

Information identification, evaluation and utilisation for decision-making by managers in South West Nigeria

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Background: Managers' organisational decisions and subsequent actions flow from their understanding of the business environment in which they operate. This study sought to understand how managers in various organisations identify, evaluate and use information for effective current and future decision-making.

Objectives: The study focused on the types of information needed by managers for decision-making, the methods used to identify and acquire the information and the sources of information consulted, their satisfaction with the information used and their decision-making behaviours.

Methods: The study employed descriptive study design. Simple random sampling was used. A pre-tested self-administered questionnaire was used to gather information from 219 managers, randomly selected from the registers of the Ibadan, Abeokuta and Lagos chapters of Nigerian Institute of Management.

Results: Results indicated that the types of information considered very important for decision-making included industry information followed by government policies and economic development/forecasts.

Conclusion: Investigation revealed the extent of information identification, information evaluation and information utilisation individually predict the perceived effectiveness of decision-making by the managers. Nevertheless, information evaluation was found to have greater predictive relationship with perceived effectiveness of decision-making than information use and information identification.

Introduction

Businesses have become more complex, global and information driven (Hillard 2010). Decision-makers all over the world are daily confronted with a combination of technological, social, political and economic problems that forces them to sometimes attempt what seems the impossible (Ali 2000). Therefore, information has been recognised as a valuable commodity in effective management of business operations. Its significance to business functions is very apparent in today's highly competitive economic environment and information society (Tihamiyu 2004). Hence, managers need quality information to help them make valuable decisions, achieve company goals and objectives and improve services and productivity (Mind Tools Community 2010). Devadson and Lingam (1996) submitted that the identification of information needs is essential to the design of information systems in general and to the provision of effective information services in particular (Kolawole 2010). However, this has been found to be a difficult task, because it is almost a detective work. In order to identify the information needs of managers, one needs to adopt various methods to identify and gather information that is relevant to the need of the user. No single method or tool will serve entirely (Owolabi & Jimoh 2010). A careful selection and blending of several techniques depending on the manager whose need is being studied is necessary (Markman 2010). In addition to gathering and recording the information needs, a careful analysis should be made to distil actual needs from the information gathered (Owolabi & Jimoh 2010). Lawal (2009) recognised the major steps in the process of identifying information needs, which include the study of subject(s) of interest to the organisation, study of the organisation and its environment, study of the immediate environment of the users, study of the users, identification and recording of information needs and analyses and refinement of the identified information needs.

Identification of relevant information is one step in the formal decision-making process, resulting in evaluating and deciding whether information should be considered as a candidate for use in decision-making (Akhter 2010). As Perkins (2001) stated, there is plenty of information

around, but too much of the wrong kind and not enough of the right kind. He further noted that the kinds of complaints usually encountered regarding information are that the information is too dispersed to be useful, it arrives too late to be useful and it arrives in a form that leaves no idea of its accuracy and therefore lacks orientation or focus. Hence, there is need to identify and evaluate potentially relevant and useful information in the particular environment of users as the basis of efficient information systems and effective information services.

Studies over the years have shown that managers' knowledge, skills and experiences on how to identify quality information, evaluate such information and use it effectively in the course of making decisions is fundamental. Lawal (2009) also opined that decision-makers in Nigeria particularly do not have a good perception of information in decision analysis as do their counterparts in advanced nations. Therefore, there is an urgent need to understand and grasp the complex process of identifying information. This is necessary because one might spend a lot of time, effort and money accessing various information sources and mining a great deal of information that does not answer the key questions of the users' decision-making process (Jamieson 2015). Hence, before making any strategic decision in organisations, the relevance of information to be acquired must be thoroughly evaluated, which can then be used in decision-making.

Objectives of the study

The study aims to understand how managers of various organisations (such as banks, telecommunications, insurance companies and investment houses) in South West Nigeria identify, evaluate and use information for current and future decision-making. A knowledge of how information required by managers is identified, type of information needed on a regular basis for decision-making purposes, how the information is sought, the attributes of information considered before making use of information, the actual use of information in organisations and the influence of demographic attributes on effective decision-making processes of managers would provide valuable indications into how information is being used in making management decisions, as well as the important determinants or predictors. The following hypotheses guided the conduct of the study, each tested at the 5% level of significance:

Ho: Demographic attributes (age, gender, highest level of education, years of experience as a manager, management cadre) will not significantly influence managers' effective decision-making.

Ho: There is no significant relationship between information identification and the managers' effective decision-making.

Ho: There is no significant relationship between information evaluation and managers' effective decision-making.

Ho: There is no significant relationship between information utilisation and managers' effective decision-making.

Ho: Information identification, information evaluation and information utilisation will not significantly predict managers' effective decision-making.

Methodology

Survey method

The survey design approach was used for the study and was implemented through self-administered questionnaires. The questionnaire was used to collect data for measuring and determining the extent to which the independent variables (information identification, information evaluation and information utilisation) predict the dependent variable (effective decision-making) of managers in organisations.

Sample selection

The target population was purposely selected from the membership base of the Nigerian Institute of Management (NIM), as it was considered a good sample frame for the survey, which also allowed for the selection of information-rich cases for in-depth study.

The development of the questionnaire followed criteria given by Fowler (1993) and the preliminary set of questions went through many drafts before it was put into a form for self-administration. The questionnaire was distributed to a sample of 20 respondents for pretesting. Based on feedback received, the questionnaire was further modified. The questionnaire was divided into five parts: Part A of the questionnaire obtained information on the demographics of the respondents, including age, gender, educational qualification and management cadre. Part B focused on the managers' information identification skill. Data were collected on the types of information managers need in the discharge of duties, methods managers often use to identify information needed in making decisions and sources of information managers consult in making decisions. In all, 15 types of information, 7 methods for identifying and acquiring information and 16 sources of information that are considered to be relevant to the decision-making by managers, were provided. The information identification variables was measured on a 5-point Likert scale by asking the respondents to score each type, source and method of identifying information, based on their managerial experience, ranging from 'Never needed' (coded 1) to 'Always needed' (coded 5). Part C was used to collect data on managers' information evaluation behaviours. Data were collected on the criteria/attributes managers look out for in information including such attributes as accuracy, relevance, timeliness, currency/up-to-datedness, reliability, completeness, ease of access and ease of use. Also, the respondents were required to use 5-point Likert scales to provide their responses ranging from 'No extent' (coded 1) to 'Very great extent' (coded 5). Part D focused on the managers' information use behaviour. Data were collected on how information is being used in organisations, what the information is being used for and how satisfied managers were when they use the information in making organisational decisions. The respondents were also required to use 5-point Likert scales to provide their responses, ranging from 'Not often used' (coded 1) to 'Always used' (coded 5). Part E dealt with managers' decision-making behaviour, using a 26-item decision-making behaviour

inventory developed by Hammed (2002). The 26-item scale was adapted and revalidated to fit the study. Hence, a 12-item scale for effective decision-making, with 5-point Likert scales was provided with response ranging from 'Not true of me' (coded 1) to 'Very true of me' (coded 5). The questionnaire was accompanied by a cover letter, which described the objectives of the survey, assured the respondents of confidentiality of the information provided and requested for returns to be forwarded by a deadline. A self-addressed envelope was provided for the return of completed questionnaires. Follow-up included two reminder letters. Data collection lasted for 5 months (April to August 2011).

Of 270 managers randomly selected from the registers of NIM, 243 managers responded to the questionnaire and were retrieved, but only 219 copies of the questionnaire were found valid for analysis, giving a response rate of 81.1%. A summary of questionnaire administration and retrieval from the respondents is presented in Table 1. Because of the nature of the study and research design used, both descriptive and inferential statistical tools of analysis such as mean frequency distribution, percentage and multiple regression analysis were employed in analysing the data.

Findings

Survey demographics

The gender distribution shows that 158 (72.1%) were male respondents, while 61 (27.9%) were female respondents. The largest proportions of respondents were in the age group of 35 years – 39 years and have work experience as a manager, ranging between 1 year and 6 years. This implies that most managers of today are younger than they used to be some years back. In addition, of the 219 respondents, 7 (3.2%) had Ordinary National diplomas, 116 (53.0%) had bachelor's degree qualifications or its equivalent, 92 (42%) were holders of master's degree certificates and only 4 (1.8%) had doctor of philosophy degrees.

The banking, telecommunication, insurance, health, service and educational industries of both public and private sectors were represented in the sample of respondents, with the private sector accounting for 169 (77.2%) and the public sector accounting for 50 (22.8%).

Information identification of managers

Concerning the identification of information needs of the respondents, they were provided with a list of types of information, which managers may need in support of their decision-making in business organisations. Also, 6 different methods of identifying and collecting information were

TABLE 1: Summary of responses to the distributed questionnaires.

Centres	Sample	Completed questionnaires found valid	Response rate(%)
NIM, Ibadan	70	58	82.85
NIM, Lagos	150	122	81.33
NIM, Abeokuta	50	39	78.0

NIM, Nigerian Institute of Management.

provided and 16 sources of information were listed. Respondents were asked to score each information type needed, method of identification used and source of information needed by them in the course of making organisational decisions, on a 5-point Likert scales in the following manner: 'Very Highly needed' (coded 5), 'Highly needed' (coded 4), 'Occasionally needed' (coded 3), 'Rarely needed' (coded 2) and 'Not needed' (coded 1). The data were later recoded into two categories – 'Needed' and 'Not needed'.

Table 2 shows the types of information considered very important for decision-making purposes by the respondents, which includes industry information (99.5%) followed by government regulations/policies (99.5%), economic development/forecast (99.1%), competitor's information (96.3%), business trend and news (97.2%), use of information technology (98.6%), legal and regulatory information (97.2%), environmental information (91.8%) and labour matters (96.4%).

Methods used to identify and acquire information

Table 3 shows the percentages of the methods available to respondents in identifying and acquiring information needed in decision-making.

As shown in Table 3, the major methods managers often use to identify and acquire information needed in the decision-making process, in the order of importance to respondents, include: meetings (100%); discussion (99.1%); record inspection (98.6%) and interview (98.6%).

TABLE 2: Type of information needed in decision-making ($N = 219$).

Type of information	Needed (%)	Not needed (%)
Industry information	99.5	0.5
Government regulations/policies	99.5	0.5
Economic development/forecast	99.1	0.9
Information on use of technology	98.6	1.4
Current affairs	98.1	1.9
Business trend and news	97.2	2.8
Legal and regulatory information	97.2	2.8
Socio-cultural information	97.2	2.8
Population and demographic information	96.8	3.2
Labour matters	96.4	3.6
Competitors information	96.3	3.7
Environmental information	91.8	8.2
Information on energy availability	87.2	12.8
Tax laws	86.3	13.7
Finance information	80.4	19.6

Note: Responses range from 1 = needed to 0 = not needed.

TABLE 3: Methods used to identify and acquire information needed in decision-making ($N = 219$).

Method	Used (%)	Never used (%)
Meetings	100.0	0.0
Discussions	99.1	0.9
Record inspection	98.6	1.4
Observation	98.6	1.4
Interview	98.6	1.4
Questionnaire	75.3	24.7

Note: Responses range from 1 = used to 0 = not used.

Sources of information consulted by managers in decision-making processes

Table 4 shows the percentages of information sources managers often consult and otherwise in the course of making decisions.

Table 4 shows that respondents use a variety of information sources comprising people, prints and so on. The sources consulted most are organisational records/company files (78.1%), customers (77.6%), superior managers (75.3%), internal studies/reports (71.2%) and free Internet/web resources (68%). This implies that these information sources are readily available to managers in their decision-making process; hence, managers consult these sources of information more often than the others.

Information evaluation of managers

Table 5 shows the percentages of respondents who consider some attributes/criteria before using information acquired in making decisions and the extent to which each information attribute is ranked important and otherwise.

Results in Table 5 show how the managers tend to evaluate information. The majority of the respondents indicated that they have a special preference for information that is trustworthy/reliable (99.1%), followed by what is relevant (97.7%), complete/adequate (97.3%), up-to-date/current (96.3%) and accurate (94.5%).

TABLE 4: Information sources used in decision-making processes ($N = 219$).

Information sources	Yes (%)	No (%)
Organisational records	78.1	21.9
Customers	77.6	22.4
Superior managers	75.3	24.7
Internal studies/reports	71.2	28.8
Free Internet/web resources	68.0	32.0
Subordinate managers	67.6	32.4
Business associates	65.3	34.7
Subordinate staffs (non-managers)	65.3	34.7
Fellow professionals	55.3	44.7
Organisational library	43.4	56.6
Government publications	41.1	58.9
Conference proceedings	40.2	59.8
Competitors	38.8	61.2
Newspapers/magazines	37.4	62.6
Industry/trade associations	33.8	66.2
Commercial electronic information services	33.3	66.7

Note: Responses were from 1 = yes, 0 = no.

TABLE 5: Attributes checked when using information in making decisions ($N = 219$).

Information attributes	Great extent (%)	No extent (%)
Trustworthy/reliable	99.1	0.9
Relevance	97.7	2.3
Complete/adequate	97.3	2.7
Up-to-date/current	96.3	3.7
Accuracy	94.5	5.5
Timeliness	85.4	14.6
Easy to obtain/access	76.3	23.7
Easy to use	73.1	26.9

Note: Responses were 1 = Great extent, 0 = No extent.

Information use of managers

Actual use of information

Table 6 presents the percentages of respondents who make use of information for the listed purposes.

As shown in Table 6, the most important task for which information was actually used in organisations is for the preparation of reports (89.5%), followed by information being passed on to superior colleague (83.6%). Furthermore, 79.9% of the respondents indicated that information was being used for the preparation of strategic plans, followed by preparation of executive summaries (72.1%) and to prepare presentations (71.1%).

Purpose of using information

Table 7 presents the percentages of respondents who make use of information for the listed purposes.

Results in Table 7 show that information was mostly used for company performance analysis (75.3%), that is, to monitor the trend at which the performance of the organisation is improving or otherwise. This is followed by use of information for consumer analysis (72.1%) and supplier analysis (67.1%).

Satisfaction with the purpose of using information

Table 8 presents the percentages of respondents who are satisfied with the purpose of using information in their organisation. The data show how satisfied the respondents were with the quality of the information that is available to them for the various specific purposes.

TABLE 6: Specific uses of information in organisations ($N = 219$).

Specific use	Applicable (%)	Not applicable (%)
To prepare report	89.5	10.5
Pass on to superior colleague	83.6	16.4
To prepare strategic plan	79.9	20.1
To prepare executive summary	72.1	27.9
To prepare presentation	71.7	28.3
Pass on to subordinate staff	69.4	30.6
Pass on to a client	50.7	49.3
For personal use	44.3	55.7

Note: Responses were 1 = applicable, 0 = not applicable.

TABLE 7: Purposes of using information ($N = 219$).

Information use purpose	Applicable (%)	Not applicable (%)
Company performance analysis	75.3	24.7
Consumer analysis	72.1	27.9
Supplier analysis	67.1	32.9
Local trend	63.5	36.5
Competitor analysis	58.4	41.6
Regional market opportunity	50.2	49.8
Global trend	49.3	50.7
Demographic analysis	47.5	52.5
Stock market analysis	46.6	53.4
Social analysis	43.4	56.6

Note: Responses were 1 = applicable, 0 = not applicable.

Table 8 shows that respondents are mostly satisfied with information they have acquired and used for understanding local trends (95.4%), regional (South West Nigeria) market opportunities (86.3%), consumer analysis (84.9%), social analysis (83.1%), competitor analysis (79.4%) and supplier analysis (77.1%).

Effective decision-making of respondents

Table 9 presents the percentages of respondents who agreed that the different managerial behaviours listed in the table truly reflect how they make decisions in their various positions in their organisations.

Based on Table 9, the items that best describe effective decision-making behaviour of the respondents among others include the following: I organise and store the information I have used for decision-making (89%); I ask for feedback on the intended effects of my decisions (84%); I search for available and relevant information within the organisation (77.2%); I search for available and relevant information outside the organisation (71.2%). These suggest that the managers are highly oriented towards organising, searching for and using available information and obtaining feedback

TABLE 8: Satisfaction with purpose of using information types ($N = 219$).

Information use purpose	Satisfied (%)	Not satisfied (%)
Local trends	95.4	4.6
Regional market opportunity	86.3	13.7
Consumer analysis	84.9	15.1
Social analysis	83.1	16.9
Competitor's analysis	79.4	20.6
Supplier analysis	77.1	22.9
Demographic analysis	76.7	23.3
Global trend	74.8	25.2
Stock market analysis	13.7	86.3
Company performance analysis	15.5	84.5

Note: Responses were 1 = satisfied, 0 = not satisfied.

TABLE 9: Managers' decision-making behaviours ($N = 219$).

Decision-making behaviours	True of me (%)	Not true of me (%)
I organise and store information I have used for decision-making	89.0	11.0
I ask for feedback on the intended effects of my decisions	84.0	16.0
I search for available and relevant information within the organisation	77.2	22.8
I search for available and relevant information outside the organisation	71.2	28.8
I spend much time collecting information for decision-making	68.0	32.0
I seek very many alternatives before selecting the ones I decide upon	63.9	36.1
I spend much time analysing information for decision-making	59.8	40.2
I ask for feedback on the unintended effects of my decisions	53.9	46.1
I worry a lot about the unintended effects of my decisions	48.9	51.1
I am able to make a decision quickly without spending too much time	46.6	53.4
I use more of guesses when making decision	30.1	69.9
I believe evaluation is a complex process, so I sometimes avoid it	29.2	71.8

Note: Responses were 1 = true of me, 0 = not true of me.

within their own organisations. However, only between 60 and under 70% of them agreed with the behaviour I spend much time collecting information for decision-making (68%), I seek very many alternatives before selecting the ones I decide upon (63.9%), I spend much time analysing information for decision-making (59.8%). These indicate that the managers do not spend much time searching for and evaluating information sources beyond what they are accustomed to in their organisations. Also, although a high majority of the managers (84%) ask for feedback in the *intended* effects of their decisions (item 2), much lower proportion of them agreed with I ask for feedback on the *unintended* effects of my decisions (53.9%) and I worry a lot about the unintended effects of my decisions (48.9%).

Test of hypothesis

Regression analysis was used to find out the strength of the predictive relationship between dependent and each of the independent (predictor) variables, each at the 5% level of significance.

Hypothesis one

H_{01} : There is no significant relationship between information identification and effective decision-making.

H_{11} : There is a significant relationship between information identification and effective decision-making.

Table 10 presents the results of regression analysis between information identification and effective decision-making.

The results in Table 10 show that $p < 0.05$, which indicates a significant relationship between information identification and effective decision-making ($B = 0.179, p = 0.047$). Therefore, the null hypothesis is rejected, and alternate hypothesis is accepted. However, information identification explained only 1.4% of the total variance of effective decision-making of respondents ($R^2 = 0.014$).

Hypothesis two

H_{02} : There is no significant relationship between information evaluation and effective decision-making.

H_{12} : There is a significant relationship between information evaluation and effective decision-making.

Table 11 presents the results of regression analysis between information evaluation and effective decision-making.

TABLE 10: Regression results of information identification and effective decision-making.

Predictor variable	Beta	t	Significance level
Information identification	0.179	2.000	0.047

Note: Dependent variable: Effective decision-making.

TABLE 11: Regression results of information evaluation and effective decision-making.

Predictor variable	Beta	t	Significance level
Information evaluation	0.422	2.346	0.020

Note: Dependent variable: Effective decision-making.

The results in Table 11 show that $p < 0.05$, which indicates a significant relationship between information evaluation and effective decision-making of respondents ($B = 0.422$, $p = 0.020$). Therefore, the null hypothesis is rejected, and alternate hypothesis accepted. However, information evaluation explained 2.0% of the total variance of effective decision-making of respondents ($R^2 = 0.020$).

Hypothesis three

H_{03} : There is no significant relationship between information use and effective decision-making.

H_1 : There is a significant relationship between information use and effective decision-making.

Table 12 presents the results of regression analysis between information use and effective decision-making.

The results in Table 12 shows that $p < 0.05$, which indicates a strong significant relationship between information use and effective decision-making of respondents ($B = 0.213$, $p = 0.000$). Therefore, the null hypothesis is rejected, and alternate hypothesis accepted. However, information use explained 6.2% of the total variance of effective decision-making of respondents ($R^2 = 0.062$).

Hypothesis four

H_{04} : There is no significant relationship between demographic attributes of respondents and effective decision-making.

H_1 : There is a significant relationship between demographic attributes of respondents and effective decision-making.

Table 13 presents the results of regression analysis between demographic attributes (age, gender, highest level of education, years of experience as a manager and management cadre) and effective decision-making.

The results in Table 13 show that $p > 0.05$. There is a negative but insignificant relationship between respondents whose ages are in the range 24 years to 29 years ($B = 1.057$, $p = 0.366$), 30 years – 34 years ($B = -1.848$, $p = 0.090$), 35 years – 39 years ($B = -0.989$, $p = 0.348$), 40 years – 44 years ($B = -0.720$, $p = 0.443$) and 50 years and above ($B = -1.305$, $p = 0.245$) with decision-making. Therefore, for age, the null hypothesis is accepted and the alternate hypothesis is rejected.

For gender, male respondents show a positive but insignificant relationship with reference to female respondents ($B = 0.602$, $p = 0.123$). Therefore, for gender, the null hypothesis is accepted, and alternate hypothesis is rejected.

For the highest educational level, with reference to respondents with doctoral degree, the results show that

TABLE 12: Regression results of information use and effective decision-making.

Predictor variable	Beta	t	Significance level
Information use	0.213	3.923	0.000

Note: Dependent variable: Effective decision-making.

$p > 0.05$. There is a negative and insignificant relationship between respondents whose highest educational qualification is OND ($B = -0.942$, $p = 0.572$) and HND ($B = -0.308$, $p = 0.833$), BSc ($B = -0.145$, $p = 0.917$) and MSc/MBA ($B = -0.677$, $p = 0.629$) and decision-making. Hence, for educational level, the null hypothesis is accepted and the alternate hypothesis is rejected.

For years of experience as a manager, Table 13 shows a negative and significant relationship between respondents with less than 3 years of managerial experience ($B = -2.596$, $p = 0.002$) and effective decision-making. Therefore, the null hypothesis is rejected and the alternate hypothesis is accepted. However, for respondents managerial experience of 3 years – 6 years ($B = 0.410$, $p = 0.585$) and 10 years and above ($B = 0.230$, $p = 0.786$) does not significantly predict effective decision-making. Hence, for these experience categories, the null hypothesis is accepted and the alternate hypothesis is rejected.

For management cadre, with reference to senior manager, the results show that $p < 0.05$, which indicates a positive and significant relationship between branch manager and effective decision-making ($B = 1.424$, $p = 0.016$). Therefore, for management cadre, the null hypothesis is rejected and the alternate hypothesis is accepted.

Nevertheless, despite these diverse results, Table 13 shows that the demographic attributes, taken together, explained 22.8% of the variation in effective decision-making ($R^2 = 0.228$).

Discussion

In the process of taking business decisions, managers need to identify, acquire and evaluate information from various sources. The information which they often identify and need cuts across economic, technological, political, socio-cultural and legal and

TABLE 13: Regression results of demographic attributes and effective decision-making of respondents.

Predictor variables	Beta	t	Significance level
Age (ref category = 45 years – 50 years)			
24–29	-1.057	-0.906	0.366
30–34	-1.848	-1.702	0.090
35–39	-0.989	-0.941	0.348
40–44	-0.720	-0.769	0.443
50 years and above	-1.304	-1.167	0.245
Gender (ref category = female)			
Male	-0.602	-1.547	0.123
Highest level of education (ref category = PhD)			
OND	0.942	0.565	0.572
HND	0.308	0.211	0.833
BSc	-0.145	-0.104	0.917
MSc	-0.667	-0.484	0.629
Years of experience as a manager (ref category = 7 years – 10 years)			
< 3	-2.596	-3.217	0.002
3–6	-0.410	-0.546	0.585
> 10	0.230	0.271	0.786
Management cadre (ref category = senior manager)			
Branch manager	0.992	2.111	0.036

Note: Dependent variable: Effective decision-making.

these are based on the components of their business environment. This study revealed that the major types of information required for effective decision-making of the respondents were industry information, government policies, economic development/forecast, competitor information, business news and trends, and information on the use of IT. These findings agree with Marshall (1994), who reported that managers and executive managers in five major financial institutions in Canada need industry information, company information, legal information and financial information in their corporate decision-making.

This study also reveals that managers often make use of records, meetings and discussions within their organisations in identifying and collecting information needed in making decisions. In actual fact, managers in business organisations can also source needed information from personal and impersonal sources (human, print and online) from outside their organisations when performing their functions. However, this study found out that that internal and organisationally approved information sources dominate the managers' sources of information, including organisational records, customers, superior managers, internal reports, subordinate managers, subordinate non-managerial staff and business associates. These findings concur with Weiss (1979), who asserted that insurance companies must utilise information and knowledge for business success and effective decision-making and reported from his study that organisational records, customers and subordinates are the greatest sources of their information. Almost similar is the finding of Ikoja-Odongo and Ocholla (2004), who reiterated that information has its own importance to the individuals who are working in managerial positions in organisations and identified company files, subordinate staffs and business associates as the most important sources of information used for decision-making. Popoola (2006) had also found out that colleagues, subordinate staff, customers and company files are highly utilised information sources in the decision-making of managers in large-scale manufacturing industries in Nigeria.

This study also found out that information is mostly used by the managers for preparation of reports, strategic plans, executive summaries and presentations. This finding appears contrary to the result of the study of Erwat and Fabunmi (2006), which revealed that use of information for personal purposes was considered as most important, while collection of information to pass to other persons was not considered as important. Other reasons managers make use of information in organisation, as found out in this study, are to analyse company performance, check consumer trends/patterns, supplier trends, local trends and competitor analysis.

Also, results from this study showed that managers are satisfied with the purpose of use of information, when being used for social analysis, consumer analysis, local trend, competitors' analysis and global trend.

Information is now considered to be an economic resource or corporate asset, whose value is on par with or possibly greater than that of other resources such as labour, material, capital

and machines. For this reason, managers in business organisations are under pressure to identify, acquire, evaluate and use good quality information to make effective decisions. This study found out that information used for decision-making, as agreed to by the highest proportions of the respondents, must be reliable/trustworthy, relevant, complete/adequate, up-to-date/current and accurate, with slightly lower proportions of them emphasising the timeliness, easy to obtain and easy to use attributes of the information. De Alwis and Higgins (2001) summarises similar good attributes of information in order to adequately inform decision-making, as accurate, timely, current, relevant, complete, interpretable, consistent representation, accessible, traceable and easy to use.

This study established that there is significant and positive relationship between information identification and effective decision-making of the respondents. This means that there is a direct relationship between information identification and effective decision-making of the respondents. Therefore, one can infer that the more the business managers in Nigerian industries identify information, the more effective the organisational decisions they make.

This study also found out a significant and positive relationship between information evaluation and effective decision-making of the respondents. This means information evaluation skill predicts effective decision-making of managers. Therefore, one can infer that the more the business managers in Nigerian industries are able to evaluate information comprehensively and effectively, the more they are effective in their decision-making.

This study also found a significant positive relationship between information use and effective decision-making of the respondents. Thus, one can deduce that the more the managers make use of information, the more effective they tend to be in their decision-making. Some previous studies had also revealed significant relationship between information utilisation and decision-making effectiveness of managers in Nigerian commercial banks (Oyewusi 2008; Popoola 2006).

Conclusion

Effective and efficient information identification, acquisition, evaluation and utilisation can be regarded as the basic skills needed to facilitate sound and effective decision-making by managers in organisations.

These skills are part of information literacy skills. Information literacy skills can generally be described as the ability of managers to take adequately informed decisions about the information that they need for their specific organisational responsibilities, thereby improving their own productivity and efficiency. Such skills are essential and must be continuously updated by managers for the highly dynamic, competitive, global and digital environments in which organisations operate today. Organisations need to help their managers in this, by investing in various innovative human resource capacity building programmes for their managers and promoting the use of such updated skills through challenging job descriptions and effective motivation and reward systems.

Recommendations

Based on the findings of this study, it is recommended that the management of organisations in Nigeria should periodically assess the information identification, evaluation and use skills of their managers and employees and invest strategically in ensuring that their managers acquire, update and use such skills effectively in their decision-making. In order to achieve this, information identification and evaluation training should be given periodically to their managers. Decision-making is really all about accessing and using good quality information from good quality information sources to improve organisational knowledge and using that knowledge to solve organisational problems and promote innovation. Previous studies have found out, as was also found out in this study, that managers often prefer to use internal or organisation-approved information sources, which means that organisations need to expand the scope of the information sources which their formal information systems acquire relevant and trustworthy information, so that their managers can comfortably use such information often. Finally, it is recommended that managers themselves should intensify their personal efforts to be more innovative in their search for and use of reliable information from diverse sources within and outside their organisations in their decision-making processes.

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Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

O.O. undertook the study as a Master of Information Science degree dissertation submitted to the Africa Regional Centre for Information Science, University of Ibadan, with M.T. as her supervisor. O.O.'s role included identifying the topic and conceptualizing the study; designing validating and administering the questionnaire data collection instrument; and performing data analyses for the purposes of the dissertation. M.T. reviewed various versions of the dissertation, and performed additional data restructuring, analyses, interpretations and discussion in order to

restructure the dissertation into a manuscript suitable for journal publication.

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