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Knowledge Acquisition and Knowledge Sharing as Determines of Organizational Competitive Advantage

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Abstract

This study aims to examine the relationship between knowledge management (knowledge sharing and knowledge acquisition) and competitive advantage constructs (quality and cost) in the industrial sector in Sudan, the study employed the quantitative methods and deduction approach via convenience sampling and self-administrative survey questionnaires were sent to 207 managers of industrial firms in Sudan response rate of 70%. Data from the study were collected analyzed using descriptive statistics, person correlation and path analysis through using (SPSS V. 23), (AMOS V. 25) in Structural Equation Modeling demonstrate some empirical support to the model of this study. The Results of this study indicate that a positive relationship between knowledge management and competitive advantage in the Sudanese industrial firms. Knowledge sharing is a significant effect on competitive advantage (cost and quality), while, knowledge acquisition is not significant to competitive advantage quality. This study focuses only on the industrial sector. Also, the data were only collected from single respondents in an organization.

Keywords

Knowledge Management, Knowledge Sharing, Knowledge Acquisition, Competitive Advantage, Cost, Quality

1. Introduction

As the globalization has created challenges to the organizations, there are many organizations competing with each other in order to defeat the competition and win the customers. The organizations have to face the high risks of competition and the possibilities of losing customers. One of the main reasons which cause this problem is the organizations have difficulties in responding to the rapid changes in market trends [7]. The current business

competition is increasingly tight. Businesses or companies are required continuously to find ways and strategies to be the best in order to survive in global competition. One way that can be taken by the company to be the best is to have a good company strategy in order to gain a competitive advantage [3].

This study focuses on the influence of knowledge management (KM) and competitive advantage (CA) of the industrial firms in Khartoum state. Although the relationship between KM and competitive advantage has already been examined in previous studies, Knowledge management is

purported to be essential to sustain competitive advantage and continued business success [29], nowadays knowledge management has become important due to increased awareness of the importance of knowledge for organizations prosperity and survival [10], knowledge currently and in the future represents a power source that achieves progress and the competitive advantage, because it considers the most important source for the organizations, societies, and individuals it helps enhancing skills and experiences, accelerates the activities which add value and achieves customers desires, it also makes make the organization at the excellence stage [1].

The arguments of the researcher for conducting this research is that previous studies are done in other economics, so the implication of those studies cannot be generalized for a developing country like Sudan where the knowledge management is still emerging in Sudan, there is a lack of empirical studies that explore even the mere existence of knowledge management in the country. This study will explore the relationship between knowledge management and competitive advantage. The existing empirical work concentrates mainly on the knowledge management and related constructs independent variables and competitive advantage as dependent variables. the results of these studies still remain mixed.

Past studies showed that a positive relationship between knowledge management and competitive advantage [1, 7, 9, 19, 41-44]. All these studies used knowledge management in different dimensions, some of the studies used knowledge management as three dimensions [29, 9]. while others used knowledge management it as four dimensions [40]. furthermore, knowledge management was used as a five-dimensional construct [1]. However, few of the scholars used knowledge management multidimensional construct such as [45]. This study will examine the relationship between knowledge management (knowledge acquisition and knowledge sharing) and competitive advantage (cost and quality).

Therefore, the theoretical significance of this study is trying to fill the gap between knowledge management and competitive advantage then attempts to build a conceptual framework that will contribute to the Knowledge-based view (KBV) theory; also the study will provide scientific guideline and devices through the industrial firms operating in Sudan to achieve high performance. This study will make the managers aware of the change and complexity of the business environment, this study may encourage the managers to play a greater role in activities related to competitive advantage.

In order to achieve the objectives the study organizing as follow, the introduction of the term knowledge management and competitive advantage in the Sudanese industrial firms relying on the works of past researchers, followed by the hypotheses development, the research methodology, analyses of data, discussion and conclusion.

2. Literature Review

2.1. Knowledge Management Concept

Knowledge management has been defined in different ways and from different aspects; interestingly, no sole definition can explain the whole picture, as different authors viewed knowledge management from several perspectives, which dictates the way they define it. However, the study of knowledge dates back to ancient Greece. Even before that, knowledge was at least implicitly at managed as people performed work. Early hunters, for example, learned the best skills and practices for a successful hunt. The skills and techniques transferred from one generation to the next. This illustrates the transfer of knowledge; knowledge management activity [19] Knowledge management can be defined as a combination of border experience, contextual information, norms and values that give a base for investigating and integrating new information and experiences. It prevails in the mind of individuals but from an organization perspective, it not only exists in the repositories but also in the daily routine activities of the organization practices [32]. Knowledge management (KM) diffusion is the timely dissemination of needed knowledge to the relevant decision makers. KM capability turns to a source of competitive advantage because that is usually difficult to copy. Companies utilize external information system to develop creative options that enhance productivity and leads to new ideas [45].

Knowledge management represents the methodological way that enhances the company's capability to improve the capability of making the decision, and the process formulating the strategy [1].

Most of the concepts and the management schools see that knowledge management represents processes, and knowledge information comes from internal and external sources do not mean anything without these processes. Knowledge management processes define as the degree to which the company creates in them the knowledge and participate in it, distribute and benefit from it in the job limits [22] Knowledge management process including knowledge creation, organizing, storage, sharing and utilization, and these processes are the systematic stages which provide the knowledge for the organization in order to succeed [31].

Various studies have addressed the knowledge management; they divided the knowledge management into many processes. KM process includes activities of acquiring, creating, storing, sharing, diffusing, developing and deploying knowledge by individuals and groups [21] Many frameworks for knowledge management have been identified. This study examines two dimensions of knowledge management namely knowledge acquiring and knowledge sharing [26].

2.1.1. Knowledge Acquisition

When the organization determines the needed level of knowledge, it determines the cognitive gap that should be reached that requires the look inside, and the organization

some time demands help from external companies in developing its capabilities to attain the needed knowledge, or buys the advanced technology from the market, also can cooperate through combining its resources by the emerging processes or unification, this can help the organization attains its need for knowledge [22] This process involves new implementation of knowledge or replacing the current content within the organization explicit and tacit knowledge. It requires the organizations to search for new knowledge and information, both inside and outside of the organizations [7]. Knowledge acquisition is a complementary capability that enhances a firm's absorptive capability to identify and acquire external information that is critical to its operations [18].

2.1.2. Knowledge Sharing

Knowledge Sharing is techniques have been a subject of interest for many scholars of strategy with the majority of companies analyzed indicating that beneficial consequences of their use had been realized [20]. It indicates the diffusion of knowledge to improve the work of the system and decision-making processes. It can be characterized by the transfer of a total of knowledge from one person to another, It is the process by which knowledge held by an individual is converted into a form that can be understood, absorbed and used by other individuals through channels or networks between knowledge providers and seekers [46] knowledge sharing is exchange of employee's knowledge, experience, and skills across the whole organization. Employees share knowledge by talking to their colleagues, by helping one another and by seeking the way to get something done better, more quickly and efficiently [10]. Knowledge sharing has been described by in a way that when we say someone shares his knowledge we mean that person guides another person with his knowledge insight and thoughts to help him see his status better [17].

2.2. Competitive Advantage Concept

Competitive advantage is a long tradition in the strategic management literature. Defined characteristics of unique opportunities within the field defined by the product-market scope and growth vector. This is a competitive advantage. It seeks to identify particular properties of individual product-market which will give the firm a strong competitive position [6] competitive advantage represents a factor or a combination of factors that have a direct or an indirect impact on the stability or the growth of the organization in the market which includes an active participation in the economic impact and increase the stability of the profits through the optimal utilization of available resources [11] Competitive advantage basically grows from the values or benefits created by the company for its buyers. Customers generally prefer to buy products that have more value than they desired or expected. However, the value will also be compared with the price offered. Purchasing the product will occur if customers price consider the price of the products is appropriate with the value offered [30].

Competitive advantage is a relative positional superiority in the marketplace that ensures a Firm outperforms its competitors by putting in place unique strategies that are inimitable. He further stated that competitive advantage is something driven from valuable, rare, non-sustainable and imitable resources that came as a result of integrating unique resources and capabilities [7].

2.2.1. Cost

Cost is one of the important variables in achieving competitive advantage by reducing the cost of production in a percentage that achieves the desires of a wide range of customers by reducing the total cost of service products, with the need to realize that the strategic goal of reducing cost is not absolute, but according to the governed conditions and regulations. Therefore, the organization that adopts the least cost should focus on the production process, starting from the supplier and the ending with the arrival of the product to customers and control overall products and costs associated with production and provide new value-inexpensive services [11] Cost is one of the most basic dimensions for competition and that many organization tried to rely on reducing their product cost to achieve competitive advantage, which means that the organization carry on the product and marketing of products at the lowest possible cost compared to its competitors enabling it to sell at a lower price [22] Cost is one of the most basic dimensions for competition and that many organizations tried to rely on reducing their product cost to achieve competitive advantage, which means that the organization carry on the production and marketing of products at the lowest possible cost compared to its competitors, enabling it to sell at a lower price [2].

2.2.2. Quality

Quality the ability to offer products and services at the lowest cost and free of defects, and to ensure the achievement of discrimination to the organization under the existing competition in the market and represent the overall attributes and characteristics of the product and the service that meets the needs of customers, quality is known as one of the most important factors for the survival and growth of the organization and to maintain its competitiveness [15]

Quality is the degree of excellence of a particular product or service with the global automaker embracing this idea with the corporate slogan quality is job1. Quality is also concerned with product longevity and strength; as well as consumer satisfaction in the after-sales service process and through advertisement through word-of-mouth [37] Quality is a competitive weapon in the marketplace. It engenders a competitive advantage by providing products that meet or exceed customer needs and expectations. Quality defined using different perspectives, as it is a subjective goal that has indefinable characteristics. Quality as fitness for use Juran's definitions employs the customers perspective in defining quality, it is the customer who decided what goods or services best satisfy his/her needs [39].

2.3. Knowledge-Based View (KBV)

The knowledge-based view of the firm proposes that heterogeneous knowledge bases among and the ability to create and apply knowledge are the main determinants of performance difference [8, 4] argue that knowledge is an established theoretical construct that has been proposed as a heterogeneous resource that firms value in different manifestations as a basis of competitive advantage. An organization's superior performance depends on its ability to defend, capitalize and apply knowledge that it creates, in combination with other resources and competencies of the firm such as contextual factors and in agreement with its strategic direction [25]. A similar view is shared by [13] who argues that firms exist because they are better at integrating and applying specialized knowledge than markets do
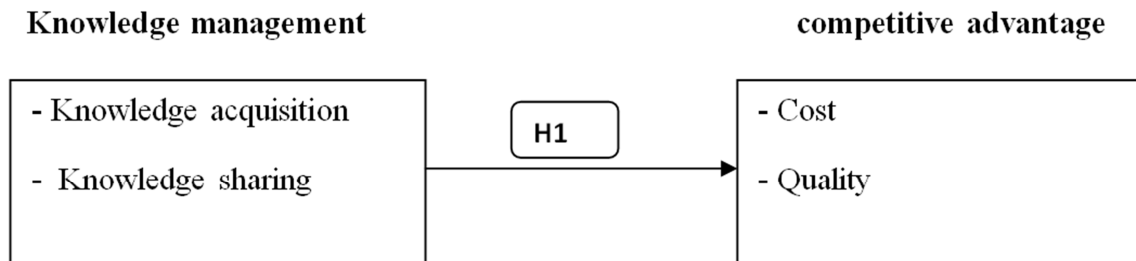
Knowledge management   competitive advantage

Knowledge management		competitive advantage
- Knowledge acquisition - Knowledge sharing	H1 →	- Cost - Quality

Figure 1. A conceptual framework of the study.

2.4. Hypotheses Development

1. The relationship between knowledge management and competitive advantage.

In accordance with the findings in literature knowledge management was posited to have significant and positive relationship with innovation in competitive advantage [12] the results obtained show that manufacturing SMEs have good knowledge management which can be regarded as a competitive advantage, [23] states that external knowledge management (E-KM) contribute positively to the performance of manufacturing firms [26] states that are to provide an overview of knowledge management and highlight the important of this field of practice and also successful implementation of knowledge management positively impacts organizational performance.

According to the studies that mentioned above this study developed the hypotheses to be as following:

H1. Knowledge management is positively related to competitive advantage.

H1.1. Knowledge acquisition is positively related to cost.

H1.2. Knowledge acquisition is positively related to quality.

H1.3. Knowledge sharing is positively related to cost.

H1.4. Knowledge sharing is positively related to quality.

3. Research Methodology

The study relied on the descriptive approach through the use of the tools of descriptive analytical statistics and relied on the two types of data being primary data and secondary data. The questionnaire was relied upon as the main data-collection tool, as it was designed according to the five-point Likert scale which consists of five levels as follows: strongly agree, agree, neutral, disagree, and strongly disagree, as numbers were assigned for these phrases in the process of analysis, as follows: No. (1) Strongly disagree, number (2) disagree, number (3) neutral, number (4) agree, number (5) strongly agree. In order to verify the validity of the content of the study tool and to ensure that it serves the objectives of the study, it was presented to a group of (5) competent arbitrators in the area of business administration, and after the questionnaire was retrieved from all the experts, their observations were taken into account and the proposed amendments were made.

The study population was made up of the managers of industrial firms operating in Khartoum State, the questionnaire was distributed a total number of 300 questionnaires returned 207 represent 70%, the two research relied in the process of the statistical data analysis, on the method of Structural Equation Modelling, which is an assumed pattern of direct and indirect linear relationships between a range of underlying and observed variables, and the path analysis method has been used specifically since it has several advantages that are appropriate to the nature of this study. The questionnaire of this study consisted of four mains sections mainly the profile of company secondly, specific questions designed to measure knowledge management and specific questions designed to measure knowledge management were measured by using two dimensions (knowledge acquisition, knowledge sharing,), the KM acquisition and KM sharing are measured by using 8 items that are adopted from [35] competitive advantage were measured by using two dimensions (cost, quality), cost measured by using 4 items adapted from [38] and Quality were measured by using 3 items adapted from [36]

3.1. Exploratory Factor Analysis

The Exploratory factor analysis has been performed to extract the loadings of factors with Promax rotation. In conducting factor analysis, this study followed assumptions recommended by [16] *Firstly*, there must be a sufficient number of statistically significant correlations in the matrix. *Secondly*, the Kaiser-Meyer-Olkin measure of sampling adequacy should be at least 0.6. *Thirdly*, Bartlett's test of sphere city should be significant at 0.05. *Fourthly*, commonalities of items should be greater than 0.50. *Fifthly*,

the minimum requirement of factor loading 0.45 (since the sample size of this study 207 service firms managers) based on a 0.05 significant level, with a value of cross loading exceeds 0.45. Also to provide a simple structure column for interpretation, the factors were subjected to Promax rotation.

Finally, eigenvalues should be more than 1 for factor analysis extraction. Factor analysis was done on the nineteen items, which were used to measure study variables, showed the table summary of the results of exploratory factor analysis on study variables.

Table 1. *Factorial loads of observed variables - Promax Rotation.*

Observable variables	Factor1	Factor2	Factor3	Factor4
in our company, employees use the internet to obtain the information necessary to perform their duties	.719			
our company has the ability to convert the information available from competitors to new products	.813			
our company has stored information that can be converted into data that helps employees perform their tasks	.789			
Sharing / Our company provides technology systems supported by internet network		.549		
The business environment encourage the sharing of information		.825		
The company shares information with suppliers and customers		.983		
Cost/ my firm has a low cost of production than others			.751	
my firm operates low inventory			.852	
my firm produces at maximum capacity utilization			.854	
my firm operates low overhead cost			.824	
Quality/ we offer products that are very durable				.829
Provide products compatible with customer specifications				.946

Source: prepared by the researchers from data (2018).

3.2. Confirmatory Factor Analysis

The statistical analysis software package was used (AMOS) to perform the process of confirmatory factor analysis for the model, as this package is used to test the hypotheses relating to the existence or non- existence of relationship between the variables and underlying factors adequacy [16] The confirmatory factor analysis is also used to assess the ability of the factor model to change from the actual dataset and also to compare several models of factors in this area. Figure 2: below show the confirmatory factor analysis for study variables
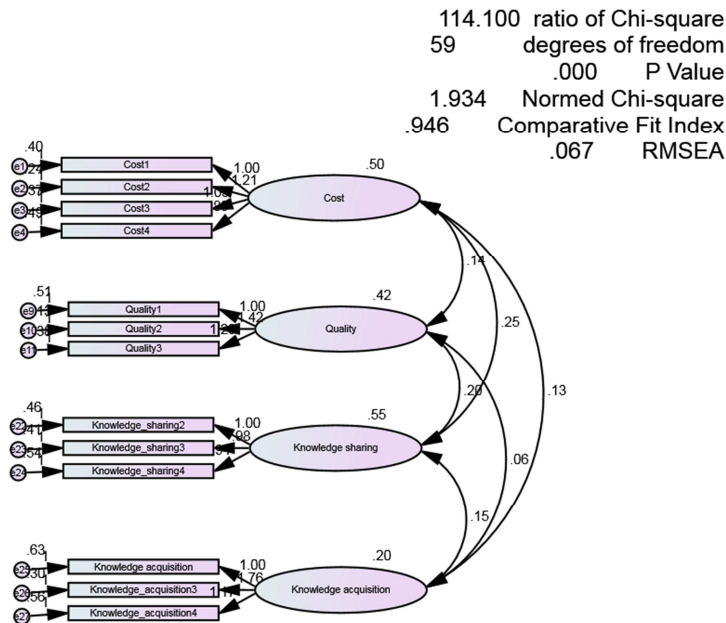

114.100	ratio of Chi-square
59	degrees of freedom
.000	P Value
1.934	Normed Chi-square
.946	Comparative Fit Index
.067	RMSEA

Figure 2. *Confirmatory Factor Analysis for study variables.*

Source: prepared by a researcher from data (2018).

4. Correlation and Reliability Analysis

The correlation analysis was used between the study variables with the aim of identifying the correlative relationship between the independent and dependent variables, so whenever the closer the degree of correlation to the integer one, the stronger the correlation between the two variables, whenever the less the degree of correlation than the integer one, the weaker the relationship between the two variables, and the relationship may be direct or inverse. In general, the relationship is weak if the value of the correlation coefficient is less than (0.30), and it can be considered medium if the correlation coefficient value ranges between (0.30-0.70), yet if the value of the correlation is more than (0.70) the relationship is considered strong between variables, and the correlation is considered positive if its value is negative [47]

The standard deviation, mean and Cronbach's alpha along with person correlation, shown in Table 2

Table 2. Correlation and Reliability Analysis for study variables.

Variables	Cronbach's alpha	Mean	Standard Deviation	1	2	3	4
1. Knowledge acquisition	.649	4.13	.926	1			
2. Knowledge sharing	.768	3.87	0.998	.460	1		
3. Cost	.849	3.98	.962	.402	.467	1	
4. Quality	.859	4.02	1.018	.199	.423	.302	1

Source: prepared by the researchers from data (2018).

The descriptive statistics for the study variables are presented in the "Table 2", the main value for KM acquisition is 4.13 with standard deviation of.926, mean of KM sharing is 3.87 with standard deviation of 0.998, mean of Cost is 4.073 with standard deviation of 3.98and finally mean of Quality is 4.02 with standard deviation of 1.018 The Cronbach's alpha value is calculated for checking the internal consistency of scales. It's absorbed from this table, for all the variables the alpha value is above 0.60 which indicates that all variables scales are reliable

5. Hypotheses Testing

After the preliminary analyses, this part discusses the hypotheses testing and findings of the study. The hypotheses were tested with the path analysis that discloses the effect of independent variables on dependent variables through the structural equation modeling (SEM) that grows out of and serves purposes similar to multiple regression, but in more powerful way which takes in account the modelling of interactions between variables, nonlinearities, correlated independents, measurement error, correlated error terms, multiple latent independents each measured by multiple indicators, and one or more latent dependents also each with multiple indicators [13]. The main hypotheses in this study which assumes that the knowledge management dimensions (knowledge sharing, knowledge acquisition) and competitive advantage dimensions (cost, quality).
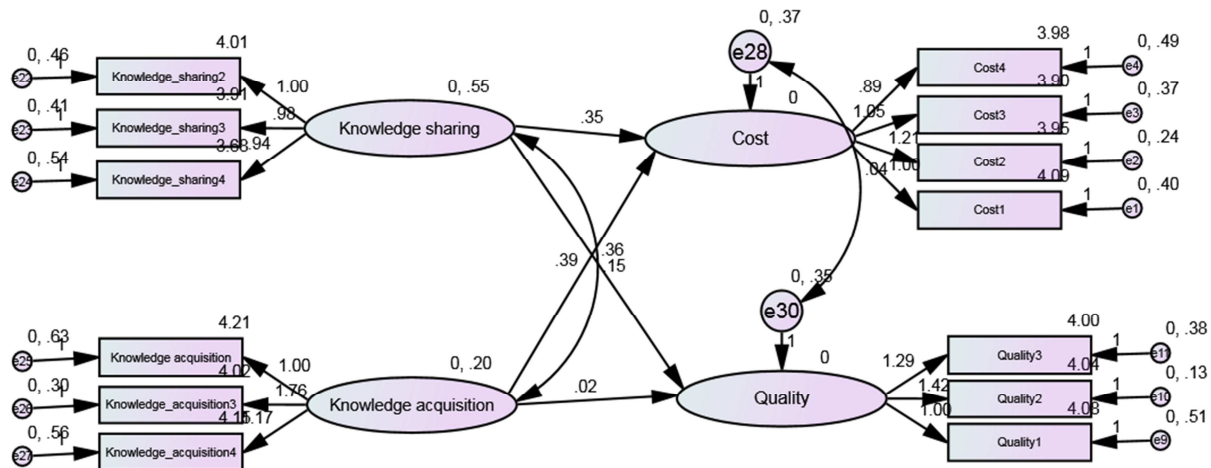

Figure 3. Path analysis between knowledge management and competitive advantage.

Source: prepared by researcher from data (2018)

The results of path analysis showing Model fit parameters consistent with recommendation as follow, CMIN=114.100, DF=59, CMIN/DF=1.934, RMSEA=.067, GFI=.924, AGFI=.882, RMR=.050, NFI=.895, IFI=.947, CFI=.946, and PCLOSE=.000.

Table 3. Path analysis for direct effects.

	Relationship		Estimate	S.E.	C.R.	P
Cost	<---	Knowledge sharing	.346	.094	3.661	***
Cost	<---	Knowledge acquisition	.389	.161	2.421	.015
Quality	<---	Knowledge sharing	.362	.092	3.939	***
Quality	<---	Knowledge acquisition	.019	.140	.138	.890

The path analysis of cost to Knowledge sharing (.346) is significantly different from at the (***) level, path cost to Knowledge acquisition (.389) is significantly different from at the (.015) level, path Quality to Knowledge sharing (.362) is significantly different from at the (***) level, and path of the Quality to Knowledge acquisition (.019) is not significantly from at the (.890) level

6. Discussions

The aim of this study was to investigate the relationship between knowledge management and competitive advantage in industrial firms in Khartoum State.

The findings show that there is a partial significantly and positive relationship between knowledge management (knowledge sharing, knowledge acquisition) and competitive advantage (cost, quality), the finding support with previous studies [12] show that manufacturing SMEs have good knowledge management which can be implementation of knowledge management positively impacts regarded as a competitive advantage, [23] showed that knowledge management positively impacts organizational performance, knowledge acquisition is not significant on competitive advantage quality, therefore, this result revealed that Sudanese manufacturing firms didn't attend to the acquisition knowledge. This study has provided empirical justification for a framework that identifies two dimensions of KM and describes the relationship between knowledge management and competitive advantage within the context of manufactures sector in Khartoum State. These results support the basic proposition of KBV that the combined effect of firm-specific resources leads to superior performance because this combination cannot be easily imitated by competitors; the result further suggests that manufacturing firms can achieve competitive advantage through the knowledge management dimensions.

7. Conclusion

This study has provided empirical justification for a framework that identifies two dimensions of knowledge management and describes the relationship between knowledge management, and competitive advantage within Sudanese industrial sector. past studies supporting the importance of KM in create competitive advantage The major contribution of this study is the development of a dimension of knowledge management constructs through comprehensive combination perspective; based on a survey data of 207industrial firms, this study carries more weight especially for generalization purpose due to the limited quantitative philosophy and deduction approach in the extant literatures. The study offers implications represent in this study will help decision-makers in industrial firms to know the importance of KM to attaining competitive advantage. This study is subject to a number of limitations, respects only industrial sector. Also, the data were only collected from single respondents in an organization.

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