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Home-Based Food Businesses Questionnaire Development: Expert Review Approach and Content Validation Index Analysis16AN BOLD Title - Max. 2 rows only. Do not use BLOCK CAPITAL LETTERS

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Abstract 10AN

Home-based food businesses (HBFBs) play an important role in Malaysia's economy by providing low-cost food for the market. But it often lacks standardized tools to assess food safety practices on its premises and in its production. Content validation questionnaires were developed and reviewed by experts to confirm the relevance, clarity, and suitability of each item in Pahang, Malaysia. The content validity of structured questionnaires established by using content validity index (CVI), scale content validity index (S-CVI), probability of chance agreement (Pc) and kappa (K*). 73 items listed in a structured table provided with a recommendation column for expert feedback. (99 words) Click here and insert your abstract text. 9AN (100 words max. Abstract exceeding 100 words surcharged MYR200)

Keywords: content validity; expert review; home-based food business; food safety CVI 9 AN (Max. 4 keywords)

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Paper length to be 3,000 – 3,500 words (excluding 1-page References, Illustrations)

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1.0 Introduction 11AN Bold

Here, introduce the paper, and put a nomenclature if necessary, in a box with the same font size as the rest of the paper. The paragraphs continue from here and are only separated by headings, subheadings, images and formulae. **Please do not alter the formatting and style layouts** which have been set up in this template document. Do not number pages as page numbers will be added separately for the preprints and the Proceedings.

Home-based food businesses are small-scale operations at a private home, using domestic equipment. Its production is intended solely to supply small quantities of food for sale to the public. Public areas, such as nearby neighborhoods and schools, are often identified as the target market because operating costs are relatively low, as the home serves both as a residence and a place of business, with utility bills lower than those in commercial areas. Those factors have influenced the final product to be priced reasonably and quite affordable for communities and school kids. Home-based food businesses experienced rapid growth in recent years globally due to the

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COVID-19 pandemic. Despite the pandemic, it has created economic opportunities and flexible working hours. In Malaysia, this sector is rapidly growing and contributes to household income for homemakers and to the local food supply, as highlighted by Palliany samy (2025). Previously, this home-based food business's target market focused only on nearby residential areas. However, technology has expanded, turning it into a gig market where food can be ordered at any time and from any location as long as there is an internet connection. Despite positive growth, concerns about food safety practices in home-based businesses remain a pressing issue. HBFBs have raised significant concerns about food safety, as home food preparation may not adhere to standardized hygiene and sanitation standards. Razak et al. (2022) found that poor hygiene practices and limited regulations and monitoring by enforcement officers at HBFBs are due to their location in private areas, where the MOH has no procedure for checking home operations using standard raiding practices in commercial areas.

Previous studies have highlighted factors influencing food safety behavior among HBFBs' food handlers. HBFB's food handlers know about food safety, as highlighted by Nur Izyan (2019), but their practice was unaligned with knowledge. This statement was supported by Fauzi & Abdul-Mutalib (2021), who found that knowledge: 97.5% (very high), but did not always result in positive changes in behavior. To address this gap, a structured questionnaire was developed to assess food safety practices among home-based food operators. Before its implementation, the instrument requires content validation to ensure that all items are relevant, clear, and representative of the study objectives. Content validity is a fundamental step in instrument development, ensuring that the items adequately reflect the construct being measured. An expert review is commonly used to evaluate the appropriateness and comprehensiveness of questionnaire items.
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2.0 Methodology

2.1 Study Design

This study applied a methodological design to assess the content validity and instrument validation of HBFB's food safety using the CVI. The study was conducted for a week to select an eligible expert reviewer. A set of questionnaires was developed based on objectives and respondents' levels of understanding and suitability.

2.2 Instrument Development

The questionnaire was developed based on a literature review, guidelines from food safety authorities, and existing validated instruments, as highlighted by Wang, K. et al. (2026) where questionnaire commonly develop using existing instruments, experts input, and validated practices. Each item designed to measure relevancy, clarity, and suitability. Questionnaires to home-based food operators divided into A, B, C, and D. Section A for expert background, Section B instructions for expert, Section C items for questionnaires, where 3 main sections are Section I: Background Information, Section II: Cleanliness Score/ Demerit System, Section III: Product Information, Section IV: Labeling Information, and Section D overall feedback for experts. 73 items were presented for expert review on their clarity, relevance, and suitability.

2.3 Expert Panel Selection

Selected expert review based on position, expertise, and years of working experience. However, variables such as the experts' age and race excluded because they were not relevant to this study. Seven panel experts were selected based on their expertise in food safety, food technology, and public health, and on at least 1 year of experience working with the Malaysian health department. For this research, food technologists and health inspectors were selected as expert reviewers to ensure their knowledge aligns with food safety practices and applied in accordance with Malaysian food safety rules and regulations. The threshold I-CVI ≥ 0.78 for 6–10 experts. It is not arbitrary and is based on well-cited methodological papers which is acceptable as mentioned by Polit (2006).

2.4 Content Validation Procedure

Experts allocated with a set of hard-copy questionnaires for home-based food operators. A simple, clear instruction on the cover page stated that experts must fill in their names, positions, and years of experience. Informed consent was obtained before the experts filled out the questionnaire. Next, experts required to rate each item using a 4-point scale;1 = not relevant/ not clear/ not suitable; 2 = somewhat relevant/ somewhat clear/ somewhat suitable; 3 = relevant/ clear/ suitable; 4 = highly relevant/ highly clear/ highly suitable as in Table 1. An empty column was provided at the end of each item for recommendations. They were also encouraged to provide qualitative feedback for improvement.

Table 1 Scale to guide experts for scoring method

Scale	Relevancy	Clarity	Suitability
1	Not relevant	Not clear	Not suitable
2	Somewhat relevant	Somewhat clear	Somewhat suitable
3	Relevant	Clear	Suitable
4	Highly relevant	Highly clear	Highly suitable

2.5 Data Analysis

For this study, Excel utilized to list 73 items in a vertical format. If the item marked as 1 = not relevant/ not clear/ not suitable; 2 = somewhat relevant/ somewhat clear/ somewhat suitable, it considered as zero (0). If the item marked as 3 = relevant/ clear/ suitable; 4

= highly relevant/ highly clear/ highly suitable, considered as one (1). Zero (0) and one (1) filled up in the Excel sheet. Content Validity Index (CVI) was calculated based on a given formula where the total cumulative score of each item divided by seven (7) experts. CVI ≥ 0.78 considered acceptable when there were three or more experts (Polit, 2007). Therefore, I-CVI ≥ 0.78 decided to be retained, while I-CVI ≤ 0.78 would be revised or deleted.

73 items broken down into five domains, namely D1 owner background (items 1-8), D2 premise background (items 9-37), D3 cleanliness score/ demerit system (items 38-65), D4 product information (items 66-68), and D5 information of labeling (items 69-73). The calculation applied for relevancy, clarity, and suitability. The next step is the calculation of S-CVI/Average (S-CVI/Ave) and S-CVI/ Universal Agreement (S-CVI/UA). The purpose of S-CVI/Ave was to measure the overall agreement among experts across all items to ensure a general and stable estimate of content validity. In comparison, the S-CVI/UA purpose was to measure the proportion of items which all experts agree that the item is valid.

The pre final stage is the calculation of Pc as below where *N* is total number of experts, *A* is number of expert who rated the items as relevant and ! is factorial. Pc used to compute the modified K*, which adjusts the I-CVI to account for agreement that might occur by chance

$$\mathrm{Pc} = \frac{N!}{A!\,(N-A)!} \times 0.5^N$$

The final stage is the calculation of modified K* as below. K* interpretation >0.74 is excellent, 0.60–0.74 is good, 0.40–0.59 is fair, as highlighted by Zamzadeh et al. (2015). K* < 0.40 is not included in the Cicchetti classification and is considered poor agreement.

$$K^* = \frac{\mathrm{ICVI} - \mathrm{Pc}}{1 - \mathrm{Pc}}$$

3.0 Results

The CVI results are shown in Table 2. CVI results for relevancy: 0.43 (1 item), 0.57 (4 items), 0.71 (12 items), 0.86 (22 items), and 1.00 (34 items). CVI for clarity: 0.57 (1 item), 0.71 (15 items), 0.86 (21 items), and 1.00 (36 items). CVI for suitability: 0.57 (5 items), 0.71 (10 items), 0.86 (22 items) and 1.00 (36 items).

Table 2 : Content validation index (CVI)

Item	Relevancy CVI	Clarity CVI	Suitability CVI
Domain 1: Owner background (D1)			
Item 1	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 2	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 3	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 4	**0.71 (Revise)**	0.86 (Appropriate)	**0.71 (Revise)**
Item 5	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 6	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 7	**0.71(Revise)**	0.86 (Appropriate)	**0.71(Revise)**
Item 8	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Domain 2: Premise background (D2)			
Item 9	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 10	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 11	**0.71 (Revise)**	1.00 (Appropriate)	**0.71 (Revise)**
Item 12	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 13	**0.43 (Revise)**	0.86 (Appropriate)	**0.57 (Revise)**
Item 14	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 15	**0.71 (Revise)**	**0.71 (Revise)**	0.86 (Appropriate)
Item 16	**0.57 (Revise)**	**0.71 (Revise)**	**0.57 (Revise)**
Item 17	**0.57 (Revise)**	**0.71 (Revise)**	**0.57 (Revise)**
Item 18	**0.71 (Revise)**	**0.71 (Revise)**	**0.71 (Revise)**
Item 19	**0.71 (Revise)**	**0.71 (Revise)**	**0.71 (Revise)**
Item 20	**0.71 (Revise)**	**0.71 (Revise)**	**0.71 (Revise)**
Item 21	**0.57 (Revise)**	**0.71 (Revise)**	**0.57 (Revise)**
Item 22	**0.71 (Revise)**	**0.71 (Revise)**	**0.71 (Revise)**
Item 23	**0.71 (Revise)**	**0.71 (Revise)**	**0.71 (Revise)**
Item 24	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 25	**0.71 (Revise)**	**0.71 (Revise)**	**0.71 (Revise)**
Item 26	**0.57 (Revise)**	**0.57 (Revise)**	**0.57 (Revise)**
Item 27	**0.71 (Revise)**	**0.71 (Revise)**	**0.71 (Revise)**
Item 28	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 29	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 30	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)

Item 31	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 32	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 33	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 34	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 35	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 36	1.00 (Appropriate)	**0.71 (Revise)**	0.86 (Appropriate)
Item 37	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Domain 3: Cleanliness score/ demerit system (D3)			
Item 38	0.86 (Appropriate)	**0.71 (Revise)**	0.86 (Appropriate)
Item 39	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 40	0.86 (Appropriate)	**0.71 (Revise)**	0.86 (Appropriate)
Item 41	0.86 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 42	0.86 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 43	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 44	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 45	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 46	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 47	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 48	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 49	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 50	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 51	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 52	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 53	1.00 (Appropriate)	0.86 (Appropriate)	1.00 (Appropriate)
Item 54	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 55	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 56	0.86 (Appropriate)	**0.71 (Revise)**	0.86 (Appropriate)
Item 57	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 58	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 59	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 60	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 61	0.86 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 62	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 63	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 64	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 65	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Domain 4: Product information (D4)			
Item 66	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 67	0.86 (Appropriate)	0.86 (Appropriate)	0.86 (Appropriate)
Item 68	**0.71 (Revise)**	0.86 (Appropriate)	0.86 (Appropriate)
Domain 5: Information of labelling (D5)			
Item 69	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 70	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 71	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 72	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)
Item 73	1.00 (Appropriate)	1.00 (Appropriate)	1.00 (Appropriate)

3.1 Relevancy

According to Table 2, Item 13 results for CVI results for Items 13 and 16 were 0.43, and Items 16, 17, 21, and 26 were 0.57. Items 11, 15, 18, 19, 20, 22, 23, 25, 27, and 68, the result was 0.71. Items 11, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27 are categorized under Domain 2 (D2). Item 68 is categorized under Domain 4 (D4). In Table 3: D2, S-CVI/Ave was 0.82 while S-CVI/UA was 0.41. From the perspective of Pc and K* as in Table 4, the interpretation was poor, resulting in 0.273 and 0.214.

For D2, items 16, 17, 21, and 26 accounted for the results of 0.82 for S-CVI/Ave and 0.41 for S-CVI/UA. From the perspectives of Pc and K*, the interpretations were fair at 0.273 and 0.410. Three experts on E1, E2, and E3 provided positive feedback on item 21 by requesting further clarification. For D4, Item 68 results at 0.81 for S-CVI/Ave and 0.0 for S-CVI/UA. The results for Pc and K* were good, within the same range. This item will be retained and revised.

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Table 3 Relevancy summary of I-CVI and S-CVI by two approaches of S-CVI/UA and S-CVI/Ave for items of all domains

Domain	Item Range	I-CVI Range	S-CVI/Ave	S-CVI/UA	Decision	
					Appropriate (Item)	Revise (Item)
D1	1-8	0.71-1.00	0.94	0.75	1,2,3,5,6,8	4,7
D2	9-37	0.43-1.00	0.82	0.41	9,10,12,14, 24, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37	11, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29
D3	38-65	0.86-1.00	0.92	0.43	38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65	
D4	66-68	0.71-0.86	0.81	1.00	66, 67	68
D5	69-73	1.00	1.00	1.00	69, 70, 71, 72, 73	

Table 4 Relevancy modified K* for CVI

Domain	Item Range	I-CVI Range	Pc Range	K* Range	Interpretation			
					Excellent Item	Good Item	Fair Item	Poor Item
D1	1-8	0.71-1.00	0.008-0164	0.658-1.000	1, 2, 3, 5, 6, 8, 66, 67, 69, 70, 71, 72, 73	4, 7		13
D2	9-37	0.43-1.00	0.008-0.273	0.214-1.000	9, 10, 12, 14, 24, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37,	11, 15, 18, 19, 20, 22, 23, 25, 27	16, 17, 21, 26	
D3	38-65	0.86-1.00	0.008-0.055	0.849-1.000	38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65			
D4	66-68	0.71-0.86	0.055-0.164	0.658-0.849	66-67	68		
D5	69-73	1.00	0.008	1.000	69-73			

3.2 Clarity

According to Table 2, item 26 had a CVI of 0.57. Items 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 27, 36, 38, 40, and 56, the result was 0.71. Items 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, and 36 are categorized under Domain 2 (D2). Items 38, 40, and 46 are categorized under Domain 3 (D3). Table 5, D2, S-CVI/Ave was 0.85 while S-CVI/UA was 0.41. From the perspective of Pc and K* in Table 6, the interpretation was fair, resulting in 0.273 and 0.410.

For D2, items 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, and 36 comprised the result at 0.85 for S-CVI/Ave and 0.41 for S-CVI/UA. From the perspectives of Pc and K*, the interpretations were fair at 0.164 and 0.658. Five experts from E1, E2, E3, E5, and E6 provided positive feedback on these items by requesting further clarification. Therefore, these items will be retained and revised. For D3, items 38, 40, and 56 represented the result of 0.91 for S-CVI/Ave and 0.46 for S-CVI/UA. In Table 6, from the perspective of Pc and K*, the interpretation was good at 0.164 and 0.658

Table 5 Clarity summary of I-CVI and S-CVI by two approaches of S-CVI/UA and S-CVI/Ave for items of all domains

Domain	Item Range	I-CVI Range	S-CVI/Ave	S-CVI/UA	Decision	
					Appropriate (Item)	Revise (Item)
D1	1-8	0.86-1.00	0.96	0.75	1, 2, 3, 4, 5, 6, 7, 8	
D2	9-37	0.57-1.00	0.85	0.41	9,10,11,12,13,14,24,28,29,30,31,32,33, 34,36,37	15,16,17,18,19,20,21,22,23,25,26,27,35
D3	38-65	0.71-1.00	0.91	0.46	39,41,42,43,44,45,46,47,48,49,50,51,52, 53,54,55,57,58,59,60,61,62,63,64,65,	38,40,56,
D4	66-68	0.86-1.00	0.86	0	66,67,68,	,
D5	69-73	1.00	1.00	1.00	69,70,71,72,73,	

Table 6 Clarity modified K* for CVI

Domain	Item Range	I-CVI Range	Pc Range	K* Range	Interpretation			
					Excellent Item	Good Item	Fair Item	Poor Item
D1	1-8	0.86-1.00	0.008-0.055	0.849-1.000	1,2,3,4,5,6,7,8			
D2	9-37	0.57-1.00	0.008-0.273	0.410 – 1.000	9,10,11,12,13,14,24, 28,29,30,31,32,33, 34,36,37	15,16,17,18,19,20, 21,22,23,25,27,35	26	
D3	38-65	0.71-1.00	0.008 – 0.164	0.658 – 1.000	39,41,42,43,44,45,4 6,47,48,49,50,51,52, 53,54,55,57,58,59, 60,61,62,63,64,65	38,40,56		
D4	66-68	0.86-1.00	0.008 - 0.055	0.849 – 1.000	66,67,68			
D5	69-73	1.00	0.008	1.00	69,70,71,72,73			

3.3 Suitability

According to Table 2, Items 13, 16, 17, 21, and 26 yielded a CVI of 0.57. Items 11, 18, 19, 20, 21, 22, 23, 25, and 27 yielded a score of 0.71. All these items are categorized under Domain 2 (D2). S-CVI/Ave and S-CVI/UA in Table 7 reported results of 0.83 and 0.38, respectively. From the perspective of Pc and K* in Table 8, the interpretation was fair, resulting in 0.05 and 0.547 for items 13, 16, 17, 21, and 26. Two experts, E3 and E7, commented on Item 3 regarding the local authority questionnaire. This question was removed as it was supported by poor performance in the relevant category. Items 16, 17, and 21 will be retained, as there were no comments on them. Items 11, 18, 19, 20, 21, 22, 23, 25, and 27 from the perspective of Pc and K* in Table 8 had good interpretations at 0.712.

Table 7 Suitability summary of I-CVI and S-CVI by two approaches of S-CVI/UA and S-CVI/Ave for items of all domains

Domain	Item Range	I-CVI Range	S-CVI/Ave	S-CVI/UA	Decision	
					Appropriate (Item)	Revise (Item)
D1	1-8	0.71 – 1.00	0.93	0.75	1,2,3,5,6,8	4,7
D2	9-37	0.57 – 1.00	0.83	0.38	9,10,12,14,15,24,28,29,30,31,32,33,34,35, 36,37	11,13,16,17,18,19,20,21,22,23,25,26,27
D3	38-65	0.71 – 1.00	0.92	0.46	39,40,41,42,43,44,45,46,47,48,49,50,51,52, 53,54,55,56,57,58,59,60,61,62,63,64,65	38
D4	66-68	0.86	0.86	0	66,67,68	
D5	69-73	1.00	1.00	1.00	69,70,71,72,73	

Table 8 Suitability modified K* for CVI

Domain	Item Range	I-CVI Range	Pc Range	K* Range	Interpretation			
					Excellent Item	Good Item	Fair Item	Poor Item
D1	1-8	0.71 – 1.00	0.008 - 0.164	0.658 - 1.000	1,2,3,5,6,8	4,7		
D2	9-37	0.57 – 1.00	0.008 - 0.055	0.410 – 1.000	9,10,12,14,15,24,28, 29,30,31,32,33,34,35 36,37	11,18,19,20,21,22,23 25,26,27	13,16,17	
D3	38-65	0.71 – 1.00	0.008 - 0.164	0.658 - 1.000	39,40,41,42,43,44,45 46,47,48,49,50,51,52 53,54,55,56,57,58,59 ,60,61,62,63,64,65	38		
D4	66-68	0.86	0.055	0.849	66,67,68			
D5	69-73	1.00	0.008	1.000	69,70,71,72,73			

4.0 Discussion

The findings demonstrate that the questionnaire possesses strong content validity after expert evaluation. The feedback from seven experts played a crucial role in improving item clarity and ensuring alignment with food safety constructs. It aligns with previous studies, which emphasize the importance of expert review in validating instruments as found by Polit (2007) for public health and food safety research. 73 items were divided into five domains namely: D1: Owner background, D2: Premise background, D3: Cleanliness score/ demerit system, D4: Product information and D5: Information labelling.

In relevancy, two experts' feedback, E3 and E7, stated that local authority questions were irrelevant for HBFBs because the premises themselves were not declared as commercial food businesses. In fact, for local authority homes shall be used only as residential areas and shall not be considered small business entities. Item 13 should be eliminated from the questionnaires due to poor performance in the modified K* which resulted in 0.214. 72 items resulted ≥ 0.4 will be retained in the questionnaires, by modifying or rewording those questionnaires. For D2, items 11, 15, 18, 19, 20, 22, 23, 25, 27 represented the result of 0.82 for S-CVI/Ave and 0.41 for S-CVI/UA. From the perspective of Pc and K*, the interpretation was good at 0.164 and 0.658. E3, E5, and E6 each gave feedback for each listed item. Their comments concerned the generality of the item options, which were not specified in the question. These items will be modified and reworded. Clarity, four experts, E1, E2, E3, and E6, each gave feedback for item 38. Their comments concerned the generality of the item options, which were not specified in the question. These items will be modified and reworded. One expert's feedback, E3 mentioned that there is no standard for grease traps under the Food Act because the premise itself was not declared a commercial food business. However, this question will be retained and revised as new knowledge for this research. Suitability, four experts from E1, E2, E3, and E6 provided positive feedback on these items by requesting further clarification. Therefore, these items will be retained and revised.

5.0 Conclusion

This study demonstrates the use of expert evaluation to assess item significance based on relevancy, clarity, and suitability, thereby improving HBFBs food safety questionnaires before they are distributed to respondents. The findings indicate the instrument achieved acceptable levels of content validity based on the CVI, Pc, and modified K*. This study found out that a validated questionnaire is suitable for assessing food safety practices among HBFBs operators. However, this study is limited to the feedback of seven experts and focuses only on content validity measures. Future research should include face validation and further testing involving more than seven samples. Overall, the developed questionnaires provide a useful foundation for food safety assessment and may support further research interventions in this area.

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Acknowledgements 11AN Bold

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Paper Contribution to Related Field of Study11AN Bold

This study provides a validated questionnaire for assessing food safety practices among home-based food businesses, developed through expert review and CVI. The instrument offers a reliable tool for research and practical applications in improving food safety standards.

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References

Abd Razak, S. S. A., Tuan, L. Y., & Lau, T. C. (2022). Food safety legal issues in home-based food business. *International Journal of Academic Research in Business and Social Sciences, 12*(1), 2600–2610. https://doi.org/10.6007/IJARBSS/v12-i1/12133

Fauzi, F. J. M., & Abdul-Mutalib, N. A. (2021). *Knowledge and practice of home-based food handlers in Hulu Selangor, Malaysia regarding food safety*. **Biology and Life Sciences Forum, 6**(1), 12. https://doi.org/10.3390/Foods2021-10930

Nur Izyan, F. R., Zuraini, M. I., Maria, M. S., Lovelyna, B. J., Maimunah, M., & Saidatul Afzan, A. A. (2019). A preliminary study on food safety knowledge, attitude and practices among home-based food providers in Klang Valley, Malaysia. *Malaysian Applied Biology, 48*(2), 157–160

Polit, D.F., & Beck, C.T. (2006). *The content validity index: Are you sure you know what's being reported? Critique and recommendations.* Research in Nursing & Health, 29(5), 489–497

Polit, D. F., Beck, C. T., & Owen, S. V. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing & Health*, *30*(4), 459–467. https://doi.org/10.1002/nur.20199

Pallianysamy, S., Abdul-Mutalib, N. A., Ungku Zainal Abidin, U. F., Mahmud @ Ab Rashid, N. K., & Ahmad, N. H. (2025). Home-based foods in Malaysia: A food safety perspective. *Pertanika Journal of Tropical Agricultural Science, 48*(3), 667–683. https://doi.org/10.47836/pjtas.48.3.01

Wang K, Mirosa M, Hou Y, Bremer P. Measuring Food Safety Culture: A Systematic Review of Questionnaire Dimensions and Validation Practices. Compr Rev Food Sci Food Saf. 2026 May;25(3):e70472. doi: 10.1111/1541-4337.70472. PMID: 41940711; PMCID: PMC13051759

Zamanzadeh, V., Ghahramanian, A., Rassouli, M., Abbaszadeh, A., Alavi-Majd, H., & Nikanfar, A.-R. (2015). Design and implementation content validity study: Development of an instrument for measuring patient-centered communication. *Journal of Caring Sciences, 4*(2), 165–178. https://doi.org/10.15171/jcs.2015.017

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