

Adoption and Diffusion of Digital Photography among Journalists in Makurdi Town, Nigeria

MICHAEL A. KOMBOL*

Abstract

The technology used in processing pictures has advanced in this digital age. Thus, the dark room with its attendant delays and flaws has been abandoned in some countries with the introduction of efficient digital systems. This study examines the advantages of digital photography as well as the problems which photojournalists face in adoption of this innovation. Furthermore, the study examines the uses and problems which emanate from manipulation of pictures which is ever so possible in this digital age. Using a survey of selected photojournalists from one television station, newspaper and magazine in Makurdi, Nigeria, the study finds that management of these mass media hold the “magic wand” needed to facilitate the adoption of digital photography, via provision of equipment and training. Government too is involved in the bigger picture by offering tax rebates on the importation of equipment for digital photography.

Introduction

For as long as journalism has existed in Nigeria camera men, photographers and other photojournalists have relied on film strips as the basic ingredient that is used for the processing and eventual production of photographs. Over this period the dark room has become entrenched as a major production unit for photographs. Toward this end various personnel involved in this process of photography are trained and have become popular in Nigerian society.

The advent of digital photography challenges the existing status quo described above. With digital photography, the dark room is no longer needed and same goes for the personnel and processes required. This may have far reaching economic implications as far as redundancy and unemployment is concerned. However, this is not the subject of this study. What concerns this study is the many hurdles which photojournalists in Nigeria face in the process of change. Agreed, the change from the dark room where photography relies on the development of film to digital photography is not an easy task. This is the situation which this study tries to explain.

Digital photography presents a number of advantages over photography which relies on film. However, the question at this point is whether photojournalists in Nigeria avail themselves of the opportunity which digital photography presents. On the other had it is also worth considering the problems which digital photography causes as it tries to supplant film photography. It is important to note that other countries such as Russia and China are holding onto film photography. Tapscott, Lowy and Ticoll (1998) write that people in these countries are finding it difficult to let go off film photography because it has been there for a while and it is easier to use.

*Michael A. Kombol, Ph.D., Department of Mass Communication, Benue State University, Makurdi, Nigeria.

Furthermore, the manipulation of pictures is ever so possible with digital photography and it has far reaching implications. Journalism is based on truth, thus twisting the facts is unacceptable especially in news presentation. While manipulation of pictures is accepted in film production and theatre, it may not be accepted in certain genres of journalism. As journalists adopt digital photography, they need to be aware of the problems posed by the manipulation of pictures.

Statement of problem

Digital photography is new and fascinating because of the many advantages which it presents. Film photography is generally time consuming, rigid, costly and generally unreliable. However the latter has been present in Nigeria and served a useful purpose for a long period. Most photojournalists have become used to it and the change to digital photography may not be easy. What are these problems which face the adoption of digital photography in Nigeria? Also, digital photography presents the possibility of picture manipulation. Thus, what problems arise when pictures are manipulated? These are important considerations in this digital age as the media in Nigeria strive to be in tune with current practices around the globe.

Theoretical perspective

The adoption of innovations (like digital photography) is not easy, especially for media professionals (i.e. photojournalists) in developing countries which have so many hurdles to cross- cost, technology illiteracy, availability, etc. Original research in diffusion of innovation was began by a French Sociologist, Gabriel Tarde who plotted the “S” shaped diffusion curve. In today’s world, Tarde’s diffusion curve is still relevant because most people adopt innovations in an “S” shaped pattern. Rogers (1976) writes that most innovations have an “S” shaped pattern of diffusion however, the difference is the slope of the “S.” When the rate of adoption is fast, there is a steep slope but when the rate of adoption is slow, the slope is gradual. Furthermore, innovations are adopted at different rates based on existing conditions. While some innovations are rapidly adopted, others are slowly adopted.

Diffusion is a process which involves a number of stages. Rogers (1962:36) writes that, the diffusion process “... is the spread of a new idea from its source of invention or creation to its ultimate users or adopters.” The study of diffusion has continued over the years. In the 1940’s Bryce Ryan and Neal Gross studied the adoption of hybrid corn by farmers in Iowa, USA. In the study, the classified farmers according to the rate at which it took them to adopt the innovation. In the end the study came up with five distinct groups according to the rate of adoption. Rogers (2003) affirms this classification and went on to assign percentages to each of the groups. These groups are as follows:

Innovators.....	(2.5%)
Early adopters.....	(13.5%)
Early majority.....	(34%)
Late majority.....	(34%)
Laggards.....	(16%)

Innovators

These are the first group of farmers who adopted the innovation (i.e. hybrid corn). They form 2.5% of the population and have the following characteristics: venturesome; cosmopolitan; higher socio-economic status; understand complexity; cope with uncertainty; and possess large financial resources.

In the adoption of digital photography, photojournalists who work (in large regional newspapers, magazines, government television as well as private television stations) in Nigeria are likely to be innovators. Given their work and socio economic status they possess the characteristics described above and will easily adopt digital photography.

Early adopters

The early adopters come after the innovators and form 13.5% of the population. They are the next group to adopt the innovation and they have the following characteristics: form a substantial part of the social system; serve as opinion leaders; people look up to them as role models; respected by peers; successful in their endeavours and have an enviable status. Early adopters are similar to innovators, though different. Photojournalists in large mass media organizations may not all fit into the category of innovators but serve as early adopters.

Early majority

The early majority is the third group to adopt the innovation and they form 34% of the population. This group has the following characteristics: high social interaction; rarely opinion leaders; large population and they think it over before adopting the innovation. Many photojournalists in Nigeria fall into this group because they sit back and think very seriously about digital photography before they adopt it. Somewhere along the line they find a reason that convinces them to adopt the innovation.

Late majority

The late majority takes a long time before they accept and use an innovation. The late majority form 34% of the population and have the following characteristics: cynical; cautious; face peer pressure; limited economic resources; and they are large. The late majority take a long time before adopting the innovation because their minds are filled with doubts and unless those doubts are cleared, they refuse to adopt the innovation. They take this much time because they have limited financial resources, thus they need to be careful in the way they spend. Photojournalists in state owned mass media and other organizations of lower significance in Nigeria fall under this group. They are very cautious because they have limited financial resources. However, when they are convinced, they adopt the innovation and this often takes time making them the late majority.

Laggards

The laggards are the last group to adopt the innovation. This group is very reluctant to adopt the innovation. They adopt the innovation only after all the other groups have adopted the innovation. The characteristics of laggards are as follows: they are not opinion leaders; isolated from other people; suspicious; refer to past unfortunate events; lengthy decision process and have limited financial resources. Photojournalists at the grass roots in Nigeria fit into this category. They are often found in small media organizations and in remote local government areas. Apart from the other reasons which prevent them from adopting innovation is the fact that they constantly refer to past unfortunate events where the innovation failed to deliver. They use this as a basis for refusing to adopt the innovation.

The Nature of Digital Photography

Digital cameras capture images on sensors. These sensors produce the image. In digital cameras, sensors take the place of film. Haparnas (2009) writes that since digital cameras have this feature they will gradually replace film cameras. Film is basically a light

sensitive material upon which light makes an impression. Image sensors are made up of several electrodes which measure light and produce an image. When light strikes the image sensor, it is converted to electrical signals in a binary format (i.e. a series of 1s and 0s). The number of electrodes on the image sensor determines the digital camera's mega pixel rating. Examples of image sensors used for digital cameras include Charge Coupled Device (CCD) and CMOS.

The advantages of digital cameras are numerous. Haparnas (2009) writes that digital cameras are: cheap; have high storage capacity; produce pictures at the instant; provided new shooting angles; photos can be easily edited; adapts itself to day and night modes and; the photos have a longer life span. On the whole, digital photography has the following advantages:

Flexibility

Digital photographs can be e-mailed, edited, printed out, burnt on CD, used for slide presentations and saved on various drives. This flexibility makes digital photographs preferred to still photographs that are printed on paper. Photojournalists find digital photographs very useful because they are easily e-mailed to the editor and they can be touched up for colour as well as editing purposes.

Time savers

Digital photographs are time savers because no processing is involved. While photographs produced from film are need chemical processing in the dark room, digital photographs are produced at the instant. Take the picture and see it immediately. Since digital photographs are time savers, they assist photojournalism beat deadline pressure. With the rush to send photos back to the editor, photojournalists find digital photographs very useful.

Cost savers

Digital photographs save cost because there is no need to buy film and costly chemicals in the dark room. Film is an additional cost and processing in the darkroom also involves some cost. Photojournalists in developing countries like Nigeria will definitely be relieved to get rid of such costs. Memory devices on digital camera such as memory cards offer relief from the huge costs involved with the use of film cameras.

Compatibility

Digital cameras and the photographs produced are compatible with other digital media such as computers and mobile phones. In this way, these devices can be connected to share files. This is useful in storing files off the memory card of the digital camera so that space can be freed up to take more photographs.

Editing

When digital photographs are transferred to computers, they can be edited using appropriate software. In some cases, the photograph can be improved for colour and have spots as well as other unwanted detail removed. For example if the photograph is too dark it can be brightened and vice versa. Editing can also be done to exclude other people in the photograph. Photojournalists edit photographs for various reasons and digital photographs enable this process happen.

Multifunction

Digital cameras serve other purposes apart from photography. In the first place digital cameras are used to take both still and moving pictures (i.e. video). Furthermore, they are

also used to record sound, edit pictures and adjust to different weather conditions. Photojournalists may find the various functions of digital cameras useful because their job requires the use of these functions from time to time.

Instantaneous

Digital photographs are produced the moment they are taken. With the display screen the picture can be seen and videos played back. In this way the photojournalist can decide whether to delete or keep them. When the photo is not desired it is deleted and another one taken. The instantaneous nature of digital photographs enables quick detection of mistakes. Once these mistakes are noticed, they can be corrected. With this feature on digital photography, the element of surprise is eliminated. This is often the case with film photography where the picture emerges only after it is processed in the dark room.

Long life span

The life span of digital photographs is longer than photographs on film. Once the digital photograph is taken it is stored in the appropriate format and can be retrieved years after in the state it was when the photograph was originally taken. Photographs on film deteriorate with time. Whether the photograph is stored on compact disc, memory cards or USB drives, it remains the same even if it is retrieved years later.

Due to the many advantages of digital photography, the craft has grown in many parts of the world. Eriksen, Ghazaepour and Lewis (2009) write that the use of digital cameras across the world has continued to grow in Europe. According to their estimates, household penetration of digital cameras reached 51% in 2006. In 2010, it is expected to reach 65%. Apart from Europe, the penetration of digital cameras in developing countries like Nigeria is accelerated by the many advantages which digital photography offers. Tatsuno (2006:36) explains the proliferation of digital cameras across the globe when he writes that,

Digital cameras have won widespread acceptance for both business and personal use, due to their usefulness as imaging devices that can be linked with PCs.

At this juncture, it is important to mention the compatibility of mobile phones and computers. The compatibility of the two aforementioned digital devices is important to ensure sending the receiving of files of various types especially video and still pictures. This ability which fostered by internet connections is useful to journalists especially those dealing with breaking news.

In order to avail themselves of the advantages, people from various walks of life adopt the technology. The road side photographer uses digital photography to take and print photographs on the spot- with this service, an instant passport photograph service is provided. On the other hand, journalists use digital photographs for many reasons, one of which is to beat deadline pressure especially e-mailing the pictures to the editor. Digital photographs in formats such as JPEG enable easy uploads and downloads.

Furthermore, it is important to note that there is a growth in the use of digital cameras on phones. Camera phones are very popular these days and are especially useful to journalists in investigative reporting. Investigative reports uncover what a news maker seeks to hide. Thus, camera phones may be useful in this regard. Tatsuno (2006) writes that in 2004, 500 million mobile phones were purchased globally while 180 million camera phones were bought. However, in 2008, the sale of mobile phones globally was projected to be 700 million and also a corresponding rise in the sale of camera phones. Tatsuno (2006) adds that over this time, there has been widespread production of camera

phones in the world. The use of digital cameras on mobile phones has increased the proliferation and use of digital cameras in the world.

Manipulation of Pictures

Photographs are often said to be a representation of reality. Can a picture tell a lie? There has been that belief that pictures cannot tell a lie. However, the technological advances in this digital age have changed this notion. These days it is possible to make a pictures tell a lie. Pictures are manipulated and twisted to present phenomena that do not exist or even events that never happened. This is worrying as far as news presentation is concerned. In a world where most people have access to digital software that is used in altering pictures, it is wise not to believe all that is presented in pictures.

Digital manipulation of pictures involves the use of appropriate computer programmes to alter the contents of a picture. When this process is accomplished the picture is no longer the same. Rossner and Yamada (2004:3) write that,

It's all so easy with Photoshop. In the days before imaging software became so widely available, making adjustments to image data in the darkroom required considerable effort and/or expertise. It is now very simple, and thus tempting to adjust or modify digital image files.

Furthermore, a picture that has been manipulated is not a true reflection of reality. In other words it deviates from the truth because a lot has been changed to suit a preconceived notion. Manipulation of pictures may be important in the production of fictitious film but it has no place in news presentations except when pictures are manipulated to enhance aesthetics. In fiction, the original picture does not suit desire, thus there is need to touch it up so that it carries new meaning.

The manipulation of pictures using software has defined the role of computers in managing information. In the same way news stories are edited to remove what is not needed, and add what journalists want the public to know, pictures too are re-worked so that they conceal unwanted detail and project only the aspects that are deemed important. In this way computers are controlling devices that determine the contents of pictures. Computers do not only control the contents of pictures but by extension, they also control the perception of the audience. Simply put, a picture that has been worked upon directs the thought patterns of members of the public who see it.

Digital manipulation of pictures has raised concern in many fields. Since journalists are expected to present facts objectively, is the manipulation of pictures using advanced technology acceptable? In broadcasting the manipulation of pictures raises questions about credibility, truth, objectivity and fairness. In many countries of the world where the application of digital technology is not widely practiced, journalists may be ignorant about the influence of technology on picture contents. Photojournalists in these places may not be able to identify and avoid manipulated pictures. Furthermore, can manipulation of pictures be justified in the journalism profession? In broadcasting, is there a place for the manipulation of pictures in news and programmes? Manipulation of pictures is deception in various regards, so can photojournalists ever find it useful. These are issues which need to be considered for further research in this field.

With so many avenues for manipulation, honest pictures are "endangered species." Most people are tempted to touch up a picture in one way or other. Even when the colour on the picture is improved the picture has drifted from reality. Once a picture is altered, it no longer presents reality. Rather it presents an expression of what the author wants the audience to believe. The audience is persuaded to see things in a particular way.

The manipulated picture highlights a point of view that is aimed at influencing the audience to adopt this preconceived position. When pictures do not present reality, they

are not truth full. Deception is often the hallmark of manipulated pictures. Often members of the public are easily deceived because they cannot notice the “alterations” on the picture. In this way, ignorant members of society are highly vulnerable. Pictures that have been digitally manipulated by professionals are often perfectly done. However, it is important to evaluate the times when pictures can be manipulated in public interest. Outside this, manipulation of pictures is out rightly deceptive and has no place in journalism.

Digital photography has many advantages to journalists and indeed other media professional but it is not without its limitations. With digital photography, deception is easier to achieve. Digital photography is replete with appropriate computer software that can be used to alter pictures and make them tell a lie. Keller (2007) writes that,

The ability to digitally alter these photos has been around for quite some time now too but technology today has allowed for the average person to get their hands dirty in digitally altering their own photos.... But some also believe that when these pictures are involved with journalism and media is when it starts to become a problem.

This situation poses a serious ethical problem to journalists as news is meant to be true-faithful to the facts. Falsehood has no place in news reporting. Toward this end, Johnston (2003) poses a relevant question. She explores the effect of picture manipulation on the credibility of photojournalism. With the current technology, photojournalists are often tempted to manipulate pictures to tell a story the way they want. In reaction to this many media organizations have made clear statements against manipulation of pictures by journalists. The connection is clear. Manipulation of pictures adversely affects the credibility of news reports and this clearly results in a drop in patronage. Obviously, this is a situation that many media organizations want to avoid. Long in Johnston (2003) rightly asserts that the only thing which journalists have to offer the public a faithful rendition of facts and manipulation of pictures equals inaccuracy. Since it is often premeditated, manipulation of pictures is outright deception. Walski in Johnston (2003) explains that journalists are often prone to self imposed pressure to produce the best pictures, thus they resort to manipulation. In line the call to objectivity, Keller (2007:1) recounts a pertinent statement by the National Press Photographers Association in the United States of America that,

As journalists we believe the guiding principle of our profession is accuracy; therefore, we believe it is wrong to alter the content of a photograph in any way that deceives the public.

Some media organizations have recognized the inherent danger in the manipulation of pictures and have come up with statements concerning the phenomenon. Cifuentes, Myers and McIntosh (1998:170) highlight the steps taken by the Associated Press to curb the manipulation of pictures by issuing guidelines. The guidelines are as follows:

- (a) The content of a photograph will never be changed or manipulated.
- (b) Only the established norms of standard photo printing methods such as burning, dodging, black and white toning, and cropping are acceptable.
- (c) Retouching is limited to removal of normal scratches and dust spots.
- (d) Serious consideration must always be given in correcting colour to ensure honest reproduction of the original.
- (e) Cases of abnormal colour or tonality will be clearly stated in the caption.
- (f) Colour adjustment should always be minimal

Manipulation of pictures is a craft which has no place in news reporting because it violates the ethics of the profession. Furthermore, news presentation requires that pictures should be captured in its purest form- alterations rid the picture of its truth value. Manipulation of pictures is acceptable in other professions but not in journalism as far as news reports are concerned.

Digitally manipulated pictures go back a long way. Various scholars such as Alling-Ode and Tubin (2003) and Becker (1996) agree that digitally manipulated pictures started appearing in the press since the mid 1980s. Since the advent of digital photography and its evident ease in manipulation of pictures, Ritchin (1990) writes that members of the public have a different perception of such pictures. This perception is often beclouded by disbelief. Obviously, people are less likely to accept pictures the way they are presented.

Digital Strategies in Manipulation of Pictures

Digital manipulation of pictures refers to the steps in which appropriate computer software is used to alter the contents of a picture. In the end the original picture is different from the resulting picture. When this happens, the picture is no longer a factual presentation of reality but a blatant lie.

The strategies used in the manipulation of pictures via digital media vary and are often evident in the terminology used to refer to the craft. Digital picture manipulation is different from "picture enhancement," and "picture retouching." Picture enhancement involves improving colour, making the picture sharper, brightening the picture using artificial light (strokes) or increasing its size. Picture enhancement entails improving the quality of a picture from its previous state. Singh (2008:1) writes that picture enhancement refers,

... to improving the quality of the photograph through software such as Adobe Photoshop or Photopaint.

These computer software have a lot of tools that facilitate the enhancement of pictures. Quinn and Spence (2004:9) identify the dodge and burn technique where tools are used to lighten or darken certain parts of a picture. This technique may be used to enhance a picture but it also has the potential to be used to achieve deception.

On the other hand, picture retouching involves removing marks and scratches from a defaced picture. This suggests that the picture is old and retouching is done to remove the features that age has put on it and bring it back to appreciable quality. The picture quality of an old video tape may become shaky and unstable, but this can be improved upon and put to use on television. Picture enhancement and picture retouching are harmless; rather it enhances the picture and ensures efficient communication where age and other types of interference may have stalled the communication process. Singh (2008:1) supports this when he writes that,

The picture invariably comes out looking better yet entirely different. No one will complain if the changes improve the quality of the picture.

These two different techniques (i.e. picture enhancement and picture retouching) vary from manipulation. Singh (2008:1) describes picture manipulation as those times when,

... photographers go further and alter parts of the picture. They import another face or person into the picture or change the surroundings. When they do this, they are clearly guilty of manipulation. The photograph then is not a document but a lie.

The following strategies are used in digital manipulation of pictures. They are as follows:

- Importing another face/person/object
- Supplanting a face on another face
- Changing backgrounds
- Morphing
- Desired action
- Airbrush/smooth skin

Importing another face/person/object

Using this technique, people who were not present in a group picture are included. This is done carefully so that the included image blends with the rest of the picture. Skill is needed here to ensure that the picture does not look disjointed, i.e., composition of several obviously disjointed parts. This strategy is deceptive because the image that is included at this point was not originally there. Tallim (2002:1) recounts that in October 2001, a newspaper in Canada, the *National Post*, published an article about the Queen of England receiving a mobile phone for her birthday. The article was followed with a picture of a smiling Queen Elisabeth II waving her *Telus* phone. When readers complained that the Telus brand of mobile phone was not available in England, editors at the *National Post* confessed that the mobile phone had been digitally added to the picture. Furthermore, Tallim (2002:1) writes that during the trial of O. J. Simpson in the US, *Time* magazine was criticized for altering O. J. Simpson's picture to make him look darker and more sinister. In this way *Time* perpetuated a racial stereotype. Stavchansky (2006:2) agrees that, "during the O. J. Simpson trial in 1994, *Time* magazine altered Simpson's mugshot to make the defendant appear more sinister when compared to the same mugshot published on the cover of *Newsweek*."

Supplanting a face on another face

This type of digital manipulation is used to place a face on a different body. The original face is supplanted. In this case as well, it is important to carefully match the face with the body so that the picture does not end up looking awkward. This strategy is used in supplanting the faces of celebrities on nude bodies. It is found on some websites on the internet. This is illegal activity and the perpetrators will definitely face trial if ever they are caught. This strategy is used for impersonation. Digital manipulation thrives on the Internet and the reasons for this state of affairs are complex. There is a reason for this and Tallim (2002:1) explains that, "digital manipulation is thriving on the Internet, where there are few gatekeepers and countless opportunities for misinformation."

Changing Backgrounds

This strategy involves removing an image from its original background and placing it on a different background. This strategy creates an illusion of presence because the image was never in that background. This is very deceptive. Professionally, the changing of backgrounds is achieved using the chroma-key technique. In television news production, this technique is used to place reporters and interviewees in places where they never were. Stavchansky (2006:5) explains that, "the chroma-key technique allows the news room to artificially extend its geographical presence thereby enhancing the validity of the news story."

Changing backgrounds is also achieved by cropping. Cropping is used to remove an image from its original background. After this, the image is placed on the desired background. Quinn and Spence (2004:3) argue that, "cropping is valuable because it can

make photographs more meaningful by increasing the impact of the image's salient regions. Careful cropping, then, will enhance the virtues of accuracy and integrity when its potential can be safely realized."

Morphing

Morphing is a smooth change from one image to the other. In the production of science fiction as well as films that have magic scenes, morphing is important to ensure a smooth transition from one image to the other. Nigerian home videos are notorious for portraying fetish, idol worship, black magic and other forms of voodoo. Thus, when spells are cast and the young girl is expected to transform into a tortoise, the image is morphed appropriately.

Desired Action

Digital picture manipulation is used to portray action which cannot be achieved in reality. For example, a flying car or a talking tree. These actions are not obtained in real life situations, thus it is necessary to alter the picture to achieve the desired result. Advertisers use a lot of manipulation in order to illustrate the efficacy of goods and services they produce.

Airbrush/smooth skin

Advertisements on television often use air brushes to smooth the skin of characters they portray. Singh (2008:1) refers to the air brush as the "digital brush." The same goes for people that appear on fashion television. The fashion world is one of glamour and prestige. Thus, this technology enables models appear the way they want to be.

Research Method

This study used a survey of photojournalists (cameramen) from one television station, one newspaper house and one magazine organization. All the media organizations used in this study are located in Makurdi, which is the capital of Benue State, Nigeria. These mass media were purposively selected due to the peculiar nature of the study. Radio stations were left out for obvious reasons. As a blind medium, radio does not have the visual element. Therefore radio stations were not used in this study because it has to do with photography. Media organizations have various departments, but the department which is relevant to this study is the news and programmes department. Furthermore, not all the staff in this department of relevant to this study, thus the study had to go a step further in selecting suitable respondents. Consequently, all photojournalists were purposively selected and from this group a representative sample needed to be selected because not all the respondents could be used for the study. In the light of this five respondents were selected using purposive sampling based on years of experience- not all the respondents were used for the study. Consequently, the more years of experience which the respondent had put in on the job made it more likely that they will be selected for the study. In other words, the more years a photojournalist put on the job, such a professional was more likely to be selected as a respondent for this study. Years of experience was identified as a criterion (independent variable) for selecting respondents because this has an effect on the quality of their responses to this study. The size of the sample selected for this study was determined by exigencies of time and cost. Thus, the study has fifteen (15) respondents. Upon these respondents, a questionnaire containing six close ended questions was administered.

Findings

The findings of this study are presented in the tables and analyzed appropriately below.

Table 1.0 Most significant advantage of digital photography

S/N	Advantages	Frequency	Percentage
1.	Saves time	5	33.34
2.	Saves cost	4	26.66
3.	Improves picture quality	3	20
4.	Ease of editing	1	6.67
5.	Compatible with computers	2	13.33
	Total	15	100

Table 1.0 presents a distribution of respondents according to the most significant advantage of digital photography to photojournalists in Nigeria. From the findings, 5 respondents (representing 33.34 percent of the total population) indicate that the most significant advantage of digital photography is that it saves time, 4 respondents (representing 26.66 percent of the total population) indicate that the most significant advantage of digital photography is that it saves cost, 3 respondents (representing 20 percent of the total population) indicate that the most significant advantage of digital photography is that it improves picture quality, 1 respondent (representing 6.67 percent of the total population) indicate that the most significant advantage of digital photography is that it eases editing, while, 2 respondents (representing 13.33 percent of the total population) indicate that the most significant advantage of digital photography is that it is compatible with computers.

Most respondents (by 33.34 percent of the total population) indicate that the most significant advantage of digital photography is that it saves time while few respondents (by 6.67 percent of the total population) indicate that the most significant advantage of digital photography is that it eases editing.

Table 1.1 Problems preventing adoption of digital photography

S/N	Advantages	Frequency	Percentage
1.	Technology illiteracy	3	20
2.	Fear of the unknown	2	13.33
3.	Cost of new technology	7	46.67
4.	Lack of service personnel	1	6.67
5.	Erratic power supply	2	13.33
	Total	15	100

Table 1.1 presents a distribution of respondents according to the most pressing problem that prevents the adoption of digital photography by photojournalists in Nigeria. From the findings, 3 respondents (representing 20 percent of the total population) indicate that “Technology illiteracy” is the most pressing problem that prevents the adoption of digital photography by photojournalists in Nigeria, 2 respondents (representing 13.33 percent of the total population) indicate that “Fear of the unknown” is the most pressing problem that prevents the adoption of digital photography by photojournalists in Nigeria, 7 respondents (representing 46.67 percent of the total population) indicate that “Cost of new technology” is the most pressing problem that prevents the adoption of digital photography by photojournalists in Nigeria, 1 respondents (representing 6.67 percent of the total population) indicate that “Lack of service personnel” is the most pressing problem that prevents the adoption of digital photography by photojournalists in Nigeria, while 2 respondents (representing 13.33 percent of the total population) indicate that “Cost of new technology” is the most

pressing problem that prevents the adoption of digital photography by photojournalists in Nigeria.

Most respondents (by 46.67 percent of the total population) indicate that “Cost of new technology” is the most pressing problem that prevents the adoption of digital photography by photojournalists in Nigeria, while few respondents (by 6.67 percent of the total population) indicate that “Lack of service personnel” is the most pressing problem that prevents the adoption of digital photography by photojournalists in Nigeria.

Table 1.2 Problems from the digital manipulation of pictures

S/N	Advantages	Frequency	Percentage
1.	Impersonation	1	6.67
2.	Fraud	3	20
3.	Mudslinging	1	6.67
4.	Legal squabbles	2	13.33
5.	Loss of media credibility	8	53.33
	Total	15	100

Table 1.2 presents a distribution of respondents according to the most significant problem that will arise from the manipulation of pictures by photojournalists in Nigeria. From the findings, 1 respondent (representing 6.67 percent of the total population) indicate that “Impersonation” is the most significant problem that will arise from digital manipulation of pictures, 3 respondents (representing 20 percent of the total population) indicate that “Fraud” is the most significant problem that will arise from digital manipulation of pictures, 1 respondent (representing 6.67 percent of the total population) indicate that “Mudslinging” is the most significant problem that will arise from digital manipulation of pictures, 2 respondents (representing 13.33 percent of the total population) indicate that “Legal squabbles” is the most significant problem that will arise from digital manipulation of pictures, while 8 respondents (representing 53.33 percent of the total population) indicate that “Loss of media credibility” is the most significant problem that will arise from digital manipulation of pictures.

Most respondents (by 53.33 percent of the total population) indicate that indicate that “Loss of media credibility” is the most significant problem that will arise from digital manipulation of pictures, while few respondents (by 6.67 percent of the total population) indicate that “Mudslinging” and “Impersonation” are the most significant problems that will arise from digital manipulation of pictures

Conclusion

The most significant advantage of digital photography to photojournalists in Nigeria is that it saves time. Obviously, digital photography has a number of advantages but all these have an order of significance as far as photojournalists are concerned. Digital photography saves time because there is no need for chemicals to process the pictures in the dark room. Once the pictures are taken, they can be used immediately. Time is of essence to photojournalists because they need to beat deadline pressure. Editors are waiting each day for the news story and accompanying pictures to come in, thus digital photography comes in handy and cuts processing time that is wasted in the dark room.

“Cost of new technology” is the most pressing problem that prevents the adoption of digital photography by photojournalists in Nigeria. Digital cameras are quite expensive and they come in various grades. According to Nigerian standards, the average photojournalist will find digital cameras expensive. If they are not provided by the organization, photojournalists will find it expensive to buy. Apart from the cost of the digital camera, printing pictures from the digital camera is a difficult task. Printing shops

are not readily available in many Nigerian cities, thus there is need for a portable printer and photo paper. Furthermore, digital cameras are compatible with computers. Thus when pictures are taken they can easily be transferred to the computer and sent to the editor via the Internet. This means that buying only the digital camera is insufficient- a computer as well as a photo printer is essential

“Loss of media credibility” is the most significant problem that will arise from digital manipulation of pictures by photojournalists in Nigeria. Digital manipulation of pictures may be useful in some aspects but with regard to journalism, there is need to focus on the negative effects which it may have on profession. Journalism is based on truth, thus digital manipulation of pictures, destroys the very essence of the craft.

Recommendation

Media organizations should provide ICT (Information and Communication Technology) packs for photojournalists who work for them. The content of these ICT packs should be: a professional digital camera with accompanying lenses; a computer (laptop or desktop with appreciable specification); battery charger and rechargeable batteries. Photojournalists need these equipment in order to function efficiently. Media organizations should not assume that the photojournalist can afford these on their own. If they do, the job will suffer and in the end deplete the quality of reportage.

The Federal Government of Nigeria should reduce import duty on digital cameras and computers so that they can be affordable and easily acquired by media organizations. Cost is often a barrier to photojournalists. When the Federal Government removes this barrier, it will lead to a proliferation of digital cameras among photojournalists in Nigeria.

The various bodies which regulate media practice in Nigeria such as: the Nigerian Union of Journalists (NUJ); Nigerian Guild of Editors (NGE) and the National Broadcasting Commission (NBC) should make a statement about digital manipulation of pictures. This statement should be in recognition of the detrimental effects which digital manipulation of pictures may have on the practice of journalism. Needed structures need to be put in place to ensure that photojournalists do not abuse the possibilities available via digital manipulation of pictures.

References

- Alling-Ode, B. and Tubin, E. (2003) “Falsehood?” Stockholm: Styrelsen for psykologiskt forsvär
- Becker, K. (1996) “Pictures in the press: Yesterday, today, tomorrow” Goteborg: Nordicum
- Cifuentes, L. Myers, L. J. and McIntosh, K. (1998) “Selected data analyses, photo manipulation, and honest message design” *Journal of Visual Literacy* Autumn Vol. 18 No. 2
- Eriksen, M., Ghazaeepour, M. and Lewis, J. (2009) “Digital photography trends Europe” Luton: Infotrends
- Haparnas, Z. (2009) “The advantages of digital photos and digital cameras” Retrieved July 20th 2009 from http://EzineArticles.com/?expert=Ziv_Haparnas
- Johnston, C. (2003) “Digital Deception: How damaging is the threat of manipulating photos to the credibility of photojournalism?” May *American Journalism Review*
- Keller, S. (2007) “Digital Photo Manipulation: Are Pictures Worth a Million Words or Are We Being Cheated?” Retrieved 27th July 2009 from <https://www.msu.edu/~kellers5/writing%20sample.pdf>

- Quinn, A. and Spence, E. (2004) "Manipulation in Photojournalism: Is it ethical? Is it corrupt?" A paper presented at ANZCA 04 Conference, in Sydney Australia, July
- Rogers, E. M. (1976) "New Product Adoption and Diffusion". *Journal of Consumer Research*. Volume 2 March pp. 290 -301.
- Rogers, E. M. (1962) *Diffusion of Innovations*. New York: The Free Press.
- Rogers, E. M. (2003) *Diffusion of Innovations*. New York: The Free Press.
- Rossner, M. and Yamada, K. M. (2004) "What's in a picture? The temptation of picture manipulation." *Journal of Cell Biology* Vol. 166 no. 1
- Singh, M. (2008) "Digital image manipulation- Is manipulation of images ethical? Retrieved October 22, 2008 from www.ezinearticles.com
- Stavchansky, A. (2006) "Knowledge of digital video manipulation techniques and its effect on the perceived credibility of television news." A dissertation proposal.
- Tallim, J. (2002) "Photographic truth in the digital era" Retrieved October 22, 2008 from www.media-awareness.ca
- Tapscott, D., Lowy, A., and Ticoll D. (eds.) (1998) *Blueprint to the Digital Economy* New York: McGraw-Hill Companies, Inc
- Tatsuno, K. (2006) "Current trends in digital cameras and camera phones" *Quarterly Review* No. 18 January
- Ritchin, F. (1990) *In our own image* New York: Aperture