

## **DEVELOPING ORGANIZATIONAL INNOVATION CAPABILITIES THROUGH HUMAN RESOURCES MANAGEMENT PRACTICES: EVIDENCE FROM NIGERIA'S BREWERY INDUSTRY**

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### **ABSTRACT**

This paper contributes to the on-going discussion on Human Resource Management Practices (HRMP) as an enabler, facilitator, prerequisite of firm level innovation (organisational innovation) being the immediate source of competitive advantage for organizations by exploring four hypotheses viz: HRMP have positive effect on organizational innovation - HRMP have positive influence on product innovation; HRMP have positive influence on process innovation; HRMP have positive influence on administrative innovation. Four human resource management practices (training and development, motivation, knowledge management and employees autonomy) were explored. Creativity and Innovation and Social Exchange theories were used to explain the link between human resource management practices and organizational innovation. Quantitative data was drawn from two large brewing organizations in Nigeria. Out of the two hundred and twenty questionnaire administered using simple random sampling, two hundred and one were completed and analysed. The result of the regression shows that human resource management practices generally have positive effect on organizational innovation (product, process and administrative innovation). This study found out that for brewing firms in Nigeria, training and development and motivation has mutual effect on the three dimension of organizational innovation. Knowledge management was also found to have positive influence on process and administrative innovation with no effect on product innovation. Employees' autonomy did not have any influence on process and product innovation but has significant impact on administrative innovation. Findings from this study also have implications for management practices. Managers in the sector can strive to improve process and administrative innovation by providing adequate and focus training, create avenue to share and transfer knowledge as well strengthen the reward system in other to upscale the skills, competencies, knowledge as well as the psychological and inner drive of employees to show more commitment and idea generation leading to innovation.

**Keywords: Human Resource Management practices, Organizational Innovation and Brewing firms**

## Introduction

The crucial nature of the present day world underlies a very vast and competitive society where ability to dictate changes and transformation adds the utmost value (Seyed and Omid, 2013); which is a function of creativity and innovation. Innovation has been seen as a major driver of organisations' profitability and also plays a central role in the knowledge based economy, until recently, the complex processes of innovation have been insufficiently understood. The tendency of organizations to develop new or improved products/services and the success of bringing those products/services to the market (Gumusluoglu and Ilsev, 2009) is what innovation is all about at the organizational level. Sometimes, it means organizations' capacity to recreate ideas and knowledge into modern products, services or processes continuously for the benefits of stakeholders (Seyed and Omid, 2013).

The creativity hosted by the organizations is a crucial resource, particularly, the ability to generate both ideas that are novel and useful; and ideas that can be implemented in order to solve a significant and emerging problems (Mumford, 2000). Creativity is something extraordinary, unusual or pattern breaking (Martens, 2011), which in the context of innovation also includes the implementation of the ideas into products, processes or procedures which will benefit the organization, the work team or the individual (Jiang, Wang and Zhao, 2012). The likeness of innovation can be increased by managerial practices, but it is the employees who are part of the firms that are considered as the source of new ideas (Mumford, 2000). Employees are the creators who generate new ideas, and who proposes and implement the ideas.

Furthermore, innovation is embedded in various disciplines and it is the process by which nations or firms recreate, modernized and redesign the production of goods and services that are new to them irrespective of whether they are new to their competitors, customers or the world (Mytelka, 2000). Innovation studies according to literature are characterized by divergent assumptions regarding core concepts and their connection (Sundbo, 1998; Lindell, 2012); with two commonalities i.e focus on novelty, and the role of people in the creation and diffusion of that novelty (Altman, 2014). According to OECD (2005), innovations is clearly distinguished into product, process, marketing and organizational innovation. While product and process innovation are referred to as technological innovation, marketing and organizational innovation are referred to as non-technological innovation (OECD, 2005). Studies related to organizational innovation is less common in innovation management literature until recently as a result of few studies linking organisational factors and its contributions to the development of all forms of innovation (Martins, Lopes and Barbos, 2012). Innovation is a prerequisite for business success and innovation performance (Hamel, 2006; Jamrog, Vickers and Bear, 2006); it is ubiquitous and its importance permeates within and among the organization value chain. Human resource management (HRM) goal is to efficiently utilize people in the organization through various HR practices like recruitment and selection, performance management, learning and development, etc. Therefore, it is not out of context to assert that the innovation capability of any organization largely depends on HR programmes and practices, since it has been argued

that individuals are the main source of any idea (Redmond, 1993; Shalley and Gilson, 2004). HRM plays crucial role in stimulating innovation processes in companies (Li, Zhao and Liu, 2006), by influencing creativity (Jiang et al., 2012) and knowledge management system (Jiménez-Jiménez and Sanz-Valle, 2011). In other words, HRM through its practices and programmes influences and shape the attitude, behaviour and skills of employees to perform at work towards achieving the goals of the organization (Chen and Huang, 2009). Literature has also reported a shift in focus and perspectives leading to outright shift from an instrumental view of HRM as a toolkit supporting a given process or output, towards a more HR-centric view on organizations where HRM is integrated into innovation related decisions (De Leede and Looise, 2005). According to Beugelsdijk, 2008, certain HRM practices do affect firms capacity to innovate, and might therefore be a valuable resource for firms wishing to foster innovation. Several studies has concluded that firms need to develop a system of internally consistent practices (Jiménez-Jiménez and SanzValle, 2005; Laursen and Foss, 2003) since a system with mutually reinforcing practices are the most beneficial to innovation performance rather than individual HRM practices (Laursen and Foss, 2003).

In a study conducted by Wang (2005), findings show that innovative firms treat HRM practices as the firm's strategy to encourage team responsibilities, promote organizational culture, and sustain customers' relationships through participation and empowerment. Development and introduction of new product, new process and/or new administrative practices requires staffers with creative minds, who are flexible, risk taking, and tolerant of uncertainty and ambiguity (Chen and Huang, 2007). Encouraging individual abilities, motivation and opportunities to perform creatively, requires HRM practices to improve organizational processes; fostering a more cohesive pattern of interaction, communication among employees and a clear vision for innovativeness (Evans and Davis, 2005; Gould-Williams, 2007).

Organizational innovation is generally defined as the creation of entirely new behaviour, attitude and ideas within an organization or a nation (Damanpour and Gopalakrishnan, 2001). The dimensions of organizational innovation are extremely complex which can be reviewed from either from the breadth of innovation including policies, system, administrative processes, products, services, and others; or the depth of innovation, which includes the importance, the degree of influence, effect on long term profitability, and others (Chuang, 2005). Basically, the general idea of organizational innovation is essentially related to creation or adoption of new forms of management and organizations practices, which may or may not be supported by technology, once it's come to fundamental aspects of social organization (Martins, et. al 2012). The recent broad categorization of innovation which included marketing and organizational innovation viz-a-viz studies related to innovation management has pointed to the fact that total dependent on technology do not guaranteed continuous innovation and competitive advantage of organization in the long run; rather, marketing and organizational innovation should be examine separately to cover the social, economic and organizational aspect of the phenomenon of innovation.

Interestingly, before OECD classification of four types of innovation, some definition offered by scholars presumptuously integrates the concept of organizational innovation. For instance, Damanpour and Schneider (2001) had attempted a comprehensive definition of innovation as the adoption or creation of new product, process, technology, politics, structure or administrative systems. The aspect of politics, structures and administrative systems connotes that successful innovation should be inclusive in terms of adoption or creation of new administrative systems, structures and politics that are meant to establish new way of organizing job related task in the organization. Generally, organizational innovation is specifically related to the creation or adoption of new ways of managing and organizing work related process and procedures. To change the processes, systems, techniques and methods of organizing work and task of organization to something newer, firms need to consistently pay attention to how to build the capabilities of its workforce. Related studies on innovation evidenced that, an organization's approach to human resource management is crucial and instrumental to eliciting positive work behaviours among employees, which in turn enhances organizational innovation (Tan and Nasurdin, 2010). According to Shipton, Fay, West, Petterson and Birdi (2005), the management of a firm's human capital would promote innovation by enabling employees to create, transfer and institutionalize knowledge.

Globalization and competition have encouraged firms to be proactive in their human resource management practices in order to influence their workforce to show more commitment and come up with new thinking in all aspect of organization's value chain. HRM practices which consist of a system that attract, develops, motivates and retained employees to ensure effective implementation and survival of the organization and its members (Jackson and Schuler, 1995); are essential to innovation performance. Specifically, it includes such activities as recruitment, talent management performance management, grievance procedures, learning and development, participation, information and knowledge management system, motivation, career development, rewards and compensation among others. Against this backdrop, the objective of this study was to examine the relationship between of HRM practices (knowledge management, employees' autonomy, motivation and training) on organizational innovation (product, process and administrative innovation) capability in the Nigerian's Brewing firms. Drawing upon the above, this study therefore constructs the following hypotheses:

H<sub>1</sub>: Human resource management practices (knowledge management, training and development, intrinsic motivation and autonomy) have positive influence on organizational innovation.

H<sub>1a</sub>: Human resource management practices (knowledge management, training and development, intrinsic motivation and autonomy) have positive influence on process innovation.

H<sub>1b</sub>: Human resource management practices (knowledge management, training and development, intrinsic motivation and autonomy) have positive influence on administrative innovation.

H<sub>1c</sub> Human resource management practices (knowledge management, training and development, intrinsic motivation and autonomy) have positive influence on product innovation.

### **Human Resource Management Practices and Organizational Innovation**

Organizational innovation generally is the mechanism applied by firms to adapt to changes in business environment, competition, technological advancement and market expansion by producing newer products, techniques and systems (Utterback, 1994; Dougherty and Hardy, 1996). More so, the strategic interconnectedness of Human Resources Management across the organization has placed before the practitioners, the potential to influence innovation. Innovation is directly proportional to the attitude of those who manage the human capital of an organization, their ability to adopt best practices (including HRM practices) that will encourage and support innovation as well as create an environment where creativity and innovation is allowed to flourish is ever important. Availability of technology and other technical components may act as a catalyst, but creativity will not flourish if organizations do not have a culture of encouraging and supporting innovation (Ogbo, Okechukwu and Ukpere, 2012). Organizational innovation according to literature is viewed as multi dimensional phenomenon, comprising of product innovation, process innovation, and administrative innovation (Tan and Nasurdin, 2010). Previous studies reported that factors such as individual, environmental and organizational structure are strong determinant of innovation at the organisations' level. The role of employees in the whole innovation process has now occupied the center stage in academic work due to the impact of work environment related and organisational factors in creativity and innovation.

Accordingly, HRM practices are the functional methods for organizations to influence and shape attitudes, behaviours and skills of employees to perform at work in order to achieve the goals of the organization (Chen and Huang, 2009). Certain HRM practices do affect the innovation tendencies of firms, and might therefore be a valuable resource for firms wishing to innovate (Beugelsdijk, 2008). Most recent studies on innovation management reported that organisations should develop a system of internally consistent HRM practices (Jiménez-Jiménez and Sanz-Valle, 2005; Laursen and Foss, 2003) since a system with mutually reinforcing practices are the most beneficial to innovation performance rather than isolated HRM practices (Laursen and Foss, 2003). Unlike other forms of innovations, where the aim is to increase sales and volume or market share (marketing innovation); improvement in production or delivering services through new equipment and software (process innovation); and introduction of good or service that is new or significantly improved (product innovation). Organizational innovation deal primarily with people and the organization of work (OECD, 2005). In achieving any of these types of innovation, the contribution of the organisational factors within the organization is essential (Becker and Matthews, 2008).

Jiang, Wang and Zhao (2012) stated that HRM practices that motivate employees to a sense of autonomy will result in employees being more effective in problem solving and

creating new ideas in order to cope with job demands. For example, since recruitment includes organizational practices to attract, recruit and retain employees with traits that support innovation, HRM is argued to an important aspect of organisational practices that determines innovation (Jiménez-Jiménez and Sanz-Valle, 2008). Additionally, Chen and Huang (2009) opined that recruiting workers with appropriate skills and attitude to needed to perform at work will enable organizations to integrate diverse sources of knowledge and hence stimulate innovations. The HR of any organisation is the nucleus as well as the hub as no organization has the chance of being a global competitor without innovation. In light of the foregoing, there is consensus across HRM spectrum that innovation capabilities of an organization reside in the intelligence, imagination and creativity of its employees (Mumford, 2000). Understanding the fundamental drivers and requirement influencing an organization's ability to innovate is a function of successful implementation of new product, ideas, practices, methods and system. It has been widely acknowledged that effective HRM practices are significant in extracting positive work behaviour among employees, which consequently lead to organizational innovation (Damanpour and Gapal Krishnan, 1998 and Tan and Nasurdin, 2010).

However, innovation according to Williams (1990) may not occur by itself. Organizations must provide their employees the opportunities to be creative or must make demand for innovation from their employees and must also ensure sustainability of innovation performance through Innovative Work Behaviours (Janssen, 2014). According to Shipton; Patterson and Birdi (2005), effective management of a firm's human capital will promote innovation by enabling employees to create, transfer, and institutionalize knowledge. Harter; Schmidt, and Hayes (2002) suggested that HRM practices can generate increased knowledge, motivation, synergy, and commitment of firm's workers, resulting in a source of sustained competitive advantage for the firm's innovation performance. Human Resources Management practices play an important role in supporting employees to exhibit favourable attitudes and behaviours, which are required to support and implement the competitive strategy of an organization (Hiltrop, 1996). Below are some modern HRM practices found to be impactful on organizational innovation.

Autonomy is related to granting and allowing freedom to employees for determining the means by which to achieve a task not necessarily autonomy for selecting what goals to achieve for the organisation (Amabile, 1996). Employees who perform better creatively often value independence and autonomy. An organizational culture that supports autonomy in achieving clearly communicated goals will likely be more successful in terms of creativity and innovation than an organization that does not (Janssen, 2014). An environment of freedom and autonomy is more likely to tap into the intrinsic motivation of the employees, which is key in promoting creativity in organizations (Ling-Tan, 2011). A job design that increases autonomy and focus on empowerment were found to influence the motivation for being creative, to contribute to innovations (Jiang et al, 2012) and to generate more product innovations (Beugelsdijk, 2008). Autonomy raises the psychological empowerment of the

employee and it is said to be a source of creativity and innovation. People who are empowered are more likely to exhibit creative behavior, (Zhou, 1998; Jung et al., 2003).

Learning occurs to increase the availability of knowledge to the organization with the view to amplify the value of its intellectual assets, such as innovation and capital (Ling-Tan, 2011). Knowledge Management has been broadly defined from many perspectives. For instance Wiid (1997), referred to it as a set of activities that focus an organization attempt to acquiring knowledge both internally and externally. As reported by Cakar and Yildiz (2010), knowledge management is an integrated and systematic approach which contains database, documents, policies and procedures including the current expertise and experience and which is related to determining, managing and sharing all information assets of the enterprise. In the value creation process, the knowledge, expertise and commitment of the employees are the key input on which the innovation initiative tends to depend mainly (Youndt, 1996). Knowledge management enhances engagement in innovation through generating, using, and sharing new ideas and exploitation of the organization's thinking power (Huang and Li, 2009; Darroch and McNaughton, 2002; Lin and Lee, 2005; Plessis, 2007). In general, knowledge management effectiveness can be conceived as the effectiveness of an organization in managing the knowledge acquired, shared, and applied by its employees. In summary, knowledge management effectiveness is conceived as a process to enhance knowledge application necessary to achieving organizational innovation for improving business performance (Ling-Tan, 2011). According to Ozigbo (2012), knowledge management essentially embodies organizational processes that seek synergistic combination of data, information processing capacity of information technologies, and the creative and innovative capacity of human beings.

Training is associated with higher innovative performance (Beugelsdijk, 2008; Shipton, et al, 2006). It provides employees with the required knowledge, skills and ability (KSA) needed for innovation (Jiménez-Jiménez and Sanz-Valle, 2008). Innovative organizations tend to see organisational learning as the basis for team building and performance. According to Senge (1990) in Barker and Neailey (1999), team learning is "the process of aligning and developing the capability of the team to create the results its members truly desire". Team-based learning is seen as a good way to foster innovation, because "heterogeneity in decision making and problem solving styles produce better decisions through the operation of a wider range of perspectives and a more thorough analysis of issues. Furthermore, team-based learning can act as a stepping stone approach on which other teams in the organization can build and it is therefore a platform for developing a major source of competitive advantage (Barker and Neailey, 1999). Training and development is argued to be the process of competence development and one of the HRM practices that was found to have direct influence on organizational innovation. Bysted and Jespersen (2013) describe training as competence development and argue that when employee's competencies get developed, their creative skills get stimulated which in turn might trigger their innovative working behaviours.

Employees that are creative and enthusiastic on the job see training as the most important reason why they need to stay on the job. Training and development are sources of ideas and innovations that safeguards organizations against future workforce turnover (Ldama and Bazza, 2015). In a study that examine the effect of human resource training and development in Nigerian hospitality industry, Audu and Gungul (2014) reported that training and development of employees are essential activities needed by all organizations considering the ever demanding technological improvement, innovation and technical advancement.

People will be most creative when they feel motivated primarily by the interest, enjoyment, satisfaction, and challenge of the work itself – and not by external pressures. This is the “Intrinsic Motivation Principle of Creativity and Innovation” (Amabile, 1996). Recent research has shown that intrinsic motivators are better predictors of innovation than extrinsic motivators (Patterson and Kerrin, 2009), and that intrinsic motivators such as desire to contribute and task challenge are more often better predictors of outcomes than pecuniary extrinsic motivators (Sauer mann, Cohen and Stephan, 2010). The elements that make up intrinsic motivation include a sense of self-determination in doing the work (rather than a sense of being a pawn of someone else), a feeling that one’s skills are being both fully utilized and further developed, and positive feelings about the work, which may be akin to positive affect or positive emotion (DeCharms, 1968; Lepper and Greene, 1978; Deci and Ryan, 1985; Deci, Koestner and Ryan, 1999: as in: Amabile and Fisher, 2009).

This study was conducted drawing from social and psychological theoretical perspectives in explaining how social/work environment factors and individual employees behaviour can be strengthen to foster creativity and innovation through human resource management practices. The Social Exchange Theory (SET) is among the most influential paradigms for understanding work place behaviors (Blau 1964). The concept of Social Exchange and the norms of reciprocity have long been used by researchers to describe the motivational basis behind employee’s behaviors and encouraging factors for positive employee’s attitude. Positive actions directed at employees by the practices of HRM which are aimed to support the working conditions in terms of acquisition of new skills; freedom to decide on the best method in the performance of task; and the intrinsic motivation that can enhance their creative ability to deliver innovation will lead to establishment of high quality exchange relationship that will creates feelings of obligation for employees to reciprocate in positive ways to their organizations. The general presumption is that workers can form distinguishable social relationships with the employing organizations if there is feeling of genuine obligation from both parties. These distinct relationships have implications for behaviors, particularly, since individuals return the benefits they receive, they are likely to match goodwill and helpfulness towards the party they have a social exchange relationship with (Cropanzano and Mitchell, 2005).

Accordingly, social exchange refers to relationship that entails unspecified future obligation, which generates an expectation of some future return for contributions. The



relationships in social exchange are based on individuals trusting that the other parties to the exchange will fairly discharge their obligation in the long run (Holmes, 1981). The implementation of progressive Human Resources Management Practices that affects employee's skills and motivation can create competitive advantage for organizations due to the strategic value of HR in creating organizational culture and social relationship that cannot be readily replicated by other organizations. Social exchange is the most basic form of exchange (Blau, 1964) and it is based on norms of reciprocity (i.e. managerial expectations - recognition, empowerment and investment in human assets). The exchanges occurring between employee and its organization go well beyond simple economic exchange.

In applying the social exchange theory to explain this phenomenon, the rationale behind this explanation is the "norms of reciprocity", "trust" and "investment in human asset". Employees who perceived a highly supportive work environment are more likely to reciprocate the organization with positive attitudes such as high-level of effective commitment and favorable work behavior that can bolster creative capacity accompanied by socio-emotional factors. Specifically, HRM practices which are intended to promote supportive work environment (i.e. autonomy, motivation, knowledge management and training) are prerequisite for organizational innovation. In short, the underlying premise in the social exchange theory predicts that the exchange of favorable treatment could be prolonged if the receipt of resources from another party is highly in need and valuable (Eisenberger, 1986). At its core, innovation is interactive as well involves socio-political process that are expected to be resisted by organizational members who are committed to the existing framework of thoughts and actions (Janssen, 2003; Kanter, 1988). Considering the socio-political nature of innovation process, employee's willingness to invest in creative activities may depend largely upon the extent to which they perceived the support from their organization. Human resources management practices such as autonomy/freedom, focused training, employee motivation and knowledge management are considered as practices that are supportive, which can strengthen social relationships leading to innovation.

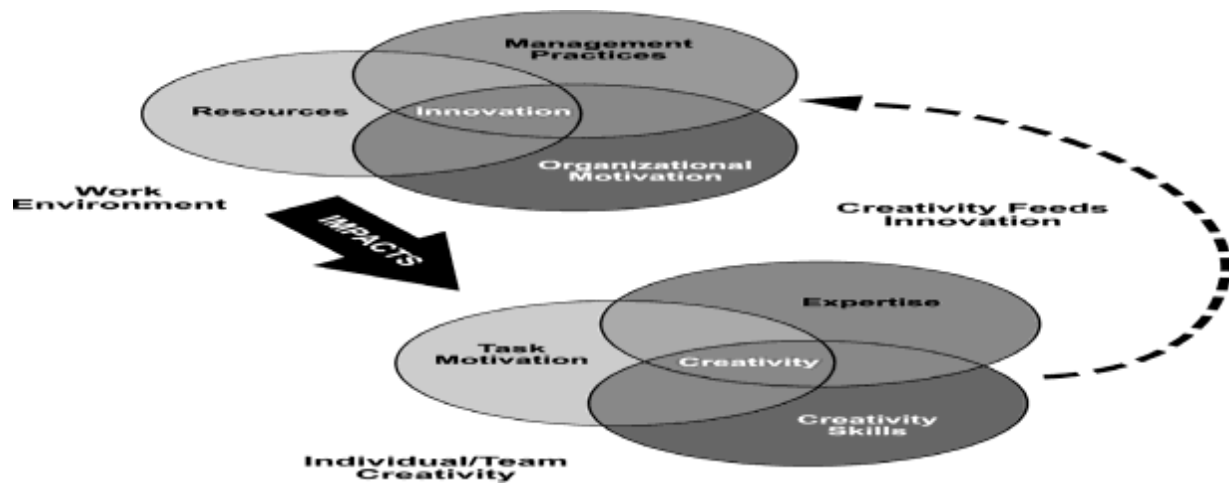
The second theoretical perspective - componential theory of Creativity and Innovation (Amabile, 1983) is a social psychology theory with a comprehensive model of social and psychological components necessary for an individual to produce creative work that will eventually be implemented to become innovation. Two categories of work environment that are either stimulants or obstacles to innovation within the organization were identified. Stimulants refers to organizational and supervisory encouragement, work group support, sufficient resources and challenging work, while obstacles form of environment refers to organizational impediments and work load pressures. Organizational settings revealed a number of work environment factors that can block innovation, such as norms of harshly criticizing new ideas; political problems within the organization; an emphasis on the status quo; a conservative, low-risk attitude among top management; and excessive time pressure (Amabile, 1996). Other factors that stimulates innovations such as a sense of positive challenge in the work; work teams that are collaborative, diversely skilled, and idea-focused; freedom in carrying out the work; supervisors who encourage the development of

new ideas; top management that supports innovation through a clearly articulated creativity-encouraging vision and through appropriate recognition for creative work; mechanisms for developing new ideas; and norms of actively sharing ideas across the organization (Amabile, 2012). Innovations most likely occur when there is an overlap of people's skills and their deepest passion (strongest intrinsic interest).

The central prediction of the theory is that, element of the work environment will impact individual's creativity and that creativity produced by individuals and teams of individuals serves as a primary source for innovation within the organization (Amabile 1996). Four components are necessary for creativity to take place out of which three are within the individual employee working in the organization (domain-relevant skills, creative-relevant processes and intrinsic task motivation) and the fourth component is outside the individual employee (social environment in which the individual is working): **Domain Relevant Skill/Expertise** - This explains the fundamentals for all creative work. It includes the cognitive pathways used for solving a task or a problem (Amabile, 1997). The expertise component is also the source of intelligence and the repertoire of knowledge used to solve problems. **Creativity skills** - This component focus on personal characteristics such as self-discipline, risk-taking orientation, tolerance of uncertainty, the ability to explore new pathways, working style, being persistent to frustration and relatively not being bothered by social approval. **Task motivation** -This component is the driving force for creative actions in an organization. This element is fundamental and is connected to the intrinsic motivation principle of creativity which states that, people are at their most creative when they are intrinsically motivated by the challenge, joy, satisfaction and interest in the work itself.

From the basic model of individual creativity developed in 1983, Amabile expanded the theory to encompass both creativity and innovation in the organization. A parallel set of components was proposed for innovation to expand the theory stating that innovation depends on the resources in the task domain (analogous to domain relevant skills at the individual level); skills in innovation management (analogous to an individual's creative-relevant processes); and motivation to innovate (analogous to individual task-motivation).

**Figure 1: Component of Creativity and Innovation in Organization**



**Source:** Adapted from Amabile (1997).

### Methodology

As hypothesized above, it is expected that human resource management practices when applied together will show the extent and degree of influence on various types of innovation at the organisational level than when implemented individually. Consequently, the objective of the paper is to see if bundles of HRM practices employed together have significant association with organisational innovation than when they are implemented individually. Human resource management practices comprised of 24 items that included Employees autonomy (6 items), Training and development (6 items), intrinsic motivation (6 items) and Knowledge management (6 items). All items were adapted from previous study of Wang et al. (2008) and Argawala (2003). The response format was based on five-point Likert scales ranging from 1- strongly disagree and 5- strongly agree. Organizational innovation was measured using 15 items that included process innovation (5 items), process innovation (5 items) and administrative innovation (5 items). The response format was based on seven-point likert scale ranging from (1) strongly disagree to (5) strongly agree. Measurement of Product innovation adopted a modified version of product innovation questionnaire which has been employed in previous studies using two proxy variables indicating whether the brewing firms introduced new products or engaged in product reformulation and/or rebranding; whether the firms introduced new production activities or modified the existing process for optimization and improved quality; and whether the organizations introduced new work procedures, routines and design or modified the existing administrative procedures, reward systems and employee's relations strategies (Tan and Nasurdin, 2010; Jimenez-Jimenez and Sanz-Valle, 2008; Chew, 2000). This study used a form of factor analysis (principal component analysis) to reduce the broad set of practices. The principal component analysis (PCA) methods estimate linear combinations of the underlying variables which in this case are indicators of the four dimensions of HRM practices and organisational innovation that explains the highest possible fraction of the remaining dataset (Laursen and Foss, 2003). Using the Varimax rotation with Kaiser Normalization, this study find out the underlying dimension of organisational innovation (product, process and administrative

innovation) and human resource management practices (knowledge management and organizational motivation). A regression analysis was conducted to explore the possible relationship between the four dimensions of human resource management practice on organisational innovation.

### Population and Sampling

The brewery market in Nigeria is oligopolistic duopoly, with the emergent of one other global player joining in the last few years. The market is now operating under three major multinationals, hence the use of purposive sampling to select the participating organizations. A quantitative research methodology was used and for finalizing the research instruments, the descriptive and causal research was used to conduct the survey. In Nigeria, the brewing market is growing fast for many years. The target population for this study were senior and managerial levels employees in the two selected brewing firms. The choice of senior and managerial levels for the study was because employees in that category have experience, knowledge and better understanding regarding various aspects of human resource management practices and organisational innovation. Convenient sampling technique was used for collection of data. Two hundred and twenty (220) copies of questionnaire were distributed among managerial and senior level employees in the selected breweries in Nigeria out of which two hundred and one (201) were completed and valid for analysis.

### Assessing Reliability

For measuring the internal consistencies of the statements, the Cronbach's Alpha reliability coefficient was used to determine the reliability of the instrument. Values of the overall Cronbach's Alpha coefficients for each construct which ranges from 0.613 to 0.874 suggesting satisfactory level of construct reliability and consistency. The coefficients oscillate around 0.6 which met the reliability criterion of Jolibert and Jourdan (2006).

**Table 1 Reliability of Measurement**

Constructs/Variables	No. of Items	Chronbach's Alpha	
		Brewery A	Brewery B
Product innovation	5	0.693	0.613
Process innovation	5	0.730	0.661
Administrative innovation	5	0.634	0.646
Motivation	6	0.817	0.796
Knowledge Mgt.	6	0.754	0.759
Training and Development	6	0.818	0.872
Autonomy	6	0.711	0.704

The table above demonstrates the results of reliability analysis for every construct. The results show that Cronbach's alpha varied from 0.613 to 0.817. It was eminent that all the alpha values were above 0.6, indicating that the constructs used in the study are reliable and good.

### **Confirmatory Factor Analysis**

The study first extracted the factor structure using Principal Component Analysis (PCA). A principal component analysis with Varimax rotation (varimax with Kaiser Normalization) was conducted to find out the underlying dimension of organisational innovation (product, process and administrative innovation) and human resource management practices (knowledge management and organizational motivation). Table 2 below presents the confirmatory factor analysis showing the extracted structure and factors loading for organisational innovation as well as the four HR practices which were significant and considered appropriate for further analysis.

**Table 2 Estimates of constructs of the study**

Constructs	Items	Estimates
Autonomy	Freedom to solve job related problems	Autonomy .855
	Effect of task freedom on employees' creative ability	Autonomy .691
	Effect of freedom to adopt best practices on innovation	Autonomy .706
	Impact of employees' freedom on idea generation	Autonomy .877
	Impact of employees' freedom on risk taking ability	Autonomy .721
	Degree at which job autonomy influence innovation	Autonomy .730
Training and Development	Effect of training on employee's general competency for creativity	Training .701
	Impact of continuous training on innovation	Training .796
	Effect of focus training on employee's creative ability	Training .806
	Impact of regular training on employee's creative ability	Training .8.61
	Impact of training on learning and problem solving skills	Training .791
	Influence of learning and development on innovation	Training .844
Knowledge Management	Existence of Knowledge Management policy	Knowledge Mgt. .735
	Sharing of job related information on product development	Knowledge Mgt. .693
	Information sharing among individual and between teams	Knowledge Mgt. .606
	Sources of Knowledge available	Knowledge Mgt. .677
	Knowledge sharing mechanisms	Knowledge Mgt. .781
	Institutionalization of knowledge	Knowledge Mgt. .737
Motivation	Reward for Creativity and Intelligent	Motivation .847
	Award and recognition for outstanding performance	Motivation .841
	Adequate compensation for work done	Motivation .798
	Supervisor support and encouragement	Motivation .610
	Adequate training	Motivation .904
	Favourable working condition	Motivation .818
Process Innovation	Introduction of new process	Process Innov. .804
	Significant improvement in existing process	Process Innov. .703
	Optimization of the existing process	Process Innov. .678
	Ongoing new process development	Process Innov. .625
Product Innovation	Introduction of new product	Product Innov. .793
	Significant improvement in existing product	Product Innov. .827
	Reformulation of existing product	Product Innov. .756
	Rebranding of product components	Product Innov. .687
Administrative Innovation	Introduction of new administrative procedures and routines	Admin Innov. .809
	Significant Improvement in existing procedures and routines	Admin Innov. .647
	Introduction of new employee relations strategies	Admin Innov. .864
	New managerial structure	Admin Innov. .731
	Improvement in existing project team	Admin Innov. .881

Through confirmatory factor analysis of assessing measurement, the maximum likelihood estimation technique was adopted (Agarwal, Chawla and Singh, 2017)

### Analysis of Demographics

Table 3, showed that male dominated the workforce in brewing firms. Specifically, result indicated that most of the respondents (89%) are males. The age distribution of respondents showed that most of the respondents (38.3%) are between 23-37 years. The distribution of respondents according to marital status indicated that majority (93%) are married. The distribution of respondents according to highest education showed that larger percentages (74.6%) are graduates. The distribution of respondents according to length of service indicated that most of the respondents (44.2%) had spent between 6-8 years working in the breweries.

**Table 3: Frequency Distribution of Demographic Profile of the Respondents**

Demographic	Category	Frequency	Percent
Gender	Female	22	11
	Male	179	89
Age	18 -22	6	6
	23 -27	34	16.9
	28 -32	56	27.9
	33 – 37	77	38.3
	38 – 42	19	9.5
	Above 42	9	4.5
Marital Status	Married	187	93
	Unmarried	14	7
Qualification	Graduate	150	74.6
	Master	49	24.3
	PhD	2	1
Service Period	3 – 5	60	30
	6 – 8	89	44.2
	9 - 11	33	16.3
	More than twelve years	19	9.5
<b>Total</b>		<b>201</b>	<b>100</b>

Note N=201

### Hypotheses Testing

A regression analysis was conducted to test hypothesis H<sub>1</sub> to H<sub>c</sub>. Four variables of human resource management practices (Knowledge Management, autonomy, training and intrinsic motivation) were penetrated as shown below:

**Table 4: Result of Regression Test showing the impact of HRM Practices on Organizational Innovation**

	Process Innov.	Admin Innov.	Product
Innov Predictors	Std. $\beta$	Std. B	Std. $\beta$
HRM Practices:			
Knowledge management	0.27**	0.25**	0.15
Autonomy	0.15	0.20*	0.09
Training and development	0.25**	0.30**	0.25**
Intrinsic Motivation	0.29**	0.28**	0.29*
R <sub>2</sub>	0.24	0.31	0.18
Adjusted R <sub>2</sub>	0.17	0.28	0.13
$\Delta$ R <sub>2</sub>	0.19	0.30	0.19
F-Value	5.88**	10.39**	5.79**
$\Delta$ F-Value	7.91**	14.28**	6.83**

**Note: \*\*P<0-01, \*P<0.05**

From the table above, R<sub>2</sub> of the process innovation is 0.24 indicating that the four dimensions HRM practices contributed 24% to the variance in process innovation. The R<sub>2</sub> of administrative innovation shows is 0.31 meaning that the four practices of HRM contributed 31% to the variance in administrative innovation while the R<sub>2</sub> of product innovation 0.18 indicating that the four human resource management practices contributed 18% to the variance in product innovation. The table also show the change in F-Value to be 7.91% for process innovation, 6.83% for product innovation and 14.28% for administrative innovation was significant (P< 0.01). Two out of the four HRM practices (training and development and intrinsic motivation) were found to have mutual effect on the three dimension of organizational innovation. The implication of the result depicts that when organizations have a well designed and focus training with high level of implementation, it will advance the competencies and capabilities of employees by developing requisite skills and ability to deliver outcomes. Also, employees will be most creative when they feel motivated primarily by the interest; enjoyment, satisfaction, and challenge of the work itself will enhance idea generation leading to innovation. Statistically, the result further shows that training and development affect process innovation ( $\beta=0.25 < 0.01$ ), administrative innovation ( $\beta=0.30 < 0.01$ ) as well as product innovation ( $\beta=0.25 < 0.01$ ). Knowledge management also has influence on process innovation ( $\beta=0.27 < 0.01$ ) and administrative innovation ( $\beta=0.25 < 0.01$ ) with no impact on product innovation. Motivation also demonstrated positive link to process innovation ( $\beta=0.29 < 0.01$ ), administrative innovation ( $\beta=0.28 < 0.01$ ) and ( $\beta=0.28 < 0.01$ ). Autonomy did not depict any association with process and product innovation but has significant impact on administrative innovation ( $\beta=0.21 < 0.05$ ). The results therefore provide support for hypotheses H<sub>1a</sub>, H<sub>1b</sub> and H<sub>1c</sub>.



## **Discussion and Conclusion**

The purpose of this study was to examine the relationship among human resource management practices and organizational innovation. The statistical consequences attained in this study demonstrated that human resource management practices have a significant impact on firm's innovation. The consequences of the above result shows that when organizations engage in focus training create new and alternative ways of sharing knowledge and information as well as renew the reward system to reflect prevailing circumstances of employees, it will enhance growth of individual obligatory expertise and their motivation to learn, therefore increase their chances of generating new ideas and creativity that will lead to innovation. The results of the study also offer some important suggestion to the brewing firms in Nigeria to focus on motivation, training and knowledge management practices to foster organizational innovation. Employees that undertake training are expected to apply the knowledge, transfer and institutionalize the knowledge through effective mechanisms to increase organizational learning. In other words, combining training and effective knowledge management system with appropriate motivation will enhance the generation of new ideas that will promote process and administrative innovation with some level of improvement on product innovation. Similarly, the findings provide some managerial implications. Mangers in the brewing firms can strive to improve process and administrative innovation by providing adequate and focus training related to process and administrative tasks more often as well strengthen the reward system in other to enhance the inner drive of employees for more commitment and idea generation. Through effective human resource management practices, individual are capable to create latest ideas and innovative dreams which are important and helpful to the overall firms innovation process.

## **Recommendation**

Human resource management practice is crucial to how organisations influence and shape the attitude, behaviors and skills of individual employees to enhance innovation. In line with the findings of this study, the following recommendations are proposed:

1. Top management should recognize that apart from financial resources, research & development activities and technology, organisational factors such as managerial expectations, organisational structures, practices and procedures (i.e supportive HR practices) are essential requirements to build socially rewarding relationship that can promote trust, commitment and norms of reciprocity between actors in the organisation to foster innovation.
2. Top management of organisations should create the atmosphere that will promote knowledge acquisition and sharing, encourage creativity through supportive management practices with dedicated administration to shape employee attitude and behaviour to foster organisational innovation.

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