COMPETITIVE INTELLIGENCE AND PRODUCT DEVELOPMENT IN SELECTED PHARMACEUTICAL FIRMS IN ANAMBRA STATE OF NIGERIA

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ABSTRACT
In today's dynamic business environment, pharmaceutical firms are focusing their strategies on product development. For a product to secure market acceptance it must meet customers' needs. Competitive intelligence (CI) equips organisations with the necessary information and knowledge needed for product development. With new and unique insights gained from CI, organisations are able to develop new or improve existing products that add value to customers.This study therefore, examined the influence of Competitive intelligence on Product Development of Selected Pharmaceutical Firms in Anambra State. To achieve this objective, a model was specified and competitive intelligence diffused into sub variables of Competitive risks, Core assumptions, Competitor threats, Marketplace opportunities, and Key Vulnerabilities. The study adopted descriptive research design. Data were obtained from primary source, and analysed using Principal Component Analysis and Multiple Regression Analysis. The result of the analysis revealed a significant relationship between competitive intelligence and product development of selected pharmaceutical firms. From the findings, it was concluded that the role of Competitive Intelligence on product and service innovation is to provide strategic information that will guide pharmaceutical firms in producing valuable products that meet customers' needs. The study recommended among other things that for pharmaceutical firms to increase their performance, they should leveraged on useful information gathered in their environment to engage not only in new product development but also in constantly making relevant modifications to their existing product offerings.

Key Words: Business Environment, Competitive Intelligence, Product Development, and Strategic Information

Introduction

Globally, business environment has become increasingly uncertain and unprecedented due to fierce competition with shorter product life cycles, and dynamic requirement of customers in terms of price, specifications, quality, quantity and delivery (Ganguly, Nilchiani, & Farr, 2009). The trend has been strengthened through fundamental developments in communication and information technologies. The consequences of these activities and host of others are an increasing need and pressure for efficiency, productivity and competitiveness in organisations. For an organization to survive and remain competitive in such an aggressive environment, a better understanding and knowledge of the competitive forces that reshape the behaviour of the environment is imperative. Karim (2011) agrees that knowledge is the main source of competitive advantage. Organisations are using information to expand and maintain competitive advantage in the current information age in which knowledge is power (Haag, Cummings & Philips, 2007). Ishikawa and Nakagawa (2013) emphasize that those organisations that can understand their environment, their competitors and establish competitive management strategies will win in this rapidly globalized information society. Thus, having access to information and knowledge of the environment, and application of the intelligent information are essential elements for organisational survival. Competitive intelligence (CI) is the acquisition and use of knowledge and information about competitors, customers and suppliers to

support decision making process that will enhance competitiveness of the organization (Anica and Cucui, 2009).

CI involves legal and ethical methods of collecting and analyzing environmental data and information relating to competitors, customers, suppliers, industry and market trends and future behavioural patterns for improved strategic decisions and actions (Fleisher, 2008). Du Toit (2009) argued that CI is conceptualized as a process of monitoring the competitive environment, identifying opportunities and threats in the industry with the aim of providing actionable intelligence that will result to competitive advantage. Efficient CI activities can help an organisation to assess its strengths and weaknesses in relation to its competitors, and consequently plan ahead of competitors' moves (Peltoniemi & Vuori 2008). By analysing the capabilities, vulnerabilities, intentions and moves of competitors, CI allows an enterprise to anticipate market developments proactively rather than merely react to them. This in turn enables the enterprise to remain competitive by improving its strategic decisions and performing better than its competitors (Johns & Van Doren 2010).

Competitive intelligence supports competitive advantage and better organization performance by permitting product and service innovation, market segmentation and new market development (Porter, 1980). Product and service innovation process cannot be successful without information regarding the needs and requirements of customers whom the innovated product or service will serve. Such information is crucial in determining the nature of the new product and service that will provide a greater value than the one provided in the past and the one provided by competitors. Organisation that fails to modify its products or services to suit current and prospective consumers' taste may be surpassed in terms of market demand and sales by competitors who identify such need to constantly apply changes that improve their products and make them current and relevant in the market. Organisations can use CI for such reasons as assessing a competitor's strategies, defining the customers' requirement, discovering and evaluating trends in the industry or identifying emerging new opportunities in the marketplace and accordingly offered innovative products and services to that effect (Gabber, 2007).

The practice of CI has become more critical in pharmaceutical industry as competitive intensity in the industry has increased owing to complex technology, product availability and variety, strict regulations, and consumer sophistication. This industry is characterized by long development cycle and high expenditure in product development. Hence, any firm that produces new drug needs time to recover their investments before generic drugs enter into the market. More specifically, the pharmaceutical industry is highly complex since it depends on Research & Development (R&D) for survival. The cost of the R&D in this sector is huge and the risk of "no success" is high. However, the successful development of a new drug can generate abnormal profit for a period. Thus, pharmaceutical firms must devote greater attention in obtaining information about customers, products, competitors and the environment for effective strategic decision (Ettorre, 1995). Without the CI information, a pharmaceutical firm may miss market opportunities, ignore competitive threats, or produce products that fail to add value to consumers.

Statement of the Problem

In recent years, business organisations are witnessing hyper competition, and that of pharmaceutical industry is not an exception. The pharmaceutical industry is a complex, highly regulated and technical industry where the ability to outperform competitors and to achieve above industry average lies in the pursuit and execution of appropriate competitive strategy (Yoo, Lemak & Choi, 2006) and in most cases product innovation. The successful development of a new drug has been identify as major source of competitive advantage in pharmaceutical industry as it increases sales and overall performance of the firm (EFPIA, 2010). However, each new drug that enters the pharmaceutical market is an outcome of long, risky and very expensive R&D process.

Another complex dimension to the competitive trend in pharmaceutical industry is the nature of competition and partnership. Sometimes firms may enter into partnership with their rival to undertake expensive research programme. During the programme period, they may be confronted to divulge some strategic information. Apart from this, pharmaceutical industry as a highly regulated industry is required to disclose virtually all information concerning them to the public. As such, they always face with decision of how much information to publish or keep private because if they publish information sooner than they should, competitors may respond with new products, or even take pre-emptive action against them (Sawka & Hohhof, 2008). Therefore, the main problem facing pharmaceutical firms is how to protect their

organisations against environment of unguarded information, and at the same time gather and analyze information about competitors, products, customers, suppliers, technologies, potential business relationships, and other environmental forces with the aim of providing actionable intelligence to secure competitive edge.

Objective of the Study

The broad objective of this study was to examine the influence of competitive intelligence on product development of Pharmaceutical firms in Anambra State; while the specific objective was to determine the extent to which competitive intelligence dimensions influence product innovation in selected Pharmaceutical firms in Anambra State.

Hypothesis

H_1 Competitive intelligence dimensions have significant influence on product innovation in selected Pharmaceutical firms in Anambra State.

Significance of the Study

The need for competitive intelligence in today's business environment characterised by information overload cannot be over emphasized. Hence, this study is highly imperative to academia and business practitioners. It provides insight to managers on how to assess and exploit competitive intelligence concept to avoid surprises and manage proactively by taking actionable intelligence. The study also contributes to the body of knowledge especially in the area of strategic management.

Scope of the Study

The study focuses on examining the influence of competitive intelligence on product development of Pharmaceutical industry using three selected Pharmaceutical firms in Anambra state of Nigeria. The study adopts stratified random sampling technique for determining selected firms. This was done by first identifying the three major cities in the state (Onitsha, Nnewi, and Awka), and then randomly picking one firm from each city, hence these three pharmaceutical firms- Christ the King Pharmaceutical Company Limited, Nnewi, Juhel Nigeria Limited, Awka, and Rico Pharmaceutical Industry Limited, Onitsha.

REVIEW OF RELATED LITERATURE

Conceptual Review

Competitive Intelligence (CI) is a relatively new management concept developed from the main idea of Porter's five competitive forces (Pellissier and Nenzhele, 2013). To ensure an understanding of CI concept the study reviews some definitions and discussions from scholars. Priporas (2005), states that CI can be considered as both a product and a process. The product is data on the firm's competitors that is used as the foundation for action. The process is the methodical acquisition, analysis and evaluation of data for competitive advantage over known and potential competitors. This data helps executives, to understand their competitors and make strategic decisions. Karim (2011) reports that CI is a systematic process that allows for identifying competition's plans and intentions to obtain some advantage. This process involves collecting, processing, analyzing, and distributing to top management and other decision makers any information about an organizations' external environment. Blenkhorn and Fleisher (2005) define CI as a continuously evolving process that involves discovering, analysing and using intelligence regarding competitors and the general business environment from publicly available, non-proprietary information sources and converting it into knowledge on a continuing basis.

The Society of Competitive Intelligence Professionals (SCIP, 2008) defines CI as a systematic and ethical process for gathering, analysing and managing external information that can affect the company's plans, decisions and operations. Viviers, Saayman, and Muller (2005) state in their study that competitive intelligence has the purpose of providing strategic advantage and it incorporates information on customers, suppliers, technologies and environment. CI means a systematic process initiated by organizations in order to gather and analyze information about competitors and the general socio-political and economic environment of the firm (Colakoglu, 2011). It is conceptualized as a process of monitoring the competitive environment, with a goal to provide actionable intelligence that will provide a competitive edge to the organization (Kahaner, 1998). Kahaner (1998) identifies four objectives of using competitive intelligence. They are; to discover new potential competitors or customers and support the start of new businesses. To identify and analyse new technologies, products and processes that influence organization's activities and behaviour. To identify and analyze political or legislative standards or regulations that influence

organization's activities and behaviour. Finally, to identify and analyze situations from competitors, customers, suppliers and others that evolved into successes or failures.

McGonagle and Vella (2002) describe CI as a formalized but developing process that is used by managers to evaluate the evolution of their industry and the capabilities and behaviour of their competitors and those who might be their competitors in future. It is assumed that CI is the analytical process that transforms scattered information about competitors and customers into relevant, accurate and usable strategic knowledge on market evolution, business opportunities and threats (Teo & Choo, 2001). The key points of various definitions refer CI as an ethical and legal business practice, as opposed to industrial espionage which is illegal, the focus is on the external business environment, and there is a process involved in gathering information, converting it into intelligence and then utilizing it for strategic decisions. CI professionals emphasize that if information gathered are not usable (or actionable) then it is not intelligence. Fleisher (2001) considers CI as the process in which organizations capture information on competitors and their environment and applies it in their decision making process and planning with the purpose of improving the performance of the business. Fleischer and Bensoussan (2003); and Gray (2010) identify several strategic analytical techniques available to transform collected information into intelligence for strategic decision making. They are; SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis, Competitor profiles, Environmental scanning, PEST, Industry analysis (Porters Five Forces Model), Financial analysis, BCG growth/share portfolio matrix, GE Business screen matrix, Scenarios, War gaming, and Value chain analysis. They indicated that while these techniques are available and have been used by organisations for many years, there is no one right analytical tool that can solve the problems of every organisation. Thus, the complexity and depth of the analysis, and the tools and techniques that will be chosen are dependent on the business situation and the needs of the organisation.

Fahey (2007) in his research identify five strategic inputs to be focused on while studying competitive intelligence. Those inputs are market place opportunities, competitor threats, competitor risks, key vulnerabilities and core assumptions. Hence, this study adopts Fahey's (2007) competitive intelligence model to examine CI influence on product innovation of the selected Pharmaceutical firms. Consequently, CI is captured in this study with market place opportunities, competitor threats, competitive risks, key vulnerabilities and core assumptions.

Marketplace Opportunities

Marketplace opportunity is a strategy concerned with creating and realizing new opportunities in the market. This involves new ways of creating and developing value for customers: new product development; extending existing product lines, modifying existing product, and others (Fahey, 2007).

Competitor Threats

Fahey defines competitor's threats as ability of a rival to prevent a company's strategy from succeeding in the market. If threats are detected too late, resources invested in supporting a strategy may be wasted, if threats are detected long before coming to full action, strategy can be adapted to eliminate, ameliorate or avoid the threat (Fahey, 2007). Therefore, opportunities would be so much easier to realize in the absence of current and potential competitors threats.

Competitive Risks

Competitive risk involves change in and around the marketplace driven by customers, channels, suppliers, governmental agencies, technological development, amongst others. Competitive risks include any changes in the market that can negatively impact the firm's current or potential strategy (Fahey, 2007). Organisations, therefore, should critically study competitive trends, patterns and discontinuities to detect risks and how it can negatively affects the achievement of their objectives.

Key Vulnerabilities

Key vulnerabilities are those factors that have the potential to affect our strategies and we have least control over them. Key vulnerabilities compel organisations to go beyond merely listing competitor threats, and competitive risks. It propels the analysis and ranking of current and potential threats and risks, to identify those that could most severely impede strategies success (Fahey, 2007).

Core Assumptions

Firms strive to identify their competitors' strategy by gathering a huge amount of information, and this competitive information is surrounded by many assumptions. These assumptions atimes may be misleading.

The impact of such error may cause serious drawback in recognizing important competitive event, or late recognition of competitors' action (Fahey, 2007).

Product Innovation/Development

Product innovation and product development are used interchangeably in this study. Lee and AbuAli (2011) define product innovation as development of new product, changes in design of established product, or use of new materials or components to modify existing product. In other words, anything which is new to the business and its product range is counted as innovation, even if similar products are available elsewhere or if the change is an incremental one. For an offering to satisfy as a product, it must have these five characteristics; quality level, features, design, a brand name, and packaging (Sattar, 2003). These characteristics are the variables organisations can use to manipulate and differentiate their products for competitive advantage. **Quality level** involves the level to which a product conforms to the required standard and at the same time effective over a stipulated period of time which is also called shelf-life of a product. All drugs have their standard profile, which act as a standard when a product is evaluated in terms of its quality level (Ahmed, 2012). **Features** are the benefits that customers need from the product. For pharmaceutical product, this will mean the profile of a drug, what it does, its side effects, and other features. **Product Design** is concerned with physical nature of product. A pharmaceutical product can be in the form of capsules, tablets, syrup, injection or ointment. This is one of the major determinant factors when chosen a product for treating a patient (Stephen, 2003). **Brand name**; unlike consumer products, where every product invariably carries a brand name, pharmaceutical product may or may not be branded. Some firms may decide to market their products as under a generic name, instead of giving it a brand name (Kola, 2004) but most pharmaceutical firms prefer to market their products under branded names, which allow them to position and promote their products effectively (Filmore, 2004). **Packaging** plays significant role in pharmaceutical products. It goes beyond just acting as outer container to ensure the conditions required for stability of the medicine are maintained. A pharmaceutical firm cannot just select the packaging material arbitrarily, but has to consider if the packaging selected conforms to the standards required for a particular product profile or not (Gilbert, 2003).

Product Innovation and Competitive Intelligence

Cavalcanti (2005), states that competitive intelligence begins with environmental scanning activities, which involves transforming data, information and knowledge into intelligence as a final product. However, competitive intelligence as a final product becomes useful when the final consumers' needs have been satisfactorily met.

Today the role that CI plays in product innovation is enormous. The key success factor in the implementation of product innovation is information, especially information about the wishes and requirements of the customers as well as information about the business environment. Kahaner (1998) asserts that CI is the action of gathering, analyzing, and applying information about products, competitors, suppliers, regulators, partners, and costumers for short-term and long-term planning needs of an organization. In essence, CI helps organisation to have a better understanding of market, regulations, customers' current and future needs, competitors' strengths and weaknesses, and accordingly offer innovative product that will meet the need of the customers (Gordon et al., 1993).

In addition to that, CI gives direction to organisation's research and development. Organization through CI may identify potential opportunities for investing in new technology or help incorporate new technologies into their own products. By so doing, they identify potential technology-based threats and possibly partner for collaborative research and development (Vedder & Guynes, 2002).

Theoretical Framework

This study is guided by Open system theory developed by Ludwig von Bertanlanffy (1956). Open systems theory states that organizations are strongly influenced by their environment. The environment consists of other players that exert various forces of an economic, political, and social in nature. Open systems possess porous boundaries that permit interaction across their boundary through which new information or ideas are readily absorbed, and permitting the incorporation and diffusion of viable new ideas. Because of this, they can adapt more quickly to changes in the external environment in which they operate. Open systems approach views the organizations' continuous interaction with the external environment as vital for organizational survival and success. Thus, alertness and sensitivity to the environment is very essential

ingredient of business success, survival and longevity, because of the firm's dependence on it for resources inputs and services outputs.

Open system theory therefore, explains how organisations interact with their environment through CI to gather data, information and knowledge about actors in environment (competitors, customers, suppliers, government etc) in order to develop or improve products and services that meet or even exceed customers' expectations. Hence, open system theory conceptualise competitive Intelligence as an ethical and legal business practice that focuses on gathering information from external business environment, converts it into actionable intelligence, and utilises it for developing innovative products and services that are valuable to the customer.

Interaction of Organisations with environment through Competitive Intelligence
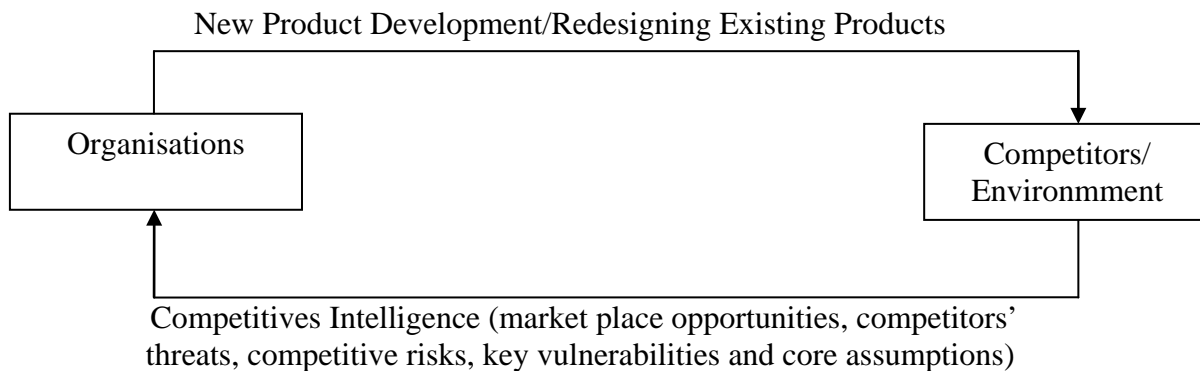
New Product Development/Redesigning Existing Products

Organisations

Competitors/ Environmment

Competitives Intelligence (market place opportunities, competitors' threats, competitive risks, key vulnerabilities and core assumptions)

Fig. 2.1 Conceptual Framework

Empirical Review

Ahmed, Ahmad, Khoso, Arif, and Palwishah (2014) examined competitive Intelligence and Marketing Effectiveness of Organizations in Pakistan. Competitive intelligence was diffused into sub variables including market opportunities, competitor risks, competitor threats, technological intelligence, technical intelligence, and strategic intelligence. In order to prove the importance of competitive intelligence in business this research tested whether competitive intelligence was being used by the organizations in Pakistan and also the extent to which it was used. T-test was used to individually test each variable to check for significance. The results of the research show that all the sub variables are significantly used by the organizations in Pakistan to make their marketing effective and that competitive intelligence is important to make the marketing effective for a business.

Lynnette, Mphahlele, and Awosejo (2014) examined the extent to which the utilization of competitive intelligence (CI) gives rise to enhanced competitive performance in small and medium enterprise (SMEs) by examining the roles of a selection of technological, and specific environmental factors in enhancing competitive advantage for SMEs, within the Telecommunications Industry in South Africa. Two models – technology acceptance model (TAM) and the Perceived ease of use Model (PEOU) were applied to investigate the extent to which SMEs in the context of South Africa can leverage CI. Quantitative research approach was applied and Purposive sampling was utilized as a data collecting tool from a number of individuals at lower, middle and top management levels in five different SMEs in Gauteng Province. Results indicated that perceived ease of use (PEOU) and Perceived Usefulness are the most important factors that determine the application of CI tools for competitive advantage in SMEs and that IT Training, SWOT and Political, economic, social and technology (PEST) are significant explanatory factors of Competitive Intelligence (CI) in the context of Small and Medium sized Enterprises.

DuToit and Sewdass (2014) examined the current situation with regards to competitive intelligence (CI) activities in Morocco. This study was exploratory in nature. A questionnaire survey method was used for the study where a questionnaire was administered to CI experts in organisations to determine the current state of CI in Morocco. It was found that 21 percent of the companies with less than 50 employees in the organisations use CI as a strategic tool and that the CI function had been in existence for more than five years in only 30 percent of the companies.

Yaya, Achonna, and Osisanwo (2014) discussed competitive intelligence as a tool for effective job performance in academic library. It employed descriptive research method to explain the application of competitive intelligence to the services rendered by academic libraries in any institution of higher learning. The paper also discuss some services provided by the academic libraries and highlights how competitive intelligence could be applied to some basic tasks performed by the librarians in order to align with the current trends in the profession. The paper found that there is need to identify and use a variety of non-traditional information sources such as competitive intelligence that would enable the academic library to edge out its competitors and make library users to develop renewed interest in the services provided by the library in meeting their information needs.

Jihene and Zeineb (2015) examined the influence of Organizational Culture on Competitive Intelligence Practice in Tunisia. Findings of the study suggest that for CI to flourish in a company and for the discipline to be implemented and used optimally, there has to be an appropriate organization awareness of CI and a culture of competitiveness

Egberi and Okpako-Uyeh (2011) assessed the competitive intelligence and marketing effectiveness of corporate organizations in Nigeria. The study used a survey research method. The statistical tools used for testing the two null hypotheses were the Pearson product moment correlation and the T-test. The study found that there was a significant positive relationship between competitive intelligence and organizational profitability. It was recommended that organizations setup a competitive intelligence unit or department in their organization in order to have a competitive advantage.

While much discussions and studies have been undertaken in this area of knowledge, no empirical research has so far been undertaken to investigate the extent to which competitive intelligence affects product development in Nigerian Pharmaceutical industry. Thus, a gap exists in this area of strategic importance. The present study is an attempt to address this gap. This study adds to the limited empirical knowledge by linking Competitive intelligence and product innovation of Pharmaceutical firms in a developing economy like Nigeria. This was done by formulating a model to examine the extent to which each CI dimension affects product development in selected pharmaceutical firms in Anambra State, Nigeria.

METHODS

Research Design

This study employed descriptive research design. This research design is suitable and appropriate for the objective of the study because it aids the researcher in the observation and analysis of the relationship among variables of interest, Ezeani (1998).

Population of the Study

The study population involved all the operational staff and managers of Christ the King Pharmaceutical Company Limited, Nnewi, Juhel Nigeria Limited, Awka, and Rico Pharmaceutical Industry Limited, Onitsha. A complete enumeration-based survey was adopted to cover management staff (supervisors and managers) of the selected pharmaceutical firms.

Table 3.1 Pharmaceutical Firms Staff Number

S/N	Firms	Rank/Position	Total Population
1	Christ the King	Managers/supervisors	17
2	Juhel Nigeria	Managers/ supervisors	22
3	Rico	Managers/ supervisors	19
			58

Source: Personnel File of Christ the King, Juhel Nigeria, and Rico Pharmaceuticals.

Method of Data Collection

The primary data used for this research work were gathered through questionnaire. A structured questionnaire was used in gathering relevant data with options provided for participants on a five point likert scale. Response to the items ranges from (5- Strongly agree (SA)) (4- Agree (A)) (3- Neutral (N)) (2- Disagree (D)) (1- Strongly Disagree (SD)). A total of 58 questionnaires were administered to participants with 49 returned, representing approximately 84% of the administered questionnaires.

Variables of the Research

Variables in this study are Product Development (Y) variable, as the dependent variable, and Competitive intelligence as independent variable (X). Competitive intelligence was decomposed by Competitive risks (X1), Core assumptions (X2), Competitor threats (X3), Marketplace opportunities (X4), and Vulnerabilities (X5).

Model Specification

This model denotes the influence of various Competitive Intelligence dimensions on Product Development of the selected pharmaceutical firms.

$$Y = b_o + b_1X1 + b_2X2 + b_3X3 + b_4X4 + b_5X5 + U$$

Where:

b_o	= the intercept
$b_1 - b_5$	= the coefficient of independent variables and
Y	= Product Development
X1	= Competitive risks
X2	= Core assumptions
X3	= Competitor threats
X4	= Marketplace opportunities
X5	= Vulnerabilities
U	= the error term.

Analysis of data

The statistical package SPSS (version 21) was used for data analysis. The analysis of data involved two steps. Principle component analysis was first used for data dimensionality, where original set of items were reduced and represented by a concise number of latent variables. At second step, multiple regression analysis was performed to find out the relationship and extent to which the identified Competitive Intelligence variables affect Product Innovation of the selected pharmaceutical firms.

Validity of the Research

To test the validity of the instrument, content and construct validity were analyzed. Before data collection, the content validity was established by expert reviews of the questionnaire to make sure that the instrument measured correctly, what it sets out to measure. Exploratory factor analysis was used to evaluate the construct validity of the instrument. The results of the factor analysis revealed factor loadings for the items range from 0.528 to 0.923. The KMO measure of sampling adequacy for the latent constructs ranges from 0.585 to 0.722, and Bartlett test of sphericity which indicates sufficient correlation between variables were all significant (p=0.000) for the latent constructs. Hence, all the mentioned results of factor analysis are in acceptable range.

Reliability of the Instrument

An instrument is reliable if measurement of the same phenomena with the same instrument at different times and places yields the same result. That is, the instrument can give consistent results at different point in time. Cronbach's alpha coefficient is widely use as a measure of reliability. The alpha level of 0.60 or above is considered acceptable as suggested by (Sekaran, 2003). The results of the Cronbach's alpha coefficient of the variables were 83% reliable. This implied that the instrument is reliable.

PRESENTATION AND ANALYSIS OF RESULT

This section is devoted to presentation and analysis of results using appropriate statistical tools. It also involves interpretation of statistical results as a basis for not rejecting or rejecting the alternate hypothesis of the research study.

Regression Result

Table 4.1: Results of Regression Model, Dependent Variable; Product Development

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.001E-013	.093	.000	1.000
Competitive risks	-.534	.115	-4.648	.000

Core assumptions	.223	.124	1.805	.078
Competitor threats	.237	.107	2.211	.032
Marketplace opportunities	.653	.123	5.323	.000
Vulnerabilities	.479	.154	3.115	.003

Sources: Extract from SPSS Ver. 21 Output

Durbin-Watson = 0.723

Adjusted R^2 = 0.575

F-Statistics = 14.003, Prob (F-Statistics) = 0.0000

Analysis of Result

The results of the regression analysis revealed that all the independent variables except coefficient of core assumptions are statistically significant. The result also showed positive relationships between the independent variables and dependent variable except competitive risk that assumed a negative sign. The Adjusted R-squared (R^2) value of 0.575 showed that 57.5% changes in the dependent variable were explained by the independent variables. The Durbin-Watson (DW) result 0.723 indicated presence of negative autocorrelation. The f-statistic was found to be statistically significant, with p-value of 0.000 percent. This implies that the independent variables (Competitive Intelligence dimensions) put together have a statistically significant relationship with dependent variable (Product development). Therefore, with the ANOVA result (F-statistics) we accept alternate hypothesis and concluded that Competitive Intelligence has a significant influence on Product Development of selected Pharmaceutical firms.

FINDINGS, CONCLUSION AND RECOMMENDATIONS

Discussion of Findings

The research model captured competitive intelligence with Competitive risks, Core assumptions, Competitor threats, Marketplace opportunities, and Vulnerabilities. After the analysis, the result revealed that competitive intelligence influenced product development of the selected firms. The result also confirmed significant relationship between the dependent variable and independent variables except core assumptions.

Coefficient of Competitor threats has a positive sign and statistically significant. This is consistent with the finding of Hay and Morris (1979) who argue that competitors' threats can be mitigated through competitive interdependence where competitive uncertainty pushes firms to enter into alliances to limit number of competitors and sometimes engage in joint research resulting to product development.

The coefficient of Marketplace opportunities is positive and statistically significant. This finding was supported by Fahey (2007) who states that market opportunities are new methods and means to develop values which manifest in form of new products development, or redesigning existing product.

The coefficient of Competitive risks assumed a negative sign and is statistically significant. This result is at variance with the work of Wright et al. (2005) who assert that the hostility of the environment (that is, Competitive risks) influences innovativeness. Therefore, the higher the Competitive risks the higher the product innovation. Firms operating in a highly competitive hostile market are likely to be more successful innovators than firms operating in a static environment.

Coefficient of Vulnerabilities poses a positive sign and statistically significant. This is in conflict with the work of Cooper (2003) who suggests that organisational vulnerability (in terms of internal problems) affects product failure because of organisation's inability to meet product performance standard, reliability, or cost requirements.

Conclusion

The need for competitive intelligence as regards to product development cannot be over emphasized. In the research model, Competitive risks, Competitor threats, Marketplace opportunities, and Vulnerabilities were significant. This supports the notion that gathering, analysing and sharing information about the marketplace enables organisations to realize new market needs and rival plans, and accordingly respond to it with appropriate strategic actions. The findings revealed that competitive intelligence is the necessary tool for improving firms' product innovation in terms of new product novelty and improvement of existing products, thus leading to competitive advantage. Hence, the study concludes that the roles of Competitive Intelligence

on Product Development are to provide actionable intelligence for strategic decisions, identify customer needs, and reveals competitors' strategies and consequently help organisations to locate themselves on the competitive scale and provide innovative products that meet customers' need.

Recommendations

1) In their quest for increase in sales volume, pharmaceutical firms should not only engage in new product development but also constantly make relevant modifications to their existing product offerings for it to be continually relevant in satisfying the ever-changing market needs.

2) Organisations should exploit the knowledge of competitive intelligence to analyse customer's needs, adapt their offering to those needs, react to competitors' actions and respond with innovative product.

3) Organizations should have a formal position for competitive Intelligence unit to regularly monitor the activities of competitors and business environment with the aim of evaluating the organizations actions in line with that of competitors.

REFERENCES

Ahmed, R., Parmar. V., & Ahmed, J. (2012), Factors that affect attitude towards Generic Drugs Perception: Comparison of Physicians & General Practitioners of Karachi City. *International Journal of Marketing and Technology,* 2(11)

Anica-Popa, I. & Cucui G. (2009). A framework for enhancing competitive intelligence capabilities using decision support system based on web mining techniques. *International Journal of Computers Communications and Control*, 4, 326-334.

Bertalanffy, L. (1950). An Outline of General System Theory British *Journal for the Philosophy of Science,* (1)2, pp.134-165

Blenkhorn, D., & Fleisher, C. (2005). *Competitive Intelligence and Global Business*. Greenwood Publishing Group, Westport.

Cavalcanti P. (2005). The relationship between business intelligence and business success *Journal of Competitive Intelligence and Management*, (3)1

Colakoglu, T. (2011). The problematic of competitive intelligence: How to evaluate and develop competitive intelligence, *Procedia Social and Behavioral Sciences*, 24, pp.1615– 1623

Cooper, L.P., 2003. A research agenda to reduce risk in new product development through knowledge management: a practitioners perspective. Journal of Engineering and Technological Management 20, pp. 117–140.

Davenport. H., & Harris, J. (2007). *Competing on analytics. The new science on winning*. Boston, Massachusetts: Harvard Business School Press.

Du Toit, A., & Sewdass, N. (2014). Competitive Intelligence (CI) in Morocco. Afr. J. Lib. Arch. & Inf. Sc. (24)1, pp. 3-13

Egberi, A. K,. & Okpako-Uyeh, B. (2011). Competitive intelligence and marketing effectiveness of corporate business organizations in Nigeria. *International Journal of Economic Development Research and Investment*, (2)3

Etorre B. (1995). Managing competitive intelligence. *Management Review*, 84(10), 15-19.

European Federation of Pharmaceutical Industries and Associations, (2010), The Pharmaceutical Industry in figures,

Ezeani, S. (1998). *Research methods: A realistic approach*. Ibadan: Elohim Publishers.

Fahey, L, (2007). Connecting strategy and competitive intelligence refocussing intelligence to produce critical strategy inputs. *Strategy Leadership*, 35(1): 4-12.

Fleisher, C. (2001). *An introduction to the management and practices of competitive intelligence (CI)", in Fleisher, C.G. and Blenkhorn, D.L. (Eds), Managing Frontiers in Competitive Intelligence*, Quorum Books, Westport, CT, pp. 3-18.

Fleisher, C. (2008). Using open source data in developing competitive and marketing intelligence. *European Journal of Marketing*, 42 (7/8), 852-866.

Fleisher, S., & Bensoussan, B. (2003). *Strategic and Competitive Analysis: Methods and Techniques for Analyzing Business Competition*. Upper Saddle River, NJ:Prentice Hall.

Gabber, H. (2007). Competitive intelligence topology analyze for improved plan operation. *Industrial Management and Data Systems*, 107(2), 198-236.

Ganguly, A., Nilchiani, R., & Farr, J. (2009). Evaluating agility in corporate enterprises. *International Journal of Production Economics,* 118 (2) pp. 410-23.

Gordon, G., Kaminski, R., Catalone C., & Benedetto, (1993). Linking customer knowledge   with successful service innovation. *Journal of Applied Business Research,* 9(2), 129-140.

Gray P. (2010). Competitive intelligence, *Business Intelligence Journal*, 15(4), 31-37.

Haag, S., Cummings, M., & Philips, A. (2007). *Management Information Systems for the Information Age*. 6th Edition. Boston: McGraw-Hill/Irwin.

Hay, D., & Morris, D. (1979). Industrial Economics: Theory and Evidence, *Business Review Journal*, 14(6), pp.419-32.

Heppes, D. & Du Toit, A. (2009). Level of maturity of the competitive intelligence function: case study of a retail bank in South Africa. *Aslib Proceedings*, 61(1), 48-66.

Jihene, C., & Zeineb, B. (2014). Critical sucess factors of competitive intelligence implementation: a conceptual framework. *International Conference on Business, Economics, Marketing & Management Research (BEMM'13) Volume Book: Economics & Strategic Management of Business Process (ESMB),* (2), pp. 41-46

Johns, P., & Van Doren, D. (2010). Competitive intelligence in service marketing: A new approach with practical application. *Marketing Intelligence & Planning,* 28(5), 551–570.

Kahaner, L. (1998). *Competitive Intelligence*, Touchstone Books, New York, USA.

Karim, A. (2011). The value of competitive business intelligence system (CBIS) to stimulate competitiveness in global market. *International Journal of Business and Social Science*, 19(2), 196–203.

Kola, J. (2004). Can the pharmaceutical industry reduce attrition rates? *Nature Reviews*

Lee, J., & AbuAli, M. (2011). Innovative product advanced service systems (I-PASS): methodology, tools, and applications for dominant service design. *Int J Adv Manuf Technol*, Vol. 52, 2011, pp. 1161 – 1173.

Lynnette, M., Mphahlele, M., & Awosejo, O. (2014). Utilization of competitive intelligence to enhance firm performance: A case of South African small and medium enterprises. *International Journal of Advanced Computer Research,* (4)2

McGonagle, J., & Vella, C. (2002). *Bottom Line Competitive Intelligence*, Westport, CT: Quorum Books

Nenzhelele, T., & Pellissier, R. (2013). Towards a universal definition of competitive intelligence. *South African Journal of Information Management,* 15(2).

Peltoniemi, M., & Vuori, E. (2008). Competitive intelligence as a driver of co-evolution within an enterprise population. *Journal of Competitive Intelligence and Management*, 4(3), 50–62.

Phathutshedzo. N., & Tiko, I. (2011). The impact of competitive intelligence on products and services innovation in organizations. *International Journal of Advanced Computer Science and Applications,* (2)11

Porter, M. (1980). *Competitive Strategy: Techniques for analyzing industries and competitors.* New York: The free press.

Priporas C., Gatsoris L., & Zacharis, V. (2005). Competitive Intelligence activity: evidence from Greece. *Marketing Intelligence & Planning,* 23(7), pp. 659-669.

Rizwan, R., Imamuddin, K., Khawaja, A., & Rana, I. (2014). Competitive intelligence and marketing effectiveness of organizations: an investigation from Pakistan. *Middle-East Journal of Scientific Research,* 22 (10)

Sattar, I., & Maqsood, A. (2003). A marketing mix model for pharmaceutical industry - a pakistani perspective. *The Journal of Independent Studies and Research*, 1(2)

Sawka, K., & Hohhof, B. (2008). *Starting a Competitive Intelligent Function.* Competitive intelligence foundation, Alexandria.

SCIP, 2008, *Society for Competitive Intelligence Professionals.*

Sekaran, U. (2003). *Researcher Methods for Business*. U.S.A. John Wiley & Sons.

Stephen, R. (2003). ethical considerations in the use of direct-to-consumer advertising and pharmaceutical promotions: the impact on pharmaceutical sales and physicians. *Journal of Business Ethics*

Teo, T. & Choo, W. (2001). Assessing the Impact of Using the Internet for Competitive Intelligence. *Information and Management*, (39)1, pp. 67.

Vedder, R., & Guynes, C. (2002). Guynes CIOS' perspectives on competitive intelligence, *Information Systems Management*, Fall,

Wright, R., Palmer, D., & Perkins, (2005). Types of product innovations and small business performance in hostile and benign environments. *Journal of Small Business Strategy* 15(2): 33-44.

Yoo, J., Lemak, D., & Choi, Y. (2006). Principles of management and competitive strategies: using Fayol to implement Porter. *Journal of Management History,* 12(4), 352-368.