

## DRIVING BUSINESS REENGINEERING THROUGH CORPORATE ENTREPRENEURIAL BEHAVIOR: A SINGLE FIRM MODEL

Okwo, Henry Uchenna<sup>1</sup>  
Onwe, Chukwuemeka Christian<sup>2</sup>  
Edigbo, Anthony Ogbuinya<sup>3</sup>  
Ezenwakwelu, C.A

### ABSTRACT

*It is true that Employees Entrepreneurial Behavior has been called intrapreneurial behavior and corporate entrepreneurial behavior by other authors which we subscribe to. It is also our belief that for business reengineering to thrive with respect to the dimensions of product, process and customers reengineering, a firm may have to improve the entrepreneurial behavior of its employees. The study was centred on establishing the relationship amongst these variable; with employees' entrepreneurial behavior as independent and business reengineering as dependent. The study used Rokana Industries as a focal point, with a sample of one hundred and sixty seven respondents. First and second order confirmatory analysis showed that the factor loadings were high for the selected study variables. The Cronbach's alpha coefficients were also very high showing a good internal reliability. The results also did show that for the first hypothesis of this study, there is a positive and significant relationship between Innovativeness and product reengineering of the employees of Rokana Industries Plc. ( $r = 0.529^{**}$ ,  $p < 0.01$ ). While, for the second hypothesis, there was direct and significant relationship between self-renewal and process reengineering ( $r = 0.601^{**}$ ,  $p < 0.01$ ). For the third hypothesis, a positive and significant relationship also does exist between new business venturing and product reengineering of the employees of Rokana Industries Plc. ( $r = 0.410^{**}$ ,  $p < 0.01$ ). The results imply that sustaining a conducive work climate that foster entrepreneurial work behaviour is central to having a seamless reengineering practice.*

Keywords: Self Renewal, Process Reengineering, Product Reengineering, and New Business Venturing

### INTRODUCTION

Business Reengineering has over the past couple of years, gained increasing circulation. Changes in the workplace especially for production based outfits have made it that they need to redesign, and restructure intermittently. As a result, many find themselves faced with the prospect of having to learn, plan, implement and successfully conduct many real business reengineering endeavor from time to time, whatever that might entail within their own business organization. Hammer and Champy (2013) define business reengineering as the fundamental rethinking and radical redesign of the business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed as it basically has to do with customers, the products, and the process or technology.

Essentially, business reengineering amounts to making radical changes to one or more business processes affecting the whole organization. It also requires a cross-functional effort usually involving innovative applications of technology. Reengineering is a pioneering attempt to change the way work is performed by simultaneously addressing all the aspects of work that impact performance, including the process activities, the people's jobs and their reward system, the organization structure and the roles of process performers and managers, the management system and the underlying corporate culture which holds the beliefs and values that influence everyone's behavior and expectations (Cypress, 2014). With business reengineering, rather than simply eliminating steps or tasks in a process, the value of the whole process itself is questioned (Gotlieb, 2013) and redesigned. Although, most writers and even organizations do not see anything so peculiar about business reengineering, some have even interpreted to be Total Quality Management (TQM).

Business reengineering differs from Total Quality Management (TQM) in two important respects. First, while TQM is focused on continuous improvement, an incremental performance improvement approach, reengineering was founded on the premise that significant corporate performance improvement requires discontinuous improvement - breaking away from the outdated rules and fundamental assumptions that underlie operations. Second, reengineering makes a significant break with previous performance improvement approaches by requiring a high level of state-of-the-art information technology awareness among the entire reengineering team prior to, rather than after, the definition of process changes or improvements (Cypress, 2014). Some technologies (i.e. imaging systems and expert systems) can provide substantial opportunities for the redesign of business processes (Guimaraes, 2013). Ringim (2012) went further to develop the scales for measuring business reengineering which are customer reengineering, product reengineering and process reengineering. These decompositions explain a shift from normal, and would require the wit of entrepreneurial behavior amongst staff become a reality. This employee entrepreneurial behavior is what is known as intrapreneurship or corporate entrepreneurship (Udu and Udu, 2015).

Intrapreneurship, or entrepreneurship within existing organizations also has generated considerable research over the past few decades. Much of this research has focussed on investigating how entrepreneurial firms differ from other types of firms (Kreiser, Marino, Weaver, 2002). The essence of intrapreneurship is innovation, with early work by Miller and Friesen in Fitsimmons, and Douglas, and Antoncic, and Hisrich (2004) arguing that entrepreneurial firms were characterized by their strong willingness to

innovate while taking risks in the process. Entrepreneurial firms innovate not only in their markets but also by introducing new production, marketing and management processes that are intended to give them a competitive advantage. Underlying corporate entrepreneurship is entrepreneurial leadership and intrapreneurial managerial behaviour within the firm. At the firm level, intrapreneurship is synonymous with corporate entrepreneurship (Antoncic and Hisrich, 2003). It is also at this level that the issue of reengineering takes off.

Corporate entrepreneurship is concerned with various forms of newness which can include organisational renewal, innovation and establishing new ventures (Dess, Ireland, Zahra, Floyd, Janney, Lane, 2003). Corporate entrepreneurship has long been recognised as beneficial for the organisation, with the main theoretical argument being the positive influence related to first-mover advantages and the tendency of entrepreneurial firms to take advantage of emerging opportunities as they become available (Wiklund, 1999).

Rokana Industries Plc as a manufacturing firm, would no doubt be in need of constant redesign so as to reduce cost, improve quality and deliver just in time. These key benefits of business reengineering are synonymous with the decompositions of business reengineering-product (cost), customer (quality) and process (time). Although, the firm may require to achieve these, it needs the best interplay of entrepreneurial skills within the organizational space. These employees' entrepreneurial skills or behaviors are innovativeness, self-renewal, and new business venturing. A proper harnessing of these behavior may lead to improvement in the redesign and change mostly required in manufacturing firms like Rokana.

On the other hand, most manufacturing firms may not understanding how the innovativeness of their employees could lead to product redesign and may therefore keep struggling to rethink their product line and its optimization thereby increasing costs and accumulation a whole lot of waste that could either have been avoided or recycled. The relationship between these two have also not been seen in the literature of change and strategic management discourse.

Another aspect is how self-renewal could improve process reengineering. We have tried to link process reengineering to the reduction of time and use of technology. An organization that would want to improve on it process component taking a shift from what have been may not be able to do so if the self-renewal dimension of its employees is in question as that may hinder such shift. The self-renewal aspect talks of accepting something new to the organization, which may be in terms of how units run, a redefinition of time; may be a twenty-four hour production cycle or just anything novel. If employees are not receptive of these, then process reengineering may not be actualized.

The issue of new business venturing and customer reengineering is much straight forward and has been supported by literature. New business venturing is a drive to create of new businesses within the existing organization or explore new markets with the needs of customers. These new business entities can reside either within the firm or outside the existing organizational domain. Antoncic and Hisrich (2003) considered this dimension an integral component of intrapreneurship given the importance of entrepreneurial firms pursuing new business venturing by redefining the organization's market. A neglect of this may therefore impact negatively on the customers (market base) of the firm.

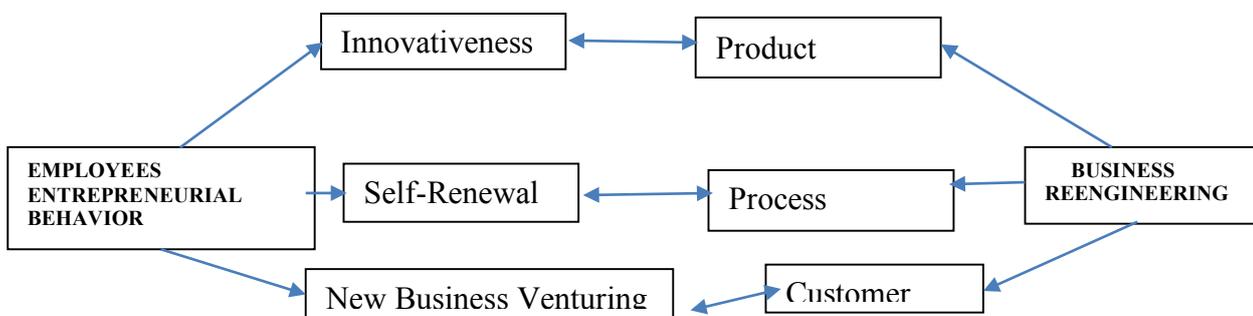


Figure 1: Proposed Conceptual Model.

## LITERARY SYNTHESSES

Several authors have had diverse views concerning entrepreneurship in an organization. Schollhammer (1981; 1982) described it as internal corporate entrepreneurship; Burgelman (1983), Vesper (1984) referred to it as corporate entrepreneurship; while Pinchot (1985) regarded it as intrapreneurship (Wiklund and Shepherd 2005). A widely accepted view is that entrepreneurship in an organization (whether new or existing) is a process of raveling and developing an opportunity to create value through innovative thinking and leveraging on opportunities irrespective of human or capital resources available to create more values within an organizations (Churchill 1992 in Lumpkin and Dess 2001). The process could encompass sustained regeneration in terms of introducing new products or exploring existing market but new to the firm; organizational rejuvenation in terms of internal innovations targeting improved firms' functioning; strategic renewal that aim in redirecting the firms course of actions; and domain redefinition in terms of creation and exploitation of product/market arenas (Covin and Miles, 1999 in Antoncic and Hisrich 2001). Antoncic and Hisrich (2001) regarded behavior of employees in an existing firm that initiates entrepreneurship process as intrapreneurship.

The distinction between intrapreneurship and corporate entrepreneurship appears vague (Jeroen and Sander 2008). The views of Pinchot (1985; 1987); Sharma and Chrisman (1999) in Belousova, Gailly and Basso (2010) indicated that corporate entrepreneurship is usually defined at the level (top level) of organizations while intrapreneurship relates to the individual (employees) level. Based on this distinction Amo (2006) proposes that corporate entrepreneurship is a top-down process, which most times is referred to as a strategy that management can leverage to nurture more ingenuity and/or advance efforts from their workforce (employees) and organization. Intrapreneurship in contrast to corporate entrepreneurship is bottom-up, which is related to proactive creativities of individual employees to improve work procedures or products and/or to explore and exploit business opportunities (Jeroen and Sander 2008). It is said that intrapreneurship is less risky than corporate entrepreneurship (Dubey and Bansal 2013). Theoretically, intrapreneur exists within a structure that allows him to be active in making innovation faster and is also motivated more by resources, especially knowledge, that arouse interest in new ventures.

Bhattacharya (2014) considered intrapreneurship as activities that receive organizational consent and resource commitments for the purpose of inventive results. Such results could predispose them to cope effectively with competitive realities irrespective of size and resources. Firms require proper harnessing of organizational resources to carry out innovative activities in form of product, process, and organizational ploys (Morris and Kuratko, 2002; Sathe 2003). In this regards, activities that encourage individuals or group of individuals in an existing firm to thinker out new methods of repositioning their firm for viable ventures is eminent towards achieving a competitive advantage. Hence, intrapreneurship is an outgrowth of programs that embrace employee participation (at all levels of organizational hierarchy); conscious efforts to instill entrepreneurial practices within corporations which are intended to boost the ability of the firm to produce or acquire new products (goods or services) and as well manage the innovation process (Hitt, Ireland and Hoskisson, 2001). Intrapreneurial effort is nurtured within a pre-existing, often mature, organizational setting; such an organization provides support for the development and exploitation of one or more innovations which are deemed strategically and financially consistent with the supporting organization's mission (Brazeal and Herbert, 2005), often undertaken in anticipation of an increasingly difficult competitive environment. These innovative activities at times consist of product extensions or re-formulations, cost-minimization, seeking to lunch into an unexploited markets, new applications of existing products/services, new ventures, and so on (Herbert and Brazeal 2012); this orientation toward innovation should not be confused with the normal marketing and product development efforts of the firm, structurally and processes imbedded within the ongoing operations of the firm. Corporate entrepreneuring's genesis and objectives are found in the corporation's external relationships to its competitive environment, that is, as part of the firm's competitive strategy.

This study embraced the definition of Antoncic and Hisrich (2001) and regarded intrapreneurship as a course that goes on in a firm that is already in existence and that which propels new business venturing, self-renewal and innovative activities like new product development, services, technologies, strategies, repositioning for competitive advantage regardless of the firms size. This definition clearly identified new business venturing, self-renewal and innovativeness as dimensions of intrapreneurship while including proactiveness which is considered as a top-down strategy of firms to encourage entrepreneurship (Antoncic and Hisrich 2001, Amo 2006, Carrier 2010).

- **New Business venturing**

New business venturing involves entrepreneurial activities like expanding business lines, creating new niches for firms' products/services. Put simply, it is activities that lead to new business formation in already existing organization. It could as well embrace breaking into new businesses by offering new lines or improved products in different or related industries (Mokaya, 2012).

- **Innovativeness**

As a measure of intrapreneurship, innovativeness in an existing firm indicates its emphasis on new product development, product improvements, new and improved production methods and procedures (Schollhammer 1982 in Antoncic and Hisrich 2001). Covin (2009) maintained that innovativeness is one aspect of intrapreneurial stance that reflects a firms' extensiveness and frequency of product/service innovation and the related tendency of technological leadership. In a manufacturing firm that emphasizes on product innovation for instance, "the development or enhancement of products, services, and techniques and technologies in production" (Knight 1997 in Antoncic and Hisrich 2001, P. 498) is anchored on innovativeness (Miner, Smith and Bracker 2014). Innovativeness therefore is a constant search out for new working methods, techniques or instruments that would lead to new approaches to executing tasks that may be cost efficient and production of new or improved products/services. It predisposes firms to favourable outcomes and serves as a hub for organizational performance (Carrier, 2010; Behini 2015). In a firm, innovativeness could be measured by the number of new products introduced by the firm which is a fillip emanating from firm's financial commitment (spending) towards new product development; it could also reflect in the firms revenue accruing from product(s) which did not exist in the firms product line couple of years back (Antoncic and Hisrich 2001).

- **Self-Renewal**

The self-renewal dimension of intrapreneurship revolves round strategy reformulation, reorganization, and organizational change that will predispose a firm towards attaining competitive advantage in an industry (Campos, Acuña, Nuño de la Parra, and Valenzuela 2013). Moriano (2013) described self-renewal as firms entrepreneurial efforts whose outcomes results in a considerable changes in business pattern, ploys/perspectives of repositioning of organization for better performance. This entails a strategic effort that constitute revising business concept for better performance in an organization; reorganizing units for coordinated activities and adopting organizational structure that will promote autonomy towards increase in innovative ideas. According to Mokaya (2012:135) self-renewal is "the transformation of organizations through the renewal of key ideas on which

they are built". This implies that self-renewal is used to re-evaluate values and belief system of organizations towards better performance.

Invariably, self-renewal as firms' intrapreneurial dimension places emphasis on flexible organization culture that nurtures entrepreneurship in an organization. For instance, a firm could adopt flexible organizational structures that would establish procedures of training employees in creativity techniques and means of soliciting employees' ideas for innovations.

There are several conceptualizations and definitions of reengineering. Budiono and Loice (2012) regarded it as a radical rethinking and redesigning all aspects of business essentially to achieve a desired repair in organizational performance. Ringim, Razalli and Hasan (2012) regarded it as a management approach that continuously seek a better approach of achieving a radical improvement in quality (product/services), speed (process), customer satisfaction and reduction in operating cost in an organization. Though it is a continuous approach to garner better methods of effective and efficient management of an organization; it is however, considered a painful process as it constantly challenges values and beliefs system of an organization (Hammer and Champy 1993 in Ringim, Razalli and Hasan 2012 ). The quest to formulate and adopt new or improved method of operations in organizations certainly require revisiting organizations' underlying values, norms and belief systems to embrace changes in line with current realities as it affects business performance. Olawumi and Isaac (2014) suggested that reengineering should be defined as the critical analysis and radical redesign of existing business processes to achieve breakthrough improvements in performance measures like cost, quality, speed, profitability and services.

Arviansyah and Hillegersberg (2014) viewed it as a strategic management process that encompasses rethinking and redesign of content, context and process of all aspect of an organization radically to produce a better product/services cost efficiently. Content aspect includes the description, selection and justification of what will be reengineered from its existing form; for instance a manufacturing firm would want to redesign existing products to serve potential customers, the content selects and justifies the reason for selecting such product(s) that will be reengineered to achieve a desired goal (Okumus, Altinay and Chathoth 2015). Context aspect best explain the opportunities that existed from anticipated reengineering based on environmental scanning, for instance the customers that a firm would seek to satisfy or attract; while the process is the continuous commitment efforts towards efficient utilization of firms resources to outwit competitors (which inculcates internal and external context implementation) (Okumus, Altinay and Chathoth 2015; Suriani, Abubakar and Saleh (2015).

This study therefore considered product reengineering, process reengineering and customer reengineering as dimensions of Business Reengineering especially in discussing business reengineering in a manufacturing firm (Ringim, Razalli and Hasan 2012).

- **Process Reengineering**

This involves introduction of improved methods of achieving maximum optimization of firms business processes. It inculcates seeking possibilities of minimizing operational cost for instance reducing wastage of resources and maximizing profit which could ensue from adoption of better technologies in a firm (Ringim, 2012).

- **Product Reengineering**

Product reengineering in any given firm places emphasis on improving existing products and development of new products to meet current market demands (Suriani, Abubakar and Saleh (2015). It is a consistent effort in redesigning products to perform more than one function or develop products that would meet both intrinsic and explicit needs of customers such that it places the firm ahead of its competitors (Ringim, (2012). For instance, redesigning tooth paste that would reduce tooth ache and as well serve its primary purpose.

- **Customer Reengineering**

This places emphasis on bringing a firm closer to its existing or potential customers by creating new markets. It is exertion of considerable effort towards efficient satisfaction of customers which could be a way of outwitting competitors.

Manufacturing firms like every other business sectors are faced with stifled competition not only locally but globally as a result of market liberalization (Hsu, Lin, Lawler and Wu, 2007). To cope with these global trends, manufacturing firms like every other business sectors require doing the needful to match global competitiveness by adopting changes in their operational processes. These operational processes cut across speed in terms of improved process in production, producing quality and improved or new products, reduction in operating cost, and venturing in existing or new areas of production (Kabiru, Mohd and Norlan 2012). To achieve such feat require garnering of human capital resources at firms disposal which manifests in the employees entrepreneurial behaviour (Marimuthu, Arokiasamy and Ismail, 2014). Employees' entrepreneurial behavior which is regarded as intrapreneurship perhaps serves as a brainbox upon which firms' nature major business transformations in terms of reengineering that aid performance. Description above depicts that intrapreneurship relates to business reengineering which this treatise sought to verify.

Some related empirical studies reviewed found significant positive relationship between Intrapreneurship and Business Reengineering (Lotz and van der Merwe, 2013; Antoncic and Hisrich, 2001). Çoban and Güles (2011), for example, found that there is significant relationship between intrapreneurship and competitive advantage brought about by Business Reengineering. The works of Covin (2009); Carrier (2010) and Bchini (2015) all found a positive and significant relationship between innovativeness and new product development which is an offshoot of product reengineering. In a study of a selected technology ventures in China, Zhang and Chan (2015) found a significant relationship between strategic self-renewal of the firms understudy and their adoption of efficient process of operation. Equally, Lee and Pennings (2012) in a similar study found a positive and

significant relationship between strategic renewal of the firm studied and competitive advantage. In a study conducted by Cardon, Gregoire, Stevens, and Patel, (2013) amongst employees of selected firms in Mexico, which aimed at ascertaining employees' entrepreneurial behaviour in the firms studied and new market development; the result indicated a significant positive relationship between new business venturing and development of new market which will attract potential customers. In a related study, Campos, Acuña, Nuño de la Parra and Valenzuela, (2013) found a positive relationship between new business venturing and customers patronage level.

## 2.2 Environmental Research gap

Most of the empirical studies reviewed considered employees' entrepreneurial behaviour as behaviour of top management that supports entrepreneurship in an organization; whereas this treatise considered it as an employees' behaviour that leads to entrepreneurship development which could be experienced at all levels of management in an organization irrespective of resources. This study went further to adopt Antoncic and Hisrich (2001) decomposition of entrepreneurship (new business venturing, innovativeness and self-renewal) and matching it respectively with Ringim, Razalli and Hasan (2012) business reengineering dimension (process, product and customer) in order to ascertain their respective relationship with regards to a single firm. The researchers were oblivious of any study that center on any Nigerian manufacturing firm that considered such relationship, hence, the gap this study intends to fill.

Moreover, most of the empirical works on corporate entrepreneurship centered on firms in a relatively advanced and predictable economy with more technological opportunities which could promote entrepreneurship development. This propelled the curiosity to carry out this study in different environment characterized by dynamic economy with less technological opportunity.

Rokana industries Plc is a one of the Nigerian leading industries specialized in manufacturing house hygiene products like toothbrush, tooth paste, and other toiletries. The firm formally had its head office located in 115 Allen Avenue Ikeja Lagos. But since 1991, when the firm's culture of maintain a head office in different location was revisited, it had its head office relocated to 15 Mission Road Umualum Nekede, Owerri Imo State where its manufacturing plants are sited; while its Allen Avenue serves as its South West Zonal Office (Rokana Industries, 2001). The proximity of the head office with the production plant perhaps, is a strategic self-renewal process to aid effectiveness and efficiency in the production process.

One of Rokana products: Jordan toothbrush is a household name in dental care, it comes in different types, head sizes, and bristle stiffness probably due to innovativeness which resulted in the product reengineering to fit variety of customers choice. The manufacturing of other house-hold products like deodorants, toilet cleaning brushes could as well be considered as veritable means which the firm deployed to ensuring that every household uses Rokana products. The firm however has other competitors locally and internationally that deals in dental care and other household products. To maintain its fame as the first and best toothbrush manufacturer in Nigeria (Rokana Industries, 2001), for instance, requires garnering of human capital effort within the firm to propel innovativeness, strategic renewal and new business venturing in order to maintain a competitive advantage over others in the industry (Marimuthu, Arokiasamy and Ismail, 2014).

This study sought to explore the relationship between employees entrepreneurial behaviour and business reengineering in manufacturing firm in Imo State. To achieve the desired objectives, this study formulated the underlisted hypotheses:

Ho1: there is a significant and significant positive relationship between innovativeness and product reengineering in Rokana Industries Plc.

Ho2: there is a positive and significant relationship between self-renewal and process reengineering in Rokana Industries Plc.

Ho3: there is a positive and significant relationship between new business venturing and process reengineering in Rokana Industries.

## METHODOLOGY

This study adopted a survey research design where by a structured questionnaire was administered to the entire staff of Rokana Industries Plc. This design is appropriate because the study is exploratory in nature, accordingly, Konthari, (2012), avers that such designs suit aim is to discover the true nature of a phenomenon. In this case, our goal is to discover the relationship that exists between employees' entrepreneurial behaviours and business reengineering. The entire staff population of Rokana Industries Plc was studied. The total staff population was 203, this population was moderate enough, and therefore no sampling technique was adopted. A total of 167 questionnaires were received from questionnaires distributed, but 149 (73.4) of the questionnaires as the remaining 18 (26.6%) of the questionnaires were not properly filled.

## Measures

The questionnaire for this study consisted of three sections. In the first section, there were demographic questions for the respondents. In the second and third sections, there were scales for measuring the respective study constructs. Respondents were asked to rate the multi-items using a five-point Likert type scale (1=Strongly Disagree; 5=Strongly Agree). The scales for the dimensions of employees' entrepreneurial behaviours were taken from Antoncic and Hisrich (2001), while the scales for the dimensions of business reengineering were taken from Ringim, (2012); they were also measured on a five point Likert Scale.

### • Measurement Model

Primarily, the first-order confirmatory factor analysis was executed for each dimension that comprised employees' entrepreneurial behaviours. The reliability of the dimensions were calculated with Cronbach's alpha ( $\alpha$ ) coefficients. Confirmatory factor analysis and the reliability results of scales are presented in Table 1.

Similarly, the first-order confirmatory factor analysis was executed for each dimension that comprised business reengineering. Their reliabilities were as well calculated with Cronbach's alpha ( $\alpha$ ) coefficients. Confirmatory factor analysis and the reliability results of scales are presented in Table 2.

**Table 1: Scale items, first-order and second order measurement model: CFA results**

Scale/Items	First-Order Model Factor Loading	Second- Order Model Factor Loading
<i>New Business Venturing</i> (C.R.=0.81 ; AVE= 0.59 ; $\alpha$ =0.80)		
<i>NBV1</i> Broadening business lines in current industries	0.82	0.80
<i>NBV2</i> Pursing new businesses in new industries that are related to current businesses	0.76	0.75
<i>NBV3</i> Finding new niches for products in current markets	0.81	0.81
<i>NBV4</i> Entering new businesses by offering new lines and products	0.79	0.83
<i>Innovativeness</i> (C.R.=0.81 ; AVE= 0.59 ; $\alpha$ =0.80)		
<i>INN1</i> Company's emphasis on developing new products	0.82	0.85
<i>INN2</i> Company's spending on new product development activities	0.77	0.75
<i>INN3</i> The number of new products introduced by the company	0.71	0.69
<i>INN4</i> Percent of company's revenue generated from products that did not exist three years earlier.	0.86	0.85
<i>Self-Renewal</i> (C.R.=0.81 ; AVE= 0.59 ; $\alpha$ =0.80)		
<i>SR1</i> Revising the business concept	0.69	0.67
<i>SR2</i> Reorganizing units and divisions to increase innovation	0.83	0.81

It was observed that the factor loadings of the three dimensions of employees entrepreneurial behaviours were greater than 0.40. The reliability coefficients of the dimensions were over the acceptable values. Also, the measurement model provided acceptable fit for the fit statistics, it could be inferred that the measurement model enhanced the convergent validity since both fit statistics and factor loadings were within the acceptable ranges.

The extent to which the dimensions represented (explained) the employees' entrepreneurial behaviours were calculated with the second-order confirmatory factor analysis. As a result of the analysis, the dimensions that explained the employees' entrepreneurial behaviours best were NBV (0.81), Innovativeness (0.85), and sales proneness (0.95), respectively (Table 1).

**Table 2 Scale items, first-order and second order measurement model: CFA results**

Scale/Items	First-Order Model	Second-Order Model
	Factor Loading	Factor Loading
<b>Process Reengineering</b> (C.R.=0.81; $\alpha$ =0.80)		
<b>PR1</b> Introducing better ways of achieving optimization	0.79	0.84
<b>PR2</b> Discovering better means of reducing wastage in resources.	0.86	0.85
<b>PR3</b> Creating avenues via which the firms can reduce cost and increases its profit.	0.84	0.86
<b>PR4</b> Introducing and adopting better technologies than competitors	0.91	0.90
<b>Product Reengineering</b> (C.R.=0.81; $\alpha$ =0.80)		
<b>PDR1</b> Emphasis are on developing new products and improving upon existing products	0.80	0.81
<b>PDR2</b> Adding new features to the company's product.	0.87	0.85
<b>PDR3</b> Ensuring that products can perform more than one functions, such that it places the firm ahead of its competitors.	0.84	0.83
<b>PDR4</b> Creating products that meet but explicit and as well as intrinsic needs of customers.	0.90	0.91

Accordingly, it was observed that the factor loadings of the three dimensions for business reengineering were also greater than 0.40. The reliability coefficients of the dimensions were also over the acceptable values. It could be inferred that the measurement model enhanced the convergent validity since both fit statistics and factor loadings were within the acceptable ranges. The extent to which the dimensions represented (explained) the business reengineering were calculated with the second-order confirmatory factor analysis. As a result of the analysis, the dimensions that explained the business reengineering best were Product Reengineering (0.84), Process Reengineering (0.88), and Customer Reengineering (0.91), respectively (Table 2).

#### Analysis

The hypotheses were tested by using the Pearson's Product Moment Correlation with the aid of the Statistical Package for Social Sciences (SPSS. V.23). These analyses were conducted in such a way that each dimensions of employees' entrepreneurial behaviours (innovativeness, new market venturing and self-renewal), were paired against each of the corresponding dimensions of business reengineering (product reengineering, process reengineering and customer reengineering).

## RESULTS

### Sample Profile

Descriptive statistics for the sample showed that most of the participants were female (50.3 %), between 28-37 years old (54.0 %), and secondary school graduates (45.6 %). All three hypotheses showed significant relationships.

### Findings

Hypothesis 1, for instance predicted a direct positive and significant relationship between innovativeness and product reengineering, and this was supported. The proposed relationship between these two dimensions was revealed to be significant and in a prediction direction of ( $r = 0.529^{**}$ ,  $p < 0.01$ ). Thus it supports the first hypothesis of this study there is a positive and significant relationship between Innovativeness and product reengineering of the employees of Rokana Industries Plc. Similarly, Hypothesis 2 proposed that there was a direct positive and significant relationship between self-renewal and process reengineering, and the findings were in line. This proposed relationship between these two dimensions was revealed to be

significant and in a prediction direction of ( $r= 0.601^{**}$ ,  $p < 0.01$ ). Thus it supports our second hypothesis that there is a positive and significant relationship between self-renewal and process reengineering of the employees of Rokana Industries Plc. Hypothesis 3 also proposed a direct positive and significant relationship between new business venturing and customer reengineering, and the hypothesis was as well supported. The proposed relationship between these two dimensions was revealed to be significant and in a prediction direction of ( $r= 0.410^{**}$ ,  $p < 0.01$ ). Thus it supports the third hypothesis of this study there is a positive and significant relationship between new business venturing and product reengineering of the employees of Rokana Industries Plc.

Other notable results, although not proposed initially were that: innovativeness has a positive and significant relationship with process reengineering ( $r= 0.371^{**}$ ,  $p < 0.01$ ), but has a negative and an insignificant relationship with customer reengineering ( $r= -0.021$ ,  $p > 0.01$ ). Similarly, in the results of self-renewal and product reengineering and customer reengineering respectively, it was discovered that there was a direct positive and significant relationships between self-renewal and product reengineering ( $r= 0.398^{**}$ ,  $p < 0.01$ ), but the relationship between self-renewal and customer reengineering was not a significant one ( $r= 0.075$ ,  $p > 0.01$ ). Also, it was discovered that amongst the relationships between new business venturing and product and process reengineering respectively, there were positive and significant relationships respectively; ( $r= 0.233^{**}$ ,  $p < 0.01$ ;  $r= 0.295^{**}$ ,  $p < 0.01$ ). In general, the overall pattern of results indicated that employees' entrepreneurial behaviours is highly correlated and as well as significantly affects the business reengineering activities in Rokana Industries Plc.

**Table 3: Correlations between the dimensions on Employees' entrepreneurial behaviours and Business reengineering in Rokana industries Plc**

		1	2	3	4	5	6	7	8	9
Age	Pearson Correlation	1								
	Sig. (2-tailed)									
	N	149								
Educational Qualification	Pearson Correlation	.000	1							
	Sig. (2-tailed)	.996								
	N	149	149							
Gender	Pearson Correlation	.157	.137	1						
	Sig. (2-tailed)	.055	.097							
	N	149	149	149						
Innovation	Pearson Correlation	.149	-.183*	.052	1					
	Sig. (2-tailed)	.070	.026	.531						
	N	149	149	149	149					
Product Reengineering	Pearson Correlation	.243**	-.008	.023	.529**	1				
	Sig. (2-tailed)	.003	.927	.784	.000					
	N	149	149	149	149	149				
Self-Renewal	Pearson Correlation	.036	-.187*	-.041	.704**	.398**	1			
	Sig. (2-tailed)	.662	.023	.621	.000	.000				
	N	149	149	149	149	149	149			
Process Reengineering	Pearson Correlation	.041	-.075	-.102	.371**	.301**	.601**	1		
	Sig. (2-tailed)	.617	.365	.215	.000	.000	.000			
	N	149	149	149	149	149	149	149		
New Business Ventures	Pearson Correlation	.074	-.159	.022	.425**	.232**	.638**	.295**	1	
	Sig. (2-tailed)	.367	.053	.786	.000	.004	.000	.000		
	N	149	149	149	149	149	149	149	149	
Customer Reengineering	Pearson Correlation	.069	-.018	.003	-.012	-.025	.075	.015	.410**	1
	Sig. (2-tailed)	.402	.828	.968	.880	.759	.363	.859	.000	
	N	149	149	149	149	149	149	149	149	149

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

## **DISCUSSION OF FINDINGS**

This study tested three major hypotheses that stemmed out from a literature reviewed on employees' entrepreneurial behaviour and business reengineering and as well as on other business organizational outcomes. As proposed; employees' entrepreneurial behaviours showed positive and significantly relationships with business reengineering, without recourse to other intervening variables like gender and educational qualifications of the staff of Rokana Industries Plc. Just as proposed, and in line with previous studies in the area of our enquiries, employees' entrepreneurial behaviours and business reengineering have positive and as well as significant relationships in Rokana Industries Plc. In other words, the higher the levels of employees' entrepreneurial behaviour in Rokana industries Plc, the better results they are expected to enjoy as regards their reengineering activities. The positive and significant relationship between innovativeness and product reengineering is an indication that as the levels of employees' innovation increases, there would be similar increase in the rate at which the reengineer or redesign the products in Rokana industries plc. This finding has been supported by previous studies. For instance, Miner, Smith and Bracker, (2014) showed that when an organization is flexible, and employees' skills are properly taped such that they are allowed to invent or modify products, that such organizations record better performance as regarding products, process and as well as gaining new markets. Other studies with similar findings included Carrier (2010), which showed that innovativeness, provides large firms with favourable outcomes; Covin, (2009) showed innovativeness to be the key driver for new product development; Bchini (2015), indicated that innovativeness is the hub for organizational performance. Similarly, the positive and significant relationship that displayed against self-renewal and process reengineering indicates that the more self-renewal processes that Rokana industries plc undertake, that are as a results of their employees efforts would undoubtedly lead to better process reengineering. Previous researches tend to be in agreement with these findings; Zhang and Chan (2015), indicated that a business that undergo self-renewal on a regular basis often times enjoy better outcomes like employees engagement, job satisfaction and overall firm performance. in the same vain, Lee and Pennings (2012), showed that a firm that renews its internal processes on a regular basis often develops external capabilities against its competitors as they are bound to develop effective and efficient processes that enables then to maximize materials, machines, man, profit, and also reduce cost and wastages. Regarding the very strong positive and significant relationship between the new business venturing and customer's reengineering; the result in an indication that greater levels of business venturing by the employees would translate into getting new customers, as well as breaking into new markets or discovery new markets. This result is very similar to the results of similar studies; for instance, Campos, Acuña, Nuño de la Parra and Valenzuela, (2013) showed that the more that employees in firms in Mexico display tendencies of venturing into new business line, the more these firms attract new customers and as well as break into new markets. Cardon, Gregoire, Stevens, and Patel, (2013) also found a similar result in their study amongst the employees of firms in Venezuela; they discovered that firms that venture into new lines of businesses often times discover new markets and also discover better means of reaching their customers.

## **CONCLUSIONS**

Findings from this study lead us to conclude that entrepreneurial behaviours of employees in Rokana industries plc enhances their business reengineering processes. The findings provided us with empirical evidence, supporting the proposed hypotheses of the study. We therefore conclude that the various dimensions of employees' entrepreneurial behaviours have strong correlations and as well as significant relationships with their various corresponding dimensions of business reengineering. From all indications, we conclude that the more employees are innovating, the more they reengineer the products of Rokana industries plc. We also conclude that the higher the rate of self-renewal in Rokana industries plc, the more they come up with efficient processes of production, and finally, the extent of new business venturing, will often time provide them with the edge of competing favourably and breaking into new markets. Against these findings, we recommended that the management of Rokana industries plc should pay adequate attention to the entrepreneurial behaviours of their employee, i.e. innovation, self-renewal and new business venturing, as it has been proven that they are precursors for their firm to capturing new customers, by producing better products with efficient processes. We recommended that the management needs to maintain the observed status as indicated in the findings by ensuring that the maintain conducive organizational environments that enable employees to innovate, as it has been confirmed that the relationship it has with product reengineering is positive and significant; that the relationship between self-renewal and process reengineering is also positive and significant; finally the new business renewal-customer reengineering relationship is also positive and significant. We also recommend that other manufacturing and construction firms that intend to excel in their operations should emphasize adequate employees' entrepreneurial behaviors, as there are evidence backing the fact that it will lead to business reengineering.

## **REFERENCES**

- Amo, B.W (2006). Corporate entrepreneurship and intrapreneurship related to innovation behaviour among employees: 'Entrepreneurship from the employee's perspective'. Workshop at the Max Planck-Institut für Ökonimik, Jena, 2-3 February, 2006.

- Antoncic, B. and Hisrich, R.D. (2001), Intrapreneurship: construct refinement and cross-cultural validation. *Journal of Business Venturing*, 16(1), 495-527
- Antoncic, B., and Hisrich, R.D. (2003). Clarifying the Intrapreneurship concept. *Journal of Small Business and Enterprise Development*, 10(1): 7-24.
- Arviansyah.,Spil, T., and van Hillegersberg, J. (2014). Equivocality in IS/IT Project Evaluation: Model Development and Pilot Study. *Procedia Technology* 16(1), 1155 – 1165
- Bchini B. (2015). Entrepreneurial Orientation and Firms' Performance: The Case of Tunisian Companies. *International Journal of Economics, Commerce and Management United Kingdom*. Vol. III, Issue 3, pp. 1-15.
- Belousova, O., Gailly, B and Basso, O (2010). A Conceptual Model of Corporate Entrepreneurial Behavior. *Journal of business venturing*. 25(5), 2-32
- Budiono, A., Loice, R. (2012). Business Process Reengineering in Motorcycle Workshop X for Business Sustainability. *Procedia Economics and Finance* 4(1), 33 – 43
- Burgelman, R.A. (1983a) "Corporate entrepreneurship and strategic management: Insights from a process study." *Management Science*, 29(12), 1349-1364
- Campos, H. M., Acuña, L. S. A, Nuño de la Parra, J. P., and Valenzuela, F. A. A., (2013). Entrepreneurial Orientation in Mexican Microenterprises. *Journal of Entrepreneurship, Innovation and management*. (9) 3 5-20
- Cardon, M. S., Gregoire, D. A., Stevens, C. E., Patel, P.C. (2013). Measuring entrepreneurial passion: Conceptual foundations and scale validation. *Journal of Business Venturing*, 28(3), 373-396.
- Carrier, C. (2010). Intrapreneurship in large firms and SMEs: A comparative study. *International Small Business Journal* 12(3):54–61.
- Çoban, O. and Güles, H.K. (2011). The analysis of the basic dynamics of entrepreneurship in creating competitive advantages: The case of organized industrial zone in Turkey. *African Journal of Business Management* 5, 21, 8668-8677
- Covin, J.G. (2009). Entrepreneurial vs. conservative firms: A comparison of strategies and performance. *Journal of Management Studies*: 25 (5):439–462.
- Cypress, H.L. (2014). "Reengineering". *OR/MS Today*, Vol.21, No. 1, p. 18-29.
- Dess, G.G., Ireland, R.D., Zahra, S.A., Floyd, S.W., Janney, J.J., and Lane, P.J. (2003). Emerging issues in corporate entrepreneurship. *Journal of Management*, 29(3): 351-378.
- Dubey, S. K., Bansal, Sanjeev (2013). Critical Success Factors in Impelementing BPR in a Government Manufacturing Unit – An Empirical Study, *International Journal of Business and Management* 8(2)
- Fitsimmons, J., Douglas, E., Antoncic, B and Hisrich, R.D (2004). Intrapreneurship in Australian Firms. In *Proceedings AGSE-Babson Entrepreneurship Research Conference*, Melbourne.
- Gotlieb, L. (2013). "Information Technology". *CMA Magazine*, Vol. 67, No. 2, p. 9-10.
- Guimaraes, T. (2013) "Managing Expert Systems Technology and Business Process Re-engineering". In: *Symposium of the Information Processing Society of Japan*, Tokyo, Japan.
- Hammer, M and Champy, S.S (2013). "Beating the Risks of Reengineering". *Fortune*, May 15, 2013.
- Herbert, T.T and Brazeal, D.V (2012). The Future of the Corporation: Corporate Entrepreneurship on the fly. Unpublished article on entrepreneurship. (Retieved June 6, 2017 from [www.sbaer.uca.edu/research/icsb/2017/03](http://www.sbaer.uca.edu/research/icsb/2017/03))
- Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2001). *Strategic Management: Competitiveness and globalization*. 4th ed, Singapore: South-Western College Publishing.
- Hsu, I. C., Lin, C. Y. Y., Lawler, J. J., & Wu, S. H. (2007). Toward a model of organizational human capital development: Preliminary evidence from Taiwan. *Asia Pacific Business Review*, 13(2), 251-275.
- Jeroen, D.J and Sander, W (2008). Intrapreneurship: Conceptualizing entrepreneurial employee behaviour. Scientific Analysis of entrepreneurship and SMEs, report of Ministry of Economic Affairs, Netherlands.
- Kreiser, P., Marino, L., and Weaver, K. (2002). Assessing the psychometric properties of the entrepreneurial orientation scale: A multi-country analysis. *Entrepreneurial Theory and Practice*, Summer: 71-94.
- Lee, C., Lee, K., and Pennings, J. M. (2012). Internal capabilities, external network, and performance: a study on technology-based ventures. *Strategic Management Journal*, 22, 615-640.
- Lotz, H.M and van der Merwe, S.P (2013). An assessment of selected organisational-based factors on the perceived success of agribusinesses: a corporate entrepreneurship perspective. *Southern African Business Review* 17(3), 187-216
- Lumpkin, G.T and Dess. G.G (2001). Linking two Dimensions of Entrepreneurial Orientation to Firm Performance: The moderating role of environment and industry life cycle. *Journal of Business Venturing*, 19 (1), 429-451.
- Marimuthu,M., Arokiasamy, L and Ismail, M (2014). Human Capital Development and its Impact on Firm Performance: Evidence from Developmental Economics. *The Journal of International Social Research* 7(3), 265-272
- Miner, J. B., Smith, N. R. and Bracker, J. S. (2014) 'Role of Entrepreneurial Task Motivation in the Growth of Technologically Innovative Firms: Interpretations from Follow- Up Data', *Journal of Applied Psychology* 79(4): 627–630.
- Mokaya, S.O (2012). Corporate Entrepreneurship and Organizational Performance Theoretical Perspectives, Approaches and Outcomes. *International Journal of Arts and Commerce I(4)*.

- Okumus, F., Altinay, L and Chathoth, P.K. (2015). Strategic Management for Hospitality and Tourism. Amsterdam: Elsevier. (Sourced Online 15<sup>th</sup> June 2017: <http://www.Strategicmanagement.net/tourism>).
- Olawumi, J., and Isaac, I. (2014). Assessment of Critical Success Factors of Management Re-Engineering In Nigerian Oil and Gas Industry. *Winter Journal of Business*: Vol. 19 (12), 81-95.
- Pinchot, G.H. (1985). Intrapreneuring: Why you don't have to leave the corporation to become an entrepreneur. New York: Harper & Row. (Available: <http://www.harperandrow/entrepreneurship>. Date sourced 15<sup>th</sup> May 2017)
- Ringim, K. J., (2012), The Moderating Effect of IT Capability on the Relationship between Business Process Reengineering Factors and Organizational Performance of Banks. *Journal of Internet Banking and Commerce*, August 2012, vol. 17, no.2 (<http://www.arraydev.com/commerce/jibc/>)
- Ringim, K.J., Razalli, M.R and Hasan, N (2012), The Moderating Effect of IT Capability on the Relationship between Business Process Reengineering Factors and Organizational Performance of Banks. *Journal of Internet Banking and Commerce*. 17(2), 1-21
- Sathe, V. (2003). *Corporate eEntrepreneurship: Top Managers and New Business Creation*. Cambridge University Press, United Kingdom.
- Suriani,S., Abubakar, H and Saleh, H (2015). Intrapreneurship in Travel Business: Reengineering Business for Organizational Performance. *Review of Research*. 4(11), 1-10
- Udu, A. A. and Udu, G. O. C, (2015). *Entrepreneurship, 2<sup>nd</sup>. Ed*, Enugu, Rhyce Kerex Publishers.
- Vesper, K.H. (1984) Three faces of corporate entrepreneurship: A pilot study. In Hornaday, J.A., F.J. Tarpley, J.A. Timmons & K.H. Vesper, editors, *Frontiers of entrepreneurship research*. Wellesley, MA: Babson College. (Available: <http://www.corporateentrepreneurship>. Date sourced 15<sup>th</sup> May 2017)
- Wiklund, J. (1999). The sustainability of the entrepreneurial orientation-performance relationship. *Entrepreneurship Theory and Practise*, Fall: 37-48.
- Wiklund, J. and Shepherd, D (2005). Entrepreneurial orientation and small business performance: A configurational approach. *Journal of Business Venturing*, 20: 71-91
- Zhang, Li, H., Y. and Chan, T. S. (2015). Entrepreneurial Strategy Making and Performance in China's New Technology Ventures; The Contingency effect of Environments and Firm Competences. *Journal of High Technology Management Research*, 16, 37-57.

Okwo, Henry Uchenna<sup>1</sup>  
University of Nigeria.  
[okwo.henry.pg81372@unn.edu.ng](mailto:okwo.henry.pg81372@unn.edu.ng)

Onwe, Chukwuemeka Christian<sup>2</sup>  
Ebonyi State University, Abakaliki.  
[onwed12@yahoo.com](mailto:onwed12@yahoo.com)

Edigbo, Anthony Ogbuinya<sup>3</sup>  
Ebonyi State University, Abakaliki.  
[edigboanthony@gmail.com](mailto:edigboanthony@gmail.com) <mailto:okwo.henry.pg81372@unn.edu.ng>

Ezenwakwelu, C.A (Assoc. Professor)<sup>4</sup>  
University of Nigeria.  
[charity.ezenwakwelu@unn.edu.ng](mailto:charity.ezenwakwelu@unn.edu.ng)