

THERAPEUTIC ENTREPRENEURSHIP: ANALYTICAL FEASIBILITY OF SNACKS MADE FROM LOCAL FOODSTUFFS

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ABSTRACT

This study envisaged how therapeutic entrepreneur energized their innovation skills on analytical feasibility of snacks made from local foodstuffs (pumpkin, sweet potatoes, dates, tiger nuts, native bananas) and the implications for sustainable health amongst the elderly in Imo North, Imo State. There were five specific objectives and hypotheses. The study adopted the phases of research and development (R and D) cycle proposed by Gall, Gall and Borg. The analyses were performed using SPSS version 23 (19). Differences in means at $p < 0.05$ were considered significant. The formulated hypotheses were analyzed using ANOVA. Any significant level less than 0.05 was significant and accepted. But any significant level more than 0.05 was not significant and therefore rejected. Some of the findings are that the proximate compositions (moisture, protein, crude fiber, crude fat, ash, carbohydrate and gross energy values) of the samples were normal. The moisture content ranged between 25.97% and 20.85% with 20.85 (SPC 2) the lowest moisture content. The results showed no significant difference in the three samples. According to the results, PTC 1 has the highest calcium value with 9.78mg while NBC has the lowest calcium value at 8.92mg. The magnesium value of the samples ranged between 67.12mg (NBC 1) and 71.19mg (SPC 2) which are the lowest and highest values respectively. The sodium content of the snacks ranged between the lowest value of 170.35mg (PTC 1) and the highest value of 200.19mg (SPC 2). Among the recommendations is that the amount of water added during mixture of the flours can be reduced in order to achieve a more minimal moisture content of the when producing the snacks in order to achieve a longer lifespan for the product. This should therapeutic entrepreneur special diets to boost their energies in manhandling activities.

KEYWORDS: *Pumpkin, Sweet Potatoes, Dates, Tiger Nuts, Native Bananas, Therapeutic Entrepreneurship, Risk Culture, Innovation Skills, Passion*

Introduction

Therapeutic entrepreneurship is a means to ascertain the best diet that boost and energizes entrepreneur effectiveness and efficiency. This is the flow of nutrition and diet that aids wellness, wellbeing and livelihood of entrepreneurs. Good and adequate food is a merriment for every entrepreneur's sustainability, survival and success. Credible nutrition and diet elevate sound mental health. This leads to upwards spiral and positive emotions. This reduces, depression, anxiety, frustration, injelitis, bitterness, boredom and cynicism (Ovharhe, 2022a, 2022b).

Balancing business merchandizing function with diet is cumbersome for entrepreneurs. Over a decade, dietician and nutrition experts with mental health specialist, Professor Stanley Princewill Chukwuemeka using 'systemization of knowledge' has envisaged several practices to investigate the modalities towards managing entrepreneurs' mental health, wellness and wellbeing has demonstrated the efficacies of nutrition and entrepreneurship functions (Ovharhe, 2022, Ovharhe, 2023a, Ovharhe & Chukwuemeka, 2023). This has showed that result from the entrepreneurs work overloads, stressor, frustration, burnout, anxiety, depression, discouragement and risk factors are associated with their mental health conditions. This can be supported by Mwasiagi, Githae and Ogutu (2022) who postulated that moderating sustainable development goals approach as clue are remedies to buttress entrepreneurship and mental health conditions. It is strongly augmented that mental health conditions in antecedent to specific genes and gene variants of entrepreneurs possess high-risk factor in its merchandizing functions. Perhaps, chronic stress and mental health conditions such as disappointment, frustration, depression, discouragement and anxiety may develop due to underlying critical health problems, such as cancer, high blood pressure, stroke, diabetes, and chronic pain (Freedom, 2020; WHO, 2022). Base on the United Nations discussion in year 2015, the global sustainability agenda in accord, lunch the SDG from notion of abandonment of the Millennium Development Goals modality. The aim is to synchronized, integrate and capture wider scope framework of the entire globe especially the less developing nation's incorporation. These incorporated and synchronized African society at large on socio-economic, wellness and quality of life in the SDG 2030 framework (Ovharhe, 2022a). The SDG framework consist of seventeen (17) systematic projected goals and one hundred and sixty-nine (169) targets that are applicable globally, subject to domestic realities including national capacities and levels of economic development indifferent countries around the world (Pradhan, Costa, Rybski, Lucht & Kropp, 2017). The 2030 global sustainability agenda on the social, economic and environmental dimensions has been acknowledged as imperative towards enhanced general

welfare of the most vulnerable people around the world (Barbier & Burgess, 2017). The global sustainability agenda agreed upon and launched in the form of Sustainable Development Goals (SDGs) during the United Nations assembly in year 2015, is seen as a yardstick for tracking improvements in human mental health conditions around the world (UN, 2021; UN, 2018). Achieving the objectives of the SDGs requires a comprehensive approach, collaboration and multilateral action from the political, economic, social and environment segments in addressing challenges while at the same time taking advantage of the attendant opportunities (UN, 2018; UN, 2021; Rahdari, Sepasi & Moradi, 2016). As part of the comprehensive approach to mobilization of all means of implementation, promoting entrepreneurship has thus been propagated as vital in the sense that it helps in driving the global economy, allows entrepreneurs to bring creativity into the marketplace, creates businesses with the potential to hire millions of people and brings new products to the market place (Munjeyi, 2017; Bizri, 2017; Urbano, Aparicio & Audretsch, 2018).

Indigenous foods (such as pumpkin flute, orange potatoes, dates, tiger nuts, native bananas) are foods that were consumed throughout history before the modernization and industrialization of the food supply. These foods are not only free from additives, chemicals and many of the things we find in food today, but they were exceptionally nourishing. They can be used to produce several recipes which can be ideal for the promotion of healthy living amongst the aging population. However, carrying out a proximate analysis is essential for ascertaining the nutrition values of such recipes.

Proximate analysis is a way to determine how essential a new food is for human consumption. Proximate analysis is a type of scientific inquiry done to determine the approximate amounts of substances within a material (Sassos & Jung, 2025). This is utilized by different types of scientists to study such things as animal feed, coal, and bio-fuels. The process of proximate analysis is complicated and often involves either extraction or remote sensing to determine the varying amount of substances within one material, though different methods are used for different materials.

More so, organoleptic characteristics enable the nutritionist to know the level acceptance of the new food. Organoleptic testing refers to subjective evaluations of the odor, flavor and texture of food and medicine, according to SNAC International (2025). Applications of organoleptic testing include detecting food borne pathogens and determining if packaging adversely affects the flavor, appearance, odor or texture of its contents. These characteristics are essential for determining whether people will accept the food or not. The innovation of the product, process and service will affect these characteristics (Ovharhe, 2024a,b).

Inadequate attention to malnutrition risks may lead to poor health in older adults. In fact, most recent studies have focused on the prioritization of nutrition for children and pregnant women, thereby giving less attention to the older populations. Though, it all depends on entrepreneurial opportunities' that orchestrated such phenomena (Ovharhe, 2025a,b,c,d). Recent research demonstrates that because older adults' abilities to absorb and utilize many nutrients become less efficient, their nutrient requirements (particularly as a function of body mass) actually increase. Maintaining a nutrient-dense diet is critically important for older adults because of the impact of food intake on health. Years of research have demonstrated that diet quality has a huge effect on physical condition, cognitive condition, bone health, eye health, vascular function, and the immune system. Earlier studies have focused on prioritization of nutrition for other family members such pregnant women and children, with limited interest on older people. It is against this background that this researcher embarked on the production and determination of the proximate snacks of snacks from local foodstuffs (pumpkin flute, orange potatoes, dates, tiger nuts, native bananas) for sustainable health amongst the entrepreneurs in Imo North, Imo State.

Statement of the Problem

As entrepreneurs age, they may experience malnutrition problems. Hence, they need therapeutic entrepreneurship diet to boost their effectiveness and efficiency in the entrepreneurship world. This problem is worse in developing societies such Imo North Senatorial Zone in Imo State, south-eastern Nigeria. Appetite and the body's ability to process food may decrease with age, while health conditions and use of medications that can affect nutrition status may increase. In addition, limited ability to buy for and prepare food can affect a person's access to it. Psychosocial factors like isolation and depression also affect nutrition especially for people who are aging. On its own, malnutrition may lead to poor health in older adults. In this area, states, aging and health services providers, and health plans cannot access evidence about how to improve older adults' nutrition status. Interventions such as provision of meals and meal enhancements are problematic because of the absence proven effective diets that can reduce some of the nutritional problems among the elderly.

These interventions can improve the nutrition status of many older adults who are at risk of undernutrition in the communities or in the hospitals. More so, older adults usually experience nutrition risks or malnutrition as their bodies change with age. Physiological processes slow, appetites decrease and physical problems usually arise. In addition, older adults' chronic conditions and use of multiple medications usually increase, which affect nutrition status. Psychosocial risk factors for malnutrition in this group in the area include cognitive impairment, depression, isolation and difficulty accessing food. This people also become malnourished whether they are underweight, overweight, or obese and experience the resulting adverse effects on their health, function and wellbeing.

Several concerns have been raised over nutrition interventions to help the older members of the communities attain adequate levels of sustainable health. Most efforts are usually channeled towards the provision of medications and nutritionals. However, Backery & Snacks (2025) noted that chronic conditions and medications can affect nutrition requirements. For example, in addition to drug-nutrient interactions affecting drug metabolism, some drug-nutrient interactions are also nutrient wasting. This is especially true of the B vitamins. While local foodstuffs such as pumpkin flute, orang potatoes, dates, tiger nuts, native bananas have been found to contain vital nutrients which will be vital for the improvement of nutrition for older populations, the prospects inherent in these food products have not been utilized effectively. Hence, the need for a utilization of these foodstuffs (pumpkin flute, orang potatoes, dates, tiger nuts, native bananas) for the production of snacks which will serve for sustainable health for the elderly in the area.

Purpose of the Study

The main purpose of this study was to produce and determine the nutritional composition of snacks made from local foodstuffs (pumpkin, sweet potatoes, dates, tiger nuts, native bananas) and the implications for sustainable health amongst the elderly in Imo North, Imo State. Specifically, the study carried out the following:

1. determined the proximate composition of the snacks produced from pumpkin, sweet potatoes, dates, tiger nuts and native bananas;

Conceptual Framework

Therapeutic Entrepreneurship Framework

In Nigeria, entrepreneurship has taken vast aspect of the socio-economic and trade in the trend of industrial transformation on small and medium enterprise (SME) sector by creativity, invention, innovation and rejuvenated product, services, sales and distribution in the market at large. Notation can breathe without entrepreneurship because it is the major sources of income generation, per capital income (PCI), gross national product (GNP), gross domestic product (GDP), new venture creation, employment creation, value creation and wealth creation (Ovharhe, Okolo, Woko & Igbokwe, 2022). To achieve success in entrepreneurship is a matter of struggles with socio-economic, politic, cultural, technological, market, legal and religious issues. All these struggles are factors that negatively affect the mental health of entrepreneurs. Currently, Nigerians are facing emergency in mental health as result of global human rights. Underpinned by poor societal attitudes towards mental illness, burnout and inadequate resources, facilities, and mental health staff, figures suggest that approximately 80% of individuals with serious mental health needs in Nigeria cannot access care (WHO, 2020). The renown Psychiatrists, Obindo (2022) posits that more than 60 million Nigerians are suffering from various mental illnesses.

Globally, mental health conditions among entrepreneurs of various area of specialty have been worrisome because of its rapid growth in illness and burnout among entrepreneurs in Nigeria (Human Rights Watch, 2019). Attention to mitigate this worrisome condition has been major issues to be addressed by the sustainable development goals. Entrepreneurs are the major drivers of the macro and micro economies in the globe at large in line with sustainable development goals program. In West African about 70% of the socio economic system is sustained by entrepreneurs (Chibuike, Ovharhe & Amara, 2022; Freedom, 2020).

Mwasiaji et al., (2022) supported that entrepreneurs with Attention-deficit Hyperactivity Disorder (ADHD) (though depends on the level of hyperactivity) might function better in their merchandizing activities than those without such mental health condition, because the ego, drive and entrepreneurial mind-set boost their optimism and positivism that they fit better in self-employment than in formal employment and even believed their ADHD symptoms provided them an advantage over those without ADHD (Anthsel, 2017).

Similarly, Tafti et. al., (2009) associated dyslexia (learning disability) with more original thinking, while White and Shah (2011) found a link between ADHD and sensation-seeking or excitement-seeking (in pursued of different sensational feelings such as experience-seeking, thrill-seeking, adventure-seeking, disinhibiting and boredom susceptibility). Some other studies established a link between bipolar disorder with perseverance and autism with pattern identification (Hussain & Li, 2022).

Entrepreneurs are always battling with on their merchandizing livelihood with frustration, depression, stress, anxiety and burnout. Freeman (2020) findings fathom that approximately 50% of all entrepreneurs are exposure to mental illness. Additionally, the findings also posit that entrepreneurs are two times more likely to have the tendency to commit suicide on basis of the business turbulence, trauma, disappointment and dysfunctionism in the market.

Benjamin (2020) calls depression and frustration as an epidemic among entrepreneurs and intrapreneurs. According to a study at UC Berkeley captured by Benjamin (2020) postulated that 72% of entrepreneurs with the livelihood trends of depression (30%), ADHD (29%), substance use conditions (12%), and bipolar diagnosis (11%). From the threshold, only 28% of entrepreneurs were not capture in the epidemic that acts as injelitis and cynicism (Ovharhe, 2022b). Depression that consists of 30% among entrepreneurs seems to be more of threats to their livelihood. ADHD with 29% very close to the depression has been proven by Freedom (2022) with both positive and negative spectrum. Moreover, entrepreneurs associated with the conditions of substance use and bipolar mental illness were 12% and 11% respectively. In the same vein, Freeman (2020) when further in similar study, to say that 27% of entrepreneurs and 26% of non-entrepreneurs reporting anxiety concerns. Asymptomatic (a person affected by a condition but producing or showing no

symptoms of it) entrepreneurs described their first-degree relatives as experiencing significantly more mental health conditions than did the asymptomatic comparison participants, including depression, ADHD, substance use conditions, and anxiety (Wiklund, Hatak, Patzelt & Shepherd, 2018). The Seeley (2022) in coin from Hustle surveyed said that more than 300 entrepreneurs on the state of their mental health, and a whopping 63% indicated dealing with burnout, with 59% opined that they have combat with anxiety in one way or the other. Mental health condition is the most underrated and overlooked factors of entrepreneurial sustainability, survival and success (Stănculescu, 2022). Even with some very notable calamities and deaths over several years due to mental health, such as entrepreneurs in the music, sports, manufacturing, sales, logistics and distribution, middlemen and service oriented, the issues and concerns about mental health conditions were swept under the carpet in the enterprise community generally. This calls for drastic and urgent attention to unveil possible remedies that might mitigate the worrisome and complex issues on mental health conditions affecting entrepreneurs, intrapreneurs, extrapreneurs and co-entrepreneurs in the enterprise environment (Chibuike & Ovharhe, 2022). To address these problematic issues of mental health conditions, Ovharhe (2022a) introduces the concept and model of therapeutic entrepreneurs as likely hood remedies.

Nutrition Framework

Nutrition is about eating a healthy and balanced diet with the right nutrients so the body gets the nutrients that it needs. Nutrients are substances in foods that the human body needs so they can function and grow (Njoku, 2025). They include carbohydrates, fats, proteins, vitamins, minerals, and water. Good nutrition is important, no matter what one's age. It gives one energy and can help one control weight (Darnhofer, 2005). It may also help prevent some diseases, such as osteoporosis (Dewitt, 2003), high blood pressure (Crawford, 2003), heart disease (Drew & Henne, 2006), type 2 diabetes, and certain cancers (Giraud, 2006). But as people age, their bodies and life change, and so does what need to stay healthy (Goodman, 2004). For example, one may need fewer calories, but still needs to get enough nutrients (Drew & Henne, 2006). The WHO (2018) opined that some older adults need more protein.

According to Sanders and Frey (2016), older persons are particularly vulnerable to malnutrition. Moreover, attempts to provide them with adequate nutrition encounter many practical problems (Drew & Henne, 2006). First, their nutritional requirements are not well defined. Since both lean body mass and basal metabolic rate decline with age, an older person's energy requirement per kilogram of body weight is also reduced (Crawford, 2003). The process of ageing also affects other nutrient needs (Darnhofer, 2005). For example, Agbaire (2011) noted that while requirements for some nutrients may be reduced, some data suggest that requirements for other essential nutrients may in fact rise in later life. There is thus an urgent need to review current recommended daily nutrient allowances for this group. There is also an increasing demand worldwide for WHO

guidelines which competent national authorities can use to address the nutritional needs of their growing elderly populations.

Malnutrition and older persons: Many of the diseases suffered by older persons are the result of dietary factors, some of which have been operating since infancy (Giraud, 2006). These factors are then compounded by changes that naturally occur with the ageing process. Dietary fat seems to be associated with cancer of the colon, pancreas and prostate (Dewitt, 2003). Atherogenic risk factors such as increased blood pressure, blood lipids and glucose intolerance (Fernandez-Armesto, 2002), all of which are significantly affected by dietary factors, play a significant role in the development of coronary heart disease. Degenerative diseases such as cardiovascular and cerebrovascular disease, diabetes, osteoporosis and cancer, which are among the most common diseases affecting older persons, are all diet-affected (Drew & Henne, 2006). Increasingly in the diet/disease debate, the role that micronutrients play in promoting health and preventing non-communicable disease is receiving considerable attention. Micronutrient deficiencies are often common in elderly people due to a number of factors such as their reduced food intake and a lack of variety in the foods they eat (Darnhofer, 2005).

Another factor is the price of foods rich in micronutrients, which further discourages their consumption (Friedberg, 2006). Compounding this situation is the fact that the older people often suffer from decreased immune function (Drew & Henne, 2006), which contributes to this group's increased morbidity and mortality. Other significant age-related changes include the loss of cognitive function (Fine, 2004) and deteriorating vision (Dewitt, 2003), all of which hinder good health and dietary habits in old age. Benson (2006) opined that elevated serum cholesterol, a risk factor for coronary heart disease in both men and women, is common in older people and this relationship persists into very old age. As with younger people, drug therapy should be considered only after serious attempts have been made to modify diet (Darnhofer, 2005). Intervention trials have shown that reduction of blood pressure by 6 mm Hg reduces the risk of stroke by 40% and of heart attack by 15%, and that a 10% reduction in blood cholesterol concentration will reduce the risk of coronary heart disease by 30% (Fernandez-Armesto, 2002)). Also, research has revealed that dietary changes seem to affect risk-factor levels throughout life and may have an even greater impact in older people. Relatively modest reductions in saturated fat and salt intake (Crawford, 2003), which would reduce blood pressure and cholesterol concentrations, could have a substantial effect on reducing the burden of cardiovascular disease. Increasing consumption of fruit and vegetables by one to two servings daily could cut cardiovascular risk by 30% (Fernandez-Armesto, 2002).

Nutritional problems in the elderly can cause a number of complications, including weakened immune systems (Crawford, 2003), lowered energy levels (Dewitt, 2003) and chronic health problems (Drew & Henne, 2006) such as type 2 diabetes, high blood pressure, heart disease, stroke

and osteoporosis. Brad (2002) and Davies (2004) argued that making changes in their diet to match the changes in elders' changing caloric, energy, taste and access needs helps prevent malnutrition, which often goes undiagnosed.

Weight: Both weight loss and weight gain are problems in the elderly related to nutrition. The elderly have reduced metabolisms, meaning they burn fewer calories than they did before age 40 (Drew & Henne, 2006). Additionally, the elderly often have less energy, especially if they suffer from chronic medical conditions. A slowed metabolism coupled with reduced activity can lead to obesity, which is on the rise in the elderly, according to Deen (2008). On the other side, limited access to food, decreased appetites, medication side effects and medical problems can cause weight loss (Fernandez-Armesto, 2002)). Poverty and fixed incomes keep some elderly people from purchasing foods rich in vitamins and minerals (Crawford, 2003). An elderly person with weight loss of at least 5 percent should see a doctor (Darnhofer, 2005). Even a weight loss of 5 percent over three years can signal a health problem (Dewitt, 2003).

Taste: When an elder oversalts his food, the problem more likely arises from a decreased sensitivity to salt than dissatisfaction with the cooking (Fernandez-Armesto, 2002)). The elderly often have trouble recognizing salty and bitter tastes, resulting in increased salt intake, which can lead to high blood pressure. Because the elderly usually retain their ability to appreciate sweet tastes the longest, they may go overboard on the sugary snacks, desserts and beverages (Drew & Henne, 2006). Sugary foods can cause weight gain in anyone, but because of their slowed metabolisms, the elderly are more susceptible to it.

Dehydration: Dehydration is common in the elderly for a number of reasons. The elderly have a reduced ability to conserve water (Drew & Henne, 2006), are less attuned to their thirst, and may avoid drinking fluids because of overactive bladder problems (Fernandez-Armesto, 2002). Additionally, the elderly are more likely to lack proper hydration in warm-weather months and during illness (Dewitt, 2003). Medications and chronic medical conditions often increase the risk of dehydration (Crawford, 2003). Mild to moderate complications from dehydration include constipation, headache, dizziness, low blood pressure, rapid heartbeat and loss of consciousness (Darnhofer, 2005). Severe complications include seizures, kidney failure, swelling of the brain, heat injury and death.

In an assessment of the nutritional requirements of the elderly, Baba Uga (2007) recommended that the elderly should eat foods rich in B12, magnesium and vitamins A, C and D. They should focus on high-fiber foods, leafy green vegetables, whole grains, and low-fat or nonfat milk and milk products. Adams (2011) adds that rather than adding salt, the elderly should eat foods seasoned with herbs and olive oil. To satisfy sweet cravings, they should munch on foods that are naturally sweet, such as fruits, and cook with sweet peppers. To prevent dehydration, the elderly

should drink small amounts of fluids throughout the day, consuming at least 1.7 liters of fluid every 24 hours (*Crawford, 2003*).

The Food Composition Theory (Deka and Sarkar, 2000)

This theory states that the composition of food determines the impact on individuals. Deka and Sarkar (2000) noted that since man needs to be healthy at all times, the food he eats should contain proteins, fats, carbohydrates, vitamins, minerals and water. The need for particular amount of food, as well as the particular nutrients may depend on the age for the children, and for the type of work and living conditions for the adults. To better meet this need of the body, it is necessary to know how much energy is being consumed on a daily basis. It is known for a fact, that the energy produced by the body eventually being released as heat.

In elderly people, common problems that contribute to inadequate nutrition are tooth loss, decreased sense of taste and smell, and a sense of isolation—all of which result in decreased food intake and weight loss. The elderly may have gastrointestinal ailments, such as poor absorption of vitamin B₁₂, and digestion difficulties, such as constipation. Inadequate fluid intake may lead to dehydration. Nutritional deficiency may further compromise declining immune function. Prescription and over-the-counter drugs may interact with nutrients and exacerbate the nutritional deficits of the elderly. In addition, decreasing physical activity, loss of muscle tissue, and increasing body fat are associated with type 2 diabetes, hypertension, and risk of cardiovascular disease and other diseases. Older people, especially those with reduced sun exposure or low intakes of fatty fish or vitamin D-fortified food, may need supplemental vitamin D to help preserve bone mass. Adequate calcium intake and weight-bearing exercise are also important, but these measures cannot completely stop the decline in bone density with age that makes both men and women vulnerable to bone fractures (due to osteoporosis), which could leave them bedridden and could even be life-threatening

Under the best nutritional standards we understand such rules, that completely cover the needs of the bodies for adults, and in addition, the needs of growth and development for the children. Proper diet promotes working capacity, and is one of the most important conditions for the appropriate functioning of the gastrointestinal tract. This theory is relevant to the present study in that it explains the importance of paying attention to the nature of foods consumed by older persons, especially women.

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Methodology

According to the National Population Commission, the population of this area is approximately 800,000 (NPC, 2018). These areas have predominantly rural populations, with a few engaged in the civil service. The population is predominantly agrarian, engaging in active agriculture. There is a larger concentration of aged population in the area which made the researcher choose the area for study. The population for the study is made up of all the 17 academic and non-academic staff of the Department of Nutrition and Dietetics of the Imo State University, Owerri. They formed the judges for the sensory evaluation of the samples. The simple random sampling technique was used to select a sample size of 15 academic and non-academic staff of the Department of Nutrition and Dietetics of the Imo State University, Owerri as judges. The ballot system was used in which the first 15 persons picked participated in the evaluation. Data for this study was collected using direct

contact approach. The samples were fed to the participants, and they were expected to express their opinions on the hedonic scale of from 1 = like extremely to 9 = dislike extremely. The instrument did not require any validation since is a standard for sensory evaluation. A comparative statistics and comparative analysis was conducted to present the difference in proximate composition (moisture, crude protein, crude fiber, crude fat, total ash, total carbohydrate and gross energy values), mineral contents (Ca, K, Na, Mg, Mn, Cu, Fe Zn and P) and anti-nutritional factors (phytate and tannin) in the samples (PTC 1, SPC 2 and NBC 3). The analyses were performed using SPSS version 23 (19). Differences in means at $p < 0.05$ were considered significant. The formulated hypotheses were analyzed using Analysis of Variance (ANOVA) at the significant level of 0.05.

Testing of Hypothesis

H₀: There is no significant difference in the mineral composition of the snacks produced from pumpkin, sweet potatoes, dates, tiger nuts and native bananas.

Table: Summary of ANOVA on the Mean Rating of mineral composition of the snacks produced from pumpkin, sweet potatoes, dates, tiger nuts and native bananas when Analyzed according to (a) PTC1 (b) SPC2 (c) NBC3

Source of variation	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	8.323	7	1.050	.407	.892
Intercept	17539.441	1	17539.441	7570.653	.000
PTC1	5.275	1	5.275	2.125	.161
SPC2	1.064	2	.572	.216	.799
NBC3	.092	2	.046	.018	.982
Error	95.447	33	2.580		
Total	47927.000	45			
Corrected total	102.800	44			

a. R Squared = .072 (Adjusted R Squared = -.104)

Decision rule: if $p < .05$ reject H_0 , else retain H_0 . NS= Not Significant, $p > .05$; S= significant, $p < .05$

Table: shows that there were no significant differences in the mean rating of mineral composition of the snacks produced from pumpkin, sweet potatoes, dates, tiger nuts and native bananas when analyzed based on to PTC1 ($F_1, 33=2.125, p > .05$), SPC2 ($F_2, 33=0.216, p > .05$), profession ($F_2, 33=0.18, p > .05$) respectively. The null hypothesis (H_2) was retained accordingly.

Conclusions and Recommendations

Conclusion

This study has revealed that some local foodstuffs which are commonly overlooked are useful for healthy nutrition plans. It can be concluded that the snacks (PTC 1, SPC 2 and NBC 3) produced from pumpkin, sweet potatoes, dates, tiger nuts and native bananas are a good sources of some essential minerals and vitamins required by aging populations in most homes. The snacks also showed levels of anti-nutrients. From the highlights of the present study, it can also be deduced that, these snacks may serve as constituents of minerals to humans through dieting. Generally, results and findings from this research agreed favourably with those of other wild plants recommended as food supplement in literature.

Recommendations

Based on the findings of the study, the following recommendations were made.

1. The amount of water added during mixture of the flours can be reduced in order to achieve a more minimal moisture content of the when producing the snacks in order to achieve a longer lifespan for the product. This should be done to especially the first two samples which had pumpkin combined in them.
2. Because many entrepreneurs persons are challenged by diabetes, it is advised that salt should not be added to the production process reduce further the sodium content.
3. The sample – PTC1 – sample was most liked by the respondents; this could be because of the combination of sweet potatoes flour, pumpkin flour, and dates flour which could also increase its tastiness should be developed further to control the sugar level.

Contribution to Scholarship

1. The study contribute to the correlates between therapeutic entrepreneurship boost nutrition and diets in business men

2. The study show how mental health will be boost by therapeutic entrepreneurship and good diet in wellness, wellbeing and livelihood.

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