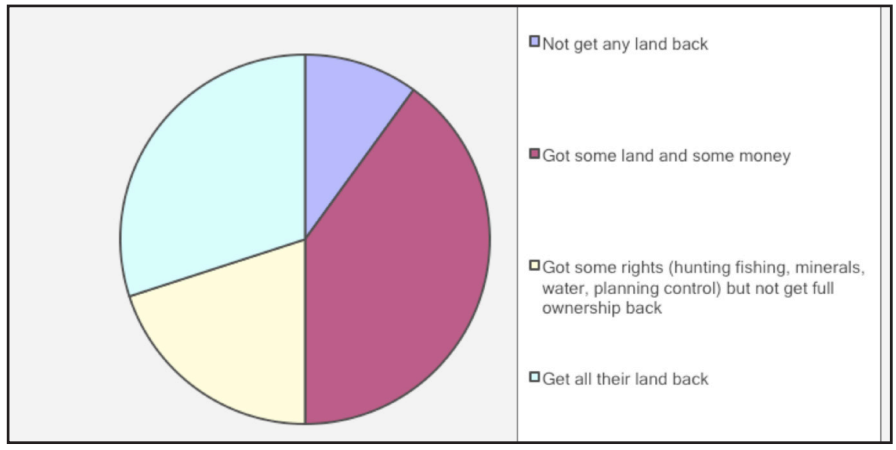
Source: Author's Survey, 2010

8. Note that this figure is higher than the 15% that reported having town planning control for the hypothetical medium sized real estate project. Planning control can extend beyond development review to include master planning, infrastructure planning, and resource planning beyond property development.

Finally, to the issue of formal land claims, we asked respondents if there been an official tribal land claim that they knew of (the tribe claims land or use rights from the government or another tribe, not against individuals), and details on the outcomes. A total of 61 (45%) responded yes to a tribal land claim, and 60 knew of household-level (or other smaller economic unit) land claim[9].

If yes, what was the result? Did the or claimant or tribe: not get any land back (10%), got some land and some money (40%), got some rights (hunting, fishing, minerals, water, planning control) but not get full ownership back (20%), and get all their land back (30%). This was a modest sub sample: N=30. Figure 6 shows this distribution of responses[10]. Winning back partial rights or some land and some money was the typical outcome.

Figure 6: Result of tribal land claims



Source: Author's Survey, 2010

Types of evidence presented for land claims

Also of interest is the type of evidence normally presented to support land claims. When asked: "What factors or evidence did the tribe present in their claims process ?", 80% of respondents stated historical records, 72 % said oral records were also accepted, and current presence or use of the land (occupation) was claimed by 44% (multiple sources of

9. Note that these cases are most likely those that filed in court of some type. This is not a random sample of all potential claims.
10. Yoruba respondents reported 78% of claims got back some land and some money.

evidence OK, N=39). Table 4 shows these results. Thus, non-written evidence appears to be common in asserting tribal and related land claims.

Table 4: What factors or evidence did the tribe present in their claims process? Select any and all that apply.

Answer Options	Response Percent	Response Count
Historical records	79.5%	31
Traditional/oral records	71.8%	28
Air photos of occupation at some past date	2.6%	1
Current occupation	43.6%	17
Other (please specify)		6

Source: Author's Survey, 2010

DISCUSSION AND CONCLUSIONS

This study reports on the results of an internet survey of 136 African-oriented researchers regarding their personal and professional knowledge about their tribe's demographic, economic, housing, governance, and land location and claim issues. The internet survey format was quick (only 2-3 weeks to get results) and relatively inexpensive. The willingness to participate was acceptably high, at 22%. Of course, with internet surveys in a non-secure format, having a non-random sample is always an issue. Over 80% of respondents were of Black African origin, and a similar percentage currently living in Africa.

The focus of this research is on creating a baseline for understanding tribal economic conditions, especially housing development, finance, and tribal institutions such as planning controls and courts, as well as tribal land claims. Although over 35 tribes were represented among those participating in the survey, this research has Nigeria-based results because an abundance of respondents were from Yoruba tribal members. Thus, results cannot be generalized beyond the sample. However, responses of Yoruba were calculated separately, and the differences between their answers and the respondent pool as a whole are known for key questions. In many cases (notable exceptions: tribal

population and municipal planning control) Yoruba results mirrored the overall results[11].

Tribal land area and populations varied widely, but the median values were tribal holdings of 4,400 square kilometers of land, and just over one million residents residing on these tribal lands. This resident status was most common, followed by those tribal members living in the country but off tribal lands; followed by those tribal members living abroad (in a "Diaspora") and those living on recognized tribal lands in another country. Most respondents did not live year round on tribal lands.

With respect to land rights and registry, most respondents (80%) stated that collective property was registered in the tribe's name, although sometimes it was in the chief's name. Further, although individual property was formally registered about 2/3 of the time, more frequently the records were kept by the municipality than the tribal office. 28% of tribal property was unregistered.

Residential loans are sometimes available (58%), and it is even possible to get a mortgage on leased land (40%). A house serving as collateral for a loan could be taken by the lender under 72% of responses, which is the typical situation in banking systems in developed countries. The form of security available for other remaining 28% of lenders is unclear, but it seems to fall outside normal western banking practice. A total of 40% of respondents reported the presence of a tribal bank or other government agency.

Most respondents (72%) reported an active tribal court system, often with ability to adjudicate criminal matters (59%) as well as boundary disputes (also 72%). However, with respect to town planning approvals, the municipal level (rather than tribal authorities at only 15%) dominated large land use decisions. This is potentially a likely source of tension between tribal authority and local government, and represents some issue of redundancy in a dual governing system.

With respect to tribal land location relative to employment and economic opportunity, traditional lands are generally not that well positioned. A total of 70% of respondents' tribal locations are far away from a main city with mediocre utility services, while only 30% said tribal lands were on the fringe of a main city with full services. Even more im-

11. According to widely published figures, the Yoruba population is about 40 million, and Africa's is about a billion. Thus, Yoruba represent about 4% of Africans, but over a third of this study sample, a clear over-representation.

portant for migration issues, only 55% said that basic employment was located within an easy commute. Not surprisingly, then, 37% of respondents reported that the tribal populations were unnaturally saturated with dependents (old and young), and virtually all respondents stated that those tribal members living in urban areas were better off economically than those on tribal lands.

Lands rights asserted by the tribes were generally less than the "fee simple" bundle of property rights (only about 40%) known in western or developed countries. Most common rights included exclusive use, and right to sell off the land (both over 50% of respondents) with planning approval less common (consistent with what was reported earlier).

With respect to tribal land claims, 22% reported knowing about some cases of tribal level claims or smaller units like household-level claims. Of those, nearly all got some form of compensation, but only 30% got all their land back. The relatively low percentage of tribal land claims is consistent with the earlier response that 85% were the "original settlers" and only 15% of respondents said their tribe took the land by conquest. In addition to historical records such as formal deeds (accepted in 80% of cases) and similar documents, alternative evidence such as oral testimony (72%) and to a lesser degree current occupancy (44%) are also commonly accepted forms of evidence when asserting land claims.

Future research can take several directions. One issue is whether tribal government is on the upswing or on the wane. Tribes have played a role in the past, and they continue to play a role now but without more economic development, the inferior tribal locations relative to employment and services may limit land use, population growth and tribal expansion. If trends continue as they have been, tribal lands could be relegated to a role as a retirement community in the future.

The research topic of 'tribal land claims' has only been partially addressed in this study. Following up with the respondents who indicated knowledge of tribal land claims is an option. If there is interest in the return of tribal lands, does that mean there is interest in the strengthening of the tribe as a political, community or governing entity? Or is the land claim merely a righting of a previous wrong.

To summarize, despite the emotional benefits of tribal land, the link between living on tribal land and economic prosperity is not strong, in fact it may be considered a disadvantage from purely an income standpoint. This is primarily due to underdevelopment of capital markets, pos-

sibly lack of planning control, and overall lack of employment opportunities on tribal land. Thus, tribal economics must be strengthened, or a continued population exodus is likely, at least when economic opportunities in main cities is better than on tribal lands.

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Relationship between the pattern of valuer heuristic behaviour and valuation variation

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Abstract In recent times, studies have shown heuristic behaviour in valuation practices which affects the valuation outcome. This study examined the relationship that exists between the way valuers behave when carrying out valuation exercises and valuation variation focusing on the Nigeria property market. The study used both quasi-experimental and the survey methods. One hundred and twenty two (122) estate surveying and valuation firms were sampled representing 50% of the total population in Lagos Metropolis, the study area. The study used both descriptive and inferential statistical analyses. The result revealed that valuers were making initial judgement about a valuation task and that this initial judgement came from valuer's knowledge and experience. It was showed that the initial judgement was a strong determinant of the valuation outcome in that adjustment by valuers to the initial value judgment tended to be insufficient as new evidence is presented. The study concluded that it is the responsibility of the valuation profession to ensure that variation in valuation is minimized especially in unfamiliar locations in order to provide more meaningful valuation advice.

Keywords Heuristic Behaviour, Valuation Variation, Judgement and unfamiliar location.

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BACKGROUND TO THE STUDY

Valuation practice is an art and the need to ensure high standard of practice has received worldwide attention. For example, previous studies have concentrated on procedural aspects (bases, instructions, reporting) and the way information is processed. Some of these studies including professional reports on standard are focussed on variation in valuation. Examples can be found in 1997 interim report (IPD/Drivers Jonas, 1997) and appraisal and valuation manual (the 'Red Book') (RICS 2000) and NIESV (1985). Other studies such as IPD/Drivers Jonas (1988 and 1990) and Matysiak and Wang (1995) examine the ability of valuations to predict the sales price of commercial properties while the variability or reliability of commercial valuations was examined by Hager and Lord (1985); Hutchinson, Adair, MacGregor, McGreal and Nanthakumaran (1996) and Crosby, Lavers and Murdoch (1998 and 1999) in UK. In the same vein, Ogunba (1997) and Ogunba and Ajayi (1998) focuse on examining valuation reliability with respect to residential properties. Aluko (2000) considers market valuation versus market price, interpretative ability of valuers, valuation methods and procedure on valuations accuracy. The finding in all these studies confirmed that valuers interpret market information differently and this has resulted into valuation unreliability. However, it is noted that none of these studies examine the reason(s) why valuers do interpret market information differently. Meanwhile, the ability to dispense judgement is central to valuation reliability and the actor is the valuer. Strong evidence suggesting that heuristic modes of reasoning underpin judgement, particularly when people assess risk and uncertainty was established (Gigerenzer, Todd, and ABC Group (Eds.), 1999; Kahneman, Slovic and Tversky, 1982). Of particular relevance to valuations is how human decision-makers operate in complex environments, where the outcome of the task is uncertain. In these situations, humans adopt cognitive short cuts, known as 'heuristics', to ease the burden of information processing (Tversky and Kahnemann, 1974; Evans, 1989).

Property valuation involves processes requiring the valuer to assemble a large amount of data, but there is a procedure to follow. According to Diaz (2002), in United States, valuers who are more commonly called appraisers are trained to value property

by using a step-by-step method called the appraisal process. The Appraisal Institute (2001) prescribes an eight - step real estate valuation process.

This process is a normative model because it suggests how appraisers should proceed, step-by-step, when addressing a valuation problem. The model is a cookbook or recipe approach to valuation. However, expert appraisers do not appear to follow a normative, systematic process or recipe. They adopt the use of heuristic (Havard, 2001 and Adegoke and Aluko, 2007). It is the use of this heuristic that often distinguishes expert from novice decision-making behaviuor which generally improve the efficiency of the decision-making process (Hardin, 1997).

In certain circumstances, heuristics use can lead to biased or inefficient decisions. For example, studies in the accountancy and auditing areas revealed examples of both heuristic use and biased decisions (Assere, 1992; Krull, Reckers and Wong-on-Wing, 1993). Similar outcomes was found to exist in the real estate field, mainly with residential appraisal or valuation (Gallimore, 1994, 1996; Diaz, 1997). The findings in these studies suggest that, this is as a result of property valuers who do not operate with perfect market knowledge; they must follow client instructions, make judgements, analyse information and respond to different pressures when preparing a valuation. All these factors influence the final valuation figure. These judgements depend upon individual valuer's knowledge and experiences. To this end, many writers have recognised that the essence of real estate discipline including property valuation is human behaviour. Ratcliff appreciates this and incorporates behavioural concerns into his normative writings (Ratcliff, 1972). Graaskamp (1991) argues that the real estate discipline is applied social science. In the late 1980s, Diaz (1987) pioneers contemporary human problem solving behaviour in a real estate context with theories and research techniques rooted in the cognitive psychology literature. At approximately the same time, Gallimore (1994) introduces a similar epistemology to the British property valuation literature. Although others have subsequently joined Diaz and Gallimore, this type of valuation research is still in the early stages of a research paradigm. Even at that, the few studies existing have focused on developed markets where there is accessibility to market information. Mean-

while, in market where information is not easily accessible and market under developed, the result of the relationship between valuers' behaviour and valuation outcome is expected to be different. The study of Adegoke (2008) revealed that estate surveyors and valuers in arriving at their valuation opinions were using an anchoring and adjustment heuristic behaviour in Lagos, Nigeria. This paper therefore, examined the relationship between the valuer behaviour and valuation variation in an emerging market with a focus on the Nigeria property market.

RESEARCH METHODOLOGY

The research study population comprises the estate surveying and valuation firms in Lagos Metropolis which has over fifty (50) percent headquarters of such firms according to the directory of the Nigerian Institution of Estate Surveyors and Valuers (2002). All the firms are registered with Estate Surveyors and Registration Board of Nigeria which is the only board that can registered and regulate estate surveying and valuation practices in the country. The study adopted five nuclei in the stratification of Lagos Metropolis. This is borne out of the fact that our study population is found aggregating about these economic nuclei where there is the expectation of very active property market, easy accessibility and complementarity's advantages. The study used both quasi-experimental and the survey methods. Simulated valuation experiments consisted of an observed, simulated commercial valuation carried out in the office of the respondents, using material supplied by the author. The subject of the valuation was an office investment located in a city that was unfamiliar to the participants, who were all drawn from a single geographical location, namely Lagos Metropolis. All participants received the same material in the same order and produced a valuation at the end of the process. The valuer was provided with both the problem and the data set that was required to complete the valuation. The fact that each valuer received the same set of information is critical, as the experiment is intended to reveal whether variation can result from the behaviour (based on their knowledge and experience) of the valuers involved rather than from the effect of differential information.

Also, the survey method employed the use of self-administered questionnaire to obtain relevant data from managers/partners of firms

sampled as representatives of their respective companies. This is because Managers/Partners are expected to have a greater experience of valuation practice and procedure. They are also expected to have a greater knowledge base regarding observation of valuation variation of errors in valuation in practice. In particular, they would be able to provide a strategic overview of the organisation of their firm and office. One hundred and twenty two (122) estate surveying and valuation firms were sampled representing 50% of the total population in the study area. Data were analysed with the use of both descriptive and inferential-statistical analyses.

THE RESULTS

The simulated valuation

In order to establish valuation variation, valuers were asked to value a property within their normal range of experience in a location that was unfamiliar to them. Even though the valuers received a common set of data, provided in a consistent sequence, the valuation outcome illustrated excessive variation. From the result in Table 1, the normal expected level of accuracy of +/-10% (as taken by the "margin for error" principle established in Singer and Freidlander (1977)) was not uniformly achieved. The level of variation as found out in this study was therefore, in excess of expectation, with only eighteen valuations falling within +/- 10% of the mean figure, and four falling within +/- 20% while twenty seven fell above +/- 20%. This shows that the outcomes of the valuation were not reliable because of the wide variation from the mean. However, this was in line with +/- 5-30% findings of Skitmore, Irons and Armitage (2007).

The main purpose of the experiment was to allow an analysis to be made of when and how the final decision of value was arrived at. This formed the thrust of our analysis in Table 2. From the responses, over 50% of the valuations saw the valuers forming an opinion before viewing any transaction evidence. In addition, this opinion was strongly related to the final value opinion as the valuers stopped data colletion as soon as evidence was seen to confirming their initial views. Fifty four percent (54%) of the respondents asserted to this fact (see Table 3 for details).

Table 1: Deviation of Variation

Valuation Outcome (N)	Response Frequency	Mean Deviation (N)	% of Mean Difference
9500000.00	6	4136326.53	30.3
9600000.00	1	4036326.53	29.6
10000000.00	6	3636326.53	26.7
11270000.00	3	2366326.53	17.4
12000000.00	1	1636326.53	12.0
12500000.00	3	1136326.53	8.3
13260000.00	8	376326.53	2.8
13423000.00	4	213326.53	1.6
13880000.00	3	-243673.47	-1.8
16643000.00	10	-3006673.47	-22.0
22607000.00	4	-8970673.47	-65.8
Total	**49**		

Source: Field Survey, 2005

Table 2: Stage at which Initial Opinion is formed in Unfamiliar Location

Stage of forming initial opinion	Response Frequency	Percentage of Response
At the time of the initial instruction	2	2.7
When reviewing the information (tenancy information, lease, floor plans, etc) supplied by the client	3	4.1
When inspecting the property or soon after	33	44.6
On looking at the first few comparables	6	8.1
After viewing all the comparables	4	5.4
After carrying out detailed analysis of all the available evidence	23	31.1
Does not form initial opinion	3	4.1
Total	**74**	**100.0**

Source: Field Survey, 2005

Table 3: Initial Opinion Formed before Valuation Outcome

Formed Initial Opinion	Response Frequency	Percentage of Response
No	4	5.4
Yes	70	94.6
Total	**74**	**100.0**

Source: Field Survey, 2005

The results in Tables 3 and 4 also conform to what psychological literature suggest. This is to the effect that a feature of the anchoring and adjustment heuristic is that the adjustment from the initial anchor figure will tend to be insufficient as new evidence is presented. The responses in Table 4 show that the participants' early value opinion proved to be quite rigidly held. This is because 54% of the estate firms asserted that they normally stopped data collection once the evidence was seen to confirm the initial opinion of the valuer. The evidence thus points to the fact that the initial anchor was a strong determinant of the final value outcome.

Many reasons can be adduce for the above finding. The participants' interpretation, analysis and comparative grading of both the subject property and the transaction evidence provided in the simulated valuation showed a high level of conformity. The variation in valuation outcome did not appear to arise from a differential interpretation of market evidence, since they were given the same set of data in a location they were not familiar with. This was suggestive of a relative overall placement of the worth of the property within the market context in the mind of the valuer at an early stage in the process, a market with which the participants were unfamiliar. The finding that the variation in outcome was a direct result of valuer behaviour is hard to challenge. It may be argued, quite justifiably, that a difference of opinion is to be expected in valuation. Meanwhile, if this difference exists after a thorough and rational appraisal of the available evidence, then this difference of opinion must be considered valid. In this case, however, such a rational process was not apparent as the result in Table 4 shows that approximately 54% of estate surveying and valuation firms stop data collection as soon as evidence was seen to confirm the initial views of

the valuer. The observations suggest that valuers will only re-examine their initial opinion if there are strong signals from the marketplace to challenge this initial view. However, valuers may be conditioned to expect weak data from the market. Therefore, any contrary signals do not tend to be searched for; hence, there is relationship between valuer heuristic behaviour and valuation outcome. In addition, the strong initial anchor becomes a 'filter' when the transaction evidence is being collated and analysed, biasing the interpretation of the evidence in favour of the initial opinion and obscuring contrary signals.

Table 4: Reasons why Firms stop data collection

Reasons why Firms stop data collection	Response Frequency	Percentage of Response
Once evidence was seen confirming the initial views of the valuer	40	54.1
Once there is no other data elsewhere to be collected	34	45.9
Total	74	100.0

Source: Field Survey, 2005

Valuer's Knowledge and Experience

From the study, it is strongly suggested that the valuers were making a value estimate by mentally comparing the property with situations perceived to be similar because of the low domain-specific knowledge of the location and the lack of available anchors from other sources (for example, prior valuations or knowledge of the asking price). The valuers relied on their previous knowledge and experience to derive the initial opinion. This can be seen from Table 5 and Table 6 respectively, with 93.2% agreed to the fact that valuer's knowledge has to do with valuation while 98.6% agreed that valuer's experience has to do with valuation. However, the chi-Square Test conducted on the years of professional experience and outcome of simulated valuation shows that there is no relationship between experience of values and valuation outcome. The chi-Square value is 63.399 at $P<0.05$. The relationship is only significant at 64.3% confidence level. This result is however expected because the partici-

pants of valuation were those not familiar with property location and had no previous knowledge of any property transaction in the area. Hence, their initial opinion formed in that situation might not be correct.

Table 5: Valuer's Knowledge has to do with Valuation

	Response Frequency	Percentage of Response
No	5	6.8
Yes	69	93.2
Total	**74**	**100.0**

Source: Field Survey, 2005

Table 6: Valuer's Experience has to do with Valuation

	Response Frequency	Percentage of Response
No	1	1.4
Yes	73	98.6
Total	**74**	**100.0**

Source: Field Survey, 2005

The Personnel Involved in Carrying Out the Key Tasks in a Valuation

Data collected on the personnel involved in carrying out the key tasks in a valuation are also instructive. Table 7 shows that approximately 88% agreed that more than one person had hand in a completed valuation. This result suggests that there was a high degree of delegation in valuations carried out. It was very rare for a single valuer to complete a valuation on his or her own. The valuation was thus the product of a team. The importance of this procedure to behaviour and the output of the valuation is an important consideration. In theory, the involvement of a number of different personalities in the production of a valuation is a good thing, in that it makes it harder for a single erroneous opinion to be maintained. In practice, the effects may be less clear-cut.

Table 7: One Valuer does a Complete Valuation

	Response Frequency	Percentage of Response
No	65	87.8
Yes	9	12.2
Total	**74**	**100.0**

Source: Field Survey, 2005

From responses in Table 8, it can be seen that 49.2% and 50% of responded that Partners/Directors were the people responsible for issuing and agreeing on valuation instruction and checking of same respectively. This means that the people mostly responsible for issuing of valuation are the senior personnel within the firms. This can be seen to be remote from direct contact with the market, being mainly involved only at the beginning and at the end of the process. These personnel are likely to possess higher levels of power in the review process and whatever initial opinions formed by them and the point of issuing and agreeing of instruction are likely to be given more weight. The signals from the market that might challenge an incorrect and unsustainable value opinion may be weakened by this situation. Since they do not have direct contact with the market, whatever opinion that they have at the point of receiving the valuation instruction will be their greatest anchor in their final judgment. The full dynamics of these relationships were not investigated in this study, but the observation is interesting in a behavioural context.

Table 8: The Parties most frequently used in Carrying out Valuation Tasks

Valuation Task	Partner/ Director	Associate	Qualified Surveyor/ Professional Staff	Graduate
Issue and agreement of instructions	32 (49.2%)	12 (18.5%)	18 (27.7%)	3 (4.6%)
Inspection of the property	2 (3.1%)	15 (23.1%)	39 (60.0%)	9 (13.8%)
Economic assessment of location	4 (6.2%)	20 (30.8%)	39 (60.0%)	2 (3.1%)
Collection of comparable evidence	2 (3.1%)	11 (16.9%)	37 (56.9%)	15 (23.1%)
Statutory enquiries	7 (10.8%)	11 (16.9%)	40 (61.5%)	7 (10.8%)
Analysis/scrutiny of legal document	14 (21.5%)	13 (20.0%)	33 (50.8%)	5 (7.7%)
Analysis of rental evidence to determine rental value	-	20 (13.8%)	39 (60%)	6 (9.2%)
Analysis of sales evidence and/or other sources to determine appropriate of capitalization rate	-	16 (24.6%)	46 (70.8%)	3 (4.6%)
Analysis of other relevant data	2 (3.1%)	16 (24.6%)	38 (58.5%)	9 (13.8%)
Capital valuation calculated	6 (9.2%)	22 (33.8%)	34 (52.3%)	3 (4.6%)
Check valuation	33 (50.8%)	16 (24.6%)	14 (21.5%)	2 (3.1%)
Verbal report to client	29 (44.6%)	12 (18.5%)	22 (33.8%)	2 (3.1%)
Final report to client	22 (33.8%)	5 (7.7%)	22 (33.8%)	16 (24.6%)

Source: Field Survey, 2005

Valuation Checking Procedure

In order to obtain more reliable valuation outcome, respondents were asked on procedure they are using to ensure quality assurance accreditation. Table 9 shows that 20.3% used mathematical checking procedure, 66.2% adopted the method of showing and discussing valuation with at least one senior surveyor, 4.1% used verbal report to client before final print out while 9.5% employed alternative valuation methodology. These systems were noted to be loosely constructed in the firms. This was particularly true of the procedures to be followed in the actual conduct of a valuation between the agreement of instructions and the final consultation procedure. The checking procedure followed by estate surveying and valuation firms is questionable. From Table 9, it can be seen that most common checking procedure of valuation outcome was that valuation must be seen, discussed and approved by at least one senior surveyor while other types of checking, such as mathematical checking, employing an alternative valuation methodology and verbal report to client before final print out were rarely used. When asked the reason why other alternative methods were not commonly in used, the reply was that this will normally only be done where a valuer is already unsure of the figure or where the subject property is complex or of an unusual type. Another reason is that majority of the Nigerian practitioners are not aware of, do not understand, and had not been using any of the contemporary methods of valuation (Bello and Bello (2007). All these procedures may not produce a reliable valuation outcome when valuing a property in an unfamiliar location.

Table 9: Valuation Quality Assurance Accreditation

Valuation checking procedure being used	Response Frequency	Percentage of Response
Mathematical checking	15	20.3
Valuation must be seen, discussed & approved by at least 1 senior surveyor	49	66.2
Verbal report to client before final print out	3	4.1
Employing alternative valuation methodology	7	9.5
Total	**74**	**100.0**

Source: Field Survey, 2005

CONCLUSION

The study revealed that anchoring and adjustment type of heuristic behaviour were been used by estate surveying and valuation firms in the study area and evidence points to the fact that the initial anchor was a strong determinant of the final value outcome. A decision was reached by forming an initial judgement about the task. This initial judgement is derived from valuer's knowledge and experience. This judgement is then tested against evidence and adjusted accordingly. This heuristic behaviour saves considerable data processing time, but there are dangers of biases inherent in the process. The risk of bias arrived because the adjustment from the initial judgement, or anchor, tends to be insufficient. The observations suggest that valuers did re-examine their initial opinion if there are strong signals from the marketplace to challenge this initial view. However, valuers might be conditioned to expect weak data from the market. Therefore, any contrary signals were not searched for; hence, there was relationship between valuer heuristic behaviour and valuation outcome. This behaviour is associated with the creation of high levels of variation especially when working in an unfamiliar location since valuer's knowledge and experience did not have much impact in an unfamiliar location.

Also, the study find out that the internal procedures adopted by valuation firms have to be improved upon because this also contributed to the wide variation of the valuation outcome. Other valuation quality assurance accreditation measures like mathematical checking, employment of alternative valuation methodology should be included instead of relying solely on valuation been seen, discussed and approved by at least a senior surveyor. Valuers and valuation firms should be aware of the potential influence that valuer behaviour has on decision-making in commercial valuation. If they are aware of the potential biases that can arise from this behaviour, then it is less likely that erroneous valuations should slip through the system. It should be noted that, although work in areas where the valuer is unfamiliar with the market has been cited as a particularly high-risk scenario, heuristic bias can occur in most circumstances, including markets with which the valuer is more familiar. In addition, the people mostly responsible for issuing of valuation instruction are the senior personnel within the estate firm. This category of personnel did not have direct contact with the market; they were mainly involved only at the

beginning and at the end of the process. These personnel possessed higher levels of power in the review process and their opinions were been given more weight. The signals from the market that might challenge an incorrect and unsustainable value opinion may be weakened by this situation. Hence, the estate firms should as much as possible allowed those that have direct contact with the markets give final opinion on the valuation outcome.

Therefore, it is the responsibility of the valuation profession to ensure that variation in valuation is minimized especially in unfamiliar locations, by way of providing a data bank that will be assessable to all estate surveyors and valuers and cut across the nation, in order to provide more meaningful valuation advice. Failure to address this situation could pose a serious threat to the credibility and integrity of valuers and even damage the public image of the estate surveying and valuation profession in the nation. This could also lead to the profession being obsolete and encourage incursion of other professionals into this core area of the Estate Management profession. Already, there is an existing attempt by professionals such as the quantity surveyors, the engineers and accountants, to make in-roads into the valuation profession. This may lead to a substantial loss of business for many valuers as clients may look for other means of appraising property values. This may also increase the valuer's exposure to claims of negligence.

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APPENDIX

DEPARTMENT OF ESTATE MANAGEMENT OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE
QUESTIONNAIRE ON RELATIONSHIP BETWEEN THE PATTERN OF VALUER HEURISTIC BEHAVIOUR AND VALUATION VARIATION
COMMERCIAL PROPERTY VALUATION PRACTICE

Tick as appropriate

1. Your years of professional experience
(a) 0-3 [ ] (b) 4-6 [ ] (c) 7-9 [ ] (d) 10-12 [ ]
(e) 13-15 [ ] (f) 16-19 [ ] (g) 20-23 [ ] (h) 24-27 [ ] (i) 27+ [ ]

2. Are you familiar with Osogbo Town in Osun State?
Yes [ ] No [ ]

3. Does your firm carried out valuation in:
(a) Familiar locations only [ ]
(b) Unfamiliar locations only [ ]
(c) Both familiar and unfamiliar locations [ ]

4. Do you form initial value opinion before valuation outcome?
Yes [ ] No [ ]

5. At what stage in the valuation is initial value opinion formed in familiar location?
(a) At the time of the initial instruction [ ]
(b) When reviewing the information (tenancy information, lease, floor plans, etc) supplied by the client [ ]
(c) When inspecting the property or soon after [ ]
(d) On looking at the first few comparables [ ]
(e) After viewing all the comparables [ ]
(f) After carrying out detailed analysis of all the available evidence [ ]

6. At what stage in the valuation is initial value opinion formed in unfamiliar location?
(a) At the time of the initial instruction [ ]
(b) When reviewing the information (tenancy information, lease, floor plans,

etc) supplied by the client [ ]
(c) When inspecting the property or soon after [ ]
(d) On looking at the first few comparables [ ]
(e) After viewing all the comparables [ ]
(f) After carrying out detailed analysis of all the available evidence [ ]

7. Does valuer's own knowledge has anything to do with valuation outcome?
Yes [ ] No [ ]

8. Does valuer experience relate with valuation outcome?
Yes [ ] No [ ]

9. Where excessive variance in commercial valuation does occur, kindly rank the reasons listed below in order of their influence on the variance. Please, rank from 1, 2, 3…n, where 1 is the highest rank.
(a) valuers working outside of their normal location [ ]
(b) valuers having a different information set about the market [ ]
(c) interpretation of information (lease, covenant strength) [ ]
(d) valuers dealing with properties not in their mainstream business [ ]
(e) difference of opinion – inherent in property market [ ]
(f) interpretation of evidence when market difficult to interpret [ ]
(g) lack of experience of people carrying out valuations [ ]
(h) variation in methodologies used [ ]
(i) client pressure [ ]
(j) measurement errors [ ]
(k) time pressure [ ]
(l) valuers possessing a different set of facts about the property [ ]
(m) lack of consultation with other valuers [ ]
(n) lack of standardization in procedure [ ]
(o) reduction in fee levels [ ]
(p) clerical error [ ]

10. When do you normally stop collecting data?
(a) once the evidence was seen to confirm the initial views of the valuer [ ]
(b) once there was no other data elsewhere to be collected. [ ]

11. Is it only one valuer that does complete a valuation on his or her own?
Yes [ ] No [ ]

12. If no, who are the parties most frequently used in carrying out the following valuation tasks? (Tick an appropriate one)

Activity	Partner/ Director	Associate	Qualified Surveyor/ Professional Staff	Graduate
Issue and agreement of instructions				
Inspection of the property				
Economic assessment of location				
Collection of comparable evidence				
Statutory enquiries				
Analysis/scrutiny of legal documentation				
Analysis of rental evidence to determine rental value				
Analysis of sales evidence and/or other sources to determine appropriate capitalization rate				
Analysis of other relevant data				
Capital valuation calculated				
Check valuation				
Verbal report to client				
Final report to client				

13. What is the valuation outcome checking procedure(s) being used in your firm?

(a) mathematical checking of the valuation outcome

(b) valuation outcome must be seen, discussed and approved by at least one other senior estate surveyor and valuer before it is issued out.

(c) verbal report to the client before final print out

(d) employing alternative valuation methodology

SIMULATED VALUATION

You are required to value a freehold interest of a certain shopping complex situated in Ajegunle Area of Osogbo, the state capital of Osun State. Ajegunle Area is part of the Central Business District of Osogbo. The shopping complex is on a corner piece plot. The street is fully developed. These premises were built in 1970 and are in a good state of repair. The complex has three main Blocks with an annex attached to Block A.

BLOCK A

It consists of 2 floors with 7 No shop on each floor. Each floor has 27.8m frontage and 6.3m depth. The current rental passing is N18, 000 and N24, 000 per annum on ground floor and first floor respectively for each of the shops.

ANNEX

4 No shop bungalow of 19.6 frontage and 2.6m depth is annexed to Block A. The rental passing on each shop is N7200 per annum.

BLOCK B

It is a bungalow of 15 No shop with 3 No facing the main road. The block has a frontage of 30.4m and depth of 9.5m. The 3 No shop facing the road is going for N18,000 per annum each while others are going for N9,600 per annum each.

Block C

Block C is a bungalow of 12 No shop with 2 No facing the main road. It has a frontage of 28.7m and depth of 8m. The 2 No shop facing the road is going for N18, 000 per annum each while others are N9, 600 per annum.
Land area is approximately 31.4m by 46m
Attached are the photographs of the subject property.

The following particulars of lettings and sales have been extracted from a local estate surveyor's records. They relate only to very recent transactions in premises which are most nearly comparables to those under review as regards position and tenants.

1) A complex on 3 floors with 4 No shop on each floor. It has a frontage of 15m and depth of 6m on each floor. Each shop on the ground floor goes for N20, 000 per annum while shops on the other floors go for N12, 000 per annum each.
The complex has just been recently sold for N4.5m.

2) Another shopping complex is of a bungalow has 13 No shop. It consists of

3 No Block
i) Block A has 5 No shop with frontage of 3.6m and depth of 17m. The only shop facing the road is going for N36, 000 per annum while others are N24, 000 per annum each.
ii) Block B is the same as A.
iii) Block C consists of 3 No shops. It has frontage of 12m and depth of 3.6m. The rent passing is N24, 000 per annum on each shop.
The complex has been recently sold for N4.0m

Shopping complex situated in ajegunle area of osogbo, osun state

Front view

Right side view

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Submission Requirements

Authors should submit their papers in the following format:

- A brief autobiographical note consisting of full name(s), affiliation/place of work, email address(es) and full international contact details
- A title page with the title of the paper and the author's names
- The main manuscript consisting of the abstract and the main article. The author should not be identified anywhere else in the manuscript.\
    - The abstract (maximum 300 words) must consist of purpose, methodology, findings, implications/limitations and value of the paper
    - Supply not more than 5 keywords which describe the topics covered by the paper
    - Classify the type of paper according to the following categories: research paper, literature review, case study, conceptual paper, etc.
- Figures and charts should be numbered consecutively and saved separately in high resolution JPG or JPEG format and inserted in a Microsoft PowerPoint file with the relevant captions. Tables should be typed and included in the manuscript. Please do not send a table as an image file.
    - The placement of charts or pictures should be clearly indicated within the manuscript.
- Detailed mathematical proofs are not required if they do not add to understanding the paper; equations should be centred and numbered consecutively.
- End notes and appendices should be kept to a minimum.
- Referencing should use the Harvard system. If you are in doubt, please read the Emerald Guide for African Authors at http://afresnet.net/downloads.php

The submissions should be sent to:

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