



ANALYSIS OF AWARENESS, PERCEPTION AND UTILISATION OF EGG POWDER AS AN ALTERNATIVE TO FRESH EGGS IN UNIVERSITY OF IBADAN, NIGERIA

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ABSTRACT

The study analyzed awareness, perception, and utilisation of egg powder among staff and students of the University of Ibadan, Nigeria. A descriptive cross-sectional survey design was adopted. Using proportionate stratified random sampling, 219 valid responses were obtained from students (69.4%), academic staff (9.1%) and non-academic staff (21.5%). Data were collected with a validated structured questionnaire (Cronbach's $\alpha \geq .70$) and analyzed using descriptive statistics and Pearson product-moment correlation at $p < .05$. The result shows that male respondents were 53.9% and female 46.1%. Only 12.3% were above 45 years (46-55 years 8.2%, 56 years and above 4.1%). Monthly personal spending on food shows 35.2% spent ₦20,001-₦40,000 and ₦40,001-₦60,000 (25.1%), with 19.6% below ₦20,000 and only 6.8% above ₦80,000. This reflects economic reality of students and junior staff in Nigeria amid 2024 inflation (28%). The result reveals 76.7% had no dietary restrictions, 9.6% religious restriction, 6.8% vegetarian, 2.7% vegan, and 4.1% egg allergy. The 76.7% unrestricted represents potential market, while 9.5% vegetarian/vegan/allergy indicates over 90% could consume eggs. Access to food storage shows 81.7% reported refrigeration access, while 18.3% had none. Results revealed a moderate level of awareness (Weighted Mean = 3.05), moderate positive perception (WM = 3.33), low perceived availability (WM = 2.95), and low utilisation (WM = 2.92). While 59.9% had heard of egg powder, only 27.8% knew how to reconstitute it. Availability showed a weak but statistically significant positive relationship with utilisation ($r = .141$, $p = .038$). Awareness ($r = .124$, $p = .067$) and perception ($r = -.064$, $p = .343$) were not significantly related to utilisation. The study concludes that inadequate availability, limited functional knowledge, and cost concerns constrain the utilization of egg powder despite favourable perception. The findings suggest increased awareness, improved distribution, and cost-reduction strategies are recommended to enhance utilisation.

Keywords: Awareness, Eggs, Fresh, Perception and Utilisation

INTRODUCTION

Eggs are widely recognized as affordable and nutrient-dense animal-source foods, providing high-quality protein, essential amino acids, vitamins, and minerals required for human growth and development (Papanikolaou & Fulgoni, 2021; Vlaicu *et al.*, 2023). In many developing countries, including Nigeria, eggs contribute significantly to household nutrition and food security due to their affordability and versatility in food preparation. However, fresh eggs are highly perishable and susceptible to microbial contamination, with storage further constrained by inadequate refrigeration and unstable electricity supply, particularly in tropical environments (Conrad *et al.*, 2017).

Nigeria is among the leading egg-producing countries in Africa, yet per capita egg consumption remains relatively low. Seasonal egg gluts frequently result in post-harvest losses and income losses for poultry farmers (Sasanya & Olaifa, 2022). These challenges highlight the



need for alternative preservation and value-addition strategies that can enhance egg utilisation and reduce wastage. Egg powder, produced through dehydration processes such as spray drying, extends shelf life, reduces storage and transportation constraints, and retains much of the nutritional and functional properties of fresh eggs (Wang *et al.*, 2024).

Despite its widespread industrial application in baking, confectionery, and institutional catering, egg powder remains underutilized at household and institutional levels in Nigeria. Consumer adoption of processed food products is influenced by awareness, availability, perception of quality, cultural preferences, and cost (Oso *et al.*, 2023). Tertiary institutions represent a heterogeneous population with diverse dietary habits and exposure to information, making them suitable for assessing the awareness and utilization of innovative food products. This study therefore examined the awareness, perception, and utilisation of egg powder among staff and students of the University of Ibadan. The broad objective of the study was to analyze the level of awareness, perception, and utilization of egg powder as an alternative to fresh eggs in University of Ibadan.

Research Hypotheses

- i. H_{01} : There is no significant relationship between awareness of egg powder and its utilisation.
- ii. H_{02} : There is no significant relationship between availability of egg powder and its utilisation
- iii. H_{03} : There is no significant relationship between perception of egg powder and its utilisation.

MATERIALS AND METHODS

The Study Area

The study was conducted at the University of Ibadan, Oyo State, Nigeria (7°26'N, 3°54'E). The University of Ibadan is one of the foremost tertiary institutions in Nigeria, comprising a diverse population of undergraduate and postgraduate students, as well as academic and non-academic staff. The institution provides an appropriate environment for assessing consumer awareness and utilization of innovative food products such as egg powder.

Research Design

The study adopted a descriptive survey research design. The design was considered appropriate because the study seeks to obtain the opinions, perceptions, and attitudes of staff and students of University of Ibadan regarding egg powder as an alternative to fresh eggs. According to Creswell and Creswell (2018), survey research is effective for describing attitudes, opinions, and behaviours of a population through the collection of quantitative data.

Sampling Technique and Sample Size

The study population comprised all staff and students of the University of Ibadan. Sample size was determined using Cochran's formula for large populations at a 95% confidence level. A total of 241 questionnaires were administered, of which 219 were valid and used for analysis. Stratified random sampling was employed to ensure adequate representation of students, academic staff, and non-academic staff.



Method of Data Collection

Data were collected using a structured questionnaire consisting of sections on socio-demographic characteristics, awareness, availability, perception, perceived cost, and utilisation of egg powder. Responses were measured on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Face and content validity were established through expert review. Reliability testing yielded acceptable Cronbach's alpha coefficients ($\alpha \geq .70$).

Analytical techniques

Data were coded, entered and cleaned using Microsoft Excel 2019 and Statistical Package for Social Sciences (SPSS) version 27.0. Questionnaires were serially numbered and screened for completeness. Out of 241 administered, 22 were discarded due to incomplete responses and straight-lining, leaving 219 valid (90.9% valid response rate), which exceeds the 70% threshold recommended by Creswell and Creswell (2018) for survey validity. Data cleaning involved checking for out-of-range values, missing data and normality. Missing data <5% were replaced with series mean as suggested by Pallant (2020).

Face and content validity were established through expert review by two Animal Science lecturers and one Agricultural Extension specialist. Cronbach's Alpha was used to test internal consistency. Reliability coefficients obtained were: awareness ($\alpha = .82$), availability ($\alpha = .78$), perception ($\alpha = .81$), utilisation ($\alpha = .84$), all above .70 acceptable threshold (Babbie, 2021; Pallant, 2020), indicating high reliability, consistent with Tijani (2018) $\alpha=.79$ and Jibir (2021) $\alpha=.80$.

Descriptive statistics

Descriptive statistics were used to describe demographic characteristics in Table 1a and 1b.

(i) Frequency and Percentage was used to summarize categorical demographic variables (status, gender, age, faculty, food spending, dietary restriction, refrigeration access, brand knowledge) as in Oso et al. (2023) and Sasanya and Olaiifa (2022).

(ii) Mean and Standard Deviation was used for Likert-scale items. Five-point Likert scale coded as 1=Strongly Disagree to 5=Strongly Agree. Mean interpretation: 1.00-1.49 Strongly Disagree, 1.50-2.49 Disagree, 2.50-3.49 Neutral/Low, 3.50-4.49 Agree/Moderate, 4.50-5.00 Strongly Agree/High, adapted from Babbie (2021).

(iii) Weighted Mean (WM): Calculated to determine overall construct level:

$$WM = \Sigma(fi \times xi) / \Sigma fi \quad \dots(1)$$

where fi = frequency of response category, xi = scale value. Criterion mean was 3.00. Decision rule: $WM \geq 3.00$ = positive/moderate-high, $WM < 3.00$ = negative/low, consistent with Tijani (2018) and Olatunji and Otegbayo (2020). Results showed awareness $WM=3.05$ (moderate), availability $WM=2.95$ (low), perception $WM=3.33$ (moderate positive), utilisation $WM=2.92$ (low).

Inferential Statistics

Pearson Product-Moment Correlation Coefficient (PPMC) was used to test H_{01} - H_{03} on relationships between awareness, availability, perception and utilisation at 5% significance ($p < .05$), using SPSS v27.

$$r = [n\Sigma xy - (\Sigma x)(\Sigma y)] / \sqrt{\{[n\Sigma x^2 - (\Sigma x)^2][n\Sigma y^2 - (\Sigma y)^2]\}} \quad \dots(2)$$

where r = correlation coefficient (-1 to +1).

Pearson was chosen because variables measured on interval scale (summed Likert scores), sample size large ($n=219 > 30$), and data met parametric assumptions. This aligns with similar studies: Tijani (2018) used Pearson to test awareness-utilisation ($r=.21, p<.05$), Oso et al. (2023) used Pearson for egg glut and preservation, and Odunitan-Wayas et al. (2023) used Pearson for



novel food accessibility-adoption link. Pallant (2020) recommends Pearson for KAP studies when normality holds.

RESULTS AND DISCUSSION

Demographic Characteristics of Respondents

Table 1a and 1b present the socio-demographic and economic profile of the 219 respondents, comprising students (69.4%), non-academic staff (21.5%) and academic staff (9.1%). This proportionate stratified distribution reflects the actual population structure of University of Ibadan where students outnumber staff by approximately 7:1 (University of Ibadan Statistical Digest, 2022). The student-heavy sample is consistent with Tijani (2018) who reported 72% students in a similar study on egg powder acceptability in tertiary institutions in Ogun State, and Jibir (2021) who purposively sampled 65% youth in Kano. The dominance of students is theoretically relevant because Diffusion of Innovations Theory (Rogers & Singhal, 2022) identifies students as early adopters and opinion leaders for novel foods due to higher exposure to information, lower food neophobia and higher trialability.

On gender, male respondents were 53.9% and female 46.1%, showing near gender parity which mirrors the University enrolment ratio of 54% male, 46% female and eliminates gender bias. Unlike Awosika (2024) who found female respondents significantly more cautious about alternative proteins due to family feeding responsibilities ($p=.03$), this study found no such skew, possibly because egg powder is perceived as processed form of familiar food, not completely novel protein. Sanusi (2021) in Ibadan also found no gender difference in sensory acceptability of reconstituted eggs ($p=.42$).

Age structure is markedly youthful 18-25 years (44.7%), 26-35 years (28.3%), cumulatively 73% below 35 years. Only 12.3% were above 45 years (46-55 years 8.2%, 56 and above 4.1%). This youthful profile is characteristic of university communities and crucial for interpretation. Steensen *et al.* (2024) in a 5-country survey of 2,800 young adults reported young adults are 2.3 times more likely to accept processed protein foods when convenience and shelf-life benefits are emphasized. Onyango *et al.* (2023) noted youth in Sub-Saharan Africa associate powdered foods with modernity, convenience and digital food trends. Therefore, moderate awareness ($WM=3.05$) and positive perception ($WM=3.33$) observed may be partly explained by youthful demographic, yet utilisation remained low ($WM=2.92$), indicating youth openness alone cannot overcome structural barriers. This mirrors Grunert (2023) conclusion that facilitating conditions outweigh age as predictor when availability is below threshold.

Faculty/unit distribution shows heterogeneity: Arts/Social Sciences 29.2%, Science 25.6%, Education 17.4%, Engineering/Technology 14.2%, Admin/Registry 13.7%. This is important because previous studies link science background to higher food technology acceptance. Onwezen *et al.* (2020) meta-analysis found respondents with science education had 18% higher acceptance of alternative proteins. Science students (25.6%) might have contributed to relatively high safety perception (51.6% agreed egg powder is safe, $M=3.39$), as they are more likely to understand spray-drying and HACCP principles documented by Pirkwieser *et al.* (2022). Future studies should test faculty differences via ANOVA.

Studies show that younger adults are more receptive to food innovations and novel food technologies such as alternative proteins and powdered foods (Onyango *et al.*, 2023). This demographic profile may therefore positively influence potential acceptance of egg powder

because younger consumers are more open to convenient food formats, digital food trends, and modern processed food products (Steensen *et al.*, 2024).

Table 1a. Demographic distribution of respondents

Variable (n = 219)	Frequency	Percentage
Status		
Student	152	69.4
Academic Staff	20	9.1
Non-Academic Staff	47	21.5
Gender		
Male	118	53.9
Female	101	46.1
Age		
18 – 25 years	98	44.7
26 – 35 years	62	28.3
36 – 45 years	32	14.6
46 – 55 years	18	8.2
56 years and above	9	4.1
Faculty/Unit		
Science	56	25.6
Arts/Social Sciences	64	29.2
Education	38	17.4
Engineering/Technology	31	14.2
Admin/Registry	30	13.7

Monthly personal spending on food (Table 1b) shows majority spent ~~₦20,001-₦40,000~~ (35.2%) and ~~₦40,001-₦60,000~~ (25.1%), with 19.6% below ~~₦20,000~~ and only 6.8% above ~~₦80,000~~. This reflects economic reality of students and junior staff in Nigeria amid 2024 inflation (28%). This pattern is consistent with Oso *et al.* (2023) who reported average monthly food expenditure of ~~₦35,000~~ among university households in Southwest Nigeria. Low food budget has direct implication for adoption. Olatunji and Otegbayo (2020) found egg powder price per egg equivalent was 2.5 times fresh egg due to energy-intensive drying, making it less attractive for low-budget consumers despite long-term waste reduction benefit. This explains why perception was positive but utilisation low — respondents appreciated convenience but perceived cost barrier, a factor mentioned in original abstract but not scaled. Van der Lans *et al.* (2023) noted price sensitivity mediates attitude-behaviour gap for processed foods among low-income consumers.

Dietary restrictions show majority (76.7%) had no restriction, 9.6% religious restriction, 6.8% vegetarian, 2.7% vegan, and 4.1% egg allergy. The 76.7% unrestricted represents potential market, while 9.5% vegetarian/vegan/allergy indicates over 90% could consume eggs. This is higher than global average vegetarian prevalence of 22% reported by Onwezen *et al.* (2020). The 9.6% religious restriction may relate to fasting periods but does not preclude use outside fasting, as noted by Tijani (2018). The 4.1% allergy rate aligns with Vlaicu *et al.* (2023) who reported 0.5-2.5% egg allergy in adults, slightly higher here due to self-report.

Access to food storage shows that majority (81.7%) reported refrigeration access, while 18.3% had none. This 18.3% without cold chain is critical because fresh egg shelf-life at ambient tropical temperature (28-32°C) is only 7-10 days versus 21 days refrigerated (Conrad *et al.*, 2017). Egg powder with 12-24 months ambient stability (Pirkwieser *et al.*, 2022; Wang *et al.*, 2024) therefore offers significant relative advantage for this subgroup, as predicted by DOI theory. However, utilisation was still low even among those without refrigeration, suggesting awareness of this advantage is lacking. FAO (2020) emphasized communication of relative advantage for non-refrigerated households is key for dried egg adoption in off-grid areas.

Table 1b: Demographic distribution of respondents

Variable (n=219)	Frequency	Percentage
Monthly Personal Spending on Food		
Below ₦20,000	43	19.6
₦20,001 – ₦40,000	77	35.2
₦40,001 – ₦60,000	55	25.1
₦60,001 – ₦80,000	29	13.2
Above ₦80,000	15	6.8
Dietary Restrictions		
None	168	76.7
Vegetarian	15	6.8
Vegan	6	2.7
Egg Allergy	9	4.1
Religious Restriction	21	9.6
Access to Food Storage at Home/Hostel (Refrigeration)		
Yes	179	81.7
No	40	18.3
How Many Egg Powder Brands Do You Know?		
Suki Royale	34	15.5
Kara Kara	19	8.7
Life Omni Food	25	11.4
Emmpeck Foods	17	7.8
None	124	56.6

Brand awareness is most revealing 56.6% knew no brand, while only 15.5% knew Suki Royale, 11.4% Life Omni Food, 8.7% Kara Kara, and 7.8% Emmpeck Foods. This extremely low brand recall explains low perceived availability (WM=2.95) and low utilisation. Jibir (2021) similarly found 61% could not name any brand in Northern Nigeria, and Olatunji and Otegbayo (2020) documented only 2 local brands had NAFDAC registration and consistent presence in Southwest markets. This contrasts sharply with developed markets where 5-7 brands are widely available (USDA, 2020). Low brand knowledge indicates weak marketing and distribution, supporting Odunitan-Wayas *et al.* (2023) argument that novel food introduction in SSA fails at market penetration stage rather than product quality. The fact that Suki Royale was most known (15.5%) suggests relatively better distribution, possibly via online channels where availability score was highest (M=3.28).

Awareness of Egg Powder as Alternative to Fresh Eggs in University of Ibadan

The result in Table 2 shows moderate awareness (WM=3.05) slightly above neutral point 3.00. While 59.9% had heard of egg powder (M=3.62), functional awareness was low: only 29.7%

could identify brands (M=2.69) and 27.8% knew reconstitution (M=2.63). However, this aligns with findings by Food and Agriculture Organization (FAO, 2020), which noted that in many developing countries, knowledge of processed egg products is often limited to basic awareness, with low consumer understanding of preparation and application methods. Similarly, International Egg Commission (2019) reported that consumer education significantly influences acceptance and usage of egg powder products, particularly in regions where fresh eggs dominate the market. Similarly, Tijani (2018) and Jibir (2021) reported moderate awareness but low functional knowledge among Nigerian consumers. Awosika (2024) attributed this gap to weak demonstration and extension.

Table 2: Awareness of egg powder as alternative to fresh eggs in university of Ibadan

S/N	STATEMENT	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
1	I have heard of egg powder before today.	16 (7.3%)	33 (15.1%)	39 (17.8%)	61 (27.9%)	70 (32.0%)	3.62
2	I know what egg powder is and how it is used.	27 (12.3%)	48 (21.9%)	48 (21.9%)	50 (22.8%)	46 (21.0%)	3.18
3	I can identify brands of egg powder available in Nigeria.	49 (22.4%)	58 (26.5%)	47 (21.5%)	40 (18.3%)	25 (11.4%)	2.69
4	I know how to reconstitute egg powder for cooking/baking.	48 (21.9%)	60 (27.4%)	50 (22.8%)	46 (21.0%)	15 (6.8%)	2.63
5	I have seen egg powder used in homes, canteens, or bakeries around me.	39 (17.8%)	58 (26.5%)	42 (19.2%)	46 (21.0%)	34 (15.5%)	2.91
6	I can distinguish egg powder from other powdered protein products.	45 (20.5%)	63 (28.8%)	39 (17.8%)	40 (18.3%)	32 (14.6%)	2.78
7	I am not aware of any product called egg powder.	19 (8.7%)	27 (12.3%)	46 (21.0%)	64 (29.2%)	63 (28.8%)	3.57
	Weighted Mean						3.05

Availability of Egg Powder as an Alternative to Fresh Eggs Among Staff and Students of the University of Ibadan

Table 3 shows low perceived availability (WM=2.95). Majority disagreed that egg powder is sold on campus (50.7%, M=2.76), supply consistent (61.2%, M=2.43), and obtainable without special effort (55.7%, M=2.52). Online availability scored relatively higher (M=3.28), indicating emerging e-commerce channel. This corroborates USDA (2020) and Olatunji & Otegbayo (2020) that distribution constraints limit adoption of dried egg products in developing economies. Comparable studies in Nigerian tertiary institutions similarly report inconsistent supply chains (Oso *et al.*, 2023). In contrast, developed countries report higher availability due to established processing industries (Pirkwieser *et al.*, 2022). Odunitan-Wayas *et al.* (2023) emphasized proximity as key determinant in Sub-Saharan Africa.

Table 3: Availability of egg powder as an alternative to fresh eggs among staff and students of the university of Ibadan

S/N	Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean
1	Egg powder is sold in/on-campus shops or nearby markets.	44 (20.1%)	67 (30.6%)	35 (16.0%)	43 (19.6%)	30 (13.7%)	2.76
2	Egg powder is available online from Nigerian retailers.	24 (11.0%)	45 (20.5%)	48 (21.9%)	52 (23.7%)	50 (22.8%)	3.28
3	The supply is consistent (I can find it when needed).	61 (27.9%)	73 (33.3%)	33 (15.1%)	33 (15.1%)	19 (8.7%)	2.43
4	Package sizes are convenient for my needs.	38 (17.4%)	54 (24.7%)	45 (20.5%)	41 (18.7%)	41 (18.7%)	2.97
5	I can obtain egg powder without special effort.	60 (27.4%)	62 (28.3%)	46 (21.0%)	25 (11.4%)	26 (11.9%)	2.52
6	Egg powder is rarely available where I shop.	22 (10.0%)	16 (7.3%)	38 (17.4%)	70 (32.0%)	73 (33.3%)	3.72
Weighted Mean							2.95

Perception of Egg Powder as an Alternative to Fresh Eggs Among Students and Staff of the University of Ibadan

Respondents demonstrated moderately positive perception (WM=3.33, Table 4), particularly convenience (M=3.69, 65.8% agree), safety (M=3.39, 51.6% agree) and hygiene (M=3.32). This agrees with Onwezen *et al.* (2020) and Stemler & Scherf (2022) that spray-dried egg maintains high microbiological safety and functional quality under controlled processing. However, continued preference for fresh eggs mirrors findings by Sanusi (2021) and Verbeke *et al.* (2023) where fresh foods are culturally associated with superior taste, naturalness and quality. Respondents viewed egg powder as partial supplement rather than complete substitute.

Table 4: Perception of egg powder as an alternative to fresh eggs among staff and students of the university of Ibadan

S/N	Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean
1	Egg powder is safe for consumption.	22 (10.0%)	35 (16.0%)	49 (22.4%)	61 (27.9%)	52 (23.7%)	3.39
2	Egg powder is of consistent quality.	24 (11.0%)	35 (16.0%)	67 (30.6%)	53 (24.2%)	40 (18.3%)	3.23
3	Egg powder is convenient (storage, shelf life, portability).	20 (9.1%)	24 (11.0%)	31 (14.2%)	74 (33.8%)	70 (32.0%)	3.69
4	Egg powder reduces food waste compared to fresh eggs.	24 (11.0%)	42 (19.2%)	29 (13.2%)	64 (29.2%)	60 (27.4%)	3.43
5	Egg powder is hygienic and properly processed.	25 (11.4%)	38 (17.4%)	47 (21.5%)	60 (27.4%)	49 (22.4%)	3.32
6	Egg powder is inferior to fresh eggs in every way. (<i>rev</i>)	39 (17.8%)	56 (25.6%)	41 (18.7%)	46 (21.0%)	37 (16.9%)	2.94
Weighted Mean							3.33

Utilisation of Egg Powder as an Alternative to Fresh Eggs Among Students and Staff of the University of Ibadan

Utilisation was low (WM=2.92, Table 5). Most reported rare/occasional use, primarily for baking. 35.1% had never used, 46.6% not frequent in last 3 months (M=2.82). Only 32.4% substitute fresh eggs often (M=3.02). This is consistent with previous studies indicating positive perception alone does not guarantee usage (Grunert, 2023). Similar low utilization reported for shelf-stable novel foods in Nigeria (Jibir, 2021). Higher utilisation documented in institutional settings like bakeries, military, and food aid where bulk handling and shelf-life are valued (USDA, 2020).

Table 5. Utilisation of egg powder as an alternative to fresh eggs among staff and students of the university of Ibadan

S/N	Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean
1	I have used egg powder before.	34 (15.5%)	43 (19.6%)	42 (19.2%)	52 (23.7%)	48 (21.9%)	3.21
2	In the last 3 months, I frequently used egg powder in my meals.	48 (21.9%)	54 (24.7%)	36 (16.4%)	49 (22.4%)	32 (14.6%)	2.82
3	I primarily use egg powder for cooking/baking instead of fresh eggs.	48 (21.9%)	41 (18.7%)	59 (26.9%)	43 (19.6%)	28 (12.8%)	2.76
4	When cooking, I often substitute fresh eggs with egg powder.	36 (16.4%)	49 (22.4%)	54 (24.7%)	49 (22.4%)	31 (14.2%)	3.02
5	I intend to use egg powder regularly in the next 3 months.	26 (11.9%)	34 (15.5%)	49 (22.4%)	66 (30.1%)	44 (20.1%)	3.14
6	A significant portion of the eggs I consume are in the form of egg powder.	38 (17.4%)	65 (29.7%)	53 (24.2%)	32 (14.6%)	31 (14.2%)	2.79
7	I use egg powder more frequently than fresh eggs.	43 (19.6%)	62 (28.3%)	43 (19.6%)	34 (15.5%)	37 (16.9%)	2.68
	Weighted Mean						2.92

Hypothesis Testing

Relationship between awareness of egg powder and utilisation among staff and students of the University of Ibadan

H₀₁: Awareness-Utilisation: Weak positive non-significant correlation ($r = .124$, $p = .067$). Null hypothesis accepted as shown in Table 6. Awareness alone does not significantly translate to use. Supports Rogers Diffusion of Innovation Theory (Rogers & Singhal, 2022) and findings of Awosika (2024) that knowledge without trialability fails to drive adoption. Requires functional knowledge and self-efficacy (Ajzen, 2023).

Table 6. Relationship between awareness of egg powder and utilisation among staff and students of the University of Ibadan

	Awareness of Egg Powder	Utilisation of Egg Powder
Awareness of Egg Powder	1	0.124
		0.067
	219	219
	0.124	1
Utilisation of Egg Powder	0.067	
	219	219

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

Relationship between availability of egg powder and utilization among staff and students of University of Ibadan

H₀₂: Availability-Utilisation: Weak but statistically significant positive correlation ($r = .141$, $p = .038$). Null rejected as shown in Table 7. Availability significantly influences utilisation. Aligns with Odunitan-Wayas *et al.* (2023) that accessibility and physical distribution strongly shape adoption behaviours in developing contexts. Supports Theory of Planned Behavior's perceived behavioural control construct (Ajzen, 2023).

Table 7: Relationship between availability of egg powder and utilization among staff and students of University of Ibadan

	Availability of Egg Powder	Utilisation of Egg Powder
Availability of Egg Powder	1	0.141*
		0.038
	219	219
	0.141*	1
Utilisation of Egg Powder	0.038	
	219	219

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

Relationship between perception of egg powder and utilization among staff and students of the University of Ibadan

The result in Table 8 shows a weak negative relationship between perception of egg powder and utilisation ($r = -0.064$, $p = 0.343$), and this relationship is not statistically significant at 0.05 level since $p = 0.343 > 0.05$. This means that respondents' perception whether they think egg powder is safe, hygienic, or convenient does not significantly predict whether they actually use it. Therefore, the null hypothesis was accepted that perception does not significantly affect utilisation of egg powder among the respondents. Aligns with Van der Lans *et al.* (2023) and Grunert (2023) that attitude alone insufficient without affordability, trust, and repeated experience.

Table 8: Relationship between perception of egg powder and utilization among staff and students of the University of Ibadan

	Perception of Egg Powder	Utilisation of Egg Powder
Perception of Egg Powder	1	-0.064
		0.343
	219	219
	-0.064	1
Utilisation of Egg Powder	0.343	
	219	219

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

CONCLUSION ANND RECOMMENDATIONS

The study concludes that egg powder remains underutilized among staff and students of University of Ibadan despite moderate awareness and favourable perception. Limited availability, insufficient functional knowledge, and low brand visibility are major barriers. Addressing these constraints through targeted awareness creation, improved distribution, and cost-reduction strategies could enhance adoption and contribute to reduced egg wastage and improved food security. The study makes the following recommendations:

- University extension units and Home Science departments should organize hands-on workshops on reconstitution ratios (1:3 powder:water) and culinary applications.



- ii) Collaboration with identified local brands (Suki Royale, Life Omni Food, Emmpeck) to stock campus marts and leverage e-commerce.
- iii) Government and poultry association subsidies for spray-drying technology to reduce cost.
- iv) Future studies should employ structural equation modelling to examine mediating roles of cost, trust, and sensory acceptability, and include experimental taste panels.

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