IJERLAS
International Journal of Educational Review, Law And Social Sciences

SERVICE QUALITY MEASURE IN ETHIOPIAN HIGHER EDUCATION CONTEXT: DEVELOPING A COMPREHENSIVE MEASURE

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ABSTRACT

The main purpose of this study was conducted to develop a comprehensive Higher Education Service Quality Measure [HESQM] that used to evaluate Ethiopian higher education service quality. To serve this purpose, the existing generic service quality models and models designed for higher education sectors were thoroughly reviewed. Through an extensive review, a comprehensive HESQM was developed. The content validity and reliability of the instrument was checked. The content validation of the instrument was judged by five experienced experts who selected from Arba Minch University. The experts' judgment in each item was quantitatively calculated using Item-Level Content Validity Index [I-CVI] and Scale-Level Content Validity Index [S-CVI]. The pilot study was conducted on twenty Graduating Class [GC] students who purposefully selected from the different departments of Arba Minch University to further analyze the reliability of the instrument. The internal consistency of the instrument was checked via Cronbach's alpha coefficient 0.5 using SPSS v.20. Both content validation and reliability analysis results confirm that the instrument was valid and internally consistent. The new comprehensive HESQM has seven main and nine sub dimensions and included a total of 118 items. The present HESQM is a comprehensive model to measure Ethiopian higher education service quality. Since using a single model unable to fully explain the Ethiopian higher education service quality, the new comprehensive model has better explaining Ethiopian higher education service quality. However, further studies should be conducted using Exploratory Factory Analysis [EFA] to strengthen the present findings.

Keywords: ***Higher Education Service Quality; Generic Service Quality Models; Arba Minch University; Higher Education Service Quality Measure [HESQM]***

1. INTRODUCTION

Nowadays, higher education is considered as a service sector. The primary focus of any higher education is to provide a quality education to students as primary stakeholders (Anim and Mensah, 2015). Even though universities are considered as non-business entities, they operate like a business where service quality is urgently sought for (Sokoli, Koren and Shala, 2019). Education service quality is an important parameter to measure the performance of higher education quality (Onditi and Wechuli, 2017). In the past two decades, the higher education service quality has been receiving an increasing research attention from scholars and researchers (Al-Dulaimi, 2016; Brochado, 2009). However, education service quality researchers like Sultan and Wong (2010) argue that studies in the higher education service quality are still new endeavor as compared to commercial or business sectors. The main purpose of this study is to develop a comprehensive Higher Education Service Quality Measure [HESQM] to evaluate Ethiopian higher education service quality. In order to develop a comprehensive model, the existing generic service quality models, such as, SERQUAL and SERPERF and models mainly designed for higher education, namely, HEdPERF, HiEQUAL, and HESQ were extensively reviewed.

The higher education service quality measures are still underdeveloped because its measurements are almost adopted from models designed for business sectors (Marimuthu and Ismail, 2012). In the literature, many prior studies have been employed generic service quality measures, especially Service Quality [SERVQUAL], Service Performance [SERPERF] models to examine the higher education quality (e.g., Tuan, 2017; Wei and Ramalu, 2011; Manea and Iatagan, 2015; Mwiya, et al., 2017). Among generic service quality models, SERVQUAL is the most popular service quality measure. The modified SERVQUAL model describes the difference between customer expectation about the service provided and their perception after taking the service. The modified SERVQUAL model consists five dimensions, viz., tangibles, reliability, responsiveness, assurance and empathy and included a total of 22 items (Parasuraman, Zeithaml and Berry,1985).

Although SERVQUAL is well known model in business and higher education sectors, the SERVQUAL model is not free from scholarly critics. Cronin and Taylor (1992) criticize that SERVQUAL's model thought about a customer's expectation before experiencing the service and it is difficult to conceptualize. They further claim that there is little evidence, either theoretical or empirical, to support the notion of the "expectations minus performance" gap as a basis for measuring service quality. This situation led Cronin and Taylor (1992) to look for another alternative model. Cronin and Taylor (1992) modified SERVQUAL model and proposed another model called Service Performance [SEVPERF] that measures performance only. The five SERPERF model dimensions are worded the same as SERVQUAL but does not repeat the set of statements as expectation items.

Due to the complex nature of higher education service quality, many higher education service quality researchers argue against employing generic service quality models to the higher education sector (e.g., Abdullah, 2006a; Annamdevula and Bellamkonda, 2012). Research on service quality in higher education setting has generally revolved around major two issues. These are (1) measurement method and (2) dimensions or facets of higher education service quality (Yildiz, 2012; Kontic, 2014). Since the higher education service quality are ranging from different indicators, different scholars propose different models to measure higher education service quality (Cerri, 2012).

For example, Abdullah (2006a) argued that the use of existing marketing sector service quality models may not be applicable in all service sectors, particularly higher education. Abdullah (2006a) proposed the new measure of higher education service quality called Higher Education Performance [HEdPERF]. The model designed by adapting the Cronin's and Taylor (1992) performance-only or Service Performance [SEVPERF] approach. The HEdPERF model has six dimensions, namely, non-academic aspects, academic aspects, reputation, access, programme issues and understanding. In his later work, Abdullah (2006b) modified the existing HEdPERF instrument by comparing three service quality measurements, such as, HEdPERF, SERVPERF and the moderating scale of HEdPERF-SERVPERF within a higher education setting. In the modified HEdPERF instrument, Abdullah (2006b) indicated five distinct factors, namely, non-academic aspects, academic aspects, reputation, access and programme issues by excluding understanding from former the HEdPERF instrument. The modified HEdPERF consists of 41 items. Of which 13 items were taken from SERVPERF, and the remaining 28 items were developed via literature review.

Table 1.1 Strengths and Weaknesses of Existing Service Quality Models

Generic Models					
	Author (s)	Number of Dimensions and Items	Sectors Applied	Strengths	Weaknesses
SERVQUAL	Parasuraman, et al. (1985)	Five dimensions with 22 items	Commercial and Higher Education	-The most popular service quality measure	-Not empirically tested in higher education -Constructs are not comprehensive
SERVPERF	Cronin and Taylor (1992)	Five dimensions with 22 items	Commercial and Higher Education	-Well known service quality measure -Measures service quality from performance only perspective	-Not empirically tested in higher education -Constructs are not comprehensive
Higher Education Service Quality Models					
	Author (s)	Number of Dimensions and Items	Sectors Applied	Strengths	Weaknesses
HEPERF	Abdullah (2006)	Five dimensions with 41 items	Higher education	-Empirically tested in higher education sectors	-Constructs are not comprehensive
HiEdQUAL	Annamdevula and Bellamkonda (2012)	Five dimensions with 27 items	Higher education	-Empirically tested in higher education sectors	-Constructs are not comprehensive
HESQUAL	Teeroovengadum, et al. (2016)	Five major dimensions and nine sub-dimensions with 48 items	Higher education	-Empirically tested in higher education sectors	-Constructs are not comprehensive

In today's modern era, we cannot avoid global influence in any matter, including production problems. Businesses in the production sector have also experienced a very significant increase in line with the development of science and technology. The increase in production not

only makes it easier for the public to consume, but also raises new concerns regarding product quality when viewed from the halal aspect(Ratih, 2018).

Efforts to provide halal guarantees for a product to the public are also the most important part for producers and consumers. This halal product guarantee is also carried out in accordance with the principles of protection, fairness, legal certainty, accountability and transparency, effectiveness and efficiency, and professionalism. The guarantee of the implementation of halal products aims to provide convenience, security, safety, and certainty of the availability of halal products for the public in consuming and using halal products, as well as increasing added value for business actors to produce and sell halal products.(Syafrida, 2013).

The obligation of producers to carry out halal certification already exists based on Law No. 7 of 1996 concerning Food and Law no. 8 of 1999 concerning Consumer Protection(Karima et al., 2019). Basically, halal certification does not only benefit consumers but also producers. With the existence of a halal certificate, producers can put a halal label on their businesses and products which will provide comfort and peace for consumers who consume them. Thus it can also provide legal certainty to Muslim consumers that the product is halal according to Islamic law.

The object of this research is salt producers in Bluka Teubai Village, Dewantara District, North Aceh Regency. Most of the salt producers in Bluka Teubai village still use traditional methods, only one producer uses the tunnel method. Based on the results of a survey conducted by researchers in the field, only one producer has submitted an application to obtain halal certification. In addition, the researchers found that there were several reasons why other salt producers had not taken care of halal certification. Limited costs and complexity of processing as well as time constraints make them reluctant to take care of the certificate, but that doesn't mean they don't intend to take care of it.

2.RESEARCH METHOD

Through extensive literature review, a comprehensive Higher Education Service Quality Measure [HESQM] model was developed that intended to measure Ethiopian higher education service quality. As mentioned in the previous section, the new model has seven main dimensions nine sub dimensions. The content validity of the questionnaire was conducted in order to check whether the designed items measure or represent the intended study objective or content area (Creswell, 2012). In order to conduct content validation and pilot study, the researcher purposefully selected Arba Minch University among Ethiopian Public Higher Education Institutions [EPHEIs]. This is because, the Arab Minch University [AMU] is the institution in which the author of this paper is currently working and has easy to access study subjects and collect data. For the purpose of this study, the researcher invited his colleagues from AMU, School of Pedagogical and Behavioral Sciences [SPBS]. The experts were chosen based on their teaching experiences in HEIs, research experiences and well-informed knowledge of the discipline of Educational Planning and Management.

Upon the completion of experts' selection process, the questionnaire was administered to content validity evaluators. The questionnaire consists two parts. The first part of the questionnaire contains information for experts about content validity and their demographic information. While, the second part of the questionnaire contains items pertaining to the education service quality. A total of 124 items were administered to the content evaluators. The response options were gauged in a four-point rating scales raging from (1) Not Relevant (2) Somewhat Relevant (3) Relevant [NR] to (4) Highly Relevant [HR]. Apart from rating each item, the experts are encouraged to provide verbal and written comments to improve the relevance of items to the targeted domain. All comments are taken into consideration to refine the domain and its items. Based on the experts' oral and written comments, necessary amendments were made. Finally, the questionnaire was

ready for pilot testing. A questionnaire consisting a total of 118 were administered to Graduating Glass [GC] students who purposefully selected from the different departments of Arba Minch University (one of research universities in Ethiopia).

3.RESULTS AND DISCUSSION

In this section, the results and discussions of the study are provided. A detailed discussion summarizes the results in relation to each research objective.

3.1 Content Validity Evaluators' Demographic Information

In the first place, the researcher interested to present the demographic characteristics of experts who judged the content validity of the instrument. As detailed in the table below, the experts chosen to evaluate the instrument were highly experienced and have knowledge of Educational Policy, Planning, Management and Leadership, including Special Need and Inclusive Education. The following table 3.1 shortly summarizes the profile of continent validity evaluators.

Table 3.1 Profile of Content Validity Evaluators

Content Validity Evaluators [CVE]	Teaching Experience in HEIs (in years)	Title	Field of Study	Academic Rank	Current Position
CVE1	19 Years	PhD	Educational Policy and Leadership	Assistant Professor	Head, Department of Pedagogical Sciences
CVE2	31 Years	PhD	Educational Policy and Leadership	Assistant Professor	Assistant Professor of Pedagogical Sciences
CVE3	7 Years	MA	Special Need and Inclusive Education	Assistant Professor	Institutional Quality Assurance Coordinator
CVE4	6 Years	MA	Educational Leadership and Management, Special Need and Inclusive Education	Assistant Professor	Higher Diploma Programme [HDP] Coordinator
CVE5	6 Years	MA	Educational Leadership and Management	Lecturer	PhD Candidate

Note: CVE=Content Validity Evaluator; HEIs=Higher Education Institutions

3.2 Content Validation Results

Upon administering the questionnaire to the selected content validity assessors, the researcher followed two major techniques to validate the contents of the questionnaire. Firstly, the researcher contacted face-to-face with each content validity evaluator while collecting filled questionnaire. The researcher orally discussed the content validity of the questionnaire with each

content validity assessor. The researcher considered some comments forwarded from content validity evaluators. The main comments raised during oral discussion with each content validity evaluator were: length of the directions, repetition of items, items that are not reflecting main and subtitles, proposing new items to be added, consistency and ordering of items, unnecessary use of conjunctions and length of the directions. After considering content evaluators' comment as an input, the researcher thoroughly re-read all items and identified some potential errors. The consistency and ordering of items, unnecessary use of conjunctions in items and length of the directions were corrected. Two new items that pertaining to students with disability services were also designed and added in under general campus infrastructure dimension. Secondly, the researcher quantitatively analyzed the content validity of the instrument using Item Content Validity Index [I-CVI] and Scale Content Validity Index [S-CVI]. The subsequent section details the quantitative analysis of content validity of the present instrument.

3.3 Calculating Content Validity Index

On top of an inputs received via oral discussion with content validity evaluators, the researcher also statistically checked the content validity of the questionnaire. As indicated earlier, the researcher administered questionnaire to five content validity evaluators who selected from AMU, School of Pedagogical and Behavioral Sciences [SPBS]. All content validity evaluators rated the relevancy of each educational service quality item and returned back to the researchers. The content validity of the questionnaire was calculated using Content Validity Index [CVI]. In principle, CVI used to measure content validity quantitatively by calculating cumulative agreement of experts in each item. The experts' decision in each construct is important to either include, exclude or revise the items (Polit & Beck, 2006). In the literature, researchers suggest the acceptance level of content validity based on the numbers of experts. The acceptance rate of content validity rate varies according the number of content validity evaluators involved in the content evaluation of the questionnaire. The following table 3.2 shortly summarizes scholars' recommendation with regard to the acceptance range of content validity index of the items.

Table 3.2 Summary of Cut-off Score for Content Validity Index [CVI]

Number of Experts	Acceptable CVI Values	Source
Two experts	At least 0.80	Davis, 1992
Three to five experts	Should be 1	Denise, et al., 2007
At least six experts	At least 0.83	Denise, et al., 2007
Six to eight experts	At least 0.83	Lynn, 1986
At least nine experts	At least 0.78	Lynn, 1986

The content validity index can be measured in two ways (1) Item Level Content Validity Index [I-CVI) and Scale-Level Content Validity Index [S-CVI]. The I-CVI can be mathematically calculated as the number of experts agreements in each item is divided by the total number of expert raters. For example, for the first item that read as ''My Lecturers/Professors have a positive attitude towards students'', all five content validity assessors ranked as 4=Highly Relevant [HR]. Thus, the I-CVI of this item calculated as:5÷5=1. In this study, the result of CVI was judged according to Denise, et al. (2007) recommendation: If three to five experts are involved in the content validation of the questionnaire, the acceptable values of CVI should be 1. On the other hand, S-CVI is calculated as adding each acceptable I-CVI result or total relevant divided by the total number of items. In this study, items yielded acceptable (1) I-CVI were included to calculate the S-CVI and items scored 0.8 I-CVI were further improved and items scored 0.4 I-CVI were totally removed from the questionnaire. The following table 3.3 shows I-CIV result of each item and S-CIV/Ave result.

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Table 3.3 Content Validity Index of Education Service Quality Questionnaire

Items	Experts in Agt.	I-CVI	Items	Experts in Agt.	I-CVI	Items	Experts in Agt.	I-CVI		Experts in Agt.	I-CVI
1	5		35	2	.4	69	5		03	2	0.4
2	5		36	5		70	5		04	5	1
3	5		7	5		71	5		05	5	1
4	5		8	5		72	5		06	5	1
5	5		9	2	.4	73	5		07	5	1
6	5		0	5		74	5		08	5	1
7	5		1	5		75	2	.4	09	5	1
8	5		2	5		76	5		10	5	1
9	5		3	2	.4	77	5		11	2	0.4
10	5		4	5		78	5		12	5	1
11	5		5	5		79	5		13	5	1
12	5		6	5		80	4	.8	14	5	1
13	5		7	5		81	2	.4	15	5	1
14	4	.8	8	5		82	5		16	2	0.4
15	5		9	5		83	5		17	5	1
16	5		0	5		84	5		18	5	1
17	5		1	5		85	5		19	5	1
18	4	.8	2	5		86	5		20	5	1
19	5		3	5		87	5		21	5	1

20	5		4	5		88	5		22	5	1
21	5		5	5		89	5		23	5	1
22	5		6	5		90	5		24	5	1
23	5		7	5		91	5				
24	5		8	5		92	5				
25	5		9	5		93	5				
26	5		0	5		94	5				
27	5		1	5		95	5				
28	5		2	5		96	5				
29	5		3	5		97	5				
30	5		4	5		98	5				
31	2	.4	5	2	.4	99	5				
32	5		6	5		100	5				
33	5		7	5		101	5				
34	1		8	5		102	5				
Total Relevant= 113.4				Proportional Relevant [S-CVI/Ave]=113.4÷124=0.914							

Note: I-CVI=Item Level Content Validity Index; S-CVI/Ave=Scale Level Content Validity Index; Agt.=Agreement

As mentioned earlier, a total of 124 items that intended to measure education service quality were administered to content validity evaluators. As we can see from the above table 3.3, I-CVI was conducted for each item. The items yielded I-CVI acceptable vale (1) and moderate value (0.8) were retained and the items that yielded low I-CVI (0.4) were removed from the questionnaire. Accordingly, a total of 114 items yielded I-CVI (1) acceptable value and three items yielded moderate (0.8) were retained. However, three items yielded moderate I-CVI (0.8), necessary improvements and re-structuring were made in the major questionnaire. On the other hand,10 items that yielded a low I-CVI (0.4) were totally dropped from questionnaire. After making intensive revisions on each item, 114 yielded acceptable I-CVI and 2 corrected items and totaling 116 items were retained. In addition, based on the written comments forwarded by content validity evaluators, the other two new items that reflecting students with disability services were added in under the Quality of General Infrastructure Subsection. Therefore, a total of 118 items that intended to measure Ethiopian Higher Education Service Quality were ready for pilot testing. The following table 3.4 shortly summarizes item's revision based I-CVI result.

Table 3.4 Summary of Items Revision

Items	Revisions Made after I-CVI Result	Corrections Made
Q14 & 18	These items describe the same thought	Merged together and constructed as a single item
Q31	Hiddenly repeated in the same subtitle ''Academic Resources and Facilities''	Removed from the questionnaire
Q35 &39	Are hiddenly repeated in the same Sub-section entitled ''Academic Program Issues''	Removed from the questionnaire
Q43	Doesn't reflect the subtitle that intended to measure ''Quality of Instructional Practices''	Removed from the questionnaire
Q65	Doesn't reflect the subtitle that supposed to measure ''Quality of Library Services''	Removed from the questionnaire
Q75	Hiddenly repeated in the same Sub-section i.e., Administrative Staffs' Attitude and Behavior and removed from the questionnaire	Removed from the questionnaire
Q80	Unnecessarily asked in under ''Quality of Administrative Process and Procedures'' Sub-section	Necessary corrections were made and moved to ''Non-Academic Staffs' Competence'' Sub-section
Q81	Doesn't reflect the subtitle that supposed to measure ''Quality of Administrative Process and Procedures''	Removed from the questionnaire
Q103	Hiddenly repeated in the same subtitle that read as ''Quality of Support Services and Facilities''	Removed from the questionnaire
Q111	Repeatedly asked in under Quality of Students' Welfare Services'' subtitle that already asked in under ''Quality of Support and Facilities'' subtitle	Removed from the questionnaire
Q116	Doesn't reflect the subtitle that intended to measure ''University Access to Students''	Removed from the questionnaire

Note: Q=Question; I-CVI=Item Level Content Validity Index

3.4 Pilot Testing

Once the content validation of an instrument has been completed, the questionnaire was piloted to ensure the readability, reliability and further improvement of the validity of items (Gay and Mills, 2012; Saunders, 2009). Based on this premise, the researcher conducted a pilot study at Arba Minch University. In the literature, there is no consistent number of participants for the pilot study. Different scholars suggest a different number of participants for the pilot study. For example, Gay and Mills (2012) and Johnson and Christensen (2014) suggest a minimum of 5 to 10 groups of people for piloting the instrument. Others like Saunders (2009) says the number of people with whom you pilot depends on your research question(s), the size of your research project, the time and money resources you have available, and how well you have initially designed your questionnaire.

By taking the above scholars' suggestions into consideration, the researcher conducted a pilot study on twenty Graduating Class [GC] students at Arba Minch University. Of which, fifteen males were respondents and the remaining five were female ones. The participants for the pilot study were purposefully selected from different departments. Afterwards, the researcher and our research assistants properly disseminated the questionnaire to the pilot study participants. Brief orientation about the purpose of the study and how to fill the questionnaire clearly introduced to the participants who voluntarily involved in the pilot study. The study participants' suggestion for time of returning the filled questionnaire to the researchers was considered and their informed consent was also secured. Since the questionnaire sections were somewhat lengthy, a one-week period was given to them to return the questionnaire back to the researchers.

The questionnaire was prepared in English language. Brief introduction and instruction were clearly stated in the questionnaire. The questionnaire has two parts. The first part of the questionnaire contains respondents' demographic information and general direction on how to fill the questionnaire. The second part of the questionnaire includes items pertaining to the educational service quality questionnaire. All of them filled out the questionnaire and returned the questionnaire back to the researchers. The following table 3.5 shows the detail information about the response rate from a pilot study.

Table 3.5 Response Rate from Pilot Survey (N=20)

Group of Respondents	Program	Program Level	Sample (n)	Responses (n)	Responses (%)
Graduating Class (GC) students	Regular	Undergraduate	20	20	100 %

3.6 Reliability Analysis

In this study, the reliability analysis was conducted in order to further check internal consistency of the items. The reliability was checked at Cronbach's alpha 0.5 using Statistical Package for Social Sciences [SPSS] v.20. The reliability of each main dimension and sub dimension were checked. The reliability result was judged according to George and Mallery (2003) rule of digit: > 0.90 = Excellent, 0.80 - 0.89 = Good, 0.70 - 0.79 = Acceptable, 0.60 - 0.69 = Questionable, 0.50 - 0.59 = Poor, < 0.50 = Unacceptable. The below table, shows the reliability coefficient of HESQM main dimensions and sub dimensions. The reliability analysis result confirms that the internal consistencies of the items were very strong. The following tables 3.6 clearly summarizes the reliability result of the questionnaire.

Table 3. 6. Reliability Results of Education Service Quality Questionnaire (N=20)

Higher Education Service Quality Facets/Dimensions	N0. of Items	Deleted Items	Cronbach's \Alpha Result	Leveled as George & Mallery (2003)
Main Facet-1: Academic Service Quality				
Sub Dimensions				
Academic Staffs' Attitude and Behavior	10	-	.813	Good
Academic Staffs' Competence	9	-	.800	Good
Academic Facilities and Resources	12	-	.912	Excellent
Academic Program Issues	5	-	.845	Good
Quality of Instructional Practices	18	-	.905	Excellent
Quality of Library Services	7	-	.868	Good
Sub Total	**61**		.962	Excellent
Main Facet-2: Administrative Service Quality				
Sub Dimensions				
Admirative Staffs' Attitude and Behavior	10	-	.902	Excellent
Quality of Admin. Processes and Procedures	3	-	.879	Good
Administrative Staffs' Competence	5	-	.843	Good
Sub Total	**18**		.928	Excellent
Main Facet -3: Quality of General Infrastructure	11	-	.927	Excellent
Main Facet-4: Quality of Support Services and Facilities	12	-	.912	Excellent
Main Facet- 5: Quality of Students' Welfare Services	5	-	.796	Acceptable
Main Facet- 6: University Access to Students	5	-	.846	Good
Main Facet: 7: University Reputation	6	-	.917	Excellent
Grand Total	**118**			

4.CONCLUSION

The main purpose of this study was to develop a comprehensive Higher Education Service Quality Measure [HESQM] model. Through extensive literature review, seven main and nine sub dimensions of higher education service quality were identified. The content validity of the instrument was checked using CVI. In addition, the instrument was piloted and reliability coefficient was computed at Cronbach's alpha 0.5 using SPSS v.20 so as to check the internal consistency of the instrument. The results confirmed that the instrument was valid and internally consistent. The present HESQM is a comprehensive model to measure Ethiopian higher education

service quality. Since using single model is unable to fully explain to Ethiopian higher education service quality, the new comprehensive model better explains Ethiopian higher education service quality. However, further studies should conduct Exploratory Factory Analysis [EFA] to strengthen the present findings via taking a representative sample from Ethiopian higher education institutions. Because the higher education service quality is a combination of various factors or variables, we also encourage future researchers to still re-look other known models, such as, Service Driven Market Orientation [SERVMO], Higher Education Total Quality Management of Excellence [HETQM], to incorporate constructs missing in the present Higher Education Service Quality Measure [HESQM].

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