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Entrepreneurial Practices Needed by Women Retirees for Processing of African Oil Bean Seeds for Sustainable Livelihood in Enugu State, Nigeria

Asogwa, C. Vincent[1]; Onuekwe, E. Monica[2]. & Isiwu C. Edward[3].
[1]Department of Agricultural Education, University of Agriculture, Makurdi, Benue State, Nigeria.
[2]Department of Home Economic, Federal College of Education, Eha-Amufu, Enugu State.
[3]Department of Agricultural Education, Michael Okpara University of Agriculture, Umudike, Abia State.

Corresponding author: Asogwa, C. Vincent
E-mail: asovinchidi@yahoo.com

Abstract

This study focused on identification of entrepreneurial practices needed by women retirees for processing of African oil bean seeds for sustainable livelihood in Enugu State, Nigeria. Three research questions and three hypotheses guided the study. Survey research design was adopted for this study. The study was carried out in Enugu State. The population for the study was 308 respondents. The entire population was involved in the study because the size was manageable. A 30 item instrument titled: Oil Bean Processing Questionnaire (OBPQ) was developed from literature and used for data collection. Cronbach Alpha reliability method was used to determine the internal consistency of the questionnaire items. A reliability coefficient of 0.89 was obtained for the questionnaire items. Weighted mean was used to answer the research questions while Analysis of Variance (ANOVA) was used to test the null hypotheses of no significant difference at 0.05 level of probability. It was found out that 10 practice items in planning, 13 practice items in processing of oil bean seeds and 7 marketing of processed oil bean seeds for sustainable livelihood in Enugu State. It was recommended that the skill acquisition centres in the states should package the identified practices into a training programme and be used to train the women retirees and others who may be interested in processing of oil bean seeds among others.

Keywords: African oil bean seed, entrepreneurial practices, processing, sustainable livelihood, women retirees

Introduction

African oil bean, *Pentaclethra macrophylla*, is a tropical tree crop found mostly in the Southern rain forest zone of West Africa. It belongs to the leguminosae family and sub-family mimosoideae (Odunfa, 1986). The fruit is usually a black, hard and woody pod measuring 35 – 36cm long and 5 – 10cm wide. This, according to author, contains oil bean seeds, each measuring 15-20g in weight. Oil bean seed is popularly known as *ekpuru Ukpaka or Ugba* in South-eastern Nigeria. Nwokedi (2004) stated that the nutritional content of oil bean seeds include: moisture (11.87%), crude protein (36.2-43.89%), carbohydrate (14.79-18%), saturated fatty acids (12%), crude fibre (2.50%), ash (2.95%), 20 essential amino acids and other minerals such as cailcim, iron, sulphure, phosphorus and so on.

In the observation of Odoemelam (2005), about 60% of people eat oil bean seed because of it delicacy while 40% eat it because of its multi-therapy capabilities. According to the author, African researchers have confirmed that oil bean seeds prevent and cure different diseases such as high blood pressure, heart disease, obesity, hypertension, diarrhea, epilepsy, malnutrition, stomach disorder, microbes, iron deficiency, eye problem and insomnia. Adam and Mass (1999) reported that oil bean seed is an anti-microbial and wounds healing agents. It boosts immune system and makes wounds heal quickly. The authors added that oil bean seeds inhibit the growth of Staphylococcus aureus, Staphlococcus epidrmidis, Escherichia coli among others.

Economically, Ogueke, Nwosu, Owuamanam and Iwouno (2010) stated that oil bean seed is a source of edible oil used for cooking, candle making and soaps. The seed shells are decorative and often used as craft beads, which are worn as necklaces and sometimes as local dance apparels. Odoemelam (2005), posited that oil bean seeds serve as a source drying oil for cosmetics, paints and varnishes. The wrapped ukpaka or ugba at different stages of fermentation are sold to consumers and they are often told

the length of fermentation at the time of purchase. However, reports have shows that when the seeds are crushed and eaten with red ants, it could induce abortion depending on the extent of its fermentation. This might be why full processing of oil bean seed is recommended, couple with the fact that it is bitter and poisonous when consumed raw.

Processing of food, in the submission of Olaitan, Amusa and Nwobu (2009) is the transformation of the raw produce into other forms in which it could be stored or eaten. Asogwa, Olaitan and Asouzu (2013) asserted that processing improves the acceptability, palatability, digestibility and durability of the farm produce. Okaka (2005) emphasized that processing of cereals and legumes are necessary for it ensures all year round supplies of the commodity in convenient form, adds value to raw products, helps to preserve agricultural produce and increases the contribution of the food industries to the gross national products. Processing, in this study, is the conversion of oil bean seeds to a sliced form to increase the rate at which it is acceptable, palatable and digestible by the consumers. Sokari and Wachukwu (1997) stated that processing of oil bean involves boiling, dehulling, slicing, washing and soaking for fermentation. Culturally, processing of oil bean seed is carried out by women especially the aged one. Therefore, women retirees, in South-east can cue into this traditional occupation for their sustainable livelihood.

Retirees, in the explanation of Billings (2004) are people who have left the occupations which they had been involved in for a considerable length of their working life. Olaitan, Ifeanyieze and Omeje (2008) viewed retirees as individuals that have disengaged from their initial employment after a long service but are still able and willing to continue with their existence in any desirable and less strenuous occupation. Women retirees, in the context of this study, are adult female individuals who have been disconnected from their primary employments after long services but are still eager to engage in profitable occupations for their sustainable livelihood.

Livelihood, in the opinion of Chambers and Conway (1991) is the individual's capabilities, assets and activities required to serve the necessities of life. Chambers (1995) postulated that livelihood is a set of activities involving securing water, food, medicine, shelter, and clothing by individuals or groups using both human and material resources for meeting the requirements of family members on a sustainable basis. Carney (1999) clarified that sustainable livelihood is the ability of individuals to generate and maintain a certain standard of living for the present and future generations. In this study, sustainable livelihood is the capabilities of the retirees to secure and maintain the necessities of life such as water, food, medicine, shelter, and clothing among others for current and future generation. For the women retirees to embark on processing of oil bean seeds to sustain their livelihood, they need to acquire the entrepreneurial practices in the occupation.

Entrepreneurial is described by Ogundele (2000) as the ability and willingness of individuals to perceive new economic opportunities and seize these opportunities into the market. The authors stressed that it is process which involves the efforts of an individual in identifying viable opportunities in a business environment and obtaining and managing the resources needed to exploit those opportunities. Ogundele and Olayemi (2002) expressed that entrepreneurial is the ability to organize and manage any enterprise especially a business with considerable initiative and risk. On the other hand, practices mean the actual performance of an activity in a real situation. It is the application of knowledge into action to produce an actual performance in an operation (Yerkes, 1994). In the submission of Encerta (2009), practice is a set of standard procedure used in a particular field to achieve a goal. It involves the process of carrying out an idea, plan or theory. Therefore, entrepreneurial practices, in the context of this study, refer to the standard procedures required by the women retirees to organize and manage processing of oil bean seed as a business for their sustainable livelihood. But the question is: what are the practices in processing of oil bean seeds needed by the women retirees to engage in it as an enterprise?

Statement of problem

The observation is that in retirement, one's primary source of income ceases or reduces depending on one's former place of work. This situation exposes the involved individuals known as the retirees to stress, emotional insecurity, economic insecurity and fear of sustainable livelihood. The government being fully aware of these challenges during retirement,have mapped out various schemes to see and plan for better conditions of the retirees. Such schemes include the Public Service Pension Scheme, Private/Public Sector Occupational Schemes, National Provident Fund that has since collapsed and Pension Reform Act enacted by Obasanjo in June, 2004. Despite all these machinations by the

government, the retirees are not getting paid which worsens their conditions. To cap it all, many of them have died of hunger, diseases and frustration (Dike, 2006). Nine hundred and eighty (980) teachers have died in seven years while waiting for retirement benefits (Mudiage, 2008). This implies that a better alternative is urgently needed to save this situation.

Further more, the researchers considered processing of oil bean seeds as a better alternative for the women retirees because it is culturally gender bias in favour of women, less strenuous, less time consuming, requires little accommodation and capital involvement. Besides, processing of oil bean seeds is left in the hand of aged women whose out puts fall below the quantity demanded by consumers in the market. A search in literature and visitation to skill acquisition centres in the State by the researchers indicated that there are no identified entrepreneurial practices in processing of oil bean seeds that could be used to train the women retirees for their sustainable livelihood. Hence, this study.

Purpose of the study

The purpose of this study was to identify entrepreneurial practices needed by women retirees for processing of African oil bean seeds for sustainable livelihood in Enugu State, Nigeria. Specifically, the sought to ascertain the practices needed by women retirees in:

1. planning for processing of oil bean seeds,
2. processing of oil bean seeds and
3. marketing of processed oil bean seeds for sustainable livelihood.

Research Questions

1. What are the practices needed by women retirees in planning for processing of oil bean seeds?
2. What are the practices needed by women retirees in processing of oil bean seeds?
3. What are the practices needed by women retirees in marketing of processed oil bean seeds for sustainable livelihood?

Research Hypotheses

There is no significant difference between the mean ratings of the responses of the teachers of Home Economics, agricultural extension officers and oil bean seed processors on practices needed by women retirees in:

1. planning for processing of oil bean seeds,
2. processing of oil bean seeds and
3. marketing of processed oil bean seeds for sustainable livelihood.

Methodology

Three research questions and three hypotheses guided the study. Survey research design was adopted for this study. Olaitan, Ali, Eyo and Sowande (2000) stated that survey research design in the plan, structure and strategy that the design is the plan, structure and strategy that the investigator wants to adopt in order to obtain solutions to research problems using questionnaire for collecting, analyzing and interpreting the data.

The study was carried out in Enugu State made up of three Agriculture zones: Agwu, Enugu and Nsukka. The State is naturally endowed with fertile soil and adequate rainfall that favours the growth of oil bean trees for production of oil bean seeds. Besides, processing, marketing and eating of oil bean seeds do not have any cultural discrimination in the State. Therefore, the area was considered very suitable for carrying out this study. The population for the study was 308 made up of 188 teachers of Home Economics, 49 agricultural extension officers and 71 oil bean processors in Enugu State. The entire population was involved in the study because the size was manageable.

A 30 item instrument titled: Oil Bean Processing Questionnaire (OBPQ) was developed from literature and used for data collection. The OBPQ had a four-point response option of highly needed (HN), averagely needed (AN), slightly needed (SN) and not needed (NN) with corresponding values of 4, 3, 2 and 1 respectively. Three experts validated the instrument for content; one was from Home Economic unit, one from Agricultural Education unit, Department of Vocational Teacher Education, University of Nigeria, Nsukka and one from Enugu State Agricultural Development Project (ENADEP). Those involved in ENADEP for validation were not included in responding to the questionnaire. The corrections and suggestions of the experts were used to produce the final edition of the questionnaire. Cronbach Alpha reliability method was used to determine the internal consistency of the questionnaire items. A reliability coefficient of 0.89 was obtained for the questionnaire items.

Six research assistants, two from each Agriculture zone in the state, were hired and given orientation on how to administer the questionnaire to respondents. Three hundred and eight copies of the questionnaire were administered to the respondents by the researchers with the help of research assistants. Three hundred and three copies of the questionnaire were retrieved and analyzed. Weighted mean was used to answer the research questions while Analysis of Variance (ANOVA) was used to test the null hypotheses of no significant difference at 0.05 level of probability. A mean of 2.50 was used for decision making. Any practice item with mean of 2.50 or above was regarded as needed while any practice item with a mean less than 2.50 was regarded as not needed. Also, any item with a standard deviation of 1.96 or below revealed that the respondents were close to the mean and not too far from one another in their responses. In testing the null hypotheses, a hypothesis of no significant difference was accepted where P-value was greater than 0.05; while it was rejected where P-value was less than 0.05.

Results

The results of the research questions and the hypotheses are presented in the tables below.

Table 1: Mean rating and Analysis of Variance (ANOVA) of the responses of teachers of Home Economics, agricultural extension officers and oil bean processors on practices needed by women retirees in planning for oil bean processing business. (N=303).

S/N	Item statement on planning	X	SD	F-value	P-value	Remarks
1	Formulate specific objective for oil bean processing business	3.61	0.91	11.18	0.21	N, NS
2	Decide on the location of the oil bean processing business	3.39	0.33	15.07	1.02	N, NS
3	Draw up schedule to cover different stages of oil bean processing business	2.43	.82	13.58	0.33	N, NS
4	Identify appropriate personnel for oil bean processing business	2.74	0.63	21.87	0.30	N, NS
5	Identify other relevant materials resources/ facilities needed for the business	2.96	1.60	12.82	0.053	N, NS
6	Make budget for oil bean processing business	3.10	0.93	10.46	0.70	N, NS
7	Identify source of fund for oil bean processing business	3.73	0.67	13.65	0.08	N, NS
8	Identify relevant record to keep for oil bean processing business.	2.87	1.18	16.67	0.51	N, NS
9	Revise the objectives of the oil bean processing business periodically as occasioned by change in market demand and supply	2.92	0.55	25.92	1.00	N, NS
10	Make necessary adjustment on the objectives oil bean processing business based on market situation.	2.57	0.48	3.05	.000	N, S

X = mean, SD = Standard Deviation, P-value = 0.05, N= Needed, NS = Not significant, S = significant.

Data in Table 1 showed that the 10 practice items had their mean ratings ranged from 2.57 to 3.73 and were above the cut point of 2.50. This showed that all the 10 items were needed by the women retirees in planning for oil bean processing business in Enugu State. The standard deviation ranged from 0.33 to 1.60, indicating that the respondents were not very far from the mean and from one another in their responses.

The data on hypothesis tested in Table 1 revealed that 9 out of 10 practice items had their P-values ranged from 0.053 to 1.02 which were greater than the P-value of 0.05. This indicated that there is was no significant difference in the ANOVA scores of the three groups of respondents (teachers of Home Economic, agricultural extension officers and oil bean seed processors) on the 9 practice items needed by the women retirees in planning for oil bean seeds processing business in Enugu State. There, the

hypothesis of no significant difference was upheld for the 9 practice items.

Post Hoc Analysis was carried out to compare the mean ratings of the three groups of respondents to determine the direction of their differences on the practice item (number 10) with a significant difference. It revealed that the teachers of Home Economics and oil bean seeds processors had their P-value on the item as 0.04 which was less than P-value of 0.05. This indicated that the two groups of respondents differed significantly in their responses on the practice items. Therefore, the hypothesis of no significant difference was rejected for the two groups of respondents on the item. The Post Hoc Analysis also revealed that the teachers of Home Economics and the extension officers had their P-value on the item as 0.80 which was greater than P-value of 0.05. This indicated that there was no significant difference in the mean rating of the two groups of respondents on the item. Therefore, the hypothesis of no significant difference was accepted for the two groups of respondents on the item.

The significant difference between the teachers of Home Economics and oil bean seeds processors could be as a result of their educational back ground and experience. The teachers of Home Economics might deem making adjustment on the objectives of oil bean processing business based on market situation necessary while the oil bean seeds processors think it is not since they have been successful in the business without any adjustment on the objectives, irrespective of the market situation.

Table 2: Mean rating and Analysis of Variance (ANOVA) of the responses of teachers of Home Economics, agricultural extension officers and oil bean processors on practices needed by women retirees in processing of oil bean seeds. (N=303).

S/N	Item statement on processing	X	SD	F-value	P-value	Remarks
1	Source oil bean seeds from the market.	2.94	0.86	14.62	0.27	N, NS
2	Boil the oil bean seeds in water for 16-18 hours.	3.10	0.62	22.49	0.08	N, NS
3	Remove the boiled seeds from water.	2.72	0.96	23.34	0.34	N, NS
4	Strike/knock the boiled seeds with a stone to remove the tough testa (dehulling)	2.39	0.47	13.54	1.04	N, NS
5	Slice the dehulled seeds (cotyledons) horizontally of about 1mm.	3.91	0.12	12.57	0.07	N, NS
6	Wash out dirt from the sliced seeds (cotyledons)	3.34	0.43	18.71	0.08	N, NS
7	Boil the sliced seeds (cotyledons) for 30 minutes in water.	3.49	0.71	20.64	0.16	N, NS
8	Remove the boiled slice seed (cotyledons) from water after 2hours and wash it twice with clean water.	3.63	0.67	15.78	0.25	N, NS
9	Soak the clean sliced seeds (cotyledons) in water for 24 hours at a room temperature to ferment out its bitterness.	3.45	0.54	23.43	0.47	N, NS
10	Remove the sliced fermented seeds (cotyledons) from water and wash it twice in clean water.	3.24	1.07	13.41	0.09	N, NS
11	Drain out water from the clean slice fermented seeds (cotyledons) using a sieve.	3.57	0.78	15.83	0.42	N, NS
12	Package the clean slice fermented drained seeds (cotyledons) in cellophane bags, banana or broad leaves of different sizes.	3.12	0.95	12.89	0.59	N, NS
13	Keep the packaged oil bean seeds (cotyledons = ukpaka) in a clean dry ventilated room.	3.85	0.78	13.93	0.65	N, NS

X = mean, SD = Standard Deviation, P-value = 0.05, N= Needed, NS = Not significant, S = significant.

Data in Table 2 showed that the 13 practice items had their mean ratings ranged from 2.39 to 3.91 and were above the cut point of 2.50. This showed that all the 13 items were needed by the women

retirees in processing of oil bean seeds in Enugu State. The standard deviation ranged from 0.12 to 1.07, indicating that the respondents were not very far from the mean and from one another in their responses.

The data on hypothesis tested in Table 2 revealed that all the 13 practice items had their P-values ranged from 0.07 to 1.04 which were greater than the P-value of 0.05. This indicated that there is was no significant difference in the ANOVA scores of the three groups of respondents (teachers of Home Economic, agricultural extension officers and oil bean seed processors) on the 13 practice items needed by the women retirees in processing of oil bean seeds in Enugu State. There, the hypothesis of no significant difference was upheld for all the 13 practice items.

Table 3: Mean rating and Analysis of Variance (ANOVA) of the responses of teachers of Home Economics, agricultural extension officers and oil bean processors on practices needed by women retirees in marketing of processed oil bean seeds. (N=303).

S/N	Item statement on marketing	X	SD	F-value	P-value	Remarks
1	Make market survey for the price of processed oil bean seeds.	3.10	0.60	16.83	0.29	N, NS
2	Grade the packaged processed oil bean seeds using quantity in each pack.	3.68	0.87	16.05	0.40	N, NS
3	Fix price for each pack based on market situation.	3.65	0.47	13.76	0.39	N, NS
4	Advertise the product locally or through the media	3.11	0.76	16.57	0.15	N, NS
5	Sell to buyers at your location or in the market at an agreed price.	3.77	0.34	16.12	0.09	N, NS
6	Keep appropriate record of sales of the packaged oil bean seeds.	3.03	0.91	15.33	0.28	N, NS
7	Calculate the expenditure and income to determine profit for sustainability and expansion.	3.84	0.34	16.83	0.30	N, NS

X = mean, SD = Standard Deviation, P-value = 0.05, N= Needed, NS = Not significant, S = significant.

Data in Table 3 showed that the 7 practice items had their mean ratings ranged from 3.10 to 3.84 and were above the cut point of 2.50. This showed that all the 7 items were needed by the women retirees in marketing of processed oil bean seeds in Enugu State. The standard deviation ranged from 0.34 to 0.91, indicating that the respondents were not very far from the mean and from one another in their responses.

The data on hypothesis tested in Table 3 revealed that all the 7 practice items had their P-values ranged from 0.09 to 0.40 which were greater than the P-value of 0.05. This indicated that there is was no significant difference in the ANOVA scores of the three groups of respondents (teachers of Home Economic, agricultural extension officers and oil bean seed processors) on the 7 practice items needed by the women retirees in processing of oil bean seeds in Enugu State. There, the hypothesis of no significant difference was upheld for all the 7 practice items.

Discussion of Results

The findings of the study in Table 1 revealed that the teachers of Home Economic, agricultural extension officers and oil bean seed processors agreed that all the 10 practice items: formulate specific objective for oil bean processing business, identify appropriate personnel for oil bean processing business, draw up schedule to cover different stages of oil bean processing business, decide on the location of the oil bean processing business among others were needed by women retirees in planning for processing of oil bean seeds for sustainable livelihood in Enugu State. This result is in consonance with the findings of Ibrahim (2007), in a study on entrepreneurship skills required by secondary school graduates for success in rice production enterprise in Kwara State. The author found out that growing rice enterprise required 8 competencies in planning, among which include formulating specific objectives for growing rice, reviewing the objectives for growing rice periodically, identifying sources of finance for growing rice and drawing up programme for rice growing. The finding is in line with the findings of Amusa

and Dumbiri (2010) in a study on entrepreneurial skills required by retirees for tree crop seedling production in Ekiti state, Nigeria. The authors found out that retirees required 20 entrepreneurial skills for planning and pre-sowing operations of tree crop. Some of the skills include to formulate specific objective for the seedling raising enterprise, revive the objective of the enterprise periodically, budget for the seedling farm enterprise among others.

The finding of the study in Table 2 revealed that the teachers of Home Economic, agricultural extension officers and oil bean seed processors agreed that all the 13 practice items which include sourcing oil bean seeds from the market, knocking the boiled seeds with a stone to remove the tough testa, removing the boiled seeds from water and boiling the oil bean seeds in water for 16-18 hours were needed by women retirees in processing of oil bean seeds for sustainable livelihood in Enugu State. This finding is in agreement with the findings of Asogwa, Olaitan and Asouzu (2010) on quality assurance of women in Agriculture in processing bambara groundnut into *okpa* in Anambra State, where it was found out that women in agriculture needed improvement in 23 competency items for processing bambara groundnut into *okpa*.

The result presented in Table 3 showed that the teachers of Home Economic, agricultural extension officers and oil bean seed processors agreed that all the 7 practice items were needed by the women retirees in marketing of processed oil bean seeds for sustainable livelihood in Enugu State. The practice items are to make market survey for the price of processed oil bean seeds, grade the packaged processed oil bean seeds using quantity in each pack, fix price for each pack based on market situation, advertise the product locally or through the media and so on. This finding is consonance with findings of Akwaji (2006), in a study on work-skills required by secondary school graduates for success in cassava processing enterprise in CrossRiver states. The author found out that in marketing processed chips and flour the following skills were needed, advertisement for chips and flour sales, determine when and how to supply goods for profits maximization among others. The finding also has the support of Asogwa, Olaitan and Asouzu (2013) in a study on entrepreneurial skills required by women retirees for processing of pineapple fruit into juice as a sustainable business in Enugu State, Nigeria**,** where it was found out that women retirees required 7 skill items in marketing of pineapple juice in Enugu State. The skills are conducting market survey for pineapple juice, sorting juice into groups using size of bottles, fixing prices for each group among others.

The findings from the hypotheses tested indicated that there was no significant difference in the mean response of the three groups of respondents (teachers of Home Economic, agricultural extension officers and oil bean seed processors) on 29 practice items while there was a significant difference on one out of the 30 practice items needed by women retirees in processing of oil bean seeds for sustainable livelihood in Enugu State, Nigeria. The implication of this finding was that the professional differences of the three groups of respondents did not significantly influence their responses on the 29 practice items needed by women retirees in planning for processing of oil bean seeds, processing of oil bean seeds and marketing of processed oil bean seeds for sustainable livelihood in Enugu State, Nigeria. The practice item with a significant difference means that the professional differences of the teachers of Home Economics and oil bean seed processors influence their responses on the item in planning for processing of oil bean seeds. The item is needed but with less emphasis.

The findings of the authors cited helped to add validity to the findings of this study. This justifies the extent to which the practice items can be useable and effective for the women retirees to sustain their livelihood in Enugu State, Nigeria.

Conclusion

Women retirees, just like other retirees in different parts of Nigeria, are exposed to economic quagmire and fear of sustainable livelihood. This situation is so alarming and horrible to the extent that some of them have packed out of this world untimely, hence requires an urgent attention to sustain the few remaining on earth for mean time. Considering African Oil bean seed as good delicacy in Enugu State, it processing could be an economic and emotional refuge for the women retirees. Therefore, this study was carried out to tap this opportunities for the women retirees. The study found out that the women retirees needed 10 practice items in planning for processing of oil bean seeds, 13 practice items processing of oil bean seeds and 7 practice items marketing of processed oil bean seeds for sustainable livelihood in Enugu State, Nigeria.

Recommendation

The recommendations based on findings of this study are that:

- The skill acquisition centres in the states should package the identified practices into a training programme and be used to train the women retirees and others who may be interested in processing of oil bean seeds.
- Teachers of Home Economics and Agricultural education in Colleges of Education should use the identified practices preparing their student in processing of African oil bean seeds for effective teaching in Junior Secondary Schools.

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