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October 2021

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Nancy, Okorie, "Knowledge Sharing And Technological Innovation Of Librarians In Nigerian Tertiary Institutions" (2021). *Library Philosophy and Practice (e-journal)*. 6296.
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**Knowledge Sharing And Technological Innovation
Of Librarians In Nigerian Tertiary Institutions**

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Abstract

This study examined knowledge sharing and technological innovation of librarians in Nigerian tertiary institutions. Knowledge sharing is the process whereby exchange of knowledge is jointly and mutually supplied to create new knowledge. Knowledge sharing takes place both at individual and organizational levels. Knowledge sharing integrates ideas, skills, experiences and technological know-how in sections, units or departments of an organization which leads to innovation. The study sought various literatures to buttress the fact that knowledge sharing serves as an enabler of technological innovations, most especially on librarians of Nigerian tertiary institutions. The literatures consulted extensively revealed concept of knowledge sharing, factors that contribute to knowledge sharing in tertiary institutions, advantages of knowledge sharing among librarians in tertiary institutions, why don't people share knowledge,

technological innovations, importance of innovations in libraries, relationship between knowledge sharing and technological innovations, associated theories of knowledge sharing, discussions and implications and conclusion. The SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis was used in discussing knowledge sharing and technological innovations of librarians in Nigerian tertiary institutions. The study indicates that knowledge sharing is a useful tool and adequate transfer of knowledge among librarians has brought about effective transfer of knowledge and knowledge creation. The study joins discussion on knowledge sharing development and at the same time contributes to literature and practices.

Keywords: Knowledge sharing, Technological innovation, Tertiary institutions, Organizations, Librarians, Nigeria.

Introduction

Knowledge has been regarded as an asset and the key source of growth as well as organizational success. According to (Muhammed & Rosmaini, 2010) knowledge is categorized into three types namely tacit, explicit and implicit. Tacit knowledge is the type that is difficult to verbalize and codify because it is ingrained at a subconscious level. Explicit knowledge is the type that can be easily explained and codified and are available in books, manuals and other types of publications. It is shareable. Implicit knowledge is the type of knowledge that is somewhere between tacit and explicit, like tacit, it also exists at the subconscious level but can be extracted through the process of knowledge engineering. Organizations nowadays make use of knowledge to simplify all the activities and enhance the process of decision making (Nawah, Nazri, Zahid & Fawad, 2015). Knowledge sharing is visible and impactful both at individual and organizational level. According to Abdallah, Khalil & Divine (2012), knowledge sharing can be defined as a social interaction culture, involving the exchange of employee knowledge, experiences and skills throughout the department or organization.

Effective knowledge sharing enables reuse and regeneration of knowledge at individual and organizational levels. In the course of sharing knowledge, opportunities are created for organizations to maximize their ability to meet needs and generate solutions that gives them a competitive advantage. Individuals in organizations most times share knowledge that brings change in the way things are done in an organization which brings innovation if it is well accepted and successfully utilized. Sarooghi, Libaers & Burkemper (2015) talks of innovation as the adoption of an idea or behavior that is new to the organization. This can either be a service, a new product, new technology or a new administrative practice.

Concept of Knowledge Sharing

Knowledge becomes useful when shared and knowledge sharing normally occurs when people of common purpose and interest come together (Gaal, Szobo, Nora & Aniko, 2015). In the process

of knowledge sharing between individuals, there is a conversion of the knowledge held by an individual into a form that can be understood, absorbed and used by other individuals (Ipe, 2003). Knowledge sharing according to Ipe (2003) is defined as the actions of individual in making knowledge available to others within the organization. In the same vein, Bartol & Srivastava (2002) viewed knowledge sharing as the sharing of originally relevant information, ideas, suggestions and expertise with one another. Halimah & Najib (2014) showed that knowledge sharing within a team or between teams was crucial for organizations to develop the skills and capabilities, to enhance the value and sustain competitive advantage. Knowledge sharing serves as the basement which employees can contribute to the application of knowledge, innovation and optimization of an organization (Wang & Noe, 2010). Knowledge sharing plays an increasingly important role in organizations, it has a great potential benefits therefore (Akparobore, 2015) described knowledge sharing as a relationship between two parties; one side is to have knowledge and the other side to acquire knowledge. It is an activity through which knowledge is exchanged among people or organization.

On the other hand, (Connelly 2000) defined knowledge sharing as exchange of knowledge or the behavior that help others with knowledge. Ford & Staples (2010) discussed knowledge sharing behavior and divided it into full knowledge sharing and partial knowledge sharing. Full knowledge sharing is characterized by intentions to fully share, whereas partial knowledge sharing is characterized by uniqueness, interpersonal distrust, and perceived value of knowledge (Sahar, Foad & Vida, 2016). Oliver and Kandadi (2006) defined knowledge sharing as an indication of an organizational life method which allows individuals enjoy the process of creation and exchange of information. Wabwezi (2011) found out that the greater part of knowledge sharing takes place informally, even in firms in which knowledge sharing is highly institutionalized.

Wang & Noe (2010) discovered as well that knowledge sharing was influenced by the interaction between evaluation and reward, conscientiousness, neuroticism and openness to experience. Furthermore, Connelly, Ford, Turel, Gallupe & Zweing (2014) stated that employees in firms face a great dilemma every time a colleague request for knowledge; should they share their knowledge. Wood & Egbu (2010) added that the flow of knowledge to be shared in a firm relies on the collaboration and trust which the firm's leaders motivate and promote. Hamza & Isa (2010) stated that regular meeting and interactions, positive relationship, hierarchy or status, and shared language are important among engineers in ICT firms.

Factors that contribute to knowledge sharing in tertiary institutions

The tertiary institutions as a workplace are controlled by environmental factors which influences individual's knowledge sharing posture. These factors controls the way employees behave amongst themselves as well as with people outside the organization. Knowledge sharing in tertiary institutions is one method for both making sure that knowledge is available and delivered at the right time (Ayman, 2011). In addition, knowledge sharing can save time and improve quality by providing appropriate solutions to clients. The significance of tertiary institutions in

any society is to contribute to its socio-economic development, therefore the quality of higher education is mainly dependent on the qualitative and competence of the employees working in the sector (Areekkzhiiyil, 2014). A knowledge worker in a tertiary institution considers knowledge sharing an important key to their professional development and growth in the entire academic community. There are factors which facilitate the knowledge sharing of employees in tertiary institutions. These factors according to Wang & Noe (2010) affect the knowledge sharing behavior of librarians in academic environment. Culture is one of the factors that have proved to have a significant influence on knowledge sharing behavior of librarians in tertiary institutions. According to Al-Alawi, Al-Marzooqi, & Mohammed (2007) the positive effect of a supportive culture on knowledge sharing behavior has been widely affirmed. Culture shapes assumptions about which knowledge is important. Culture mediates the relationships between levels of knowledge. It can influence whether knowledge belongs to individuals or organizations and how individuals would react if their knowledge is added to the organization's intranet. Culture shapes creation and adoption of new knowledge and creates context for social interaction (De Long & Fahey, 2000).

Another factor is Mutual Trust. In knowledge sharing the process of give and take exists and in the process mutual trust between the persons involved remains germane. Trust between the givers, that is, librarians with knowledge and the receivers that is librarians with less knowledge stands out as a facilitator of knowledge sharing. In addition to culture and mutual trust factors is Organizational Support factor which has been proven in literature to boost knowledge sharing by its resulting effect in higher use of information technology (I.T). The usage of I.T among librarians in tertiary institutions in Nigeria exist more on sharing explicit knowledge than tacit knowledge (Areekkuzhiyil, 2016). Open Communication is another factor that contributes to knowledge sharing of librarians in tertiary institutions. As knowledge sharing involves the process of giving and receiving, free and open communication among the librarians is needful. A free and open atmosphere of communication in an organization makes the employees willing to share their knowledge without rigidity or fear of victimization.

Howell & Annansingh (2013) carried out a study of knowledge sharing in a Post-92 University and a Russell Group Institution. Findings indicated that academics at the Post-92 University were aware of the advantages of sharing knowledge but believed that knowledge sharing were a characteristics of their environment and the lack of systems and a champion to encourage sharing resulted in very little motivation to share. This was also evident in a culture of guarding teaching materials, although there was some limited willingness to share research output. In contrast academics at the Russell Group Institution were prepared to take lead role in the knowledge sharing process and mechanisms for it is already embedded. This situation was a fall out from each institution's culture.

Advantages of knowledge sharing among librarians in tertiary institutions

Knowledge sharing has become a convenient and most effective way to obtain knowledge. This practice is found among employees' ability to seek studies related help from one another

(Akparobore, 2015). In knowledge sharing, employees facilitate achieving results in form of collective learning. According to Eden & Ani (2010) knowledge sharing has an advantage that aims at spreading or circulating the knowledge of a phenomenon in an individual, a community, a society and an institution in order to bring about direct positive change in the state-of-the-art of a system, institution or an organization especially as it relates to productivity, efficiency and effectiveness. In the words of Mohammed (2003) knowledge sharing aids the transformation of relationship between categories of people; the experts and amateurs, poor and rich, educated and uneducated, literate and illiterate, enlightened and ignorant, government and citizenry etc., for the purpose of advancement which helps in nation, individual and society's progress.

Knowledge sharing in libraries gears towards effectively identifying, acquiring, developing, resolving, using, storing and creating new approaches to handle activities. Alegbeleye (2010) expanded it further to mean creation of knowledge basis, exchange and sharing of knowledge between library staff/users, training of librarians, speeding up of, processing of the implicit knowledge and realization of its sharing. Knowledge sharing has helped each librarian learn from the experiences and practices of others and also increased employees' efficiency in the library organization. To ensure a good flow of information, librarians must not hoard knowledge; they must share their knowledge for they are the main driving force for educational development and information advancement.

Why don't people share knowledge?

Knowledge sharing has a positive impact on individuals most especially during collaborative learning. Knowledge sharing has widely been discussed, as an avenue for solving employees' problems, learning new things and increasing understanding. Yang (2004) attested to the fact that workers that are able to share knowledge are more productive and more likely to survive on their jobs than workers that do not. Therefore librarians establish their mutual common understanding by sharing their knowledge, experiences, thoughts and beliefs. This notwithstanding, literature has shown that many employees do not share their knowledge. Lack of motivation was found by (Benson & Brown, 2011) as one of the factors that hinder employees from sharing knowledge. Reinholt, Pedersen & Foss, (2011) in agreement affirms that motivation and ability to share knowledge can also be seen as moderators between network position and knowledge sharing. Zawari, Zakaria, Kamarunzamani & Noordin, (2011) cited in Zawari (2018) surveyed 17 public universities in Malaysia and concluded that the most important barrier in knowledge sharing was the lack of organizational rewards. The second most important barrier was lack of ICT systems and a small negative correlation was found between self-efficacy and sharing knowledge. Van Westrienen & Lynch (2005) pointed out that some academics were unsure of sharing knowledge; they therefore avoid placing their work into knowledge repositories because of intellectual property concerns. Lack of trust among employees inhibits successful knowledge sharing within organizations. Olander, Wanhala, Hurmelinna-Laukkanen & Blomqvist (2015) opined that considerable knowledge is embedded in trust which if not handled carefully opens door to harmful competitive imitation. In addition, information security is sometimes seen as reason for

avoiding knowledge sharing among employees. Research has shown that lack of training for employees is one way of avoiding knowledge sharing because training facilitates employees' exposure to a variety of knowledge and encourage openness to new ideas that is likely to be a source of technological and organizational innovations (Neirotti & Paolucci, 2013). The knowledge shared between employees often times contributes in shaping and organizing the way things are done. When such shared knowledge is successfully utilized in an organization in form of new idea, service, product and process, it leads to innovation.

Technological Innovations

Innovations have been constantly developed through time. Bakir (2016) posits that innovations are products of a multi-step process that includes development, adaptation and delivering the products to end-users. In the view of Murphy, Perera & Heaney (2015) innovation is an idea developed and commercially implemented into an institution, industry, business or project. According to these researches, there are two types of innovations: product innovations and process innovations. Product innovations are those innovations where the outcome is a qualitatively superior product from a given amount of resources. Process innovations on the other hand are introductions of advanced management techniques. These two types of innovations continue to define organizations in today's day-to-day activities.

Technological innovations are demarcated as the application of noteworthy changes in corporate structure or governance strategies that are planned to enhance an organizations utilization of knowledge, the nature of products and services, or the proficiency of work processes (Damanpour & Aravind, 2011). Librarians were once considered custodians of library collection only, but the information media has changed this thought. Migrating from print to electronics has shown a drastic change in the life of librarians and research has also changed due to the emergence of electronic media. Most excited, the popularity and usage of digital and virtual libraries has increased and physical presence of users has decreased rapidly (Har & Preeti, 2010). According to Freeman (1982), technological innovation does not only have to do with computers or other electronic product as many people think or assume, neither does it have to be complex, but it encompasses what the technology is designed to do. It has to be new and be a part of the total innovation discipline. Technology as a body of knowledge is seen as a building block for technological innovation, serving as cornerstone to research, design, development, manufacturing and marketing. Technological innovation according to Vaughan (2013); Andrew, Kim & Hadi (2012); and Haydn (2013) is an invention, it generates or realizes a new idea, develop this idea into a reality or product then implement and market the new idea. The key purpose of any library is to provide a quality service and access to relevant information, information networks and software applications. These technological innovations are making it possible for libraries to provide a variety of library and information services to clientele. All the functions and services that library personnel use to provide manually can be provided now through technological innovations which can do things better and faster (Satpathy & Mahanan, 2011; Bilal, 2011).

Importance of technological innovations in the libraries

The primary aim of a library is to meet the needs of the parent institution which are teaching, learning and research. It is the duty of libraries to ensure that accurate and up-to-date timely information is made available to users which has been enhanced since the arrival of information technology. According to Har & Preeti (2010), the availability of computers in offices and the transformation of information on the World Wide Web has totally changed the meaning of library.

Atakpu (2010) stated that functions done in workplace all over the world have undergone a lot of technological changes. As a result of modern equipment which gives opportunity for workers, librarians inclusive to increase efficiently abounds. Many functions which were previously done manually have been mechanized, thus the diversity of these technologies enable library personnel to be relevant on their jobs. Sharma (2010) is of the view that technological innovations has brought in many changes in LIS profession, in other words importance of technological developments among librarians cannot be overemphasized. Supporting this view, Audu, Lukman & Nyah (2014) stated that librarians' speedy movement in this knowledge age is as a result of the use of technology; for instance internet and computers which is not just very important, but very necessary and expedient for effective and efficient services has improved day-to-day responses of librarians to clientele. The emergence of technology brought innovation in diverse areas of library routine which according to Okorie (2010) ushered in the era of digitization of library resources, e-resources, Lib 2.0, digital and virtual libraries.

Traditionally, not much was achieved by library personnel for centuries. Opportunities were limited to provision of quicker, more complete and more sophisticated service to the users. Technological innovations as opined by Okon & Jacob (2010) has encouraged library personnel and students to reflect on how they learn and work; encouraged collaboration and team work among librarians; offered greater access and increase in skills and status of library personnel and lastly designed online learning environment based on principles of good instruction towards research. Technological innovation has in the past few decades provided society with a vast array of new communication capabilities. Its importance is felt in the world of communication where people can communicate with each other from different parts of the world as though they live next door. In other words, it has made the world a "global village" (Tech Term, 2014). Ansari (2013) noticed how important technological innovations has enabled the use of digital technology, communication tools, and /or networks to access, manage, integrate, evaluate and create information by library personnel in order to function in a knowledge society.

Relationship between knowledge sharing and technological innovations

Knowledge sharing and technological innovations have become increasingly important source of added value to organizations, firms, businesses. Researchers have proved that knowledge sharing is related in many ways with technological innovations. Both impact each other. According to

Lu, Wang and Mao (2007) technological innovations reduces the risks associated with research and development. Knowledge-based technological innovations have the benefit of avoiding the duplication of research and development costs and allow firms to gain by sharing knowledge. In addition, knowledge preservation is important and this is only possible with technology. While the individual and organizational factors are important, technological factors also is worthy to be taken into consideration, according to Gerger & Schreyogg (2012) the first approaches towards facilitating and fostering the sharing of knowledge have been widely dominated in technological media. Sohail & David (2009) quoted in Aljanabi & Kumar (2012) suggested that technological innovation has provided great and important facilities to share knowledge by removing temporal and spatial barriers between knowledge sharer like video conferencing, electronic forum, and Facebook. In agreement, Suppiah & Sandhu (2011) related usability of technology such as ease of use, ease of access, ease of locating knowledge by employed specific type of technology to knowledge sharing pattern. Kamasaki & Bulutlar (2010); Zhen, Jiang & Song (2011) observed that when ideas and notions are shared among employees in groups, present ideas from first group has a unique feature and seem novel to another and vice versa which leads to innovations within the organization. In other words a relationship exists between knowledge sharing and technological innovation. Likewise, Kumar & Rose (2012) supported that the consequence of knowledge sharing is the creation of new knowledge and new innovation results in improving organizational activities. Burke (2011) expressed that sharing and creating knowledge are necessary to a great extent for innovation between employees in organizations. Therefore, the ability of employees to solve problems, and technological innovation affected by their ability to acquire and share knowledge are well justified because real innovation requires the transfer and share of knowledge.

Associated theories of knowledge sharing

Theory of Reasoned Action

Employees cannot be compelled to share their knowledge so organizations have to consider what factors motivate employees to share. One significant theory that has been used by researchers interested in such factors is the Theory of Reasoned Action (TRA), which suggested that a decision to implement a particular behaviour can be predicted by intention (Fishbein and Ajzen, 1975). The intention is determined by attitude (which mirror individual beliefs) and subjective norm (which is affected by normative beliefs and motivation to comply with beliefs). TRA has been widely employed to study knowledge sharing behavior (Bock and Kim, 2002; Bock et al. 2005; Lin, 2007).

Absorptive Capacity Theory

Absorptive capacity is defined as an organization's ability to recognize the value of new, external knowledge, assimilate it, and apply it to commercial ends (Bilgili, Kedia & Bilgili, 2016). In other to engage in knowledge sharing within an organization, an organization must first

collect knowledge. According to Chang, Hou & Lin (2013), absorptive capacity (or capacity) is a 'function of an organization in the prior related knowledge field, the development of absorptive capacity and its subsequent innovative performance display shows the history and-path-dependence phenomenon'. That is a failure to acquire and sufficiently analyze knowledge does not allow an organization to reap the full benefits of knowledge sharing in the technological innovation process (Chang, Hou & Lin, 2013).

Social Exchange Theory

Social exchange theory can be described as a two-sided, mutually contingent, and mutually rewarding process involving 'transactions' or simply 'exchange' (Emerson, 1970). With respect to knowledge sharing in the technological innovation process, social exchange is paramount, as knowledge sharing within an innovation team cannot take place without social exchanges between employees.

Discussion and implication

The goal of this study was to determine knowledge sharing and its deep influence on the services of librarians in tertiary institutions in Nigeria and this was enabled by technological innovations present in the institutions. Knowledge sharing was found to lead to knowledge creation and problem solving and upon that it is a key ingredient in achieving innovation which collaborated with (Zhou & Li, 2012). In addition, factors like organizational reward, self-efficacy, lack of trust, lack of training, motivation poses as a barrier for knowledge sharing. Technological innovation on the other hand has helped in improving librarians services. The era of manually carrying out services has drastically changed in libraries. Information is delivered speedily and promptly to users.

This section made use of SWOT analysis to discuss how knowledge sharing and technological innovation will improve the librarians' services in Nigerian tertiary institutions. SWOT analysis is an instrument and a strong tool in strategy formulation, though it involves a great subjective element. It serves better as a guide rather than as a prescription. SWOT analysis is usually employed in researches in management, business and strategic planning. Ciocoiu, Hincu, Dobra, Valenitna & Burcea (2013) in their study discovered that SWOT has been made use of in various academic studies including knowledge sharing and technological innovations in organizations in various countries. This study built on the strengths of knowledge sharing and technological innovation, connect the weaknesses and protect against internal weaknesses and view the opportunities and external threats.

SWOT analysis aligns with an organization's resources and capabilities. It identifies and creates a firm specific business model. In other words it views all positive and negative factors inside and outside the firm that affect the success of an organization. So a consistent and regular study of the environment in which an organization operates helps in predicting or forecasting various changing trends and including them in the day-to-day affair of an organization. Therefore, SWOT in this discussion is Strength, Weakness, Opportunity and Threat.

Strength: Is the quality that enable organizations accomplish their mission. The continued and sustained success of any organization is based on its strength. It can either be tangible or intangible, what one is well-versed in or what one have expertise in, the traits and qualities employees possess (individually and as a team) which features consistency in an organization. The capability of librarians which include human competencies, product and services, customer goodwill and brand loyalty is in line with qualities that enable librarians' strength. Strength is a resource or capability the librarian possess to successfully achieve its objectives. Predominantly, strength lies on knowledge sharing which invariably is associated with technological innovation. Consistency in service delivery of librarians in tertiary institutions in Nigeria is as a result of technological innovations. In addition, more increase in librarians' strength will positively affect their service delivery and encourage knowledge sharing and growth of technological innovation in tertiary institutions in Nigeria.

Weakness: Is those factors that prevent individuals from accomplishing their mission and achieving full potential in organizations, firms and groups. Weakness is a debility, fault, defect or limitation in the library that prevents achievement of its objectives. Weakness have influence on the organizational access and growth and most of the time it fails to meet the standards set for organizations. In knowledge sharing and technological innovation, weakness is seen as insufficient research and development facilities, poor decision, lack of motivation, trust, training and organizational rewards which has made most librarians shy away from sharing knowledge. In relation to this, these weakness are controllable. It is either minimized by the organization implementing those factors that enable effective service of librarians or totally eliminating them by exposing librarians to a variety of knowledge and encourages openness to new ideas and innovations (Neirotti & Paolucci, 2013). Research has barely taken its foothold in tertiary environment in Nigeria, therefore lack of technological tools and outdated ones as well, builds weakness and obstacle for librarians' efficient services.

Opportunity: The environment within which organizations operates presents opportunities. The rapid technological developments in the world today pose great opportunities to librarians as well as increased competition. Thus, carefully recognizing these opportunities, arise to them and cash into them can gain advantage to librarians' services in tertiary institutions in Nigeria. According to Oduwole & Okorie (2010), the main function of librarians is to collate, organize and disseminate information to the users. They serve as a bridge between the government's goals and the populace by developing, acquiring and providing information (in book format, electronic format e.g. CD-Roms, computers, internet facilities, journals) and making them accessible centrally to communities. The contributions of these aforementioned services of librarians are very paramount and they are opportunity for exposure.

Threat: Threat arise when conditions in external environment jeopardize the reliability and profitability of the organization's businesses. They are vulnerable when they relate to the weaknesses of organizations. Threat is uncontrollable and when it comes, the stability and survival of individuals, organizations, and firms can be at stake. Threat can arise from ever

changing technology, hoarding of knowledge, unmotivated leadership behavior, unrest among employees, reducing industry profits, lack of collaboration. The means of disseminating information in tertiary institutions in Nigeria by librarians has become a crucial factor in promoting learning, research and extension services. Therefore, it is paramount for librarians in tertiary institutions to undergo trainings, be informed and ensure that they adopt use of new technological innovations, embrace sharing of knowledge for educational development and information advancement.

Conclusion

The study has succeeded in showing the relatedness of knowledge sharing and technological innovations on improving the services of librarians to the library users. Knowledge is constantly growing and the success of organizations and employees depends on knowledge acquired. Knowledge sharing and technological innovations are essential for an organization's survival. Certain factors were ax-rayed in this study while discussing knowledge sharing and technological innovations in improving librarians' services in tertiary institutions in Nigeria. These factors are culture, mutual trust, open communication and training. Culture influences creation and adoption of new knowledge. Mutual trust is vital in effective knowledge collection and sharing. Open communication is important for knowledge sharing to take place between librarians in tertiary institutions. Training is paramount in teaching librarians how to acquire knowledge and adopt the subject matter of technological innovations. Knowledge sharing can be improved through focusing on SWOT analysis.

Recommendation

Based on this study, the following recommendations are made for effective flow of information among librarians in knowledge sharing. The library management authorities need to introduce strategies and enabling initiatives towards knowledge sharing among librarians owing the fact that environmental factors most times curses frictions in sharing knowledge.

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