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Variances in property values resulting from market evidence and non-standard anchoring and adjustments by valuers

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ABSTRACT

The purpose of this paper is to determine the variances and significance of variances in capital values of properties in metropolitan Lagos of Nigeria resulting from anchoring and adjustment methods used by independent valuers in carrying out valuations within the scope of standard and non-standard anchoring paradigm. Valuation problems of ten properties were presented to 144 valuers in metropolitan Lagos to solve; but 104 (72.2%) participated in the experiment; and the One –sample t-test was used to test the variances. The significant P were all 0.00 for the ten properties; and this means that there are significant variances in estimates of property values determined by the valuers in the area of study. Crises in financial markets in Nigerian economy in the ending years of 2008 resulting from poor property valuation and unreliable values of collateral properties advised by independent valuers have heightened the need to find remedial measures to mitigate wide variances in the property values. Also, wide variances in capital values of real properties will result to clients losing confidence in values advised by valuation professionals.

Introduction

Variances in capital values of a property determined by independent valuers are generally accepted to be permissible in the valuation profession. What have been unacceptable are wide variances. Recently, the profession has come under attack by those that make use of valuation reports such as banks and sometimes courts. The policy of majority of banks in Nigeria is to brief multiple valuers to report on the value of any property brought as collateral by loan applicants before advancing loans. Variances in capital values seen in valuation reports have led to loss of confidence by the banks and created embarrassment to the profession. A report of a select committee of the Nigerian Institution of Estate Surveyors and Valuers (1998) highlighted the problem of wide variances in capital values of various classes of properties valued by their members. This paper studied the variances in capital values, significance of such variances, and ascertained whether anchoring and adjustment heuristic behaviour, and the anchoring and adjusted amounts in the market evidence method of valuation have significant contribution to variances in property value opinions, and suggested remedial measures.

Review of Related Literature

Sources of Anchor

Sources of anchors can be classified into:

The Standard Anchor or Market Evidence Data

Standard anchors refer to recent prices of similar properties used in the comparison method of valuation. These anchors could be internally or externally generated anchors; or the market prices data obtained from any of the branches of the estate firm which a valuer executing a valuation task works for(Diaz, 1990; Wyatt 2003). The internally sourced kind of standard anchors refer to the market prices of similar properties obtained from internal records of estate agency firms; while the external anchors are recent market prices of similar properties obtained from estate agency firms that valuers are not staff of (Wyatt, 2003). Due to the unfamiliar nature of some markets to some valuers, anchors are sourced externally from the experience and knowledge of some local experts familiar with the property markets (Diaz 1997; 2002). Epley (2004) gave two explanations why problem solvers base their judgments on anchors provided by these experts. One is that problem solvers usually take the anchor as a hint to the correct answer based on the conversational logic that experts only provide relevant information. Second is that these professional services providers are more likely to stay close to the anchors because they have no previous knowledge to aid in adjusting it. Reinforcing the need for local experts, Raheem (2005) also opined that failure of problem solvers to involve these experts in solving problems in unfamiliar areas may cause lack-of-participation error in outcomes.

Non-standard anchors (Non-specific anchor or Intuitive Approximation)

Non-standard anchors are sources of anchor data other than the market price anchors. Worth knowing is that market uncertainty to valuers evokes these anchoring behaviours. For example, Levy and Schuck(1999) found that student valuers in an experimental context were influenced by previously undertaken valuation task. Also, Diaz and Wolverton (1998) observed that United States appraisers anchor to their own previous estimates of value. Anchor data could also be on previous price experience of subject property (Aycock, 1999). Tversky and Kahneman (1974) opined that decision makers have implicit tendency to spontaneously generate their own independent hypotheses about states of the world based on available raw data and to anchor their final decisions onto these initial hypotheses. Diaz and Hansz's (2000) observed that United States experts operating in unfamiliar market anchor on knowledge of pending price (or uncompleted contract prices) of

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the subject and prices of similar properties. Knowledge and experience of previous values retained in the memory of valuersare sources of anchor data (Gallimore and Wolverton, 1997; and Havard, 2000). Diaz and Hansz (1997) found that United States appraisers valuing property in areas which they have limited knowledge also anchor to anonymous appraisers' prior opinion. Unlike the standard anchor used in the comparison method which has wide acceptability as objective market-based anchor data, non-standard anchoring heuristic behaviours to valuation problem solving are subjective.

Adjustments of Market Evidences and Heuristic (Non-standard) Anchors

The recent prices obtained from local expert in the market evidence method, have been generally viewed as objectively determined prices. However, adjustments of the differences in attributes of the similar property in order to determine the value of the subject could not withstand the test of objectivity. Precision in adjusting evidences are not guaranteed as adjustments are usually insufficient and subjective (Slovic& Lichtenstein 1971; Epley, 2001; Epley&Gilovich, 2004).Non-standard anchoring behaviour are used to assist problem solvers in situations market evidences are uncertain. Outside themarket evidences, cognitive-load manipulations have been shown to influence judgments in a manner consistent with a process of adjustment, from an initial assessment (e.g. Gilbert & Gill, 2000; Kruger, 2000; Pelham, Sumarta, &Myaskovsky, 1994). Epley, Keysar, Van Boven, &Gilovich, (2004) stressed that adjustment is insufficient because valuers stop adjusting once they have reached a certain range of plausible values which has to be close to the original anchor. These studies suggest that problem solvers adjust from values they generate as starting points known to be incorrect but close to the target value.

Anchoring and Adjustment Heuristics and Value Inconsistencies

Heuristics are shortcut behaviours used in processing complex information (Havard, 1998); and have been in use by real estate valuers (Havard, 2001; Diaz and Wolverton, 1996; Diaz and Hansz, 1997;Adegoke, 2008) in United Kingdom, United States of America, Lagos State of Nigeria, and some other parts of the world when the market is uncertain. Anchoring and adjustment heuristics have been touted as robust and persistent of all the heuristic types (Chapman & Johnson, 1999).In anchoring and adjustment heuristics, a valuer anchors on a value and adjust the value until an acceptable value is reached (Epley & Gilovich, 2004). Morris (1993) asserted that after adjustments of different anchors adopted by independent valuers, different final values would emerge which are not far apart from the anchors.

However, in order to ensure standard, what should matter more is not how close the final values are to the anchor; but how close the different final values are to each other. The wider the variances in the final values; the higher the inconsistencies in values; and the less confidence clients would have in the valuation professionals. In consistencies in values are the variances in the values of a property determined for a particular purpose by independent valuers at relatively the same time (Diaz and Wolverton 1998; Hager and Lord 1985;Skitmore, Irons and Armitage, 2007). Independent valuers have different ideas and as a result produce different valuation figures (Hutchinson, Adair, MacGregor, McGreal & Nanthakumaran, 1996; Bretten and Wyatt, 2002). Havard (1996) also affirmed that with in the mechanics of the valuation there is scope for variance. However, where the variances in property values become so wide, the probability that clients will lose confidence in the services provided by valuation surveyors will be high; and the attendant consequence is that claimed valuation professionals risk the chances of losing their exclusive preserve.

Methods

As at May 24th, 2011; 2679 were registered with Estate Surveyors and Valuers Registration Board of Nigeria (Source: Estate Surveyors and Valuers Registration Board of Nigeria, Lagos, 2012). The registered members randomly selected from six local governments have been carrying out valuation exercises till date.These local governments are where firms of estate surveying and valuation cluster in Lagos.

The Chairman of Lagos State Branch of the Nigerian Institution of Estate Surveyors and Valuersreported that there are roughly 260 registered firms and 700 registered valuers in Lagos state as at May 24th, 2011. In this study, the 260 registered firms represents the listed population; while the sample frames is the 164 registered firms that were accessed through a reconnaissance survey.In order to determine the appropriate sample size (n) from the accessible population, the statistical formula of Yamane (1967) and a sampling error of 0.05 was adopted as shown:

$$n = \frac{N}{1+Ne^2}$$

Where n represents sample size,
N represents population size,
e represents sampling error.
Inputting values in the formula, we have:
$n = 164/ (1 + (164 \times 0.05^2))$
$n = 164/1.41$
$ń = 116$ estate firms

This sample size of 116 firms which is 71% of the sample frame met Nwana's (1981) recommendation of a minimum of 40% of the total population when the population is in few hundreds.

Table 1: Information on Field Survey, Sampling, Randomization, and Respondents

Local Government	Accessible firms	Sample fractions of sample size	Participated firms Using Randomization	Outreached Valuers	Participated Valuers
Eti-Osa	35	25	20	35	18
Apapa	24	17	12	23	15
Ikeja	40	28	18	29	31
Surulere	16	11	7	13	13
Lagos Mainland	24	17	11	14	12
Lagos Island	25	18	11	30	13
Total	164 (N)	116 (n)	79	144	104

In table 1, the sampling fractions (n/Ni) of the sample size which represent firms in each local government (stratum) are not equal, but proportional to the number of accessible firms in each stratum. Of the 116 estate firms (n) which make up the sample size, 79 firms responded; and 144 valuers were outreached. However, 104 valuersamounting to 72.2% response rate participated in the valuation experiments.

The Research Design

Valuers were provided with simulated valuation problems of ten residential properties in metropolitan Lagos to solve in valuation experiments, and data on how they sourced (or generated) anchors and make adjustments were collected, organized, and analyzed. The simulated valuation problem scenarios (circumstances) were carefully structured in the experiment to close the variance effect of other impact variables

on values, to ensure that observed variance is only the result from different sources of anchor and the amount adjusted for. Valuation problem scenario refers to artificial, or imagined set of circumstances, or sequence of possible events, or possible valuation situation surrounding the valuation problem (French, 2004). The problem scenarios for the ten properties are the same and refer to circumstances surrounding each of the ten valuation problems.

While Havard (2001) recommended the use of control experiment, the present study incorporated the open system approach, which meant that valuers were allowed to independently source transaction prices to anchor on, or other reference points, and make adjustments irrespective of whether the market settingis unfamiliar or familiar to them.Since the method in this research is to keep the sources of anchor as well as the adjustment amounts uncontrolled, valuers choices were not confined to the list of sources of anchors provided by the researcher.

The open approach study method was used to determine the sources of anchors notwithstanding whether they are standard, or non-standard anchors; andto determine the adjustments made by valuers in order to evokevariances in capital values of properties. However, the concern in this study is to observe the variances; and to ascertain the significance of such variances. The repetition of the experiments using ten different properties in different locations was necessary to serve as further tests to validate the findings.

The study attempted to find out if the property markets in the study areas are unfamiliar to some valuers resulting in their using the following sources of non-standard anchor data obtained from literatures, as well as to explore any other sources not considered in the list:

1. Previous value experience of the subject property valued - (PVESP)
2. Previous price experience of similar property to the subject valued - (PPESS)
3. Previous value experience of similar property to the subject valued - (PVESPS)
4. Previous value knowledge of the subject property valued - (PVKS1)
5. Previous value knowledge of the similar property - (PVKS2)
6. Recent sales prices from local experts - (RSPLE)

Participants were allowed to call local experts and to make adjustment for differences in attributes of the similar properties with the subjects. Any other data not provided for the experiment were assumed not to be available to all the valuers that participated; and to be part of the circumstances surrounding the valuation problem. This closed system approach used in controlling the experiment meant that certain realistic variables that will contribute to variances in capital values will generally not be considered by participants in the experiments.

The imagined sets of circumstances in the present study were provided thus:

1. To ensure that interest valued in properties by independent valuers is the same, the contents of the valuation problems were the same.
2. Variances caused by errors due to clients' influence were avoided by not providing data on expected values from clients; and owners of the subject properties were not invited to suggest any value to the participants. Variances resulting from these errors do not fall under anchoring bias but survival bias, and is therefore an error of different class which fall out of the scope of this study.

Table 2: Valuation Problem Contents (Definition of Assignment)

Considered Factors	Aspects of Considered factors
Specific forces (Instructions and Background Brief)	1. Valuation Instructions (Valuation is for mortgage purpose; valuation date range; and the scope of valuation was specified). 2. Schedule of Areas (Site areas and gross floor areas) 3. Vacancy 4. Accommodation details 5.Neighborhood on which property is located 6. Condition of property 7. Title and duration of title on subject 8. Property taxes

Approach Adapted from Havard, (2000)

3. Variances in values that could result from errors due to inappropriate valuation method were avoided by administering a small-scale interview to test-run if the property typeto be valued were commonly sold in the market. Carefully chosen properties were found not to be unique structures that dwell in uncommon property market to allow for cost method or other methods of valuation to be used except for the comparison method which allows for standard anchoring. Having established a common market status for the selected property type, those who used methods of valuation other than comparison method and anchoring and adjustment heuristics were exempted for purposes of this study.
4. Only competent (registered) valuersparticipated in the valuation because such valuers understand valuation problems better; and proffer more valid and reliable outputs.
5. The dates of the valuation experiments for the ten properties ranged from 25th August to 25th September, 2011 Even though it is arguable that differences in values from the participants at different times in the experiment may be due to time value of money and inflation; this was not the case in the present study since prices of comparables appear stable during the short period of the experiments.

Details on the Contents of the Simulated Valuation Problems for the Ten Properties

Advice your clients on the capital values of each of the newly completed vacant detached residential properties in different neighbourhoods each having Certificate of Occupancy with 75 years unexpired term for each of the properties. The properties are highly marketable and the valuations are for mortgage value purposes. The properties are put to highest and best use; and there is no prospect for near future public works and improvements (betterment or worsenment) in the neighbourhoods. Valuations cover for only land and building.

Uniformly Simulated Valuation Problem Circumstances for Each of the Ten Subjects

The under listed valuation circumstances are circumstances surrounding the valuation problems which the valuers could take into consideration when choosing similar anchors and adjusting anchors:

1. Assumption Circumstances

- All subject properties are free from all encumbrances (free from taxes, credit obligations and the likes) with good and marketable title.
- Properties to be valued all have appropriate planning histories.
- None is a serviced apartment.
- There is water supply and electricity from public mains that reflects the average Nigerian situation.

- All the facilities and utilities are in perfect working condition.
- The properties are in excellent state of condition and are newly built.
- The rectangular shaped sites are level and well drained.

Table 3: Construction Details of Each of Each of the Ten Properties Valued

Items	Construction details
Floor finishes	Terrazzo all true except for sitting rooms which are marble tiles.
Wall finishes	Walls are rendered internally and externally, and finished with texcote paint. Wall to wall vitrified tiles in kitchen, toilet and bathrooms.
Ceiling type	Plaster of Paris in sitting rooms for ground floor only, acoustic tile boards in other areas except the kitchens which are upper soffit of reinforced concrete mass.
Fixtures and fittings	None.
Roofing sheets	Aluminium Sheets.
Windows	Glazed aluminium throughout.
Doors	Glazed aluminium at the entrance door of the sitting room guarded with protectors and others are flush doors.

Table 4: The Environmental Attributes Existing Around the Subject Properties

Environmental considerations	Condition
Mains electricity	Relatively Good
Water supply	Relatively Good
Telecommunication services	Relatively Good
Network of motorable roads	Relatively Good
Drainage	Very Good
Sanitation	Very Good
Soil texture	Very Good
Fencing	Very Good
Planning history/approval	Very Good
Land mark	Very Good

Circumstances of Areas of Properties

Areas of properties are:

- Property one is at Ogunlana Drive, Surulere in Lagos State with area of 648sqm.
- Property two is along McEwen Street, off Herbert Macaulay, SaboYaba in Lagos State with area of 500sqm.
- Property three is at AdeyemoAkapo, Omole Phase 1, in Ikeja, Lagos State with area of 800sqm.
- Property four is at Folajinadu Street Phase II, Gbagada in Lagos State with area of about 648sqm (a plot).
- Property five is at AdediranAjao Cr., Anthony in Lagos State with area of 1400sqm.
- Property six is at Ajao Estate off Airport road, in Lagos State.
- Property seven is at Bourdillion Street, Ikoyi in Lagos State with area of 3200sqm.
- Property eight is at Location A - Series, Lekki in Lagos State with area of 800sqm.
- Property nine is at Jemtok Street, Off Ago Palace Way, Okota in Lagos State with area of 700sqm.
- Property ten is at Victoria Garden City in Lagos State with area of 700sqm.

Accommodation Details

Accommodation details for the ten properties are the same. The details are:

*5 rooms all en-suite
* A guest toilet
* One veranda and one balcony
* Car park can take three cars
*One number Kitchen
*Two number living rooms
* Two number Boys Quarters

Descriptive Analyses on Anchor Values, Adjustment Amounts, and Final Values

Results of experiments of the valuers'sources of anchor were presented and analyzed below:

Table 5: Sources of Anchor Values in the Ten Valuation Experiments

Property at:	Self-generated	Used (%)	Not Used (%)
	PVESP	0(0%)	104 (100%)
Ogunlana Drive	PPESS	14(13.46%)	90 (86.54%)
	PVESPS	6 (5.77%)	98 (94.23%)
	PVKS1	0 (0%)	104 (100%)
	PVKS2	0(0%)	104 (100%)
	RSPLE	84 (80.77%)	20 (19.23%)
Total		104 (100%)	
	PVESP	0 (0%)	104 (100%)
McEwen Street	PPESS	0 (0%)	104 (100%)
	PVESPS	0 (0%)	104 (100%)
	PVKS1	0 (0%)	104 (100%)
	PVKS2	0 (0%)	104 (100%)
	RSPLE	104 (100%)	0 (0%)
Total		104 (100%)	
AdeyemoAkapo	PVESP	0 (0%)	104 (100%)
	PPESS	4(3.85%)	100 (96.15%)
	PVESPS	0 (0%)	104 (100%)
	PVKS1	0 (0%)	104 (100%)
	PVKS2	0 (0%)	104 (100%)
	RSPLE	100 (96.15)	4 (3.85%)
Total		104 (100%)	
	PVESP	0 (0%)	104 (100%)
Folajinadu Street	PPESS	7 (6.73%)	97 (93.27%)
	PVESPS	2 (1.92%)	102 (98.08%)
	PVKS1	0 (0%)	104 (100%)
	PVKS2	0 (0%)	104 (100%)
	RSPLE	95 (91.35%)	9 (8.65%)
Total		104 (100%)	
AdediranAjao Crescent	PVESP	0 (0%)	104 (100%)
	PPESS	4(3.85%)	100 (96.15%)
	PVESPS	2 (1.92%)	102 (98.08%)
	PVKS1	0 (0%)	104 (100%)
	PVKS2	0 (0%)	104 (100%)
	RSPLE	98(94.23%)	6 (5.77%)
Total		104 (100%)	
Ajao Estate	PVESP	0 (0%)	104 (100%)
	PPESS	0 (0%)	104 (100%)
	PVESPS	0 (0%)	104 (100%)
	PVKS1	0 (0%)	104 (100%)
	PVKS2	0 (0%)	104 (100%)
	RSPLE	104 (100%)	0 (0%)
Total		104 (100%)	
Bourdillion Street,	PVESP	0 (0%)	104 (100%)
	PPESS	1 (0.96%)	103 (99.4%)
	PVESPS	0 (0%)	104 (100%)
	PVKS1	0 (0%)	104 (100%)
	PVKS2	0 (0%)	104 (100%)
	RSPLE	103 (99.4%)	1 (0.96%)
Total		104 (100%)	
Location A-Series	PVESP	0 (0%)	104 (100%)
	PPESS	3(2.88%)	101 (97.12%)
	PVESPS	0 (0%)	104 (100%)
	PVKS1	0 (0%)	104 (100%)
	PVKS2	0 (0%)	104 (100%)
	RSPLE	101 (97.12%)	3(2.88%)
Total		104 (100%)	
Jemtok Street	PVESP	0 (0%)	104 (100%)
	PPESS	0 (0%)	104 (100%)
	PVESPS	0 (0%)	104 (100%)
	PVKS1	0 (0%)	104 (100%)
	PVKS2	0 (0%)	104 (100%)
	RSPLE	104 (100%)	0 (0%)
Total		104 (100%)	
Victoria Garden City	PVESP	0 (0%)	104 (100%)
	PPESS	0 (0%)	104 (100%)
	PVESPS	0 (0%)	104 (100%)
	PVKS1	0 (0%)	104 (100%)
	PVKS2	0 (0%)	104 (100%)
	RSPLE	104 (100%)	0 (0%)
Total		104 (100%)	

Data presented in table 5 showed that there are different sources of anchor values used in the ten valuation experiments. However, none of the valuers used previous value experience of the subject property valued (PVESP). This implies that none of the valuers have used the anchor value based on their experience on the value of subjects; or possibly that they have not had any value experience of the subjects.Options for previous price experience of similar property to the subjects valued (PPESS) were used in Ogulana Drive, AdeyemoAkamo, Folajinadu, AdediranAjao Crescent, Bourdillion Street, and Location A-Series by 13.46, 6.73, 3.85, 6.73, 0.96, 2.88% of the valuers respectively. The numbers were very few indicating that many valuers did not use or have not had experience of recent sales of similar properties to the subjects. Previous value experience of similar property to the subjects valued (PVESPS) were used in valuing properties at Ogulana Drive, Folajinadu and Adediran Ajao Crescent by 5.77, 1.92 and 1.92% of the valuers respectively. None of the valuers used previous value knowledge of the subject properties valued (PVKS1). This indicates that anchor values based on knowledge of value placed on the subjects by other valuers were not used. None of the valuers used previous value knowledge of the similar property (PVKS2). This also indicates that anchor values based on knowledge of value placed on similar properties to the subjects by other valuers were not used. The number of valuers that used recent sales price from local experts (RSPLE) as anchor data was relatively large. The percentage usage of this source is 80.77, 100, 96.15, 91.35, 94.23, 100, 99.4, 97.12, 100, and 100% for properties at: Ogulana Drive, McEwen Street, Adeyemo Akamo, Folajinadu, AdediranAjao Crescent, Ajao Estate, Bourdillion, Location A-Series, Jemtok Street, Victoria Garden City, respectively.

Null hypothesis (H_0): There is no significant difference between estimates of capital values byvaluers.

Test of Hypothesis

To test the stated hypothesis, One-Sample Student's T-test was employed.

Table 6: t -Test to ascertain the level of Significance in the Difference in Estimates of Market Values by the Valuers

Location of Property	N	Mean Difference	T	Df	Sig. P	Remarks
Ogunlana Drive, Surulere	104	74209913.46	105.863*	103	0.000	Significant
McEwen Street, off Herbert Macaulay, SaboYaba	104	76651346.15	111.696*	103	0.000	Significant
AdeyemoAkapo, Omole Phase 1, in Ikeja	104	74563365.38	135.619*	103	0.000	Significant
Folajinadu Street Phase II, Gbagada	104	73325048.08	110.347*	103	0.000	Significant
AdeniranAjao Cr., Anthony	104	804221925.31	283.071*	103	0.000	Significant
Ajao Estate off Airport road	104	77837884.62	107.334*	103	0.000	Significant
Bourdillion Street, Ikoyi	104	672073625.00	311.596*	103	0.000	Significant
Location A - Series, Lekki	104	206959567.31	73.078*	103	0.000	Significant
Jemtok Street, Off Ago Palace Way, Okota	104	41630894.23	139.580*	103	0.000	Significant
Victoria Garden City	104	125517538.46	191.477	103	0.000	Significant

Interpretation: The results showed significant P of 0.00 in all; and this means that there are significant differences in estimates of property values determined by the valuers in Lagos. Consequently, the null hypothesis was rejected.

Conclusion

Valuers in metropolitan Lagos obtain anchor values from various sources and with different adjustment rates to come up with the final capital values of residential properties that significantly vary. Variances in market values of the residential properties determined by the valuers in the study area are the results of different sources of anchor data and adjustment amounts for a given valuation problem.

Recommendations

The wider the variances, the lesser the confidence clients will have in values advised by professionals. In order to provide valuers with the necessary tools to manage valuation practices to minimal value inconsistencies, it is imperative that they embrace more holistic as well as appropriate behavioral approaches to solving problems. Recommending that the sources of anchor be streamlined to recent sales price of similar properties from local experts is not an end, since the study also showed that even with the relatively large number of valuers that used recent sales price from local experts (RSPLE) as anchor data, significant differences in values still resulted. There is therefore the need to make sure that chosen similar properties are always inspected to determine variables that can contribute to wide variances in final values. Arbitrary adjustment approaches without identification of differences in the attributes on the site is dangerous in the valuation profession and should be avoided as this may lead to misrepresentation of comparables. To prevent significant variances in values, valuers should pick sales that have very few areas of adjustments. This is so that even big errors in the adjustment will not make much difference in final capital values.

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