

THE IMPLICATIONS OF USING JUDGEMENT BY EXPERTS IN SCALE DEVELOPMENT TO ENHANCE THE RELIABILITY AND VALIDITY OF EXECUTIVE FUNCTIONS QUESTIONNAIRE FOR SCHOOL GOING ADOLESCENTS IN BAHRAIN

Dipshikha Baruah*, Neelam K Sharma** and Aruna Rani***

*Lovely Professional University, Phagwara, Punjab, India

**Lovely Institute of Education, Lovely Professional University, Phagwara

***Government College, Hoshiarpur, Panjab

***Corresponding Author:** Dipshikha Baruah, Ph.D. Scholar (Physical Education), Lovely Professional University, Phagwara, Punjab, India

Citation: The Implications Of Using Judgement By Experts In Scale Development To Enhance The Reliability And Validity Of Executive Functions Questionnaire For School Going Adolescents In Bahrain. Journal of Science, Technology, Engineering, Arts & Mathematics 2025. 1 (2): 01.19

Submitted: December, 2024 **Approved:** May, 2025 **Published:** July, 2025

Abstract

The reason for this study was to assess the Executive Function Questionnaire for Adolescents (EFQA) validity and reliability. Lawshe, (1975) the content validity index (CVI), and the content validity ratio (CVR) were utilized to assess the face and content validity of the inventory items following the creation of the initial inventory list. This evaluation was guided by professional university experts in science, psychometrics, physical education, education and instruction, and MBBS. The complete unwavering quality of the survey was evaluated utilizing Cronbach's alpha coefficient. Using the SPSS program the data were examined. The 36 items on the scale were partitioned into 12 significant skills. Everything in the inventory had both face validity and content reliability, as per the outcomes (CVR > 0. 0.99). Besides, all inventory dimensions had the content validity index set to 0.99, which is a decent incentive for the inventory. Cronbach's alpha coefficient was found the instrument's reliability 0.959. The Executive Function Questionnaire for Adolescents (EFQA) has the potential to be promoted as a useful tool for evaluating adolescents' executive function abilities. It has been recommended to the Psychiatrists, researcher, and professionals can use this study for screening and Identifying drawbacks, weaknesses, and the skills where one is doing well but needs to be nurtured. This study can be very useful to teachers, coaches, and educators to find out talents and facilitate the behaviors required to plot and gain goals on this Executive functioning helps.

Keywords: Content Validity Ratio, Experts, Executive Function, Questionnaire

Introduction

The measurement of content validity by the scale is an essential part of its development. The scale's content validity ensures that it measures what it intends to measure. Indeed, poor content validity will compromise the psychometric purpose of the scale even if it is reported to have good one-dimensionality and responsibility (DeVellis, 2003). The validation process will ensure that the scale has properties that can be defended and are accurate, appropriate, meaningful, and useful (Furr, 2011), (Darusalam & Hussin, 2016) approval frameworks should be executed cautiously to widen a genuine scale. Therefore, in addition to assembly and criterion validation, content validation is the first step in scale improvement validation (Bond & Fox, 2015), (DeVellis; 2003). It refers to the evaluation

of each object to determine whether it serves the Scale's improvement objective. The item's representativeness and suitability for measuring what the researcher intends to measure are two aspects that focus on the content validation technique (Kamaluddin & Nasir, 2017). The Content Validity Ratio (CVR) assessment of content validity was emphasized as one important step in the development of tools in this study.

A quantitative system developed by Charles Lawshe is called CVR. It is a method of gauging the consensus among raters or judges on how important a certain item is. Compared to other crucial techniques for determining content material validity, such as Cohen's kappa, Tinsley-Weiss T indicator, and James, Demaree, and Wolf's indicator, the CVR procedure is redundant, uncomplicated, stoner-friendly, and easy

Cite this article: The Implications Of Using Judgement By Experts In Scale Development To Enhance The Reliability And Validity Of Executive Functions Questionnaire For School Going Adolescents In Bahrain. Journal of Science, Technology, Engineering, Arts & Mathematics 2025. 1 (2): 01.19

to use. Additionally included is a table that can be used to determine the critical cut-off value. A consequence of these variables is that many experimenters, both domestically and abroad, adopt CVR as the first step in the instrument development process. The examination of face validity in studies related to scale development for executive functions is reviewed, and the findings imply that there is cause to be concerned regarding the lack of standards and consistency regarding item retention during the expert judgment stage of scale creation. Advice regarding the use of various decision rules to be used for item retention is provided after data from three scale development attempts are analyzed. The findings also indicate that at the very least, face validity should be evaluated in studies involving newly created, modified, or untested scale items.

Worldwide accepted as the means of determining content authenticity, the CVR is an item statistic helpful in rejecting or keeping individual details (Pan, et al.,2012). The average CVR for all the details contained in the final instrument is the CVI (DeVonetal, 2007). We are confident in our decision to include or exclude an item when every panelist states that the tested knowledge or ability is “essential,” or when none do. Issues with items arise when there is no consensus.

According to Lawshe (1975), each rater should indicate whether they believe an item to be (1) Essential, (2) Useful but not essential, or (3) Not necessary. The number of raters who select “essential” for each item is computed. Moreover, the following formula is utilized to get the CVR:

$$CVR = \frac{ne - (N/2)}{(N/2)}$$

where CVR = content validity rate, ne = number of Experts indicating “essential”, and N = total number of Experts.

The CVR value is a number between -1 and 1, where a value that leans towards 1 indicates that experts generally agree on the individual item. Conversely, if less than 50% of the experts rate the item as “essential,” a negative CVR value can be obtained (Cohen, et.al., 2010). To determine the CVR critical value (Lawshe, 1975), Lawshe also produced the approved CVR value table, which Wilson et al. (2012) also updated and improved. As an illustration, The table shows that for each item, at $\alpha = .05.$, the least CVR critical value is 506 for all 15 experts. Hence, if an item receives a lower score than the desired one, it must be improved or removed from the scale.

We can learn around the veracity of points of interest from the CVR. If we wish to discover the tool’s or instrument’s by and large content validity. The CVI is just the average of the CVR values for each thing that changes the 0.78 CVR limit that is kept for the final instrument. Even though (May et al.,1990)

infer that CVI values exceed 0.70, (Davis, 1992) states that a CVI of 0.80 is perfect. It is in some cases more proficient to distribute the total CVI score or maybe the CVR for each individual item. A board of content experts evaluates an individual’s instrument scale or instrument, and the CVR is a valuable genuine way to decide its genuineness. For each component in the instrument, the CVI gives a numerical value representing the generally implied CVRs. Analysts and consumers can get a quantitative assessment of a model assessment instrument’s validity using both the CVR and CVI.

Executive Function

The Executive Function scale for Adolescents investigated cognitive functions such as attention, dialect utilization, memory, discernment, problem-solving, imagination, self-checking, and thinking, juggling data, figuring out and categorizing critical data. There are 12 skills under Executive Function.

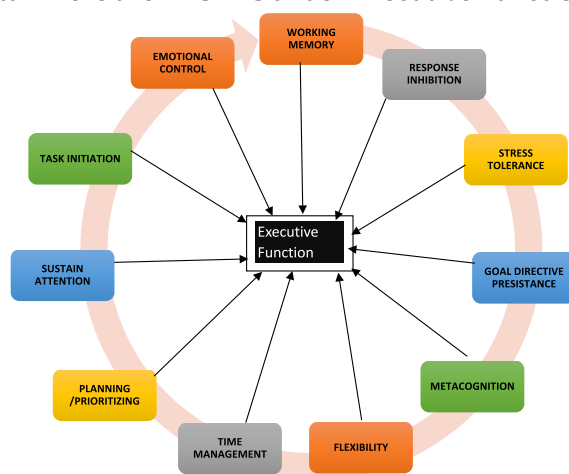


Figure 1. Model of Executive Function skills Objectives of the Study

The objectives of the study are to look at the utilization of expert judges in scale improvement suggestions for moving forward reliability, content validity rate, and content validity index of executive functions questionnaire for school going adolescents in Bahrain.

Hypothesis

From the personal experience, expert’s opinion, public view and after review of the literature,

There are significant scale development implications for improving reliability, content validity rate, and content validity index of executive functions questionnaire for school going adolescents in Bahrain.

RESEARCH METHODOLOGY

Calculating Lawshe’s Content Validity Index

The purpose of this study was to assess the validity of executive functions questionnaire for school going adolescents in Bahrain. The draft scale was transferred to 20 specialists from the subsidiary field through electronic correspondence to pick up

master conclusions on content validity, and 10 of these experts answered. The experts were inquired to gauge each statement that was planned to be included in the measurement tool and to give their suppositions. In the evaluation that was inquired to be performed with respect to the association of each item for measuring the trait aimed to be measured, Keep, Modify, and delete. The opinions of the experts who gave a conclusion to an item on the expert opinion form were respected as “essential”.

Table 1: - According to Lawshe (1975), items require minimum content validity index values in order to be included in the scale.

Number of experts	Minimum value	Number of experts	Minimum value
5	0.99	13	0.54
6	0.99	14	0.51
7	0.99	15	0.49
8	0.78	20	0.42
9	0.75	25	0.37
10	0.62	30	0.33
11	0.59	35	0.31
12	0.56	40+	0.29

Table 1 indicates that since there were five professionals participating in this investigation, CVR values more than 0.99 were deemed acceptable.

These professionals represent as interpreters who frequently work in the field of research. The list of questionnaire-based items that the experts have selected to represent the scale is reliable to each one of the Experts. Each expert is requested to evaluate each item as Keep, Modify, or Delete without consulting the other experts. Each rating is given a significant value. After combining the responses from all Experts, the number signifying “keep” for each item is established.

Apart from that, five experts’ values were the same number indicating an “keep”(essential) item for the purpose of this content evaluation procedure. The lay group offers recommendations for other significant or significant items and assists in addressing problems like word and clarity. Purposive sampling was used in the panel of experts’ selection process for both professional and lay experts. The researcher contacted each expert via phone or email to acquire their consent to participate in this study.

Table 2. List of lay experts

Sl.No.	Name	Expert	Designation	
1	Dr. V. Kaul	Academician	Assistant Professor	Lovely Professional University, Phagwara, India

Sl.No.	Name	Expert	Designation	
2	Dr Bhaskar Bora	Academician	MBBS, DFSRH, DRCOG, MRCGP, MBA, MSc Psychology Motivational Speaker.	London, United Kingdom
3	Dr. Fatima Fayaz	Academician	Lecturer	Kingdom of Bahrain
4	Dr. Mahamood Salam	Academician	Assistant Professor	Salahaddin University, Iraq
5	Dr. Harish Mittu	Academician	Associate Professor	Lovely Professional University, Phagwara, India

This study adheres to Rubio et al. (2003)’s recommendations, which include that each group of experts should consist of at least three experts. There were fewer specialists overall in this study than in the previous ones (Alizadeh et al., 2021); (Noor et al., 2016).

Item Selection

Each item has a CVR determined for it. Items that may not be significant are eliminated using a table of essential values. Alternatively, specifics with a CVR of 0.78 or higher, as suggested by (Beck, et al., 2007), may be regarded as evidence of strong content validity. An item would normally be removed from the final scale if it doesn’t meet this criterion. Based on the suggestions of (Lawshe,1975) and the opinions of five experts using CVR. Certain items that were circulated to experts require to be changed to better convey their implications in connection to the instrument’s conceptualization and the experts’ input.

The process of evaluating simulation performance is intricate and multifaceted. The instruments utilized to collect the data must be observationally based in arrange to create reliable and exact evaluation comes about. The formula for deciding Lawshe’s Content Validity Rate (CVR). When all experts agree that a specific item is “essential,” the CVR is 1.00 (Lawshe, 1975) (acclimated to 0.99 for effortlessness of control). The CVR is nearly between 0 and 0.99 when the extent of Experts who rate an item as “essential” is more prominent than half but less than all. The CVR would be 0 if no rater considered the thing to be “essential”. Three experts are an acceptable number in content areas where experts are scarce; a panel of five to ten experts is typically desired. It is apparently necessary to use more than ten specialists (Lynn, 1986). The Executive Functions questionnaire, comprising 125 items, was submitted to the Experts of Experts (10 experts

from various fields, including psychology, physical education, education, and English) for validation index evaluation based on content, construction, and clarity. Based on the expert judgments, the Item Content Validity Index (I-CVI) was calculated for each of the 125 items. The content validity indicator is obtained by dividing the number of experts who designated an item as “keep” by the total number of experts (N). If an item’s CVI value is 0, it is removed from consideration at the initial stage. This value must not fall below, it is prompted.78, in fact, despite the fact that the acceptable item CVI values for the items to be on the scale vary according to the number of experts.

Although the individual characteristics included in the indicator had I-CVI values ranging from 0 to 1.0,

the Scale Content Validity Index (S-CVI) for the entire scale was found to be 1.00 (Table 2). A score of at least 80 on the S-CVI is considered realistic. Because of this, the item and scale CVIs on the Executive Function questionnaire were in reasonable times. Each item had its CVI and CVR calculated. For all items, the CVR was more than the acceptability position of 0.62, with the lowest and maximum values of 0.20 and 1, respectively. The questionnaire’s total CVR, or the normal of all item CVRs, was 1.00. The minimal and maximum CVIs for the connection, clarity, and simplicity criteria were, respectively, 0.00 and 1.00. Every item satisfied the CVI requirements (better than 0.79). The average of all the item CVIs, or the CVI total, was 1.00.

Table 2. Values of the content validity index for the items to be included in the scale based on number of experts

Sr. No		N	ng	*CVI=ng/N	CVI	Decision
1	I analyze before I jump to the conclusions	5	5	5/5	1	A
2	I do not jump to the conclusion without analyzing	5	3	3/5	0.6	R
3	Before use I analyze whole skill	5	1	1/5	0.2	R
4	I think multiple time before I speak	5	1	1/5	0.2	R
5	I never celebrate before I win	5	0	0/5	0	R
6	My actions are always based on fact	5	1	1/5	0.2	R
7	I play for a positive end	5	1	1/5	0.2	R
8	I am aware of my goal	5	5	5/5	1	A
9	I do not jump directly to the judgement	5	1	1/5	0.2	R
10	I always present myself with facts	5	5	5/5	1	A
11	My action is well attended	5	1	1/5	0.2	R
12	I do not anticipate	5	1	1/5	0.2	R
13	I do not take any decision without reason	5	0	0/5	0	R
14	I analyze before I jump to the conclusions	5	1	1/5	0.2	R
15	I can recall information quickly	5	5	5/5	1	A
16	I have strong memory	5	1	1/5	0.2	R
17	I do not forget past anything what I know	5	0	0/5	0	R
18	I can solve familiar problems quickly	5	1	0/5	0.2	R
19	Usually I do not forget facts, dates, and details	5	5	5/5	1	A
20	I used to remember the techniques	5	1	1/5	0.2	A
21	My brain can hold briefly new information	5	1	1/5	0.2	A
22	Doing everyday tasks and skills I never face any difficulty	5	5	5/5	1	A
23	My brain always plays a vital role in focus and attention	5	1	1/5	0.2	R
24	I never forget any tasks to do	5	2	2/5	0.4	R
25	I have strong commitment	5	0	0/5	0	R
26	I always keep my words	5	1	1/5	0.2	R
27	I do what I say /speak	5	1	1/5	0.2	R
28	I stick to my words	5	1	1/5	0.2	R
29	Reminders not required for me	5	1	1/5	0.2	R
30	I do not need reminders	5	0	0/5	0	R
31	I do not need anyone to remain my work /commitments	5	2	2/5	0.4	R
32	When I do task, nothing matters	5	3	3/5	0.6	R
33	During task time I never switch or shifts my mood	5	5	5/5	1	A
34	I determined to perform better	5	5	5/5	1	A
35	I am focus on my work	5	2	2/5	0.4	R
36	I can manage my feelings in task time / due time	5	1	1/5	0.2	R

Sr. No		N	ng	*CVI=ng/N	CVI	Decision
37	Nothing can distract me from my work	5	2	2/5	0.4	R
38	Emotions never effect on my performance	5	5	5/5	1	A
39	I am determined to perform better	5	1	1/5	0.2	R
40	Completion of task is important for me	5	0	0/5	0	R
41	I focused on the task more than the distraction	5	1	1/5	0.2	R
42	I do not get distracted	5	2	2/5	0.4	R
43	During my performance time emotions does not matter for me	5	1	1/5	0.2	R
44	I have very emotional intelligence	5	0	0/5	0	R
45	I do my work /task as soon as possible	5	2	2/5	0.4	R
46	Whatever may be task I try to finish it earlier	5	2	2/5	0.4	R
47	I stay perseverant until the tasks are complete	5	5	5/5	1	A
48	I find way out from any difficult situation	5	1	1/5	0.2	R
49	Whatever the task maybe I find out easy way	5	2	2/5	0.4	R
50	I smartly handle any task	5	5	5/5	1	A
51	Once I start a task I continue till end.	5	1	1/5	0.2	R
52	I do not delay doing any task	5	1	1/5	0.2	R
53	I do not keep any of my work for last minutes	5	1	1/5	0.2	R
54	I do not procrastinate any task	5	1	1/5	0.2	R
55	I do not give excuses	5	1	1/5	0.2	R
56	I do finish my work on time	5	0	0/5	0	R
57	I am always punctual	5	1	1/5	0.2	R
58	I stick on my work schedule	5	5	5/5	1	A
59	My sustainability towards my work is rigid	5	2	2/5	0.4	R
60	I am focused on my work	5	5	5/5	1	A
61	I never distracted from my work	5	0	0/5	0	R
62	I am very sincere towards my work	5	1	1/5	0.2	R
63	I put my full dedication in my work	5	5	5/5	1	A
64	If I take up a challenge, I make sure I finish it	5	5	5/5	1	A
65	I am always proactive	5	0	0/5	0	R
66	I am vigilance towards work	5	1	1/5	0.2	R
67	I can attend and focus a task for a continuous stretch of time	5	1	1/5	0.2	R
68	I always stick to my plan	5	5	5/5	1	A
69	I cling to my plan	5	0	0/5	0	R
70	I follow my plans	5	1	1/5	0.2	R
71	I can handle multiple task	5	2	2/5	0.4	R
72	My focus is always on bull's eyes of the work	5	5	5/5	1	A
73	I focus on the momentous work	5	3	3/5	0.6	R
74	I do micro productivity	5	0	0/5	0	R
75	I organized my task into small and measurable	5	1	1/5	0.2	R
76	I keep time schedules for my work	5	5	5/5	1	A
77	I am well organized	5	1	1/5	0.2	R
78	I am a disciplined person	5	2	2/5	0.4	R
79	I plan all my work	5	5	5/5	1	A
80	I don't do any unorganized work	5	5	5/5	1	A
81	I never postpone my task till due date.	5	5	5/5	1	A
82	I have never been a disobedient student	5	1	1/5	0.2	R
83	Whenever I am assigned a project, I finish it as soon as possible.	5	1	1/5	0.2	R
84	I complete my assignment on time.	5	5	5/5	1	A
85	I finish my assignment before completion date.	5	1	1/5	0.2	R
86	I am punctual.	5	1	1/5	0.2	R
87	I do my daily task on time.	5	0	0/5	0	R

Cite this article: The Implications Of Using Judgement By Experts In Scale Development To Enhance The Reliability And Validity Of Executive Functions Questionnaire For School Going Adolescents In Bahrain. Journal of Science, Technology, Engineering, Arts & Mathematics 2025. 1 (2): 01.19

Sr. No		N	ng	*CVI=ng/N	CVI	Decision
88	I don't delay any task.	5	1	1/5	0.2	R
89	I utilize my time effectively.	5	5	5/5	1	A
90	I believe that it is the time to do.	5	0	0/5	0	R
91	Procrastination is not my kind of work.	5	1	1/5	0.2	R
92	My work is based on schedule.	5	1	1/5	0.2	R
93	I am punctual on my practical classes.	5	0	0/5	0	R
94	I never postpone my task till due date.	5	4	4/5	0.8	R
95	Under any circumstances I adjust with the situation.	5	5	5/5	1	A
96	I can deal with unexpected situations.	5	1	1/5	0.2	R
97	I can adapt and always adapt the changes in my schedule as per requirement.	5	5	5/5	1	A
98	I am able and always willing to adapt changes in my schedule.	5	0	0/5	0	R
99	I can deal with any uncertainties.	5	5	5/5	1	A
100	I can transit from one activity to another and can deal with any new and different situations.	5	2	2/5	0.4	R
101	Unexpected situations always thrill me.	5	2	2/5	0.4	R
102	I can adapt the changes in my activities.	5	0	0/5	0	R
103	My transition abilities between activities and dealing capacity with different situation is good.	5	1	1/5	0.2	R
104	I evaluate my performance & strategies on regularly and try to improve.	5	5	5/5	1	A
105	I evaluate my thoughts to develop my behaviour.	5	2	2/5	0.4	R
106	I always consider myself as a thinker and learner.	5	0	0/5	0	R
107	I always observe my decisions.	5	1	1/5	0.2	R
108	I evaluate situations and calculate risk factors before I jump into it.	5	5	5/5	1	A
109	Before using any skill, I always evaluate its effectiveness.	5	5	5/5	1	A
110	I am selfish towards my goal	5	0	0/5	0	R
111	I never allow immediate pleasures to be the hurdles of my goals	5	2	2/5	0.4	R
112	My goals are always set in a high-level way	5	5	5/5	1	A
113	I always make sure to achieve the benchmark of my goal	5	5	5/5	1	A
114	I keep on working to achieve my goals not being affected by difficult situation	5	5	5/5	1	A
115	My goals always give me sleepless night	5	1	1/5	0.2	R
116	My goals are always for long terms even destructions like short terms pleasure always try to pass thought my path, but I never fall for it.	5	1	1/5	0.2	R
117	My goals are always prioritized then other demands and competing desire	5	2	2/5	0.4	R
118	I enjoy working in a pressurized circumstance.	5	2	2/5	0.4	R
119	I can work in a compose manner whatever the situation is.	5	5	5/5	1	A
120	My endurance to work in a confined situation is high.	5	1	1/5	0.2	R
121	Wellness of my mind and behaviour is always stable even during a situation of bottleneck stress.	5	0	0/5	0	R
122	I can manage to be steady emotionally and mentally in a crisis.	5	2	2/5	0.4	R
123	I never keep a void in my mind for stress to overcome	5	0	0/5	0	R
124	The frequency of stress is always control by my mind	5	5	5/5	1	A
125	I can work promisingly controlling my anxiety	5	5	5/5	1	A

CVI= Number of experts who indicated an item as keep(**ng**)/ Total number of experts (**N**)

**CVI: Content Validity Index Values

***Decision **A** = Accepted (0.91 and above), **R** = Rejected (Lawshe 1975)

Cite this article: The Implications Of Using Judgement By Experts In Scale Development To Enhance The Reliability And Validity Of Executive Functions Questionnaire For School Going Adolescents In Bahrain. Journal of Science, Technology, Engineering, Arts & Mathematics 2025. 1 (2): 01.19

A total of 36 items were estimated by 5 experts for this study, and each item's content validity index was determined (Table 3). The content validity rate (CVR) for each item in Table 2 was compared to the minimal value (0.99) in Table 1 based on the number of experts. Items having a value greater than this minimal value were accepted (A). Because the CVR values of 125 out of the 36 items were higher than the minimal value, the Executive Function scale questionnaire compared 36 items as an outcome.

The reliability of the questionnaire was assessed using the Cronbach's alpha coefficient, which has a range of zero to one. The result was 0.959. The values of the variables Cronbach's alpha coefficients are displayed in Table 3.

Table 3: - Cronbach's alpha coefficient for the variables

Reliability statistics	
Cronbach's Alpha	No of Items
.959	36

Results and Discussion

The findings of the reliability, content validity rate, and content validity index analysis. There were 125 items on the original questionnaire at the start of the study. 89 items with a lower CVR (0.99) were removed after the face and content validity tests were completed, and 89 items with a CVI of less than 0.79 were removed. The 36-item final draft of the questionnaire was approved in the end. The results of each item's acceptance or rejection, along with the values of CVR, CVI, and impact score, are then displayed as defined in Tables 2 and 3. Cronbach's nascence measure was computed to be 0.959, and the instrument's reliability was confirmed. Thus, the overall trustworthiness of the executive functions questionnaire for school going adolescents in Bahrain is determined by these findings. The results are consistent with earlier research (Amini et al., 2020) that was carried out to create and evaluate the force psychometrically. Using Lawshe, content validity rate (CVR), and content validity indicator (CVI), professional speakers' and senior Iranian library directors' opinions were sought after creating the initial list of force particulars. The Cronbach's nascence measure was employed to evaluate the questionnaire's overall reliability. SPSS was used to analyze the data. According to the findings, every item in the questionnaire had both face validity and content validity (CVR>0.75). The content validity measure was set at 0.87 across the questionnaire, which is an acceptable level for the impact. The instrument's reliability was confirmed, and Cronbach's alpha measure found as 0.946. There are several previous studies exploring the scale (Gaskill et al., 2017) have found new metrics and indicators related to university entrepreneurship. The Content

Validity Index study, the first step in the three-phase, ten-step scale development procedure, was carried out at the scale development stage.(Baghban Zadeh, 2014) has found every item in the questionnaire identifying and Prioritizing Human Factors Affecting Information Security was the Based on the suggested research model, the basic indexes were first identified in this regard, and 27 indexes were identified and grouped in nine dimensions. Similarly, it could be concluded from this study that intervention development is needed focused on developing strategies to improve real world aspects of Executive Function. Therefore, results of the study contribute to the literature by improvising the treatment program in Executive Function.

Conclusions

The results above are consistent with earlier research, which shows that the Executive Function Questionnaire for Adolescents (EFQA) is thought to be the most useful tool for assessing the executive function of school going adolescents in Bahrain. The content validity of the questionnaire was evaluated in this study using the content validity ratio (CVR) and content validity index (CVI). Thus, the questionnaire for determining questionnaire affecting Executive Function skills has appropriate face and content validity, and its face and content validity validates the items' relevance, clarity, and simplicity based on the values obtained. Furthermore, the reliability of the instrument is confirmed by the excellent internal consistency of the expressions indicated by Cronbach's alpha coefficient in the questionnaire design. It has been recommended to the findings of this research be considered to find out the effects of any training on any group of people. It will allow us to use these skills every day to learn, work, and manage daily life and follow directions, and handle emotions, among other things. This study can be very useful in preventing the youth at risk of Attention-deficit/hyperactivity disorder. It has been recommended to teachers, coaches, and educators to find out talents facilitate the behaviors required to plot and gain goals on this Executive functioning helps. The essential competencies associated with features encompass talent in adaptable thinking, planning, self-monitoring, self-control, operating memory, time management, and organization.

References

- Alizadeh, H., Little, R. J., Asgari, M., Alamdarloo, G. H., Choobdary, A., & Soheili, F. (2021). Development of the Social Interest Scale for Iranian adolescents. *The Journal of Individual Psychology*, 77(1), 40-58.
- Amini, M., VakiliMofrad, H., & Saberi, M. K. (2020). Designing and psychometric evaluation of questionnaire of human factors affecting information security in libraries. *Lib Philos Pract*, 2020, 1-9.

Cite this article: The Implications Of Using Judgement By Experts In Scale Development To Enhance The Reliability And Validity Of Executive Functions Questionnaire For School Going Adolescents In Bahrain. *Journal of Science, Technology, Engineering, Arts & Mathematics* 2025. 1 (2): 01.19

- Tekin, M., Geçkil, T., & Koyuncuoğlu, Ö. (2017). Entrepreneurial universities index: a scale development study. *Business and Economic Research*, 7(2).
- Pezeshki, M. Z., Shadman, A., Alizadeh, M., Hakimi, S., & Heidari, F. (2017). Validity and reliability of the questionnaire for assessing women's reproductive history in Azar cohort study. *Journal of caring sciences*, 6(2), 183.
- Tajudin, M., Puteh, M., & Adnan, M. (2017). Developing themes of guiding principles to foster higher order thinking skills in teaching and learning of mathematics. *International Journal of Academic Research in Progressive Education and Development*, 6(4), 90-103.
- Mirghafourvand, M., Mohammad-Alizadeh-Charandabi, S., Jafarabadi, M. A., Mohammadi, A., & Soltanpour, S. (2017). Psychometric properties of the Iranian version of the inventory of functional status after childbirth (IFSAC). *Mohammad-Alizadeh-Charandabi*.
- Gilbert, G. E., & Prion, S. (2016). Making sense of methods and measurement: Lawshe's content validity index. *Clinical Simulation in Nursing*, 12(12), 530-531.
- Noor, R., Gul, S., Khan, E. A., Shahzad, N., & Aqeel, M. (2016). The impact of coping strategies on psychological adjustment across male and female spinal cord injured patients. *J. Appl. Environ. Biol. Sci*, 6(2S), 137-43.
- Ayre, C., & Scally, A. (2014). Critical values for Lawshe's content validity ratio: Revisiting the original methods of calculation. *Measurement and Evaluation in Counseling and Development*, 47(1), 79-86. <http://dx.doi.org/10.1177/07481775141613513808>.
- Dalle Grave, R., Calugi, S., Conti, M., Doll, H., & Fairburn, C. G. (2013). Inpatient cognitive behaviour therapy for anorexia nervosa: a randomized controlled trial. *Psychotherapy and psychosomatics*, 82(6), 390-398.
- Dalle Grave, R., Calugi, S., Doll, H. A., & Fairburn, C. G. (2013). Enhanced cognitive behaviour therapy for adolescents with anorexia nervosa: an alternative to family therapy?. *Behaviour research and therapy*, 51(1), R9-R12.
- Adamson, K., & Prion, S. K. (2012). Making sense of methods and measurement: Reliability. *Clinical Simulation in Nursing*, 8(6), e259-e260.
- Adamson, K., & Prion, S. K. (2012). Making sense of methods and measurement: Validity Part II. *Clinical Simulation in Nursing*, 8(8), e383e384.
- Adamson, K., & Prion, S. K. (2012c). Making sense of methods and measurement: Validity Part I. *Clinical Simulation in Nursing*, 8(7), e319-e320.
- Wilson, F., Pan, W., & Schumsky, D. (2012). Recalculation of the critical values for Lawshe's content validity ratio. *Measurement and Evaluation in Counseling and Development*, 45(3), 197-210. <http://dx.doi.org/10.1177/0748177512440286>.
- DeVon, H., Block, M. E., Moyle-Wright, P., Ernst, D. M., Hayden, S. J., Lazzara, D. J., & Kostas-Polston, E. (2007). A Psychometric toolbox for testing validity and reliability. *Journal of Nursing Scholarship*, 39(2), 155-164.
- Polit, D., Beck, C., & Owen, S. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing and Health*, 30(4), 459-467. <http://dx.doi.org/10.1002/nur.20199>.
- Hardesty, D. M., & Bearden, W. O. (2004). The use of expert judges in scale development: Implications for improving face validity of measures of unobservable constructs. *Journal of business research*, 57(2), 98-107.
- Rubio, D. M., Berg-Weger, M., Tebb, S. S., Lee, E. S., & Rauch, S. (2003). Objectifying content validity: Conducting a content validity study in social work research. *Social work research*, 27(2), 94-104.
- Davis, L. (1992). Instrument review: Getting the most from a panel of experts. *Applied Nursing Research*, 5(4), 194-197.
- Tilden, V., Nelson, C., & May, B. (1990). Use of qualitative methods to enhance content validity. *Nursing Research*, 39(3), 172-175.
- Lynn, M. (1986). Determination and quantification of content validity. *Nursing Research*, 31(6), 382-385.
- Lawshe, C. (1975). A quantitative approach to content validity. *Personnel Psychology*, 28(4), 563-575. <http://dx.doi.org/10.1111/j.1744-6570.1975.tb01393.x>.