

A Measurement Model of Information Types Required by Lawyers for Task Performance

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Abstract— The need to perform certain tasks drives workers to look for information. Nonetheless, various information types are required for task performance depending on the kind of task. A confirmatory factor analysis of the information types by Bystrom and Jarvelin (1995) was carried out. Data was gathered via survey questionnaires distributed among lawyers in Lagos State, Nigeria. Findings show that the evaluation criteria for the reliability, validity, and model assessment were met. The result of the CFA also shows that the information types fits well as a second-order construct. There were no offending estimates and the fit measures were satisfied. It was therefore concluded that Information type is a second order factor, with three sub-constructs (Problem information, domain information, and problem-solving information).

Keywords: Information types, Information seeking, Information sources, Lawyers, Nigeria, Structural equation modeling, Confirmatory factor Analysis.

1 BACKGROUND

In the work environment, information is the key resource to workers' efficiency because it improves their productivity while carrying out their tasks. As a result, it is quite incontrovertible that appropriate and timely information informs better decisions. An individual with accurate information is likely to be empowered because his thoughts and actions will be appropriately guided. Thus, an informed person is self-confident, responsible and thinks critically when the need arises.

Librarians and information professionals have always made efforts to providing their clients with desired information on request. Researchers have also focused on identifying the information needs of various clients in order to satisfy them. This accounts for the indispensability of the role played by librarians since their target has always been ensuring clients' satisfaction through the provision of desired information and services. Nonetheless, clients' information needs can only be met if such information are specifically identified.

In relation to the legal profession, information is very important to the extent that its inadequacy or unavailability can lead to miscarriage of justice in the society. Lawyers need information in order to be able to represent and protect their clients' interests. As opined by [15] Makri (2008) the indispensability of information to lawyers in the litigation process is such that a lawyer can easily be outweighed by his/her colleague who has accurate information. Thus, winning a case or losing it significantly depends on a lawyer's access to accurate and timely information. Information also serves as a source of liberation because people with the right information are able to make the right decision. However, different kinds of information are needed by different people in different scenarios. Even in terms of the legal profession, the kind of information needed by a solicitor is quite different from that which is needed by an advocate in performing their specific tasks. This

suggests that information may only be useful to the extent of what it can be used for.

Consequently, the main objective of this research is to investigate the various kinds of information required by lawyers for their task performance. This is in the context of the classification of information types according to specific characteristics as observed in earlier literature [7] Bystrom and Jarvelin (1995). The subsequent parts of this paper include the literature review, conceptual framework, methodology, results, and conclusion in order.

2 LITERATURE REVIEW

2.1 Information and Information Types required by lawyers

Several attempts have been made by researchers to define information. While there may seem to be complexity in arriving at a proper definition of information, many agree upon the fact that it changes its user's status from being an "uninformed" to an "informed" person, thereby increasing his/her confidence. A major characteristic of information according to [10] Faibisoff and Ely (1976) is its ability to reduce uncertainty. Data existing in different sources such as books, journals, newspapers, computers, people, etc., will remain so until they are used by an individual to reduce uncertainty, that is, until an objective or purpose is achieved by using such information. Hence, human dependence on information is incontrovertible since it is an essential commodity that empowers people. It serves as a source of liberation because people with the right information are able to make the right decision. Professionals such as lawyers rely heavily on information for performing their work duties. Undoubtedly, this aids their preparation and presentation of their cases. Nonetheless, the need for information precedes its use. Information can only be appre-

ciated if it is used.

Since information is an abstract tool, it is usually expressed in terms of its carrier (information source). Specific information sources usually reflect certain kinds of information which may be required depending on the task at hand. A review of literature shows that lawyers need different kinds of information for diverse purposes or tasks. In a study conducted by [2] Adewale and Mansor (2014), it was found that lawyers' use of information sources relate to the kind of tasks they perform. [18] Otike and Mathews (2000) also found that the information needed by a lawyer depends on the legal need of his clients. [13] Howard, Lehmann, and Rood (2003) conducted interviews among three attorneys and found that the need to support their clients' interests informed the kind of information they need. [12] Haruna and Mabawonku (2001) identified nine information needs of lawyers and found that majority of the respondents (97.6%) needed information to know the most recent court decision, followed by the need to know the latest legislation (95.7%). Their findings can be likened to the need to keep abreast of development as found by [18] Otike and Mathews (2000). As found by [20] Tuhumwire and Okello-Obura (2010), the most important information needs of lawyers include law references (60%), update of court rules (60%), and the need to know the laws of other countries.

2.2 Conceptual framework

In this study, [5] Buckland's (1991) conceptualisation of information was adopted. Hence, information is viewed as either as a thing (if documented) or as knowledge (if the target is to obtain it). [6] Bystrom (2002) also suggests that conceptualising information as an abstract tool requires that information is expected to be carried by an information source. On that basis, information may also be categorised based on the types of information sources. In this addition, the [8] Bystrom and Jarvelin (1995) categorization of information was adopted. According to the authors, information types are classified as: Problem information, Domain information, and Problem-Solving information. These information types are explained below:

2.3 Problem Information

Problem information explains the characteristics, structures and requirements of the problem or task at hand. They are often available in documents in instances where the information is old [8] (Bystrom and Jarvelin, 1995). They are often obtainable in the problem (or task) surroundings. Problem information types are mostly fact oriented in the sense that they provide information relating to figures, names, events, etc [7] (Bystrom and Hansen, 2005). These information types were similarly identified by [13] Howard, et al. (2003) as item information need. Item information types are known and exact, e.g. police report. They are mostly presented in details and they give specific facts about a question. They are real or objective kinds of information since they present just the facts and nothing more. The temperature of a particular location for instance also falls under this category.

2.4 Domain Information

This comprises facts, laws, theories, and concepts available in the domain of the task in hand [8] (Bystrom and Jarvelin, 1995). Domain information types provide information that is universal in nature. They explain the principles, guidelines, and root causes of situations or events. In a nutshell, domain information types provide a "big picture" or worldview of events, situations or a phenomenon. This information types are usually published in journal articles and textbooks. And they can be applied to many tasks of similar types [7] (Bystrom and Hansen, 2005). [6] Bystrom (2002) described this as multi-task related information. They are similar to "subject" information described by [13] Howard, et al. (2003), since they are sought through information channels using keyword search.

2.5 Problem-solving Information

Problem-solving information gives a description of the way tasks or problem should be viewed and devised. They give insight into the useful problem and domain information types as well as how these information types can be applied to resolve such problem [8] (Bystrom and Jarvelin, 1995). They are instructional in nature and are useful for many tasks of similar nature [6] (Bystrom, 2002). Problem-solving information may explain the interpretations, implications and/or consequences of specific actions of a task performer. On this basis, problem-solving information types are usually found among knowledgeable and experienced people.

3 METHODOLOGY

Primary data gathered through survey questionnaires were used in this study. The questionnaire items were developed from literature [12] [20] (Haruna and Mabawonku, 2001; Tuhumwire and Okello-Obura, 2010). The questionnaire focused on the types of information required by lawyers for their task performance. The respondents were asked to indicate their extent of need of the various information types for their task performance based on a 5-point Likert Scale. For the purpose of coding, '1' indicates 'Not At All' while '5' indicates 'Extremely'.

The study respondents were lawyers who work in private law firms in Lagos State, Nigeria. According to [19] Owoeye (2011) most practising lawyers in Nigeria are based in Lagos State. Lagos State is located in the Southwest geopolitical zone, and it is the commercial nerve of Nigeria. It has the largest population and work force in the country. There are 20 Local Government Areas (LGA) and 37 Local Council Development Areas (LCDA) in the state. Ten Local Government Areas (LGAs) were randomly selected via lottery method [14] (Jeevanand, 2015) for the distribution of questionnaires. Thereafter, cluster sampling method was adopted to select law firms where questionnaires were distributed to lawyers. Cluster sampling is considered appropriate where getting the list of elements in a population is difficult [9] (Creswell, 2009). Out of the 450 questionnaires distributed, 333 among the 350 re-

turned were useful for the analysis. The data gathered was cleaned and analysed using statistical software. The SPSS was used for the Exploratory Factor Analysis (EFA) while the AMOS version 22 Software was used for the Confirmatory Factor Analysis.

4 RESULTS

4.1 Respondents' demographic profile

The demographic profile of respondents is presented in Table 1 below:

Table 1: Respondents' demographic profile

Demographic variable		N	%
Educational qualification	LLB/BL	212	63.7
	LLM	111	33.3
	PhD	10	3.0
Area of specialisation	Advocacy	27	8.1
	Soliciting	31	9.3
	Both	275	82.6
Gender	Female	119	35.7
	Male	214	64.3

As shown in the table, most lawyers (63.7%) hold Bachelor of Law degree. Those with Master degree are 33.3%, while the remaining 3% have PhD. It may be expected that majority of lawyers hold a Bachelor's degree as this is a reflection of the fact that the bachelor degree is the basic requirement for the practise of Law in Nigeria [3] (Ali, 2012). Additional degrees such as Master may be added advantage to them but not a prerequisite. In terms of their specialisation, majority of lawyers (82.6%) practise as both advocates and solicitors, 9.3% practise as solicitors, while 8.1% practise as advocates. Again, this finding reflects the state of the legal profession of Nigeria. A lawyer is registered as an advocate and solicitor upon completion of training at the Nigerian Law School [3] (Ali, 2012) except he/she chooses to specialise on either soliciting or advocating. Regarding the gender of the respondents, most of them (64.3%) are males while 33.7% are females. Expectedly, the population of male lawyers is higher than that of the female lawyers. This can be attributed to the fact that majority of the Nigerian Labour Force are males as noted by [17] Okurame (2008).

4.2 Exploratory Factor Analysis (EFA)

The data was subjected to EFA after cleaning and assessment for normality. A principal component analysis based on varimax rotation with Kaiser Normalization and Eigen value of '1' was conducted. The KMO score of 0.826 indicate that the sample is adequate and the Barlett's test of sphericity is also statistically significant at 0.000 which implies that the matrix is not

an identity matrix. Some problematic items were deleted, thereafter, the results obtained showed a rotated component matrix with three variables: Problem Information, Domain Information, and Problem-Solving Information. The three variables explain a total variance of over 80 percent. The output of the rotated component matrix EFA is shown in Table 2.

Table2: Rotated Component Matrix^a

	Component		
	1	2	3
ProbInfo1		.883	
ProbInfo2		.828	
DomainInfo1	.776		
DomainInfo2	.850		
DomainInfo3	.833		
StrategInfo2			.634
StrategInfo1			.915

Subsequent to the EFA, an evaluation of the measurement model was done to assess the construct reliability as well as the convergent and divergent validity [16] (Mueller and Hancock, 2008). In order to assess the fitness of the measurement model, some suggested criteria must be met [11], [1], [4] (Hair et al., 2006; Adewale, 2014; and Awang, 2015). These indices include the Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), p-value, and Normed chi-square (cmin/df). The output of the measurement model is presented in Tables 3 and 4 below.

Table 3 Findings from the Measurement Model Analysis

Criteria	Threshold	Model output
CFI	> 0.90	0.984
Normed chi-square	Cmin/df < 5	1.562
TLI	> 0.90	0.970
p-value	> 0.05	0.103
RMSEA	> 0.08	0.066

Table 4 Convergent and divergent validity

Criteria	CR	AVE	MSV
Threshold	> 0.7	CR> AVE> 0.5	AVE> MSV
Problem Information	0.783	0.656	0.560
DomainInformation	0.851	0.657	0.560
Problem-solving Information	0.730	0.581	0.371

CR= Construct Reliability, AVE= Average Variance Extracted, MSV=Maximum Shared Variance

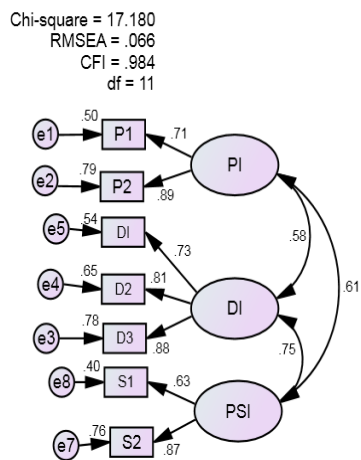


Fig. 1 Information types measurement model

As shown in Tables 3 and 4, it can be observed that the various fit indices criteria for the measurement model were satisfied. The measurement model shows that the constructs are reliable with CR values above 0.7 for the three sub-constructs. The divergent and convergent validity criteria were also met as AVE values of the sub-constructs are greater than the 0.5 threshold and their MSV values are also less than their respective AVEs. The p-value of 0.103 also satisfies the statistical significance criteria of the model.

4.3 Confirmatory Factor Analysis (CFA)

The CFA was carried out to estimate the effect of the main construct (Information types) on its underlying sub-constructs (Problem Information, Domain Information, and Problem-solving Information).

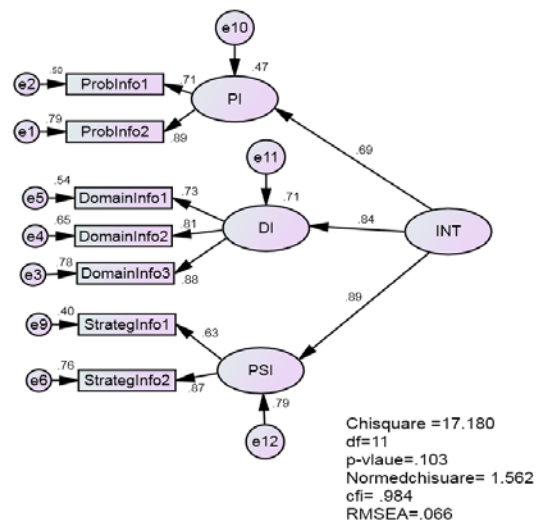


Fig 3: Confirmatory Factor Analysis

The result indicates that Information types load well on its underlying sub-constructs. The factor loading of Information types on Problem Information (PI), Domain information (DI), and Problem-solving Information (PSI) are .69, .84 and .89 respectively. In addition, the R² of the sub-constructs are .79, .71 and .41 for Problem-solving Information, Domain Information, and Problem information respectively, which is an indication that the contribution of Information types on its sub-constructs is good. As such, the proposition that information type is comprised of three sub-constructs is supported. A further assessment of the path coefficients of information types on its sub-constructs suggests that the paths are statistically significant. From Table 4, it can be observed that the effects of Information type on its sub-constructs (Domain information, Problem information and Problem-solving Information) are statistically significant. Hence, the regression weight of Information types in the prediction of its sub-constructs is significantly different from zero at the 0.001 level (two tailed).

Table 4: Regression Path Coefficient

			Estimate	S.E	CR	P	Result
PI	<--	INT	0.751	.110	6.820	.001	Sig
DI	<--	INT	0.976	.117	8.312	.001	Sig
PSI	<--	INT	0.971	.113	8.564	.001	Sig

Sig-Significant

5. Discussion and Conclusion

This paper provides evidence to the proposition that information has three dimensions. The paper contends that treating information types as a second order constructs with three sub-constructs (problem information, domain information, and problem-solving information) gives a robust model. It can be observed that the combination of the three dimensions gives a clearer picture of the specific information types needed by lawyers for their tasks. With reference to the factor loadings, it was observed that Information Types loaded highest on Problem-Solving information (0.89) which is an indication that the Problem-Solving Information is mostly desired by lawyers for their task performance. Since the sources of problem information are majorly humans (such as experts, librarians, learned colleagues, other professionals, etc), it implies that perhaps lawyers consult these human sources for the strategies, procedures, or other kinds of information that will be required for carrying out their tasks. In addition, the factor loading of the domain information type (.84) is also very high. Hence, lawyers need the domain information to a large extent for their task performance. Since the domain information (text books, Case laws, journals, etc.) are mainly found in the library or personal collections of the lawyers, it is therefore an awakening call for librarians and law libraries on the importance of updating and improving the accessibility of their collections. Law libraries as main providers of law collections may need to intensify efforts in making sure that their users get the desired information when needed. As middlemen in the information seeking process, the contributions of librarians too cannot be overemphasised. Their role as information providers goes a long way in explaining why their services in the libraries are crucial a successful information seeking process. The third but not the least important information type is the problem information, which has a loading of .69. Since Problem information are first-hand information which are task specific, their need for task performance may not be as high as the other two information types because they are task-specific. This implies that the problem information type required for a particular task may not be useful for performing another task. In view of this, they may be referred to as "one-off" kind of information and this further justifies why they are least required for task performance. Having met all evaluation criteria, it can therefore be concluded that information types fits well as a second-order construct with three sub-constructs.

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