Technical Intelligence and Organizational Effectiveness of Foods and Beverages Manufacturing Firms in South-South, Nigeria

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ABSTRACT

Being technically intelligent plays a great role in determining the level of organizational effectiveness in food and beverages manufacturing firms in Nigeria. The study looks at organizational effectiveness from goal attainment, Strategic Constituency satisfaction and systems alignment and went on to explain technical intelligence. The purpose for the study is to evaluate the influence of technical intelligence on organizational effectiveness. To solve the problems of social loafing and the problem of getting quality information, the quantitative method of data analysis was adopted. Both primary and secondary sources of data were used for the study. Survey questionnaire were used to gather data for the study. The target population of this study is forty seven (47) Food and Beverages firms in the South-South, Nigeria. Pearson Product Moment Correlation was applied to test the level of significance among the study variables. Finally the analysis was aided with SPSS version 21.0. The study found that an effective organization is one that is highly smart in applying its technical intelligence. Based on the findings, the study concludes that technical intelligence has a thoughtful influence on organizational effectiveness. Finally, the study recommend that managers should promote organizational effectiveness processes or behaviour through the building of prerequisite values for ethical and legal technical intelligence strategies that will relates with the overall corporate and business-level strategies.

KEYWORDS: technical intelligence, goal attainment, systems alignment, strategic constituency approach

1. INTRODUCTION

The issue of organization effectiveness is one of the most complex and least tackled problems among food and beverages manufacturing firms in South-South, Nigeria. Many difficulties arise with the attempts for food and beverages manufacturing firms to define the concept of effectiveness satisfactorily. Some of these difficulties stem from the closeness with which the concept itself is associated with the question of values. Other problems arise when researchers choose a priori criteria of effectiveness that seem intuitively right, without trying systematically to place them within a consistent and broader framework (Kirkman, Gibson, & Shapiro, 2001) . In effect, specific criteria that might be proper in one case may be entirely inappropriate to other organizations. Hence, the question that arises is whether it is possible to develop a definition of organizational effectiveness and to derive criteria that are applicable across organizations and that can be meaningfully placed within a general conceptual framework?

Martz (2008) suggested that an effective organization is one that shows a large degree of appropriateness and adaptability or compromise between its elements. This concept is related to issues such as the ability of food and beverages firms to access and absorb resources and consequently achieve its aims (Federman, 2006). Furthermore, organizational effectiveness is seen as the extent to which an organization as a social system, given certain resources and means, fulfills its objectives without incapacitating its means and resources and without placing undue strain upon its members. McCann (2004) saw organizational effectiveness as the

criterion of the organization's successful fulfillment of their purposes through core strategies and models.

Traditionally however, in the study of industrial organizations, effectiveness has been viewed and operationalized mainly in terms of productivity. In this connection, Thorndike cited in Baruh&Ramalho, (2006) has noted a general tendency on the part of personnel and industrial psychologists to accept organizational productivity, net profit, the extent to which the organization accomplishes its various missions, and the success of the organization in maintaining or expanding itself as indicators for effectiveness. In literature however, there is not a single model of organizational effectiveness to fit all organizations. Balduck and Buelens (2008) say that effectiveness in organizations revolves round the system resource approach, the goal approach, the strategic constituency approach and the internal process approach. Hence, the goal, strategic constituency and systems alignment approach is adopted for this report.

On the other hand, there have been a lot of advocacy for organizations to be technically intelligence. These advocates are working tirelessly to get business to recognize the existence of the externally- oriented intelligence gathering process that gives competitive advantages to firms in the same industry. According to McGonagle&Vella (2002) technical intelligence consists of the use of legally and ethically identified sources to develop data on competition, competitors, environmental conditions, trends and scenarios and the transformation, by analysis, of that data into useable information that can support better business decisions. Viviers, Saayman, & Muller (2005) define intelligence as the active use of information to guide decision making in order to reach the goals set by an organization. The business practice of technical intelligence to them is the function of turning information into intelligence (Viviers*et al.,* 2005).

Despite the increase in interest for the application of technical intelligence to strategic process and the subsequent determination of what an effective

organization is, critical gaps still emerge in literature. As there is little empirical work linking the impact of a firm's technical intelligence activities on organizational effectiveness in food and beverages manufacturing firms in Nigeria. Most literature addressing this issue has been either anecdotal and/or case-based research in the context of the developed nations of the world. Thus, this study explores the relationship between technical intelligence and organizational effectiveness of foods and beverages manufacturing firms in south-south, Nigeria.

The problem that necessitates this study is the prevailing challenges of social loafing among the different departments and staff of the organization that threatens the effectiveness of most players in the foods and beverages industry in South-South, Nigeria. As a result of this unbridled issues, Kelikume (2015) said that profit margins are thinning out and foods and beverages manufacturing firms operations are being downsized along with its attendant staff redundancy and job losses. The purpose of the study is to evaluate the impact of technical intelligence on organizational effectiveness. And the specific objective of the study was to determine the influence of technical intelligence on goal attainment, systems alignment and strategic constituency satisfaction approach of foods and beverages manufacturing firms in South-South, Nigeria. In carrying out the study, three research hypotheses were stated, which include:

HO_1: There is no significant relationship between technical intelligence and goal attainment in foods and beverages manufacturing firms in South-South, Nigeria.

HO_2: There is no significant relationship between technical intelligence and systems alignments in foods and beverages manufacturing firms in South-South, Nigeria.

HO_3: There is no significant relationship between technical intelligence and Strategic constituency satisfaction in foods and beverages manufacturing firms in South-South, Nigeria.

Conceptual Framework
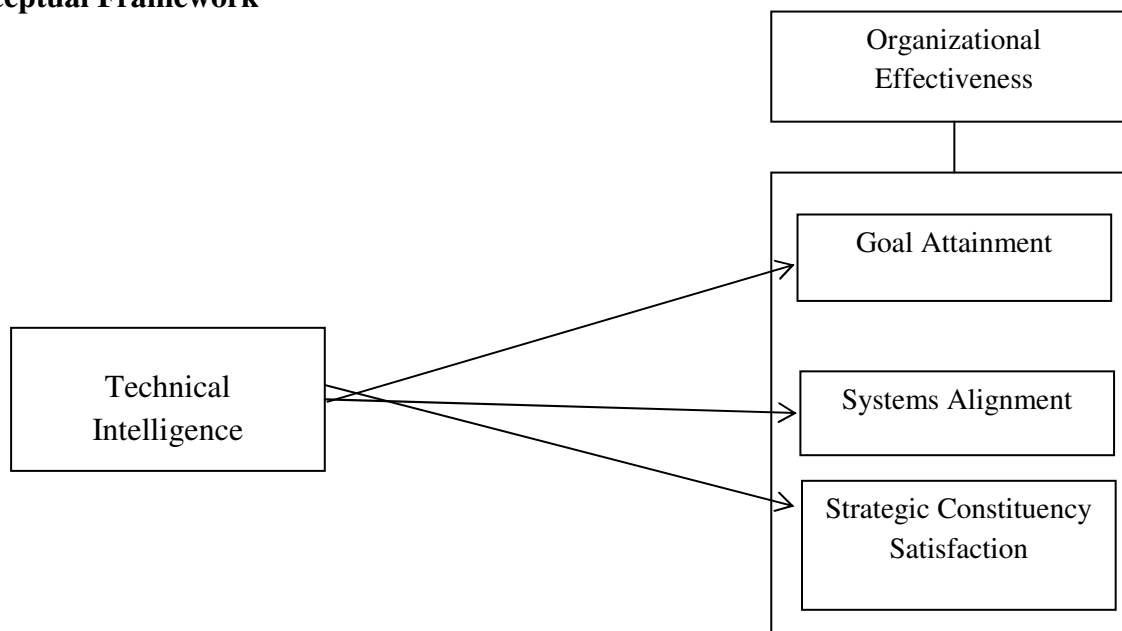
Researcher Desk, 2021
Figure 1.1: Conceptual framework

2. Literature Review

2.1. Theoretical Foundation

In search of theories of technical intelligence and organizational effectiveness; the resource based view theory was adopted for this study. The resource base view suggests that the resources possessed, deployed and used by the organization are really more important than industry structure. The resource-based view (RBV) theory is used to determine the strategic resources a firm can exploit to achieve sustainable competitive advantage (Beckes, &Coan, 2011).Food and beverages companies' effectiveness is dependent on the resources in terms of both human and capital resources that an organization has.

Organizational Effectiveness

Jaharkanti (2014) organizational effectiveness points towards effective, prudent and strategic use of all the organizational resources, namely, human, financial and technological resources for creating competitive advantage. Organizational effectiveness also calls for creating sustainable growth and development by taking care of not only the share holders' expectations but also the expectations of other stake holders. It also means that management takes the right ethical decisions in the interest of all the stake holders. Organizational effectiveness can further be defined as the efficiency with which an association is able to meet its objectives. This means an organization that produces a desired effect or an organization that is productive without waste (Jorge Morales Pedraz, 2014).

Sutherland (2009) understanding a company's level of organizational effectiveness is important for several reasons. It serves as a check-in to see how well systems alignments are meeting an initial vision, it provides investors, donors, or employees with an idea of the company's strengths, and it highlights areas of ineffectiveness that can be the focus of improvements. In many cases, a business' success or failure cannot be measured by financial performance alone, this is because even a company that is currently making a profit may be ineffective if it is failing to meet the core values of its mission statement, attract and retain talented workers, and plan for the next generation of projects. Although looking at effectiveness completely is still impossible due to the disagreement in effectiveness indicators, for this article we looked at organizational effectiveness from goal attainment, Strategic Constituency Approach, and systems alignment.

System Alignment

The systems alignment pays attention to the transformation process and is dedicated to seeing the extent that resources are officially used to render services or produce goods (Schermerhorn *et.al.,* 2004). The systems approach to effectiveness views the organization as an open system whereby the organization acquires inputs, engages in transformation processes, and generates outputs. Attracting required resources and maintaining a harmonious relationship with the environment is the main issue of the system theory (Balduck& Baleens, 2009). A systems approach to organizational effectiveness assumes that the organization is composed of interrelated subsystems. If any of these sub-systems performs inadequately, it will affect the performance of the whole system.

Strategic Constituency satisfaction

It deals with the effect of the organization on the main stakeholders and their interests. Based on this approach, effectiveness refers to the minimal satisfaction of all of the strategic constituencies of the organization. Strategic constituency involves all the people that are somehow connected to the organization. These people may have different roles such as the users of the services or products of the organization, the resource providers, and the facilitators of the organization's output, the main supporters and the dependents of the organization. This approach assumes an exhaustive attitude toward effectiveness and evaluates the factors both in the environment and within the organization (Ashraf &Kadir, 2012).

Goals Attainment

The first extensively used approach in organizational effectiveness is the goal approach. Its focus is on the output to figure out the essential operating objectives like profit, innovation and finally product quality (Schermerhorn, Osborn, & R. Osborn, 2004). There are some basic assumptions for the goal approach. One of them is that there should be a general agreement on the specific goals and the people involved should feel committed to fulfilling them. The next assumption is that the number of goals is limited and achieving them requires certain indispensable resources (Robbins, 2003). One of the criticisms of the goal-attainment approach is that it does not consider the political or power-control nature of organizations and how they choose goals.

2.2. Technical Intelligence

Technical intelligence activities enable a firm to respond fast to threats and to identify the opportunities which result from technical and scientific development. Technical intelligence provide information about the methods and processes used by the competitors, their dependence on outside technology, patents or new technology acquired, the capabilities of the competitors' research and development staff. The Society of Competitive Intelligence Professionals (SCIP 2006) defines technical intelligence as "the process focused on monitoring the competitive and technical environment of an organization for the purpose of better decision making by high and middle level executives in the areas of marketing, product design, research and development (R&D), which can be used from investment tactics to long-term business strategies". Technical intelligence comprises a continuous and systematic process that implies the legal and ethical collection of information, analysis and production of actionable results for the strategic planning process and controlled diffusion of main findings (Hefti 2003).

Technical Intelligence and Organizational Effectiveness

HO$_1$: There is no significant relationship between technical intelligence and goal attainment in foods and beverages manufacturing firms in South-South, Nigeria.

According to Tanev, *et.al.,*(2008) in his study on examining the relationship between the number of technological intelligence (TI) information topics used by small Canadian firms and their innovation performance, measured by the number of newly launched products, processes and services. The study found a strong relationship between technological intelligence gathering and innovation performance. New processes, new methods and technologies assist firms to identify new opportunities in the market and exploit them by providing new products faster than their competitors (Chen, Zhu, &Xie, 2004; Paiva& Goncalo, 2008).

HO$_2$: There is no significant relationship between technical intelligence and systems alignments in Foods and Beverages manufacturing firms in South-South, Nigeria.

Also, new technological solutions can lead a firm to obtain competitive advantage in virtue of technology leadership and offering differentiated products beyond existing ones, which can lead to superior performance in marketplace (Hamel &Prahalad, 1994). Firms with superior technological and infrastructure competencies tend to be more innovative and thus perform at high levels. Most importantly, utilizing new technologies can change the way intelligence is gathered and disseminated throughout the firm. So, new technologies could even positively affect competitive performance. It is clear that applying appropriate technologies could not be provided without precise analyses of technology trend and its cost and benefit.

HO$_3$: There is no significant relationship between technical intelligence and Strategic Constituency satisfaction in Foods and Beverages manufacturing firms in South-South, Nigeria.

Dautzenberg&Reger (2010) study entrepreneurial team characteristics and success of new technology-based firms in Germany; they examine commonalities and differences between different types of team formation regarding team size and gender in new technology-based firms in Germany. By concentrating on a sample of 1,834 firms in very-high-technology and high-technology sector and

technology-based services. Apart from descriptive statistics which was applied for the study, the subdivided the groups into temporal cohorts in order to analyse differences regarding the potential team formation impact on firm success and firm characteristics. Based on this the study found by disclosing that team heterogeneity in terms of gender, size and educational level has little impact on firm success.

3. Methods

The research dessign adopted in this study is the survey research design. The target population of this study is forty seven (47) Food and Beverages firms in the South-South, Nigeria.Primary and secondary data source were used to generate data for the study. The information collected from the questionnaire were summarized in their groups and percentage were used to analyses the data, also inferential statistical tool of

Pearson Product Moment Correlation was applied to test the level of significance among variables. Finally the analysis was aided with SPSS version 21.0.

The secondary data analysis was carried out using the Pearson product moment correlation tool at a 95% confidence interval. Specifically, the tests cover hypotheses HO_1 to HO_3 which were bivariate and all stated in the null form. The 0.05 significance level is adopted as criterion for the probability of either accepting the null hypotheses at (p>0.05) or rejecting the null hypotheses at (p<0.05). In testing the hypotheses one to three, the following rules were upheld in accepting or rejecting our alternate hypotheses; all the coefficient values that indicate levels of significance (or) as calculated using SPSS were accepted and therefore our alternate hypotheses rejected; when no significance is indicated in the coefficient r value, we reject our alternate hypotheses.

3.1. Findings
Result and Frequency Analysis

Table 1: Descriptive Statistics for organizational effectiveness

	N	Minimum	Maximum	Mean	Std. Deviation
Goal attainment	121	1.00	5.00	3.036	1.3742
Systems alignment	121	1.00	5.00	3.383	1.3240
Strategic constituency	121	1.67	5.00	3.333	1.1255
Valid N (listwise)	121				

SPSS 21.0 data Output, 2021

Table 1 above illustrates the descriptive statistics for organizational effectiveness of Foods and Beverages manufacturing firms in South-South, Nigeria with goal attainment with a mean score of 3.036, systems alignment with a mean score of 3.383 and strategic constituency approach with a mean score of 3.333 indicates that most of the respondents were on the moderate range of the measurement scale.

Relationship between Technical Intelligence and Organizational Effectiveness

Table 2 shows the result of correlation matrix obtained for technical intelligence and measures of organizational effectiveness (goal attainment, systems alignment and strategic constituency approach). Also displayed in the Table 2 is the statistical test of significance (p - value), which enable us to be able to answer our research question and specify our findings on the study population. Based on the data in table 2 with the r- value of 0.959, the study found that technical intelligence has a high moderate and positive influence on goal attainment. If a firm is technically aware of changes in the environment, such a firm will be able to achieve its goals without any form of problems. Based on the data in table 2 with the r- value of 0.941, the study found that technical intelligence has a highly moderate and positive influence on systems alignment. With this assertion, technical changes within the firm promote the extent effectiveness that food and beverages firm have. Hence, if food and beverages firms can apply modern trends in technology, the will achieve high level of systems alignment. Based on the data in table 2 with the r- value of 0.884, the study found that technical intelligence has a moderately and positive influence on strategic constituency satisfaction.

Table 2 Correlation Matrix for Technical Intelligence and organizational effectiveness

			Technical intelligence	Goal attainment	Systems alignment	Strategic constituency satisfaction
		Correlation Coefficient	1.000	.959**	.941**	.884**
	Technical intelligence	Sig. (2-tailed)	.	.000	.000	.000
Spearman's rho		N	121	121	121	121

	Goal attainment	Correlation Coefficient	.959**	1.000	.968**	.882**
		Sig. (2-tailed)	.000	.	.000	.000
Spearman's rho		N	121	121	121	121

	Systems alignment	Correlation Coefficient	.941**	.968	1.000	.851**
		Sig. (2-tailed)	.000	.000	.	.000
Spearman's rho		N	121	121	121	121

	Strategic constituency satisfaction	Correlation Coefficient	.884**	.882	.851**	1.000
		Sig. (2-tailed)	.000	.000	.	.000
Spearman's rho		N	121	121	121	121

**. Correlation is significant at the 0.01 level (2-tailed).
SPSS 21.0 data Output, 2021

Table 2 illustrates the test for the three previously postulated bivariate hypothetical statements. The results show that for hypothesis one which says that there is no significant relationship technical intelligence and goal attainment at r = 0.959 and p = 0.000 < 0.01, hypothesis two which says there is no significant relationship between technical intelligence and systems alignment at r = 0.941 and p = 0.000 < 0.01 and hypothesis three which says that there is no significant relationship between technical intelligence and strategic constituency approach at r = 0.884 and p =0.000 < 0.01. Therefore based on the results illustrated, all previous bivariate null hypothetical statements are hereby rejected as the study finds that:

H_1: There is a significant relationship between technical intelligence and organizational effectiveness of Foods and Beverages manufacturing firms in Nigeria.

H_2: There is a significant relationship between technical intelligence and organizational effectiveness of Foods and Beverages manufacturing firms in Nigeria

H_3: There is a significant relationship between technical intelligence and organizational effectiveness of Foods and Beverages manufacturing firms in Nigeria

Discussion of Findings
The Food and Beverages firms in South-South, Nigeria are operating in a dynamic and turbulent environment which has made them to expand on their services and borders with the motive of searching for market, resources and achievement of efficiency. This agrees with EssarTelcom (YU) Limited (Mutua, 2010) who noted that to cope with the level of competition, firms adopted strategic actions which enabled market penetration; specifically,

differentiation and innovation for products. The study found that the players in the market had introduced cheaper but quality handsets that met the needs of the lower end of the segmented market. The firm was found to have used various technical intelligence practices to gain understanding of competitor's future moves, analysis of competitor's strategies, and analysis of industry players 'capability.

The findings of this study agrees with the views of Wright, Fleisher and Madden (2008) that examined the characteristics of competitive intelligence practice in R&D driven firms in the United Kingdom pharmaceutical industry. The study found that the state of competitive intelligence practice in the industry was both fragmented and embryonic. The background of those practicing competitive intelligence were found to have come largely from marketing, information and technology, technology and R&D. The sources and analytical tools most used by practitioners were customers, suppliers and distributors. The study found that the views of both senior management and other department heads on the contribution of competitive intelligence made to the overall performance were mixed or inconclusive.

Also Dautzenberg&Reger (2010) study entrepreneurial team characteristics and success of new technology-based firms in Germany; they examine commonalities and differences between different types of team formation regarding team size and gender in new technology-based firms in Germany. By concentrating on a sample of 1,834 firms in very-high-technology and high-technology sector and technology-based services. Apart from descriptive statistics which was applied for the study, the subdivided the groups into temporal cohorts in order to analyse differences regarding the potential

team formation impact on firm success and firm characteristics. Based on this the study found by disclosing that team heterogeneity in terms of gender, size and educational level has little impact on firm success.

According to Schuck (2015), the adoption of technology can be understood as a complex interaction between several factors, including characteristics of the technology, organizational culture, and features of the larger social-structural environment. Technological advances in recent years have changed the nature of policing so significantly that many methods and tools from just a decade ago have become antiquated and incompatible with current technology (Goodison, Davis, & Jackson, 2015). Some of these advances include location-monitoring devices for the tracking of high-rate offenders, predictive analytics and crime mapping software for the deployment of officers into locations that cause or are likely to cause crime, crime scene technology that enhances the collection and processing of evidence, and interoperable Web-based and other communication devices that facilitate connections between police and the communities they serve.

4. Conclusion
From the data analysis and research findings, the study concludes that a significant positive relationship between technical intelligence and organizational effectiveness. Foods and Beverages firms need to demonstrates and hold on to technical intelligence as this improve the level of organizational effectiveness. Firms need to have better strategies for being effective and ensuring the effective utilization of information. Although intelligence gathering is the foremost of all organization, technical intelligence for Foods and Beverages firms is not yet at its best, and there is much need and expectations from stakeholders, shareholders and employees to ensure organizational effectiveness or better performance.

4.1. Recommendations
From the foregoing findings and conclusions, the study recommends that Food and Beverages firms in South-South, Nigeria should ensure that technical intelligence strategies should be clearly linked to the corporate strategic objectives such that innovative strategy will begin with the corporate goal in mind. Also, Foods and Beverages manufacturing firms should focus more on sourcing right and explore creative ways of cost management and value addition as this will enhance their effectiveness. Finally, special attention should also be paid to the drivers of competitive behaviour such as awareness, motivation and capability.

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