

# Bio-factor analysis of library productivity

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## Keywords

Academic libraries, Public libraries, Employees, Productivity, Botswana.

## Abstract

The question of low productivity in Botswana is a cause of concern and a study has been carried out into perceptions about productivity in a sample of academic and public librarians. The main barriers to productivity were a lack of: job satisfaction, technological facilities and employee empowerment, together with poor management, working environment, relationship among staff, and inefficient use of human and material resources. The authors suggest that a serious culture change is required which would involve modifying both management and employees attitudes towards work, behaviour and commitment.

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## Introduction

President Masire (1991), when he was in power, called upon the people of Botswana to change their attitude towards work and fight what he called "the developing culture of laxity". He contrasted the work attitude of the Batswana to that of the Chinese, who, he believed, are highly motivated in whatever piece of work they do. In his address to the first meeting of the third session of the sixth Parliament, President Masire announced the setting up of a National Productivity Centre under the Institute of Development Management to advise on measures aimed at increasing productivity in all sectors of the economy. He emphasised that the most critical factor in productivity is the quality of the people. "Improved productivity can best be achieved when the whole nation is inspired with the spirit of achievement; when our human resources are trained and developed, and when there is effective co-operation among workers and between staff and management" (p. 5).

In response Moeti (1991), argued that low productivity in Botswana is institutionalised by government. To demonstrate his point Moeti made reference to the Botswana wages policy, that government settled for paying low wages with the hope of enlarging the workforce, thereby helping to curb the impending unemployment problem. It was hoped that Botswana's national objectives would be best served by a policy that combined wage restraint with rapid expansion of employment opportunities.

To the view that Batswana are generally a lazy people Lyon (1991) charged that about 90 per cent of a lack of productivity is caused by either poor training or poor management and not by wrong attitudes of workers. Where training is concerned there is a need to bridge the gap between formal education and training for employment. The education system in Botswana was criticised for setting obstacles against productivity by instilling a strong contempt for manual work and a work motivation dominated by the fear of making mistakes. The workers need to feel sufficiently secure and trusted enough to learn from their own mistakes.

General Merafhe (1991), then Minister of Presidential Affairs and Public Administration, now Minister of Foreign Affairs, felt that managers and supervisors

should realise that wrong policies concerning training could result in a wastage of resources and valuable opportunities since there would be little or no contribution towards increased productivity, resulting from a misdirected training effort. He added that the training effort would only come to fruition when the role of the individual trainee taking part in it is clearly understood. The acquisition of skills should be allied to better performance and providing a better service to the public (Lesindi, 1992). Unless corrective solutions are found to placate the malady of indifference and uncaring attitudes in rendering service, Botswana will be faced with an intractable problem in restoring the prestige of the public service to its desired level.

Still on the question of attitude, Magang (1992), then Minister of Works Transport and Communications, now Minister of Water Affairs and Mineral Resources, felt that changes of attitudes in the employees who serve the customers must be brought about through intensive training and employees must be encouraged to share in the success of their organisation. He felt that shared ideas motivate employees towards the achievement of organisational objectives. He nevertheless warned executives that marketing efforts which do not pay due attention to the quality of service will not take them very far (Mmamapilo, 1992).

The other problem in developing countries, such as Botswana, as Nyerere (1991) correctly observed, is that although Africa has well trained professionals, it gives them no respect. "A good professional is by-passed when Botswana wants a consultant for a medical project. We by-pass our own doctor to get an ill trained somebody from outside. So we say train your people and use them. Design policies which enable your own trained manpower to stay in your countries" (p. 3). Nyerere contended that development has to be people-centred, self-reliant and taking place in freedom.

Venson (1986) has observed, among other factors, that the Botswana Civil Service appears to be unproductive for the following reasons:

- Failure to meet public demand on time, if at all.
- Top management and unit supervisors do not often seem to interpret or understand policies in the same way.
- Policies and objectives are not clear to everyone.

- Management does not seem to provide guidance, leadership, control or support required by their subordinates.
- Performance appraisal methods neither give adequate feedback to the subordinates nor are they used in management decisions.
- There is very little participation by subordinates in decision making.

Huff (1993) advised Botswana that decision making is the key to success. It is born out of imagination and intellect. The greater the imagination the greater the intellect. This however should be coupled with "effective thinking" or critical thinking, where one critically analyses "the how-to" of one's imagination.

It was against this background that the study reported in this paper was undertaken.

### Study objectives

The study aimed to:

- (1) determine whether perceptions about productivity differ according to work experiences;
- (2) determine whether perceptions about productivity differ according to gender and age;
- (3) determine whether academic and public librarians perceive productivity in different ways;
- (4) determine whether junior and senior librarians perceive productivity in different ways.

### Literature review

Enhancing power sharing and the opportunity for advancement are expected to satisfy and benefit individual employees while raising organisational productivity. Salient productivity programmes, however, should also push for participation and power sharing. To this end, co-operation between management, employees and the public is required. This necessitates pushing effective decision making down to the lower echelons. More often than not, people at the operative levels in an organisation have the most immediate and relevant information about new, unique or problem situations. This information is vital for effective decision making. By encouraging decision making at

all levels of the organisation, a simultaneous improvement in organisational productivity and quality of service can be realised. It is imperative to begin by looking at the possibilities of decentralising power and delegating more authority and responsibility, and perhaps creating more accountability. The decision for creating more accountability runs concomitantly with the need to allow employees to take more discretionary decisions. Productivity, therefore, is a measure of efficiency, quality of service and a means of assessing the use to which resources are being put (Awuku, 1995).

In library and information work, productivity relates to the value of results obtained by staff or users in searching for information or documents (Drake, 1979). We nevertheless see productivity as the efficient utilisation of scarce resources such as money, skilled human power, new technology, materials, time, energy, and information in order to produce goods or services.

McKee (1989) contends that in the library world, both external and internal factors contribute to library productivity. The internal dynamics of an organisation, together with the attitudes of the people, can be barriers to change, and hence to productivity. Changes in size and structure of the library clearly affect the number and nature of staff, the culture of the organisation and the style of its management. This may introduce disability, which is not good for productivity. Externally, economic change impacts on the resources available. Political change alters the policy framework such as the way resources are allocated. Technological change alters the tools, the systems and structures, by which objectives can be achieved and services delivered.

Lubans (1992) observed that the organisation that overlooks feedback, that withstands change, that encompasses tradition as a way of doing business, is hastening to its death.

Garebakwena (1995) noted that the absence of policy, poor supervision, poor salary and conditions of services lead to inadequate motivation. Arthur (1992) indicated the importance of good motivation in lifting morale, retaining staff, and generating extra productivity, while Nkereuwen (1986) saw job satisfaction as a key factor which influences productivity. Hinks (1990) recommended an initial programme of customer care training and

basic training for new members of staff (Sebetela, 1994). However, human resources management in libraries should not end after the recruitment, selection and retention of employees. Management work should extend to the development of human potential which includes, among other things, technical and professional training and retraining, participation in professional meetings and conferences, participation in decision making processes, utilising talents, performance enhancement, team work, counselling and discipline (Thapisa, 1993). Thus, Sullivan (1991) advocated a new paradigm of leadership that calls for leaders to question whether the current structures facilitate or hinder effective performance, promote timely decisions or procrastination, facilitate a healthy working environment in which staff are highly motivated and committed, or one that demotivates them.

Amoah (1995) suggested that library and information work demands people who work as a team for success, making progress and producing results, while Setshwaelo (1994) was of the opinion that the key to raising productivity is communication. Once people feel they are part of what is going on, they will want the organisation to succeed. Even so, the information technology departments, according to Murray (1996), should make customer service a priority in order to increase productivity and quality and attach value to their organisations. Information processes, according to Lowrey (1996), actually assist in achieving better control and efficiency, enhance productivity and harness innovation. In Bower's (1996) opinion the major advantages of local area networks (LANs) in libraries are that they improve cost effectiveness, increase productivity and facilitate information sharing. Cleland (1996), however, critically makes the poignant observation that although information technology is very important we must consider that the massive shift to computers in the workplace places new stresses on people and increases occupational illness such as neck and back pains.

## Methodology

Four hypotheses were tested to determine whether job experience, gender, type of library and status (junior or senior) influenced perceptions on productivity. Since there were

too few respondents in the 31-40 age group it was decided not to test for age. A semi-structured questionnaire was administered in order to collect data on perceived barriers to productivity in academic and public libraries in Botswana. The survey targeted six academic and six public libraries. The questionnaire was hand delivered at each of the randomly selected public and academic libraries and collected in the same way. Each librarian was given an opportunity to participate. Out of a total population of 174, 111 were surveyed, 77 of which were in academic libraries and 34 in public libraries. Forty-six were professional and 65 were para-professional.

The statistical package for the social sciences (SPSS) was used to generate frequencies, percentages and to calculate factor analysis and multivariate ANOVA.

*Factor analysis* was used to determine higher and lower productivity and categorise them according to given factors. For example, "work environment", "attitudes" and "technology" were factors used to measure higher productivity while lower productivity was measured by "individual", "organisational" and "work ethic".

*Factor scores.* Cell means were computed for each factor and standardised by using the SPSS to determine means and unit variances. Positive scores indicated that the respondent rated the factor as important or very important and negative scores indicated that the factor was rated as not important. Thus, when computing cell means, the group with the highest means was thought to perceive the factor under consideration as being more important than the group with a lower mean score perceived it. However, a zero indicated that the factor was rated as neutral.

*Variables.* There were six dependent variables, three of which measured higher productivity; "working environment", "attitudes", and "technology". Three others measured lower productivity; "individual", "organisational", and "work ethics". Independent variables were "job experience", "gender", "public and academic libraries" and "junior" and "senior" librarians or "status". The job experience variable was categorised into four groups: 2-5 years; 6-10 years; 11-20 years; and 21 years of experience and above.

*Multivariate ANOVA.* This paper reports on the multivariate ANOVA that was used to

test the relationships and significance in the mean scores of two or more groups where there were several dependent variables. It was particularly useful to establish possible relationships between dependent and independent variables. Where the multivariate ANOVA indicated that there was some difference, a follow-up analysis was carried out to ascertain in which particular variable there was a difference, and the nature of the difference.

### Null hypotheses

- (1) There is no significant improvement in perceptions of productivity with job-experience.
- (2) There is no difference between male and female perceptions of productivity.
- (3) There is no significant difference between the way librarians working in public and academic libraries perceive productivity in libraries in Botswana.
- (4) There is no significant difference between the way junior and senior librarians perceive productivity in libraries in Botswana.

It should be noted that all null hypotheses were accepted at levels of significance equal to 0.05 or greater and rejected at levels below. When the data are compatible with the null hypothesis, there is no contest and therefore the hypothesis is accepted but if the data are incompatible with the null hypothesis the hypothesis is not accepted (Weiss, 1968).

*Null H1:* There is no significant improvement in perceptions of productivity with job-experience.

The null hypothesis could not be rejected ( $P$  value 1.509). The results in Table I would appear to suggest that both the more and less experienced librarians perceive the causes for higher productivity in a similar way. This means that tenure may not have influence upon workers' perceptions of higher productivity.

The null hypothesis was accepted at  $P$ -value 0.317. Again the results in Table II would appear to suggest that both experienced and less experienced librarians perceive the elements that lead to lower productivity in a similar way. This would now appear to clearly confirm that tenure does not have a direct influence on workers' perceptions of factors

Table I Mean scores for higher productivity factors by job experience

| Job experience | Mean factors        |          |            |
|----------------|---------------------|----------|------------|
|                | Working environment | Attitude | Technology |
| 2-5 years      | -0.02720            | 0.08792  | -0.00521   |
| 6-10 years     | 0.27999             | 0.09197  | 0.02811    |
| 11-20 years    | -0.17398            | 0.01346  | 0.01846    |
| 21 - above     | 0.00799             | -0.50240 | -0.44599   |
| F-value        | 0.93418             | 1.13607  | 0.72925    |
| P-value        | 0.93418             | 1.13607  | 0.72925    |
| P-value        | 0.427               | 0.338    | 0.537      |

Notes: overall F-value = 0.91938; overall P-value = 0.509

Table II Mean scores for lower productivity factors by job experience

| Years of experience | Mean factors |                |             |
|---------------------|--------------|----------------|-------------|
|                     | Individual   | Organisational | Work ethics |
| 2-5 years           | 0.01276      | 0.05722        | 0.01410     |
| 6-10 years          | 0.031835     | 0.09152        | -0.17749    |
| 11-20 years         | -0.115370    | 0.08077        | -0.09001    |
| 21-above            | 0.013504     | -0.50410       | 0.41299     |
| F-value             | 1.28986      | 1.29501        | 0.94607     |
| P-value             | 0.282        | 0.281          | 0.422       |

Notes: overall F-value = 1.16952; overall p-value = 0.317

leading to higher and lower productivity. It had been expected that those with extensive job experience would have more positive perceptions of productivity.

*Null H2:* There is no difference between male and female perceptions of productivity.

The null hypothesis was rejected at *P*-value 0.015. This would appear to suggest that women and men perceive the measures for higher productivity differently. We should note nevertheless that, in Table III, "working environment" was perceived to be more important for women than for men. Working environment included, "doing well for the clients", "work ethic", "responsibility", "work commitment", "quality service", "user orientation" and "empowerment". However, there does not appear to be a significant

Table III Mean scores for higher productivity factors by gender

| Gender  | Mean factors        |          |            |
|---------|---------------------|----------|------------|
|         | Working environment | Attitude | Technology |
| Male    | -0.29424            | -0.12753 | -0.21862   |
| Female  | 0.18361             | 0.06525  | 0.12572    |
| F-value | 6.43557             | 1.02816  | 3.28332    |
| P-value | 0.013               | 0.313    | 0.073      |

Notes: overall F-value = 3.65486; overall P-value = 0.015

difference between males and females' perceptions of attitude and technology as they relate to higher productivity.

The null hypothesis could not be rejected (*P*-value 0.667). This result would appear to contradict the one above by suggesting that both men and women perceive the factors that lead to lower productivity similarly (see Table IV).

*Null H3:* There is no significant difference between the way librarians working in public and academic libraries perceive productivity in libraries in Botswana.

The null hypothesis was accepted at *P*-value 0.074 for higher productivity and at *P*-value 0.449 for lower productivity. These results would appear to suggest that librarians working in both public and academic libraries perceived both measures of higher and lower productivity similarly. Generally, therefore this confirms that the type of library in which one works has no influence on how one perceives the measures influencing both higher and lower productivity.

*Null H4:* There is no significant difference between the way junior and senior librarians perceive productivity in libraries in Botswana.

The null hypothesis was rejected at *P*-value 0.007 for higher productivity and was accepted at *P*-value 0.057 for lower productivity. This would appear to suggest that seniors perceive the factors influencing higher productivity differently from their junior counterparts, but both juniors and senior may not perceive the factors which influence lower productivity, differently. More seniors than juniors perceived "attitude" as more important for higher productivity. The "attitude" factor included "motivation", "job satisfaction", "work commitment", "good relationship", "training" and "teamwork".

Table IV Mean scores for lower productivity factors by gender

| Years of experience | Mean factors |                |             |
|---------------------|--------------|----------------|-------------|
|                     | Individual   | Organisational | Work ethics |
| Male                | 0.09274      | -0.13098       | 0.05191     |
| Female              | -0.03648     | 0.06088        | -0.01230    |
| F-value             | 0.48580      | 1.07316        | 0.02308     |
| P-value             | 0.487        | 0.303          | 0.880       |

Note: Overall F-value = 0.52405; overall P-value = 0.667

## Summary of hypotheses

*H1* tested perceptions of productivity against job experience. The significance of this hypothesis is that work experience or tenure does not appear to have a direct influence on workers' perceptions of the factors leading to higher or lower productivity. It might well be that tenure does not guarantee productivity. The longer or shorter the period people stayed in a given job may not guarantee productivity. Other factors such as commitment, motivation and leadership quality should also be considered.

*H2* tested perceptions of productivity against gender. The significance of this hypothesis is that men and women appear to perceive the factors which influence higher productivity differently. Women would appear to attach more importance to the "work environment". However, both men and women do not perceive the factors influencing lower productivity differently.

*H3* tested whether librarians working in different libraries perceived the factors influencing productivity differently. It would appear that the type of library in which one works (public or academic) has no influence on the perception of the factors influencing higher or lower productivity.

*H4* tested whether juniors and seniors perceived the factors measuring productivity differently. Senior members of staff would appear to perceive the factors influencing higher productivity differently from their junior counterparts. Senior members of staff were found to be particularly concerned about work "attitudes". Conversely, the "organisational" factor was perceived by the junior members of staff as slightly more important in measuring lower productivity. This included "hierarchy/officialdom", "budget constraints", "lack of advertising library services" and "poor public relations". These measures were more pressing for juniors than for seniors. The significance of this finding is that juniors appear to be more concerned about practical issues relating to quality and productivity than seniors. However, both juniors and seniors may not perceive the factors which influence lower productivity differently. This would, nevertheless, appear to allude to the fact that attitudes and perceptions may influence productivity depending on the status of the people concerned.

## Discussion

The main objective of the hypothesis tests was to determine the significance of the respondents' perceptions against given factors and their variables. Tenure and the type of library did not appear to have influence on the respondents' perceptions of the measures influencing higher and lower productivity. This implies that both experienced and less experienced staff, old and young workers working in academic or public library perceived the causes of higher and lower productivity in a similar way. A consensus in these measures signifies a good opportunity for teamwork. In Botswana, work improvement teams (WITs) have been introduced to help improve productivity. The idea is good for participatory and consultative decision making. In this situation communication and feedback are expected to improve.

Work attitudes and perceptions were found to influence productivity, for example, 92.8 per cent of respondents perceived work commitment as being very important to productivity. However, positive perceptions about work commitment may not necessarily translate to increased productivity, for example, while training was considered to be very important for higher productivity, 64.0 per cent of the respondents acknowledged that they did not have proper training facilities.

Gender seemed to have a significant influence on perceptions of the measures of productivity. Women particularly perceived "working environment" as an important factor in measuring higher productivity. This finding is inconsistent with Garland (1990) who found no significant difference among faculty in this regard. However, our demographic data would appear to suggest that libraries in Botswana are female-dominated. It would be expected, therefore, that the "working environment" itself is dominated by women who like to pay more attention to their clients, have better work ethics, obtain a feeling of responsibility, acquire good communication skills, gain the ability to provide quality service, and be more user oriented. Even so, the study indicated that these factors were lacking in the actual library service. This would appear to suggest, therefore, that the fact that certain things are

not happening in reality does not stop people from attaching importance to them.

The "organisational factor" was perceived to be more important by juniors as a measure of lower productivity. This finding appears to suggest that owing to a lack of a good salary, unavailability of proper facilities and hierarchy/officialdom, the juniors felt distressed. It was found that the juniors did not have opportunities to be exposed to the outside world through meetings, seminars or workshops, but they were nevertheless quite aware of the fact that poor public relationships lead to lower productivity. The junior members of staff appeared to be very much concerned about productivity in their libraries. It would appear therefore that issues relating to budgets, officialdom and public relations impact negatively on the lower, rather than the higher echelons.

### Conclusion

The main barriers to productivity in academic and public libraries in Botswana were found to be a lack of job satisfaction, a lack of technological facilities, a lack of observable work ethics, budget constraints, a lack of training, poor management, inefficient use of human and material resources, a lack of effective WITs, a lack of employee empowerment, poor working environment, and a poor relationship among staff. It would appear, therefore, that productivity is low in libraries in Botswana for the same reasons that productivity is low in other sectors of the economy, as indicated in the introduction. There is no incentive to work hard unless a person has motivation to work. People in Botswana are more inclined to have their own businesses and would prefer to work for themselves, than for the government.

### Recommendation

If library productivity in Botswana is to improve it is recommended that librarians should be provided with better opportunities for improving their productivity. This means paying particular attention to providing effective leadership, attention to facilitation, team building, quality service, just-in-time delivery of service and performance. Teamwork as in, Work Improvement Teams

(WITs), encourages a commitment to achievement, change, customer needs, excellence and development. Employees are normally empowered by being encouraged to participate in decision making and problem solving processes. A serious culture change is required, one that involves the modification of both management and employees' attitudes towards work, behaviour and commitment. The aim is to address issues pertaining to perceived lack of productivity, customer satisfaction and conflict among departments. Regular training and development is required in information technology in order to build lasting competencies and skills.

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