Total Quality Management in Pre-Press: A Study of Book Printers in Ibadan, Nigeria

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Abstract

Quality control (QC) in a book printing firm is prerequisite for excellence in production therefore it should be incorporated into the day-to-day activities of printing companies. It was observed that books produced by printers in Ibadan are generally of average quality. This study therefore investigated how printers can incorporate Total Quality Management (TQM) into printing processes to ensure high quality production. Survey method was adopted, structured questionnaire was the instrument employed while three research questions were formulated. Book printers constituted the population of the study and 110 were randomly selected as sample. The 110 copies of the questionnaire administered were duly returned. The data collected was analysed using percentages and statistical mean. Findings revealed that most of the printing firms neither have QC department, personnel, nor have heard of TQM. The study recommended that the installation of TQM in pre-press operations in Ibadan is a recipe for quality book production.

Key Words: Quality control, Total Quality Management, book printing, production.

1.0. Introduction

Books are sources of knowledge; they are instruments to national growth and a major key to societal transformation. Books are catalysts for national development. Indeed, the level of growth and development of any society or nation depends, largely on the quality of books published and used by members of that particular nation (Adeleke, 2007: 27 - 29). A publishing company, in most cases, is a business organisation that engages in production of books for its diverse users which include pupils, students, researchers, schools, bookshops, libraries, and indeed the general public. In doing so, it does not only make profit but also contribute significantly to the overall development of the entire society, particularly the education sector. The significance of books to education and national development cannot be undermined. Fatehinse (1991:1) submits in Akangbe (2015: 35 – 36) that**:** books in general, especially textbooks, teach, preserve and transmit ideas from one person to another. Books enable the reader to engage in intellectual and emotional discussion with other persons who are separated by distance. Books also teach value and virtue in addition to enriching and enlarging the human mind.

This implies that book is a unique and dynamic product that has monumental value to every society. As submitted by Kalejaiye and Akangbe (2007: 432), it is a veritable source of information to teachers and students, a gold mine of knowledge for researchers and scholars, and a fountain of pleasure and leisure to general readers. Books are indices of progress, pivots of stability, catalysts for social development as well as springboards of advancement and galvanisers to breakthrough.

This view is corroborated and amplified by UNESCO's submission in Orimalade and Impey (2005:2) that:

The book is one of the greatest civilizing influences available to man. It is also the simplest, most diversified, most easily handled, and one of the least costly vehicles of thought … a privileged instrument of knowledge, reflection and expression, as well as an essential tool for life-long education.

This, no doubt, is a clear pointer to the pride of place occupied by the book in the society and its pivotal role in the social and economic development of the society. Akangbe (2015: 36) classifies the importance of books under

five respective headings namely: educational importance, economic importance, political importance, socio-cultural importance, and religious importance.

The success of any book in the market depends largely on its quality (Adesanoye, 1995:39-41). That means the quality of the manuscript sourced, the quality of the editorial work carried out, the quality of the production processes, crowned with the marketing programmes adopted to communicate the intrinsic value of the book produced for the user are contributory, and indeed pivotal, to its success.

The operation of book publishing is procedural and sequential. Ihebuzor (2006) identifies manuscript development, design, production and warehousing as the four major phases of publishing while Akangbe (2009:176 – 179) identifies manuscript acquisition, origination and design, and printing as the stages involved in book production. In the view of Mahesh (2011), publishing process involves the following stages of development: content acquisition, copy editing, graphic design, production i.e. printing and its electronic equivalents before reaching for marketing and distribution *(www.folksmediaventures.com)*. All these point to the fact that book publishing is carried out in stages and printing, otherwise called production, is a major stage in book publishing.

The printer is a major player in the book production stage. He is the manufacturer who mass-produces the book. The printer receives the processed manuscript which is already at the camera ready copy (CRC) stage from the publisher and subjects it to production processes. This shows that there is a strong synergy between publishers and printers; as a matter of fact, their relationship is symbiotic in that the publisher needs the printer and the printer in-turn needs the publisher. Book production (printing) is also in sequential stages which are broadly classified into the pre-press, press, and post-press.

The pre-press is the foundation stage of production (Chiromah, 2007:3). It involves two principal activities which are film-making and plate-making. The press involves mass printing of texts and graphics on the printing machines from plates to paper while the post-press is the concluding stage in printing which entails multiple and successive technical activities which are folding, collating, binding, trimming, checking and repairs, packaging and delivery. For a quality production, all these multifarious operational stages must cohere and there must be a reasonable attention to quality of input at each stage. It is the degree of quality control measures put into the book manufacturing process that will determine the overall success of the publication.

In the early days of printing in Nigeria, the consumers of printed materials never bothered about quality. All they were interested in was just for the printer to produce something that could be read (Okunola, 2009:2). However, with increase in literacy and technological advancement; the average Nigerian has come to attach a lot of importance to the quality of printed books she/he buys. With globalisation, Nigerians have come to regard the term "quality" as being synonymous to imported products. Hence, according to Okunola (2001: 28-30), the Nigerian printers' product is now measured and evaluated by reference to international standards. This prompted Adesanoye (1995: 42 – 43) to observe that most books printed in Nigeria are not always of the highest possible standard. As a matter of fact, they are of very low quality indeed.

Today in Nigeria, there are well over one hundred and twenty established publishing houses spread across the country (*The Publisher*, November 2007) and most of these publishing houses are into educational publishing. They publish books for elementary and high schools. Specifically, Adesanoye (op. cit) said that at least 80% of the commercial publishing houses in Nigeria are in the area of textbook publishing.

In the year 2002, the Universal Basic Education (UBE) programme office produced a book evaluation criterion to support teachers in selecting effectively from a pool of over two thousand five hundred books. Seasoned librarians, authors, publishers, teachers and illustrators designed this book evaluation manual. This project brought together over forty-five thousand fiction, non-fiction, reference, picture books and titles in indigenous languages from all over the world. The project served as a good reference point for comparing the quality of Nigerian books to those from other parts of the world, including African countries. Tahir (2005:28-32) observed that majority of the books printed in Nigeria and submitted for evaluation failed to meet the required criteria set for evaluation. These books scored very low especially in the areas of binding, cover and illustration. He believes that a well-produced textbook should last for between three to five years of regular use. All these observations and comments have put the printer in a rather difficult situation because there is pressure mounted on him to produce printed books that are cheap and at the same time of comparable quality to those produced in the developed world. This therefore clearly brought to the fore the problem focused in this study, and thus justifies its concern that there are so many unskilled personnel in the printing sector in Nigeria as many of the books are substandard. It is the concern of this

study that if Total Quality Management (TQM) is infused into the production operations by printers, the inherent problem of substandard publications would be summarily eradicated.

2.0. Objectives of the Study

The main objective of the study was to investigate the use of TQM as an imperative for quality control and efficiency in pre-press in book production. The specific objectives were to: find out the quality control measures employed by book printers in Ibadan; identify the effects of pressroom ambient condition on the quality output of paper and ink; and establish how TQM principles could be implemented in a book printing company. Arising from the specific objectives, three research questions were put forward as follows:

i. What is/are the quality control method(s) put in place by book printers?
ii. What effect does pressroom ambient condition have on the quality output of paper and ink?
iii. How can TQM principles be implemented in a book printing company?

3.0. Methodology

The study adopted the survey research design. The population of the study was all the book-printing companies in Ibadan, Nigeria. The total number of such printers was 500 as obtained from the register of the Association of Master Printers in Ibadan. The simple random sampling technique was adopted to select 22% of the target population making the sample size 110. The book printing firms in Ibadan were used because majority of the vibrant publishing companies in Nigeria are situated in Ibadan and, to a large extent, the Ibadan-based printers print for those companies. Questionnaire was the main instrument used for data collection. The instrument was validated by co-experts in the field of publishing prior to its administration. One hundred and ten copies of the questionnaire were administered on the book printing firms in Ibadan and they were all filled, returned and found valid for analysis.

Percentage was used to analyse the research questions 1 and 2 while mean was used for analysing data for research question 3. Decisions were based on a cut-off point of 3.50 on a five-point scale. A mean score of 3.50 and above were regarded as adequate.

The study was significant in that it specified how to enhance book quality at the pre-press and efficient use of raw materials, tools and machinery utilised in the process of book printing. The study equally offered a good reference point for book publishers in developing quality control standards for their products with a view to enhancing their acceptability in the book market by applying TQM. Quality is crucial at this stage as pre-press serve as the very foundation of production process. Its significance to the publishing houses, book users, and the society cannot be overemphasised, especially in an environment where competition is high and rife.

4.0. Literature Review

The literature review discusses the concept of pre-press and Total Quality Management (TQM).

4.1. The concept of pre-press

As initially submitted, a typical lithographic printing house is made up of three major departments, each performing several inter-related activities in the process of transforming the developed manuscript from the editorial unit into a finished book. The departments are the pre-press; the foundation of production processes and the major concern of this study, press and post-press. Pre-press activities begin when all editorial activities on origination of manuscript has ended. Usually the publishing department hands over the camera ready copy (CRC) to the production department. For thoroughness, standardisation and high quality output, the production department begins its pre-press operations with what is called production editing. Aniyi (2009:198) maintains that the production editor, who is usually versed in printing, must work on the CRC with a 'production eye' by going through the CRC starting from the cover.

Akangbe (2009: 65) also submits that production editing is the last stage of the editing levels adding that it comes after the camera-ready copy (CRC) has been approved for press. He maintains that this bit of editing actually falls within the production scope and is usually carried out by a production expert. A good production editor will critically examine the structural layout of the book with a technical eye. According to him, an adequate production editing detects and eliminates costly production errors which may translate to loss of millions of naira. Production editing also enhances the task of quality control unit as most avoidable lapses would have been nipped in the bud. Adeleke (2007:27-29) opines that the input of the production editor is the bridge linking publishing

and printing. The production editor will normally have a dummy showing the page plan according to how the pages will eventually appear.

Apart from all these, technically challenging pages like pictures, illustrations, graphics and charts must be handled with special attention. The production editor will make sure the specifications are duly followed and that colours properly match. The discussion on production editing, so far, has been from the angle of a publishing company with a resident press, which is not a common experience in Nigeria in particular and worldwide in general. The common practice is that publishing houses prepares a manuscript and work on it to the CRC stage before handing it over to a press for the printing. In this kind of situation, the task must still be carried out. This kind of situation, which is prevalent, calls for extra vigilance on the part of the editorial, and sensitivity and strive for perfection on the part of the printing firm. At the printing stage, the production crew also does their proper checking and planning in the course of which they may detect one anomaly or the other. This implies that the printing firm works hand-in-hand with the publishing company for good result in the pre-press. Essentially, two principal activities, filming and plate making take place in the pre-press.

Filming is a process of transferring the camera ready copy (CRC) onto laser films preparatory to plate making. Rainer (2001: 824-851) avers there are two types of filming processes, these are negative and positive. The negative is an old process whereby the text is patched on the negative film and exposed to light to make it register on the film. The film will then be used for plate making. Positive filming is a shorter process and an improved technology whereby the text is printed on laser film directly from the computer. There is a technical process called mirroring which simply means flipping or turning the text over. This flipping will enable the text to register correctly on the plate. If a portion of the text is not mirrored and is filmed, when printed, the text will be upside down.

Plates are produced in the lithographic unit. Usually, the lithographic unit is made up of a plate-making machine, which has a burner and a darkroom. The making of plates passes a number of stages which involve stripping, imposition, burning, lighting, and chemical application. All these are done within a regulated time depending on the capacity of the plate-making machine or the plate-maker. Liebetruth (2001:1102-1111) describes plate making as the technical transference of text from films to printing plates. Plate making is a careful and delicate process, which should be handled professionally as it determines the quality of printing obtainable eventually. When plates are washed with chemicals, it must be neither over-washed nor under-washed.

The preparation of the chemical itself must be adequate; otherwise, it will have undesirable effect on the plate. Again, plates are burned through exposure to light. The implication of this is that quality control measure is highly desirable at the pre-press stage. The lithographer must be an expert who does his job well otherwise the printing will be in a mess. He has to be particularly careful on process colours and screen effect either in colour or in ordinary black. If the application of chemical is wrong, and burning degree is not right, these printing variables will come out badly. Again regularity and consistency is highly demanded from the lithographer to ensure evenness in printing. For checks and balance therefore, and as part of quality control measure, the production manager, works manager, press supervisor, press manager, or any officer so charged with the responsibility of ensuring high standard of quality must examine the plate and give approval for its use before printing.

4.2. Total Quality Management (TQM)

Total Quality Management (TQM) is a concept that is concerned with the scientific management of men, materials and machines for the purpose of producing high quality products and services in an organisation such as book publishing company. Its main thrust is managing the entire organisation so that it excels on all dimensions of products and services that are important to the customer. Its emphasis is on conformance quality, not features. Total Quality Management owes its origin to the work of an American, Edwards Deming, who has been described as the "father of modern-day Japanese miracle". It was originally a production engineering term, and has its roots in a variety of disciplines: economics, social psychology, mathematical statistics and management services (Okunola, 2009:3).

It is a management philosophy that focuses on human and work processes with the primary goal of ensuring customer satisfaction and continuously improving organisational performance. Today, it is built into the management philosophy and practices of the most successful international businesses (Adeleke, 2007:27-29). Although, TQM's advantages were first taken in the industrial sector, TQM has been found to be as effective in the service industries like banking, insurance, hotels, healthcare, petroleum, etc. He further describes TQM as a company-wide program that empowers workers and managers to continuously improve their processes and

outputs to conform to user's requirement and to delight the customer. It is aimed at providing a customer-driven organisation to improve its products, processes and services.
The International Standard Organisation (ISO) 8402:1994 defines TQM as:

A management approach for an organization, centered on quality, based on the participation of all its members and aiming at long-term success through customer satisfaction, and benefit to all members of the organization, and the society

Rigby (2009) adds a further dimension to the definition of TQM. He describes TQM as a systematic approach to quality improvement that marries product and service specifications to customer performance. He adds that, TQM then aims to produce these specifications with zero defects. This, he says, creates a virtuous cycle of continuous improvement that boosts production, customer satisfaction and profits. He emphasised that for TQM to succeed; there are certain obligations which managers must carry out.

a. Managers must assess customer requirements. This is necessary in order to:

i. understand present and future customers' needs, and
ii. design products and services that cost-effectively meet or exceed those needs.

b. Managers must always deliver quality goods. This, he says, only happens if management would pay attention to the following.

(i) Identify the key problem areas in the process and work on them until they approach zero-defect level.
(ii) Train employees to use the new technology.
(iii) Develop effective measures of product and service quality
(iv) Create incentives linked to quality goods
(v) Promote a zero-defect philosophy across all activities
(vi) Encourage management to lead by example.
(vii) Develop feedback mechanisms to ensure continuous improvement.

Obanya (2002) identifies important aspects of TQM that must be considered before attempting to implement TQM. These factors are as follows.

1. Customer-driven quality: TQM has a customer-first orientation; this implies that the customer comes first. Customer satisfaction is seen as the company's highest priority. The company believes it will only be successful if customers are satisfied. The TQM Company is sensitive to customer requirements and responds rapidly to them. In the TQM context, 'being sensitive to customer requirements goes beyond defect and error reduction, and merely meeting specification or reducing customer complaints. The concept of requirement is expanded to take in not only product and service attributes that meets basic requirements, but also those that enhance and differentiate them for competitive advantage. It must be realised that each part of the company is involved in TQM, each operating as a customer to the other. For example, the lithographer acts as a customer to the press operator, while the press operator serves as a customer to the book-binder. The quality of the plate produced by the lithographer determines the quality of print output by the press operator. If stripping and printing operations are not carried out correctly, the folding at the binding stage will not be correct. This could be forestalled if every staff at the different level of production acts as customer to each other by being critical.

2. TQM leadership from top management: TQM is a way of life for a company. It has to be introduced and led by top management. This is a key point. Attempt to implement TQM often fail because top management does not lead and get committed – instead it delegates and pays lip service. Commitment and personal involvement is required from top management in creating and deploying clear, quality values and goals consistent with the objectives of the company.

3. Continuous Improvement: Continuous improvement of all operations and activities is at the heart of TQM. Once it is recognised that customer satisfaction can only be obtained by providing a high quality product, continuous improvement of the quality of the product is seen as the only way to maintain a high level of customer satisfaction. TQM also recognises that product quality is the product of process quality. As a result, there is a focus on the continuous improvement of the company's processes. This will lead to an improvement in the product and process quality and customer's satisfaction. Elimination of waste and strong emphasis on prevention rather than cure is a major component of continuous improvement process.

4. Fast Response: To achieve customer satisfaction, the company must respond rapidly to customer needs. These implies fast responses to customer demands and prompt delivery of finished jobs as at when required by the customer.

5. Action based on facts: The statistical analysis of manufacturing facts is an important part of TQM. Facts and analysis provide the basis for planning, review and performance tracking, improvement of operations, and comparison of performance with competitors. The TQM approach is based on objective data, and provides a rational rather than an emotional basis for decision-making. For example, it is better to use a transmission densitometer to assess the tonal value of a halftone positive rather than using the naked eye for assessment. The data obtained from the positives can then be used to compare the densitometer readings obtained from the printed output on the printing machine. This enables the press operator to make objective assessment of the colours reproduced and quickly take corrective action to ensure the attainment and maintenance of prescribed quality standards.

6. Employee Participation: A successful TQM environment requires a committed and well-trained work force that participates fully in quality improvement activities. Such participation is reinforced by reward and recognition systems that emphasise the achievement of quality objectives. On-going education and training of all employees support the drive for quality. Employees are encouraged to take more responsibility, communicate more effectively, act creatively, and innovate.

7. A TQM Culture: To introduce TQM into the pre-press operations, it is important that management creates an open, cooperative culture. Employees must feel that they are responsible for customer satisfaction. They are however not going to feel this if they are excluded from the development of decisions, strategies, and plans. It is important they participate in these activities. They are unlikely to behave in a responsible way if they see management behaving irresponsibly – saying one thing and doing the opposite.

On the whole, Total Quality Management is an effective method for attaining quality production in the pre-press operations in particular, and the entire production processes as a whole. Many of the previous studies reviewed on TQM were conducted in countries outside Nigeria. Even the few studies in Nigeria were not specific on book printers in Ibadan. Therefore, this study is expected to fill this gap.

5.0. Data Analysis

Three research questions were answered in this study; the analysis of data gathered is presented below. One hundred and ten (110) copies of the questionnaire were administered, all the copies were fully retrieved from the respondents, and all the copies were found useful. A 5-point likert scale was adopted with the following options: Strongly agree (SA=5), Agree (A=4), Undecided (U=3), Disagree (D=2) and Strongly disagree (SD=1) for questions one and two, while frequency and simple percentage was adopted for question three. The Cronbach alpha reliability coefficient of TQMQ = 0.763.

Research question 1: What are the factors responsible for production of low quality books?

Table 1: Respondents' rating of factors responsible for low quality books

S/No	Items	SA	A	U	D	SD	N	Mean	Decision
1	Lack of set standards in terms of materials, copy and artwork supplied to the printer influence the quality of books produced.	30	12	0	3	1	46	4.48	Adequate
2	The quality of job is usually determined by the amount the customer is willing to pay.	26	14	3	2	1	46	4.35	Adequate
3	The inability of book printers to acquire modern printing machines has limited the printer's ability to produce high quality jobs.	21	12	4	6	3	46	3.91	Adequate
4	The age and type of printing machines used affect the quality of jobs produced.	28	13	0	5	0	46	4.39	Adequate
5	Lack of good quality machine spare parts and shortage of engineers is a major factor in the production of low quality jobs.	26	14	0	5	1	46	4.28	Adequate
6	Irregular and uncoordinated maintenance schedule leads to low output and frequent breakdown of printing machines.	25	18	2	1	0	46	4.46	Adequate
7	Non-availability of good quality papers and inks affects quality of printed books.	24	17	1	3	1	46	4.30	Adequate
8	Shortage of highly-skilled, experienced and dedicated press operators affect quality of books produced, considerably.	32	10	1	1	2	46	4.30	Adequate

Note: Decisions above are based on a cut-off point of 3.50 on a five-point scale. All items with a mean score of 3.50 and above are regarded as adequate.

Table 1 show that the respondents agreed and rated all the eight items relating to factors responsible for production of low quality books as adequate as all the items have a mean score of 3.50 and above.

Research question 2: What effect does pressroom ambient condition have on the quality output of paper and ink? A list of pressroom ambient conditions that affect the quality output of paper and ink was generated, and respondents were asked to rate the adequacy of such conditions as they affect quality of paper and ink. Table 2 shows the mean of the responses of the respondents for each item under investigation.

Table 2: Effect of pressroom ambient conditions on quality of paper and ink

S/No	Items	SA	A	U	D	SD	N=46	Mean	Decision
1	The use of air conditioner enhances the effective control of ambient conditions in the pressroom.	32	11	0	1	2	46	4.52	Adequate
2	When the humidity is high paper absorbs moisture and expands, this affects registration when printing multi-colour jobs.	31	12	0	1	2	46	4.50	Adequate
3	When the humidity is high, accurate feeding of sheets into the machine becomes difficult and this affects registration on the machine.	19	21	0	3	3	46	4.09	Adequate
4	Curled and wavy edges of paper are the result of unfavorable atmospheric condition of the press room.	15	17	11	3	0	46	3.96	Adequate
5	Unfavorable atmospheric condition affects ink drying on paper after printing.	15	22	2	6	1	46	3.74	Adequate

Table 2: above shows that the respondents rated all the five items relating to effects of pressroom ambient condition on quality output of paper and ink adequate.

Research question 3: How will TQM principles be installed, operated and maintained in a book printing industry? The following questions were posed to the respondents in a bid to answer the third research question.

Table 3.1 Respondents who have heard of TQM principles

Have you heard of TQM?		Frequency	Percent
Valid	Yes	81	73.6
	No	29	26.4
	Total	110	100.0

Table 3.1 shows that 81 which was 73.6% of the respondents have heard of TQM principles, while 29 which amounted to 26.4% have never heard of TQM. This could be attributed to their low educational background as the bulk of the respondents came into the profession through apprenticeship scheme and did not attend any formal printing school or training.

Table 3.2: How respondents got to know of TQM

How did you get to know of TQM?		Frequency	Percent
Valid	From a friend	27	24.5
	From books /internet	54	49.1
	No response	29	26.4
Total		110	100.0

Out of the 81 respondents who have heard about TQM, 27 which amounted to 24.5% heard of it from friends while 54 which translated to 49.1% got to know of it through books and internet. It is noted that no respondent has heard of any book printing company in Nigeria using the TQM system. This is an indication that the printing industry is yet to embrace the TQM in its operations.

Table 3.3: Can TQM be installed and used in the printing industry in Nigeria?

TQM can be installed and used in Nigeria?		Frequency	Percent
Valid	Yes	63	57.3
	No	18	16.4
	No response	29	26.4
Total		110	100.0

Out of the respondents who have heard of TQM, 63(57.3%) believed TQM can be successfully installed and used in book printing in Nigeria, while 18(16.4%) believed to the contrary.

Table 3.4: Adequacy of human and material resources for implementation of TQM

Are human and material resources available adequate for TQM implementation in Nigeria?		Frequency	Percent
Valid	Yes	6	5.5
	No	75	68.2
	No response	29	26.4
Total		110	100.0

On whether the available human and material resources in Nigeria are adequate for implementation of Total Quality Management in Nigeria, it is astonishing that only 6(5.5%) believed that the available human and material resources was capable of sustaining TQM while 81(73.6) believed to the contrary. This was a clear indication that the popular opinion was that the printing industry in Nigeria was not ripe for installation of TQM in its operations.

6.0. Discussion of Findings

This study revealed that most of the printers in Ibadan are engaged in general commercial printing. None of the respondent specialised in book printing. This finding agrees with that of Obidiegwu (2006: 3-10) who observed that there are only a few printers in Nigeria geared specifically to book printing as distinct from the printing of posters, labels, vouchers and calendars. Book printing requires specialized machineries, processes and personnel. This could be a factor responsible for the low quality books produced by these general-purpose printers.

The result of this study also established that majority of the printers were aware of the need to improve the quality of the books produced by them. It was realised that the quality of their books will have great impact on the quality of the people in the society and determine the printer's survival in the book market. Adesanoye (2007:3-9) also observed that because of the low quality books produced by printers, many publishers now take their jobs to China, India or Japan, thereby further emasculating an already deformed printing sub-sector. Another finding is that most of the book printers in Ibadan have neither quality control department nor specially trained quality control personnel. This phenomenon has influenced negatively the quality of books produced. The importance of quality control in book printing process cannot be over emphasised. Fayol (1991) supports this view when he asserts that in the book printing process, it is important to verify whether everything occurs in conformity with the plan adopted, the instruction issued, and principle established. Its objective is to point out weaknesses and errors in order to rectify them and prevent reoccurrence.

Another important finding of this study shows that the educational backgrounds of majority of the printers were very low. This was evident in the difficulty of many to fill the copies of the questionnaire administered unassisted. It therefore follows that to effectively introduce the principles of TQM in the book industry, and if real growth of individuals and organisations are to be ensured, there must be a coherent and well-planned integration of training, education and continuous development in the printing industry. It was equally deduced that majority of the printers had never heard about TQM. At pre-press, it is often found out that due to absence of TQM, foundational errors on film, page planning, imposition, and plate making are often replicated through the printing processes at

the press and post-press stages there by magnifying and sustaining the error committed at the very beginning of the production processes.

This study, in line with Echebiri's (2005) study, found that the local printing industry was left with considerable catching-up to do with industry leaders around the world, in respect of efficient machine maintenance, quality production and the adoption of new technologies. In a nutshell there is a lot of improvement measures required in the pre-press to make the quality of the book production in Ibadan up to the standard akin to that of the developed countries.

7.0. Conclusion

From the findings of the study, it is clear that Total Quality Management is a powerful strategic weapon for quality control of book printing processes. If the book printers in Ibadan must enhance the quality of their books, compete with their foreign counterparts and ensure a future for themselves and their organisations, then the time to implement TQM in the pre-press operations is now. Any book printer who ignores TQM today does so at great jeopardy to his or her business. There is however a need for print managers to have a working understanding of TQM in order to ensure quality control and efficiency in the management of organisation's resources and consequently organisational profitability, survival, growth and goodwill.

8.0. Recommendations

This study is making the following recommendations to the printers.

i. Printers should anticipate users needs: In this age of technology, printers should think ahead of their customers by anticipating their needs and meeting them satisfactorily.
ii. They should match cost with value by striving to produce quality prints at commensurate and affordable costs. The foundation for this is laid at the pre-press stage.
iii. Training and retraining is a sine qua non for TQM. Printers should lay premium on training and retraining their staff moreso that many of them lack basic education.
iv. Printers in Ibadan should desist from technological phobia by imbibing new tools and acquiring new skills in softtwares for their operations.
v. Leadership of the printing companies must be actively involved in the quality crusade rather than paying lip service and passing the buck of ensuring production excellence to their subordinates. As a matter of fact, management should cultivate a production life style of TQM.
vi. Quality execution of the operational processes is a prerequisite for TQM. TQM is absolute and total therefore every stage of production processes must be quality-conscious and quality-driven.
vii. Team work is essential. The high and the low, the skilled and unskilled, the senior and junior must play their parts diligently to attain a quality delivery of the organizational goals.

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