Investment decisions quality in the real estate sector

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Abstract
Purpose –The study aims to establish the relationship between information search precision and investment decision quality in commercial real estate investment in Uganda and as a corollary, to establish the contribution of each of the dimensions of information search precision (perfect rationality, satisficing rationality and decision weights) to quality of real estate investment decisions, using evidence from Uganda
Design/methodology/approach – This study was cross-sectional and correlational. It used a sample of 200 residential housing real estate investors, and the data were analyzed using SPSS Version 20 to test the hypotheses put forward.
Findings – Results indicate that information search precision and investment decision quality are significantly associated. Results further indicate that perfect rationality is the most important predictor investment decision quality.
Originality/value: This study improves our understanding of investment decision quality in a developing country setting unlike previous studies which evaluated investment decision quality exclusively based on standard finance using evidence from developed economies. Using evidence from Uganda, the current paper shows that perfect rationality in real estate investment decision-making is the more important in such settings.

Keywords: Information search precision, perfect rationality, Satisfying rationality, Decision weight, Decision quality.

Paper type: Research paper

1. Introduction

Investment decision quality is a key concern for decision makers in commercial real estates across the globe (Hebb, *et al*., 2010). This concern was steeped by the 2008 global financial crisis that led to a number of American investors' loss of their investment

in homes. Yet investments in real estate continue to advance rapidly in volume and complexity, and contribute significantly to the gross domestic product (GDP), wealth accumulation and employment (Reddy, *et al.,* 2014). Investment decision quality involves actions that can result in acceptable yields (Kauko, 2014), satisfaction derived from investment decision (Muhammad and Jantan, 2009) and satisfaction in profits, value creation and cost-efficiency (Klimczak 2010; Brueggeman and Fisher 2011). It helps investors in making decisions that attract inward and fixed investment, capital formulation, employment creation, productivity, profitability, value creation, cost-efficient accountableness, and sustainable affordability (Raghunathan, 1999). In the real estate sector, it allows investors to allocate capital to the most strategically important projects (Lorenz and Lützkendorf, 2011), provides well developed decision systems to address the complexity and uncertainty in the commercial real estate sector (Nguyen, 2020). A good quality decision can boost earnings and increase the value of the firm (Nguyen, 2018). Thus, on the international scene, how and the benefits of quality of investment decisions can be improved has significantly been addressed in literature. In Uganda, the quality of the investment decisions in real estate according to Uganda Bureau of Statistics (UBOS) report (2019), is faced with challenges of increased supply but at the same time many properties remain vacant and have not resulted into the expected return on investment. Ironically, the demand for low cost residential housing units is rising in Uganda (Esolyo, 2019).

Studies on information search precision and investment decision quality exist in the developed world (Gallimore and Gray, 2002; Erev, *et al.,* 2017; Callett, 2000; Philip *et al.*, 2019; Samina, *et al.,* 2018; Soukup, *et al.,* 2015). Gallimore and Gray (2002) concluded that commercial real estate investment decision quality is reliant upon all relevant information to maximize utility in USA. Erev *et al.* (2017) reveal that even with substantial evidence on information search activities, investors may utilize their perceptions of sentiment to determine investment decision quality to achieve the optimum level. Callett (2000) reports that individuals cannot account for all the available information, compile an exhaustive list of alternative courses of action, and ascertain each possible outcome's value and probability. Philip *et al.* (2019) highlight three properties of the weighting function to measure investment decision quality. Others like (Samina *et al.,* 2018) suggest that information search precision expressed as bounded, perfect, satisficing rationality and decision weight influence investment decision quality. According to Soukup, *et al.* (2015), the probability weighting function assigns decision weights to the different investment opportunities based on the objective probabilities of occurrence.

While available studies have served readers well, little is known about how information search precision and investment decision quality relate, in emerging economies like Uganda. The focus on Uganda is important because unlike other developed nations there is a widening gap in annual housing supply compared to the established demand. As indicated above, the demand for low cost housing is growing exponentially in Uganda compared to low cost housing supply, yet investments in high cost housing is also rising relative to its demand. The question is “are investors making wrong decisions in investing in high cost housing when the effective demand is high in low cost housing?” Available studies appear less focused on addressing this issue.

Furthermore, available literature offers no evidence about which of the expressions of information search precision (i.e. satisficing rationality, perfect rationality

and decision weight) matter most for quality investment decisions in the real estate sector especially in economies such as Uganda where the sector is fledgling. This is unfortunate because a decision maker in nascent economies fails to descriptively (i.e. describe how to decide), normatively (suggest how to decide) or prescriptively (i.e. how to use normative models to guide decision-making within other limiting cognitive parameters) analyze the various investment choices in the real estate sector. The question of which in-put information to use in the decision process has remained an empirical one (French, 2001). For example, should investors in such economies aim at obtaining perfect information or information that would just suffice for real estate investment decision quality? We believe that the establishment of the model (perfect rationality model, satisficing rationality model or the decision weight model) that produces the most variances in real estate investment decision quality partly ameliorates the lacuna in extant literature.

Drawing on expected utility theory (Ivan, 2016; Paul, et al., 2018), bounded rationality theory (Simon, 1955; Landa and Wang, 2001) and prospect theory (Kahneman and Tversky, 1979) this paper aims to examine the relationship between information search precision and investments decision quality in the real estate sector in Uganda. Literature suggests that information search precision is manifest in perfect rationality, satisficing rationality and decision weight (Schulz-Hardt, *et al.*, 2000). Thus, this study tests three predictions: a relationship exists between perfect rationality and investment decision quality, a relationship exists between satisficing rationality and investment decision quality, and a relationship exists between decision weight and investment decision quality. Using a questionnaire survey of real estate managers in Uganda, this study finds that information search precision manifest in perfect rationality, satisficing rationality and decision weight significantly relates to investment decision quality. The study also finds that perfect rationality is the more important predictor of real estate investment decision quality in Uganda.

This study results are important in several ways. This study contributes to existing literature on the relationship between information search precision and investment decision quality using evidence from Uganda where investors target high income earners and neglect low income earners. Targeting high income earners has led to over surplus in the high-end housing units while the neglect of the low-income earners has created a deficit in the housing units. The results support the idea that a rational investor is always risk-averse as assumed by expected utility theory and can collect all relevant available information to achieve maximum profits in an efficient market. Lastly, investors wishing to improve their decision quality in real estate sector in Uganda and such similar other settings, need to aim for perfect rationality in their information search.

The reminder of the paper is organized as follows. The next section is literature review where the theoretical and empirical review is done. Methodology then follows. After the methodology section, the results are presented and this is followed by discussion. The final section is summary and conclusion.

2. Literature review

2.1 Study setting

This study was conducted in Uganda – a developing landlocked country in East Africa. Uganda is largely dominated by the service sector, agricultural sector and the industrial sector. The commercial real estate investments are part of the services sector.

The estimated annual need for new housing units is currently about 200,000 in rural and urban areas of Uganda. In Uganda, private developers' investment decisions primarily target the high-end housing segment since it fetches a premium over the mid-income housing (Cytonn Real Estate report, 2017). These types of investments have led to an oversupply in the high-income segment, with about 50% remaining vacant thereby creating a situation of oversupply in one segment alongside under supply in the other. Further, the housing market is characterized by the few affordable units, specially targeting middle and lower-middle-income earners. According to Ojok (2018), the annual housing requirements is 200,000 per year where 60% of the housing deficit is for low-income earners, 37% for middle-income and only 3% for the high-end market. Based on the above figures, it is inevitable that the country's annual housing requirement will continue to prevail, compared to the population growing at an annual rate of 3.3 %. With the widening gap in annual housing supply compared to the established demand, developers could exploit the significant opportunity in the current attractive situation in commercial real estate in Uganda. One of the key constraints to commercial real estate investments in Uganda is lack of the quality of investment decisions which this study is trying to address.

2.2 Theoretical foundation

The expected utility theory (Von Neumann and Morgenstern, 1947) has been used to explain investment decision quality. According to Ivan (2016), the main assumptions of this theory are perfect rationality and risk averseness. The theory asserts that to achieve a quality investment decision, investors can get assess, process all the information available, the probabilities of possible outcomes, the preferences, and always choose the ones with the highest profit alternative (Paul *et al.,* 2018). However, in bounded rationality situation, decision maker's aim is to satisfy. The satisficing rationality has roots in the bounded rationality theory indicating that decision-makers do not associate quality decisions with optimal decision alternatives. The implication is that quality investment decisions are made without analyzing all the other options, because of the associated costs. Scholars (Simon, 1955; Byrne, *et al.,* 2013) argue that satisficing decision would be one that yields satisfactory outcomes and not necessarily the one with maximum satisfaction as suggested by perfect rationality model. Moreover, the prospect theory by Kahneman and Tversky, 1979) states that under the state of uncertainties, investors measure decision quality based on the decision weights, contrary to the expected utility theory. Thus, a decision-maker perceives each consequence as subjectivity's probabilities, to estimate the utility of each outcome relative to each other and evaluates the possibilities of developing a priori with personal knowledge and beliefs. Unlike the rational investor who exclusively evaluate investment decision quality based on perfect rationality, this paper in addition investigates whether satisficing rationality and decision weight affect the quality of investment decisions in commercial real estate in Uganda.

2.3 Investment decision quality

Decision quality refers to best choice, the goals, and values of the decisions, (Jacoby *et al.,* 1974). It is conceived in terms of decision outcomes, outputs, expectancy of success, information processing performance and risk preferences (Lucian and Sidorova, 2015). Zakay (1984) distinguishes four classes of decision quality: the outcome

of the decision, the correctness of the decision process, the importance and ethical value of the decision, and the decision maker's feelings about the decision (Ebbers et al*.,* 2016). Decision quality is associated with allocating resources to the most efficient combined with the goal of value creation and, and aim to help investors make decisions and adapt strategies that better fit the task at hand, (Hochberg and Mŭhlhofer, 2016). Decision quality outcomes are often measured using perceived decision maker satisfaction with the outcome as a surrogate for decision quality (Kaltoft *et al.,* 2014).

2.4 Information search precision

Information search precision is indicated and requires perfect rationality, satisficing rationality, and decision weight. It is about developing different plans to minimize risks in investment decisions, including obtaining more information to lessen uncertainties of these decisions (Schulz-Hardt, *et al.,* 2000). Information search means the necessity to seek advice from many resources before making any investment decision (Yang*, et al*., 2011). Well-informed investors can handle risk more efficiently and reduce uncertainty and biases in the investing process. In a rapidly changing environment, professional advice ensures the accuracy of the desired information acquired through digital or advice-seeking searches in general (Baker, *et al*., 2020). According to Yang *et al*. (2011), information search precision requires consulting various sources before making a biased free decision.

2.5 Information search precision and investment decision quality.

Scholars (Ge and Helfert, 2006; Taylor, 1974) note that information search precision plays a bias-reducing role in achieving a quality investment decision, especially in an uncertain environment (Yang*, et al*., 2011). Studies have found that information search precision is the primary consideration of the quality of investment decisions via a great understanding of a company's financial status, based on economic perspectives. Therefore, information search brings to bare the organization's external environment (Mohammed and Van Belle, 2019) and thus the decisions made will be informed. Since according to (De Bondt *et al.,* 2013), information search precision is the ability with which knowledgeable investors can estimate the cognitive bias in the information available accurately to arrive at an error-free investment decision, this study mainly hypotheses as follows:

H_1*: There is a positive relationship between information search precision and investment decision quality in the housing sector in Uganda.*

Ivan (2016), Fuerst and Grandy (2012) and Hands (2014) suggest that perfect rationality is the investor's ability to adjust rapidly the decisions as new information comes in so it matches with his/her prime objectives. In essence, a rational investor can efficiently process data in an efficient market and make a quality decision as it has been suggested (e.g., Gallimore and Gray, 2002) that Investors use logical processes of considering available information to arrive at the optimal conclusion. Few studies (e.g., Bolomope *et al.,* 2020; De Bondt *et al.,* 2013) document evidence on the link between perfect rationality and investment decision quality. According to Bolomope *et al.,* 2020), through maximum utilization of all the relevant information available to an investor is associated with better quality of investment decisions. According to De Bondt *et al.* (2013), the choice of the option with the relevant information increases the action of

removing biases from investment decision quality. Based on this literature, it can be hypothesized that:

***H₂**: Perfect rationality and investment decision quality are positively related.*

2.6 Satisficing rationality and investment decision quality

Satisficing rationality as component of information search precision, seeks to understand how searching for information predicts investment decision quality. Satisficing is a framework for decision quality making process (Matteo, 2017; Simon, 1955) through which an individual decides when the alternative approach or solution is sufficient to meet the individual's investment objective (Schwartz *et al.,* 2010). Satisficing rationality is the notion that investment decision quality has limitations due to information availability and an individual's cognitive abilities (Musshoff, *et al.*, 2011). Satisficing advocates for the use of less information and time in situations of uncertainties and complexes to achieve quality decisions (Gigerenzer 2010). Starry (2013) argues that investors generally seek satisfactory solutions rather than optimal ones because of the environment's complexity and human information processing limitations. Schwartz et al. (2002) also suggest that some individuals consistently attempt to find the best solution. However, such an option demands an exhaustive search, which may be costly and distort the quality of investment decisions. Likewise, others consistently attempt to find a non-exhaustive search that can meet a satisfactory solution that is free or good enough, given their standards. For instance, typical satisfiers would select only a few criteria instead of waiting for all relevant information to achieve a certain level of decision quality. Once that level of action meets this criterion, the thinking is that the quality of investment decisions is appropriate, and any other search is unnecessary. Deciding on the first option that exceeds an aspiration level is a form of a satisficing strategy in achieving a biased free achievement. Hence:

***H₃**: Satisficing rationality and investment decision quality are related*

2.6 Decision weight and investment decision quality

Decision weight is a component of information search precision. According to Hertwig *et al.* (2004), decision weight refers to the subjective probability that allows investors to make quality decisions by referencing things they have learned and their own experience. Jakub et al. (2018) argue that decision quality, rather than being derived solely from hard data and facts, depends on subjective probability, which is person's psychological estimate or intuition of a situation, and the likely outcome (Zeinab, 2013). Essentially, when investors want to achieve better quality investment decisions, they summarize all the information to avoid information overload in an attempt to minimize the cost. Decision weight extends this probability by explaining the investors' use of psychological weights to predict the actions influencing investment decision quality. The decision weights are probabilities that are not linearly proportional to their associated objective probabilities because they do not obey the expected utility theory's probability axioms. Decision weights refer to assigning different weights, to predict investment decision quality (Baláž, *et al.*, 2016). Previous studies show that investors place decision weights on the gain or loss depending on induced biases (see. e.g., Hertwig *et al.*, 2004). Investor fear losses than they value gains and therefore their perception on these variables tend to affect investment decision quality non-uniformly. Tversky and Kahneman (2007) asserted that the decision weights assigned by a decision-maker

measure the likelihood of events perceived, but also the level of biases events might have on the desirability of prospects. The above argument finds support in the non-linearity function proposed by prospect theory, which posits that decision weights are not directly proportional to the probability of the consequence occurring. They posit that decision weights best explain investment decision quality by overweighting small probabilities and underweighting moderate and high chances. Therefore, decision weights empirically derive an assessment of how investors de-bias their sense of events' likelihood (Madan, *et al.*, 2014; Byrne, *et al.*, 2013). Based on the foregoing discussion, the following hypothesis is stated.

H_4: *Decision weights and investment decision quality are related*

3. Methodology

3.1 Study design and sample

The study is a cross-sectional survey and the population comprised of 1.346 residential housing market investment decisions in Uganda, (AREA Uganda, 2015). The residential property was the unit of analysis based on the works of Muhammad and Jantan (2009). According to (Krejcie and Morgan, 1970) sampling table, a population of 1.346 required sample size of 335 properties with a margin error of 0.05 and a 95% confidence level. We use simple random sampling to select the investments and purposively select the managers/investors who are responsible for making investment decisions (Thornhill *et al.*, 2009).

The results in table 1 indicate that in terms of gender, the majority 52.5 percent were male and 47.2 percent females. The results show that 45.5 percent fell in the age bracket of 31-40, followed by 27.5 percent in the range of 21 - 30, and 20 percent in the 41 -50 percent range. Majority 43.5 percent of the respondents had been in business for a period ranging between 11 and 15 years, followed by 24 percent of them 6 to10 years and less than 5 years' experience accounted for 23 percent. Quite interesting is that the investments are jointly owned 54 percent compared to the 46perent that owned by individuals, underscoring the fact that huge resources are needed and these can be raised in partnership rather than individual efforts. With regard to sources of funding, majority 44 percent raised capital from bank loans while own savings accounted for 40 percent. Most of the investment 26 percent was in bungalow (two bed room) closely followed by 24.5 percent low-cost housing unit while 21.5 percent was bungalow (three bedroom). Overall, there is diversity of investment in the residential markets and there are efforts to meet the various demand requirements in the market.

Table I: Demographic characteristics

Background information	**Frequency**	**Percentage**
Gender		
Male	105	52.5
Female	95	47.5
Total	200	100.0
Age of the respondent		
20-30	55	27.5
31-40	91	45.5
42-49	40	20.0
50-57	12	6.0
58-65	2	1.0

Total	200	100.0
Experience		
< 5 years	18	9.0
6-10 years	46	23.0
11-15 years	87	43.5
o years	18	24.0
>20 years	1	.5
Total	200	100.0
Marital status		
Single	20	10.0
Married	151	75.5
Separated	29	14.5
Total	200	100.0
Education		
Ordinary level certificate	15	7.5
Advanced level certificate	39	19.5
Professional certificate	17	8.5
Diploma	42	21.0
Bachelor degree	65	32.5
Master's degree	22	11.0
Total	200	100.0
Investment partnership		
Singly owned	92	46.0
Jointly owned	108	54.0
Total	200	100.0
Purpose of investing in housing		
Rental income	63	31.5
Accumulating wealth	63	31.5
Affordable and sustainable	13	6.5
Ownership	61	30.5
Total	200	100.0
Capital investment		
10-40 bn.	81	40.5
41-80bn.	96	48.0
81-120bn.	15	7.5
Above 120bn.	8	96.0
Total	200	100.0
Type of property		
Bungalow (Two bed room)	52	26.5
Bungalow (Three bed room)	42	21.5
Apartment	30	15.0
Condominium	27	13.5
Low cost Units	49	24.5
Total	200	100.0
Source of financing		
Returns	18	9.0
Savings	81	40.5
Bank loan	89	44.5
Sales of other properties	12	6.0
Total	200	100.0

Source: Primary data

3.2 The questionnaire and variables measurements

The questionnaire was a six-point Likert scale ranging from strongly disagree to strongly agree (Krishnaveni and Deepa, 2013). We also tested reliability using the inter-item test method to measure the reliability where inter-item correlations were determined using the Cronbach Alpha test (Saunders *et al*., 2009). The results of the alpha coefficient were all above 0.7 and meet the recommendation (Nunnally, 1978). Investment decision quality was measured by profitability of prediction accuracy, value creation, cost-efficiency, affordable sustainability, rate of return and satisfaction of investment decisions, timeliness (Muhammad and Jantan, 2009; Dooley and Fryxell, 1999). Perfect rationality was measured with the rational subscale of the General Decision-Making Style Scale developed by Scott and Bruce (1995). These measures basically tap into the aspects of problem identification, alternative solutions and selection of optimal solutions (Hirschauer 2011; Goyal, 2016). We follow previous scholars like Brighton and Gigerenzer (2008) to operationalize satisficing rationality as action taken based on the limited availability of information, limited cognitive abilities to processing the available information. Decision weight works on the notion that investors fear losses than they value gains. We measure decision weights using (Durbach and Stewart 2012; Ludvig, *et al*., 2013) items of psychological belief that low probability events (rare events) are overweighed, high probability events are under weighed (more probability events).

Table II: Measurement of variables

Variable	**Acronym**	**Measure**
Dependent Variable:		
Investment decision quality	*IDQ*	Average rating on a 6-point Likert scale of questions
Information search precision	IFSPR	Average rating on a 6-point Likert scale.
Predictor variables:		
Perfect rationality	*PR*	Average score of questions on a 6-point Likert scale
Satisficing rationality	*SR*	Average score of questions on a 6-point Likert scale
Decision weight	*DW*	Average score of questions on a 6-point Likert scale
	βo	Constant
	εj	Error term

Source: Primary data

Model

The study utilizes a hierarchical regression model in investigating the contribution of information search precision and its dimensions to investment decision quality in commercial real estate in Uganda. Hierarchical regression analysis is the ideal for studies that aim to establish the contribution of any independent variables to variances in the dependent variables (Sekeran, 1983). Specifically, the models below were tested.

Model 1: $IDQ = \beta_0 + \beta_1 IFSPR + \varepsilon j.$

Model 2: $IDQ = \beta_0 + \beta_1 IFSPR + \beta_2 PR + \varepsilon j.$

Model 3: $IDQ = \beta_0 + \beta_1 IFSPR + \beta_2 PR + \beta_3 SATS + \varepsilon j.$

Model 4: $IDQ = IDQ = \beta_0 + \beta_1 IFSPR + \beta_2 PR + \beta_3 SATS + \beta_4 DW + \varepsilon j.$

Where: IDQ is investment decision quality; IFSPR is information search precision; PR is perfect rationality; SATS is satisfying rationality, DW is decision weights, εj is the error term while β_0 is a constant.

3.3 Factor analysis

In executing the principal component analysis for our scales, we assessed the suitability of our data for factor analysis based on sample size adequacy, the Keiser-Meyer-Olkin (KMO) and Bartlett tests. The KMO and Bartlett's test of sampling adequacy were computed to ensure that factor analysis yields different and reliable factors (Adebayo and Suleman (2017). The results shown in Table III indicate that the KMO values for information search precision and investment decision quality are 0.788 and 0.779 respectively and are within acceptable range. Bartlett' test of sphericity in all scales also reached statistical significance; that is to say significant value was 0.000 for each scale. For information search precision, Table IV reveals the presence of three components with eigenvalues exceeding 1 explaining 36.49, 14.46 and 11.40 percent respectively, of the variance of in information search precision. We name the components as perfect rationality, satisficing rationality and decision weight. Table V revealed the presence of presence of two components with eigenvalues exceeding 1 explaining 47.016 and 24.176 percent respectively, of variance in investment decision quality (cumulatively explaining a total of 71.192 percent of the variance). We name the components as cost-efficiency accountableness and value creation.

Table III: **Sampling adequacy and suitability of the data for exploratory factor analysis**

Item	KMO and Bartlett's Test	Information search precision	Investment decision quality
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.788	.799
Bartlett's Test of Sphericity	Approx. Chi-Square	601.110	488.842
	df	36	45
	Sig.	.000	.000

Source: Primary data

Table IV: Rotated Component Matrix for Information search precision

Item	1	2	3	Communalities
I always make investment decisions in real estate when I am comfortable with information.	0.795			0.682
I study each part of the information in detail before investment decision.	0.771			0.645
When making investment decisions in I try to find a couple of options and choose among them	0.748			0.571
I always share all relevant information with the experts before making decisions in real estate	0.687			0.549
I need a lot of time looking at different information when making investment decisions in real estate		0.808		0.693
My investment decisions in common real estate are always associated with low accessible costs		0.782		0.62
I am sure adventurous when making investment decisions in real estate than being conservative		0.551		0.606
I make decisions and get on with things than read them analyzing every last detail			0.827	0.737
My appetite towards risk influences my investment decisions in real estate			0.616	0.509
Total	3.284	1.302	1.026	
% of Variance	36.492	14.464	11.399	
Cumulative %	36.492	50.955	62.354	

Notes: KMO = 0.788; Bartlett's test of sphericity: approx. $\chi 2$ = 601.110, df = 36, Sig = 0.000. 1= Perfect rationality, 2 = Satisficing rationality, 3 = Decision weight
Extraction Method: Principal Component Analysis. Rotational method: Varimax with Kaiser Normalization

Table V: Exploratory Factor Analysis Results for *Investment Decision Quality*

	Cost-Efficient Accountableness	*Value Creation*
I always view big investment decisions in real estate, without proper accountability as a sign of poor cost control.	.832	
Profit is ideal to me if the investment decision associated with it is backed by clear supporting documents.	.946	
The success of my investment decisions is a result of cost efficiency, cost minimization and profit maximization.	.923	
Low cost investments like easy maintenance, guide my decisions in real estate.	.991	
Investment decisions based on the best available information are important in increasing wealth.		.973
Real estate investment decisions based on client affordability increase profitability.		.962
Real estate investments which are desirable and attractive can increase my asset growth.		.699
Eigen Value	3.291	1.692
Variance %	47.016	24.176
Cumulative %	47.016	71.192

KMO =, Bartlett's test =, Determinant = 1= *Cost-Efficient Accountableness, 2= Value Creation*
Notes: *KMO* = 0.799; Bartlett's test of sphericity: approx. $\chi 2$ = 488.842, *df* = 45, *Sig* = 0.000.
Extraction Method: Principal Component Analysis. Rotational method: Varimax with Kaiser Normalization

3.4 Data Management and Analysis

The data management involved entering the data using the SPSS version 20 to generate the required descriptive and inferential statistical analysis as indicated in Table VI. Prior to this, the data was checked for errors and then cleaned in line with Pallant (2005). We tested for normality using the histogram and P-P plots to guide the analysis of data. The histogram's assumption of the distribution of data is well-shaped, indicating normal data distribution as in, e.g., Figures 1 and 2. The findings on Skewness values range of -1 to +1 while the values for Kurtosis was -3 to +3, hence fulfilling the data standard assumption of normality. Secondly, the assumptions of linearity of the data depicted in Figure 1 revealed a linear relationship between the independent and the dependent variables.

Fig. 1: P-P Plot for investment decision quality

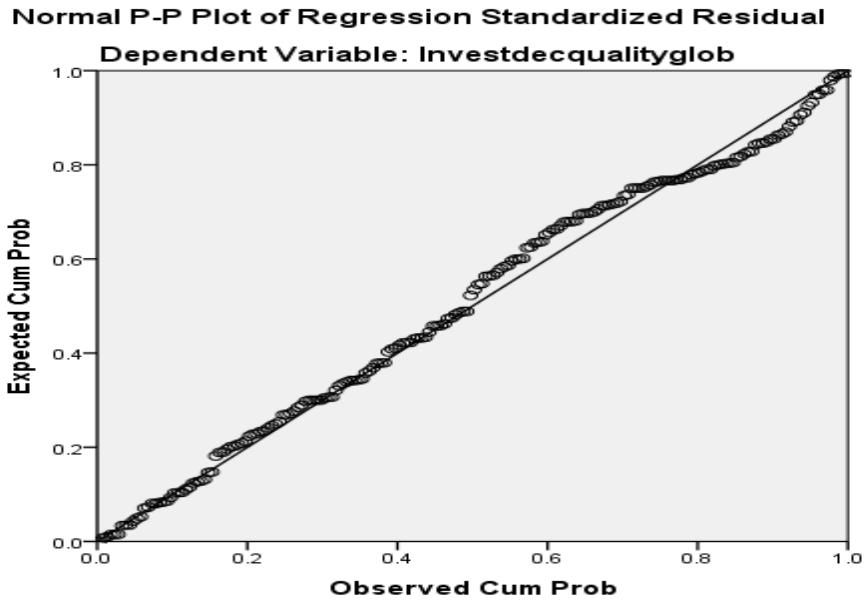
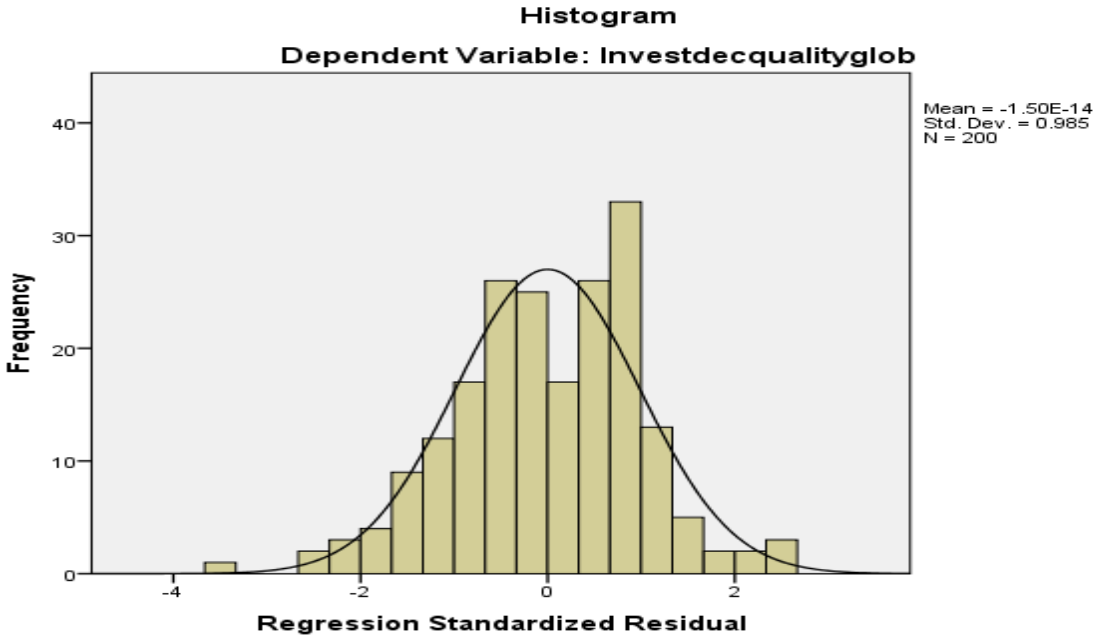


Figure 2: Histogram for investment decision quality



4. **Results:**

4.1 Descriptive and Correlation analysis

In Table VI, all mean scores of the global variables and their respective components range from 3.58 to 4.46, with standard deviations ranging from .23766 to .44620. Because of small standard deviations compared to the mean values, it is clear that the data points are close to the means (Field, 2009). Further the zero-order correlations coefficients between the variables reveal that information search precision has a significant positive relationship with investment decision quality (r =. 534**, p < 0.05). Perfect rationality has a significant positive relationship with investment decision quality (r =.667**, p < 0.05). Satisficing rationality is not significantly related with investment decision quality (r = -.005, p > 0.05). The results show decision weight and investment decision quality are positively and significantly related (r = .397**, p < 0.05). At this level of analysis, hypotheses 1, 2 and 4 are substantiated. In terms of discriminant validity, the results show that the components of information search precision are sufficiently discriminated as none of the correlations between them are more than 0.8; and so too are the components of investment decision quality. A closer look at the convergent validity show that this tenable as the relationships between the constructs and their global variable are all above 0.5.

Table VI: Descriptive statistics and Correlation analysis results

Variable	Mean	Std. Deviation	1	2	3	4	5	6	7
Satisficing rationality (1)	3.58	.36301	1						
Perfect Rationality (2)	4.37	.40158	.013	1					
Decision weight (3)	3.95	.38541	-.077	.341**	1				
Information search precision (4)	3.93	.23766	.571**	.688**	.620**	1			
Cost-efficiency accountableness (5)	4.46	.44620	-.130	.552**	.364**	.383**	1		
Value creation (6)	4.45	.39493	.014	.647**	.408**	.540**	.629**	1	
Investment decision quality (7)	4.37	.31844	-.005	.667**	.397**	.534**	.784**	.882**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Regression analysis

The difficulty with univariate analyses is their failure to control for other factors, thus making the interpretation of the results challenging. Because of this we extended the analysis to a multivariate setting and proceeded with regression analysis to further test the validity of the hypotheses. We use the regression coefficients as indicators of whether or not the contribution of each variable is significant, and the overall contribution of the variables is indicated by the variance explained (R^2) that also shows the explanatory power of the variables. Table VII(a), shows that the adjusted R^2 is 32.8 per cent and the F-ratio (F =98.261) is significant. This result further substantiates H_1. The results of Table II(b) show that except for satisficing rationality the other two constructs (perfect rationality and decision weight) of information search precision are significant predictors of investment decision quality providing further substantiation of H_2 and H_4. This model shows an adjusted R^2 of 46.09% (F = 59.602). Note, however,

among the constructs of information search precision, perfect rationality is the most significant predictor ($\beta = 0.477$, $p < 0.05$)

Table VII(a): Linear regressions model

Item	Model 1
Constant	1.368**
Information search precision	.576**
R	0.576
R^2	0.332
Adjusted R^2	0.328
Std. Error of the Estimate	0.26099
F-statistic	98.261
Durbin-Watson	1.373

a. Dependent Variable: Investment decision quality

Table VII(b): Linear regressions model (with the constructs of information search precision)

Item	Model 1
Constant	1.650**
Perfect rationality	.477**
Satisficing rationality	.002
Decision weight	.159**
R	0.691
R^2	0.477
Adjusted R^2	0.469
Std. Error of the Estimate	0.23203
F-statistic	59.602
Durbin-Watson	1.514

a. Dependent Variable: Investment decision quality

Furthermore, this study utilized hierarchical multiple regression to test the extent to which information search precision together and it constructs (perfect rationality, satisficing rationality and decision weight) predict investment decision quality in Uganda. In view of the small sample size and to ensure that the study is generalizable, results for adjusted R^2 are reported (Field, 2009; Pallant 2007) as opposed to R^2. The hierarchical regression results are presented in Table VIII. Our starting model is model 1 wherein is entered perfect rationality and the results show that this accounted for a significant amount of variance in investment decision quality (adjusted $R^2 = 0.442$), $p < 0.000$). In the second model (Model 2), decision weight is entered and this causes an extra and significant 3.2 percent variance in investment decision quality (*F-Change* = 12.235, $p < 0.05$). An addition of satisficing rationality in Model 3 causes no significant variances in investment decision quality. In all, perfect rationality and decision weight are significant predictors of investment decision quality in commercial real estate in Uganda, accounting for 47.2 percent of the variance (adjusted $R^2 = 0.472$, $p < 0.05$). The model 2 is the most plausible model for commercial real estate in Uganda. Perfect rationality as best significant predictor ($\beta = 0.529$, $p < 0.05$). The results of the Durbin - Watson score was 1.514, which is between the two critical values of 1.5 and 2.5. Therefore,

we can assume no first-order- linear autocorrelation in our multiple linear regression data.

Table VIII: Hierarchical regression

Item	Model 1	Model 2	Model3
Constant	2.057**	1.657**	1.650**
Perfect rationality	. .529**	.477**	.477**
Decision weight		0. .158**	.159**
Satisficing rationality			. 002
R	.667	.691	0.691
R^2	.445	.477	0.477
Adjusted R^2	.442	.472	.469
R^2 Change	.445	.032	.000
F	158.488**	89.858**	59.602**
F-statistic change	.158.488**	12.235**	.002
Durbin-Watson			1.514

a. Dependent Variable: Investment decision quality

5. Discussion.

This study identified that the information sources that the commercial real estate investors are able to access influences the quality of investment decisions in Uganda. For commercial real estate investment decisions, information search precision as the process of consulting various sources matters for achieving investment decision quality in residential real estate in Uganda. This notion is consistent with scholars such as Yang *et al.* (2011), whose findings show that when faced with uncertainty about the outcomes and sensing a high perception of risk, an individual may assess economic loss, in turn develop risk-reducing strategies (such as searching and acquiring information) to reduce the uncertainty. The diversity of financial investment decisions leads investors to seek advice and education from professional advisors when choosing more complex or riskier investments. This result is in agreement with Yaniv (2004) who suggests that information from advice-seeking may be costly but accurate. These results render support for expected utility theory. The theory states that in an efficient market, investment decision quality should include all the relevant information (Baker, *et al.*, 2020). Investors should invest in the real estate after first sharing information with experts before making the decisions. This makes intuitive sense because sharing information lowers uncertainty and gives the investor the confidence.

The central argument of this study was that literature is limited about which of the dimensions (constructs) of investment search precision matters most for the quality of investment decision in the real estate sector in the developing country setting. Findings indicate that perfect rationality in terms of (e.g.) relevant information matters for investment decision quality of the residential real estate investments in Uganda. Relative to decision weight and satisficing, perfect rationality has been found to matter most for investment decision quality in Uganda's real estate sector. A lack of focus on perfect rationality, therefore, may explain why investors in Uganda may not be taking advantage of the demand for low-cost residential housing units. The result of this study

seems to advance that the resultant man – also known as *homo oeconomicus* (Walras, 1883) – chooses alternatives in a decision task according to a simple norm: maximizing his/her own expected utility. Thus, the results support the traditional/normative conceptualization of individual rationality by suggesting that investors in real estate should be perfect rational individuals if they are to act to obtain the best possible payoff from their decision to invest in this sector. The results of this study seem not to advance Simon's (1947, 1955, 1957, 1983) satisficing concept. It seems the supposed perfect rationality, pushes investors towards self-interested preferences and hence better decisions. This finding is consistent with Shaharudin *et al.* (2018) that investment decision quality is making choices that yield optimal utility. The findings are also in support of Soukup *et al.,* (2015) who found that the concept of perfect rationality is associated with relevant information about the maximum total gain. These findings provide further evidence that perfect rationality in the residential real estate context appears to be that developers should use the best currently available information to form their quality investment decisions. The best information may involve forecasts on account of the current market; trends in type of housing and assessing the current value of the property before an investment decision (Verweij, *et al.,* 2015). As well, the results reported provide evidence of the postulation by (Arshad *et al.*, 2020) that perfect rationality is an essential attribute in determining the quality of investment decisions. This study's findings signal that perfect rationality uses different types of information and observe the past price movements to predict future asset investment decision benefits. Investors need a lot of time looking at a variety information, studying it in details, gives him/her a hint of a variety of real estate that can increase their rental income.

6. Summary and Conclusion.

This paper aimed to establish the relationship between information search precision and investment decision quality in commercial real estate in Uganda. As a corollary and more importantly, the study aimed to establish the contribution of each of the dimensions of information search precision (perfect rationality, satisficing rationality and decision weights) to quality of real estate investment decisions, using evidence from Uganda. The present study surveyed and analyzed data from 200 commercial real estate properties. Findings suggest that, as expected, information search precision causes positive variances in the quality of real estate investment decisions. However, among the constructs/dimensions of information search precision, perfect rationality is the most significant predictor of investment decision quality in commercial real estate in Uganda.

The current results have important implications. First, the study contributes towards a methodological position by showing that the behavioral biases can be alternative factors influencing investment decision quality in commercial real estate in Uganda. Second, our study results support the idea that a rational investor is always risk-averse in terms of expected utility theory and can collect all relevant available information to achieve maximum profits in an efficient market. It suggests that expected utility theory provides provide a relevant framework for understanding investment decision quality in Uganda. Lastly, investors in the real estate sector in Uganda need to aim at perfect rationality in their decision-making endeavors.

Like any other study, this study has got limitations. This study employs only the quantitative approach which limits respondent's capabilities to express their opinions fully on the subject matter. This means that the use of qualitative results may result into much more interesting results. The study was cross sectional and thus monitoring changes in behavior overtime was not possible. Also, this study was conducted in Uganda's commercial real estate markets and this means that the results may only be generalized to Uganda. Still, the results are potentially useful.

References

Adebayo, A. M., and Suleman, I. (2017), "The use of multiple linear regression and principal component regression models to predict the student's final grade point average (GPA) in the polytechnic", *International Journal of Innovative Mathematics, Statistics & Energy Policies*, Vol. *5* No.4, pp. 9-29.

Arshad, M.U., Khan, F.N., Ishfaq, M., Shabbir, M.N. and Shah, S.M.R. (2020), "The relevance of financial and economic informational environment: evidence from South Asian markets", *Journal of Economic and Administrative Sciences*, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/JEAS-07-2020-0123

Baker, H.K., Nofsinger, J.R. and Puttonen, V. (2020), "Investment Schemes Designed to Separate You from Your Money", *The Savvy Investor's Guide to Avoiding Pitfalls, Frauds, and Scams* (*The Savvy Investor's Guide*), Emerald Publishing Limited, pp. 121-147. https://doi.org/10.1108/978-1-78973-559-820201009

Baláž, V., Williams, A. M., and Fifeková, E. (2016) "Migration decision making as complex choice: eliciting decision weights under conditions of imperfect and complex information through experimental methods", *Population, Space and Place*, Vol.*22* No.1, 36-53.

Bolomope, M., Amidu, A.-R., Filippova, O. and Levy, D. (2020), "Property investment decision-making behaviour amidst market disruptions: an institutional perspective", *Property Management*, Vol. (*ahead-of-print*) No. (*ahead-of-print*). https://doi.org/10.1108/PM-06-2020-0042

Brighton, H. and Gigerenzer, G. (2008*), Bayesian brains and cognitive mechanisms: Harmony or dissonance?* In: The probabilistic mind: Prospects for Bayesian cognitive science, ed. N. Chater & M. Oaksford, pp. 189–208,

Brueggeman, W. B., and Fisher, J. D. (2011). *Real estate finance and investments* (pp. 5-6). New York, NY: McGraw-Hill Irwin.

Byrne, P., Jackson, C. and Lee, S. (2013), "Bias or rationality? The case of UK commercial real estate investment", *Journal of European Real Estate Research*, Vol. 6 No. 1, pp. 6-33

Callett, A.P (2000)," Prospect for investment in the private rented sector", *Journal of property investment and finance*, Vol. 18 No. 4, pp. 504-16.

Cytonn Annual Market Review (2017); Cytonn Report, Uganda Market Update – H1, 2018, Knight Frank Research.

De Bondt, W., Mayoral, R. M., and Vallelado, E. (2013), "Behavioral decision-making in finance: An overview and assessment of selected research", *Spanish Journal of Finance and Accounting/Revista Española de Financiación y Contabilidad*, Vol.*42* No.157, pp. 99-118.

Dooley, R. S., and Fryxell, G. E. (1999), "Attaining decision quality and commitment from dissent: The moderating effects of loyalty and competence in strategic decision-making teams", *Academy of Management journal*, Vol.*42* No.4, pp.389-402.

Dowling, M. and Lucey, B., 2010. Other behavioral biases. *In H. Baker y J. Nofsinger (Eds). Behavioral Finance: Investors, Corporations, and Markets. New Jersey. John Wiley and Sons, Inc*, pp.313-330.

Durbach, I. N., and Stewart, T. J. (2012), "Modeling uncertainty in multi-criteria decision analysis", *European journal of operational research*, Vol.*223* No.1, pp.1-14.

Ebbers, W. E., Jansen, M. G., Pieterson, W. J., and van de Wijngaert, L. A. (2016), "Facts and feelings: The role of rational and irrational factors in citizens' channel choices," *Government information quarterly*, Vol. *33 No.* 3 pp. 506-515.

Erev, I., Ert, E., Plonsky, O., Cohen, D. and Cohen, O., 2017. "From anomalies to forecasts: Toward a descriptive model of decisions under risk, under ambiguity, and from experience". *Psychological review*, Vol.*124* No.4, pp.369-409.

Esolyo, L.M., 2019. *Stategies Adopted by Knight Frank Kenya To Increase Market Share* (Doctoral dissertation, University of Nairobi).

Feng, L., Jeusfeld, M. A., and Hoppenbrouwers, J. (2005). "Beyond information searching and browsing: acquiring knowledge from digital libraries". *Information processing & management*, Vo.*41* No.1, pp.97-120.

French. N. (2001), "Decision Theory and Real Estate Investment: An Analysis of the Decision-making Processes of Real Estate Investment Fund Managers", *Managerial and decision economics*, Vol.22 No.7 pp.399-410

Fuerst, F. and Grandy, A.M., 2012. "Rational expectations? Expectations?" *Journal of Property Investment & Finance,* Vol. 30 No. 2 pp. 159 – 174

Gallimore, P. and Gray, A., (2002). "The role of investor sentiment in property investment decisions". *Journal of Property Research*, Vol.*19* No.2, pp.111-120.

Ge, M. and Helfert, M. (2006), "A framework to assess decision quality using information quality dimensions", In: ICIQ, pp. 455-466

Gigerenzer, G., 2010. "Moral satisficing: Rethinking moral behavior as bounded rationality". *Topics in cognitive science*, Vol.*2 No.*3, pp.528-554.

Giulia, C., Gemser, G., and Wijnberg, M. N. (2017), "The interplay between intuition and rationality in strategic decision making: a paradox perspective", Organisation studies, Vol. 38 No.3/4 pp.365-401

Hands, D. W. (2014). Normative ecological rationality: normative rationality in the fast-and-frugal-heuristics research program. *Journal of Economic Methodology*, Vol.*21* No.4, 396-410.

Hebb, T., Hamilton, A., and Hachigian, H. (2010). "Responsible property investing in Canada: factoring both environmental and social impacts in the Canadian real estate market". *Journal of Business Ethics*, Vol.*92 No.*1, pp. 99-115.

Hertwig, R., Barron, G., Weber, E.U. and Erev, I., (2004). (Decisions from experience and the effect of rare events in risky choice). *Psychological science*, Vol.*15* No.8, pp.534-539.

Hochberg, Y. V. and Muhlhofer, T. (2016), "Capital-Market Competitiveness and Managerial Investment Decisions: Evidence from Commercial Real Estate (November 10, 2016)". Available at SSRN: https://ssrn.com/abstract=2883655 or http://dx.doi.org/10.2139/ssrn.2883655 Accessed 20/8/2020

Ivan M. (2016), "Retrospectives How Economists Came to Accept Expected Utility Theory: The Case of Samuelson and Savage", *Journal of Economic Perspective,* Vol.30 No.2 *pp. 219–236*

Jacoby, J., Speller, D.E. and Berning, C.K., (1974). "Brand choice behavior as a function of information load: Replication and extension". *Journal of consumer research*, Vol.1 No.1, pp.33-42.

Jakub T., J., Agata Sobkow, A., Kamil Fulawka, K., Jakub Kus, J., Dafina Petrova, D., Rocio Garcia-Retamero (2018), "Numerate decision makers don't use more effortful strategies unless it pays: A process tracing investigation of skilled and adaptive strategy selection in risky decision making", *Judgment and Decision Making,* Vol. 13, No. 4, pp. 372–381

Kahneman, D. and Tversky A., (1979), "Prospect Theory: *Analysis of Decision making under Risk", Econometrica,* Vol. 47 No. 2, pp. 263-292.

Kauko, T. (2014), "*Towards Evolutionary Economic Analysis of Sustainable Urban Real Estate: Concept of a research strategy exemplified on house price modeling using the self-organising map, interviews and field inspection". In Walloth C., Gurr J., Schmidt J. (eds) Understanding complex urban systems.* Multidisciplinary approaches to modeling. Springer, Cham

Klimczak K., (2010) "Determinants of Real Estate Investment"*, Economics & Sociology, Vol. 3, No 2, pp. 58-66*

Krejcie, R. V., and Morgan, D. W. (1970). "Determining sample size for research activities". *Educational and psychological measurement*, Vol.*30* No.3, 607-610.

Krishnaveni, R., and Deepa, R. (2013). "Controlling common method variance while measuring the impact of emotional intelligence on well-being". *Vikalpa*, Vol.*38 No.*1, pp.41-48.

Landa, J. T., and Wang, X. T. X. (2001). "Bounded rationality of economic man: decision making under ecological, social, and institutional constraints". *Journal of Bioeconomics*, Vol.*3* Nos.2-3, pp.217-235.

Lorenz, D., and Lützkendorf, T. (2011). "Sustainability and property valuation: Systematization of existing approaches and recommendations for future action". *Journal of Property Investment and Finance*, Vol.*29* No.6, pp.644-676.

Lucian, L. V. and Sidorova, A. (2015). "Improving Decision Quality: The Role of Business Intelligence", *Journal of Computer Information Systems,* Vol. 57 No.1, pp.58–66..

Ludvig, K., Stenberg, A. C., and Gluch, P. (2013). "The value of communicative skills for developing an energy strategy". *Building Research & Information*, Vol.*41 No.*6, pp.611-621.

Madan, C. R., Ludvig, E. A., and Spetch, M. L. (2014). "Remembering the best and worst of times: Memories for extreme outcomes bias risky decisions". *Psychonomic bulletin & review*, Vol.*21* No.3, pp. 629-636.

Matteo C., (2017), "Herbert Simon's bounded rationality" *Journal of Management History* Vol. 23 No. 2 pp.170-190

Mehmood, R., Hunjra, I.A., and Chani, I.M., (2019). "The impact of corporate diversification and financial structure on firm performance: evidence from South Asian countries". *Journal of Risk and Financial Management*, Vol.*12 No.*1, pp. 1-17.

Mohammed, A.E., and Van Belle, J., (2019), "Information Searching and Satisficing Process for IT Decision Making Process of SMEs", *African Journal of information systems*, Volume 11, Issue 2, pp. 99-116

Muhammad, N.M.N. and Jantan, M., (2009), "Environmental scanning and investment decision quality", *Management Research News*, Vol. 1, No. 1: E4

Musshoff, O., Hirschauer, N., and Hengel, P. (2011). "Are business management games a suitable tool for analyzing the boundedly rational behavior of economic agents?" *Modern Economy*, Vol.*2* No.4, 468-478.

Nelson, A. C., and Duncan, J. B. (1995), "*Growth management principles and practices,* "Chicago, Ill: Planners Press, American Planning Association.

Nguyen, L.D., Le-Hoai, L., Tran, D.Q., Dang, C.N. and Nguyen, C.V. (2018), "Fuzzy AHP with Applications in Evaluating Construction Project Complexity", Fayek, A.R. (Ed.) *Fuzzy Hybrid Computing in Construction Engineering and Management*, Emerald Publishing Limited, pp. 277-299. https://doi.org/10.1108/978-1-78743-868-220181007.

Nunnally, J. C. (1978). An overview of psychological measurement. In *Clinical diagnosis of mental disorders* (pp. 97-146). Springer, Boston, MA.

Ojok, M. O. (2018). *Investigating the influence of rental prices and location of retail real estate on the increasing vacancy rates in Kampala. A case study of Kisenyi 1 and the Central Business District* (Doctoral dissertation, Makerere University).

Pallant, J. (2005). "SPSS Survival manual: A step by step guide to data analysis using SPSS version 12, the second edition". *Open University Press, UK*

Paul B. Paolo B. Nicola B. and Paola C. (2018) "Behavioral Public Administration ad fontes, A Synthesis of Research on Bounded Rationality, Cognitive Biases, and Nudging in Public Organizations, Public Administration Review", Vol.79, No. 3 pp 304-320,

Philip M. Håkan N. Juslin P. (2019) "The decision paradoxes motivating Prospect Theory: The Journal prevalence of the paradoxes increases with numerical ability, Judgement and Decision-Making" Vol. 14, No. 4, July 2019, pp. 513–533

Raghunathan, S. (1999). "Impact of information quality and decision-maker quality on decision quality: a theoretical model and simulation analysis". *Decision support systems*, Vol.*26 No*.4, pp. 275-286.

Reddy, W., Higgins, D. and Wakefield, R. (2014), "An investigation of property-related decision practice of Australian fund managers", *Journal of Property Investment & Finance*, Vol. 32 No. 3, pp. 282-305.

Samina G. Muhammad K. K. Shahid M. Arfan A. (2018), "Factors Effecting Investment Decision Making Behavior: The Mediating Role of Information Searches", *European Online Journal of Natural and Social Sciences* 2018; Vol.7, No 4 pp. 758-767

Saunders, M., Lewis, P., and Thornhill, A. (2009). *Research methods for business students*. Pearson education.

Schulz-Hardt, S., Frey, D., Lüthgens, C., & Moscovici, S. (2000). "Biased information search in group decision making". *Journal of Personality and Social Psychology,* Vol.*78* No.4, pp. 655–669.

Schwartz, B., Ben-Haim, Y., and Dasco, C. (2011), "What makes a good decision? Robust satisficing as a normative standard of rational decision making", *Journal for the Theory of Social Behaviour,* Vol.*41, pp*. 209-227.

Schwartz, B., Ward, A., Monterosso, J., Lyubomirsky, S., Whiet, K. and Lehman, R.D., (2002), "Maximizing Versus Satisficing: Happiness Is a Matter of Choice", *Journal of Personality and Social Psychology* Vol. 83, No. 5, 1178–1197

Scott, S. G., and Bruce, R. A. (1995). "Decision-making style: The development and assessment of a new measure". *Educational and psychological measurement*, Vol. *55* No.5, pp. 818-831.

Shaharudin, J., Tinggi, M., Tak, H.A and Yi, W.C. (2018), "Fundamental Analysis VS Technical analysis: The Comparison of Two Analysis in Malaysia Stock Market", *UNIMAS Review of Accounting and Finance* Vol. 1 No. 1, pp. 12-27

Simon, H.A. (1947), *Administrative behavior* (1st edition), Free Press, New York.

Simon, H.A. (1955), "A behavioral model of rational choice", *The Quarterly Journal of Economics*, Vol. 69, No. 1, pp. 99-118.

Simon, H.A. (1957), *Administrative behavior* (2nd edition), Free Press, New York.

Simon, H.A. (1983), "On the behavioral and rational foundations of economic dynamics", *Journal of Economic Behavior and Organization*, Vol. 5, No. 1, pp. 35-55.

Soukup A., Maitah, M., and Svoboda R., (2015). The Concept of Rationality in Neoclassical and Behavioral Economic Theory Modern Applied Science; Vol. 9, No. 3; pp. 1-9

Starry, P (2013), "Maximizing and Satisficing in Decision-Making Dyads," Wharton Research Scholars.98.
http://repository.upenn.edu/wharton_research_scholars/98. Accessed 26/12/2020

Taylor, J. W. (1974). "The role of risk in consumer behavior: A comprehensive and operational theory of risk taking in consumer behavior". *Journal of marketing*, Vol.*38* No. 2, pp.54-60.

Thornhill, A., Saunders, M., and Lewis, P. (2009). "Research methods for business students". *Essex: Pearson Education Ltd*.

Tversky A., and Kahneman, D. (2007), "Rational Choice and the Framing of Decisions, the Journal of Business", Vol. 59, No. 4, Part 2: *The Behavioral Foundations of Economic Theory (2007), pp. S251-S278.*

Yang, C., Tseng, S. and Yang, C. (2011), "The role of information searches in investment choice variation: Digital information, advice seeking and heuristics", African *Journal of Business Management*, Vol.*5* No.12, pp. 4934-4944.

Verweij, M, Senior, T.J, Domínguez, D.J.F and Turner, R., (2015), "Emotion, rationality, and decision-making: how to link affective and social neuroscience with social theory", Frontiers in Neuroscience, Vol.9 article 332 pp.1-13.

Von Neumann, J., and Morgenstern, O. (1947), "*Theory of games and economic behavior* (2nd rev. ed.)," Princeton University Press

Walras, L. (1883), *Théorie mathématique de la richesse sociale*, Duncker & Humblot: Lausanne.

Waweru, N. M., Mwangi, G. G., and Parkinson, J. M. (2014), "Behavioral factors influencing investment decisions in the Kenyan property market", Afro-*Asian Journal of Finance and Accounting*, Vol. *4 No*. 1, pp. 26-49.

Yaniv, I. (2004). "Receiving other people's advice: Influence and benefit". *Organizational behavior and human decision processes*, Vol.*93* No.1, pp.1-13.

Zakay, D., (1984). "The evaluation of managerial decisions' quality by managers". *Acta Psychological*, Vol.*56* Nos.1-3, pp.49-57.

Zeinab R. (2013), "The study of behavioral financial effect on individual investment", *European Online Journal of Natural and Social Sciences*, Vol. 2, No. 3, pp. 232-236.

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