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Investigation of Content Validity and Exploratory Factor Analysis of Students' Economic Behavior Measure

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Abstract

Economic behavior has attracted scholars in the last decade, and past studies measured this construct partially from consumptive perspectives or entrepreneurial behavior (Mulyani et al., 2018). Therefore, this study aims to develop a new and valid measurement of students' economic behavior and investigate its content validity using an exploratory factor analysis (EFA). The content validity is provided using an experts' assessment method with a 4-point evaluation form. At the same time, the exploratory factor analysis is performed using SPSS. This study involved content validity assessment for each item (I-CVI) for the entire scale (S-CVI/Ave). Based on the analysis of the questionnaire scale, it can be concluded that the content validity check using I-CVI, S-CVI/Ave, and S-CVI/UA is all satisfactory except for item SEB20, which was subsequently dropped. On the other hand, the results of EFA indicated that two more items did not meet the thresholds and, thus, were excluded. Therefore, developing instruments to measure students' economic behavior is prominent in dealing with digital changes, preventing consumptive behavior, and enhancing economic well-being.

Keywords: content validity; economic behavior; exploratory factor analysis; student behavior

Abstrak

Perilaku ekonomi telah menarik perhatian para ilmuwan dalam dekade terakhir, dan studi-studi sebelumnya mengukur konstruk ini sebagian besar dari perspektif konsumtif atau perilaku kewirausahaan (Mulyani et al., 2018). Oleh karena itu, studi ini bertujuan untuk mengembangkan pengukuran yang baru dan valid mengenai perilaku ekonomi mahasiswa serta menyelidiki validitas kontennya menggunakan analisis faktor eksploratori (EFA). Validitas konten diberikan melalui metode penilaian oleh para ahli dengan formulir evaluasi 4-poin. Sementara itu, analisis faktor eksploratori dilakukan menggunakan SPSS. Studi ini melibatkan penilaian validitas konten untuk setiap item (I-CVI) untuk keseluruhan skala (S-CVI/Ave). Berdasarkan analisis skala kuesioner, dapat disimpulkan bahwa pemeriksaan validitas konten menggunakan I-CVI, S-CVI/Ave, dan S-CVI/UA semuanya memuaskan kecuali untuk item SEB20, yang kemudian dihapus. Di sisi lain, hasil EFA menunjukkan bahwa dua item lainnya tidak memenuhi ambang batas dan, oleh karena itu, dikeluarkan. Oleh karena itu, pengembangan instrumen untuk mengukur perilaku ekonomi mahasiswa sangat penting dalam menghadapi perubahan digital, mencegah perilaku konsumtif, dan meningkatkan kesejahteraan ekonomi.

***Kata kunci**: validitas konten; perilaku ekonomi; analisis faktor eksploratori; perilaku mahasiswa*

Introduction

The theme of economic behavior has attracted attention among scholars in both developed and developing countries (Herawati et al., 2018; Badea et al., 2020) since human always faces choices and opportunities in fulfilling their needs and wants. In addition, there is a shift in economic behavior among individuals for certain reasons. For example, the shifting can be seen from the goods that used to be secondary needs have now turned into primary needs, and luxury goods have become secondary needs (Ridhayani & Johan, 2020). Furthermore, recent studies also noted that the increased digital marketing strategy through social media might cause consumers to make more impulsive purchases (Dolega et al., 2021). In addition, researchers in the psychological field remarked that pressure from the circumstances can also harm economic behavior (Sutter et al., 2019).

However, the increase in impulsive and less rational purchases is also problematic for students as it often leads to debt traps and other financial problems (Jaikumar & Sharma, 2021). Irrational behavior is the unreasonable hoarding of particular goods and excessive consumption (Wahyono et al., 2021). Some scholars mentioned that irrational behavior can lead to financial shortages and debt issues (Aw et al., 2019; Khandelwal et al., 2022). This irrational economic behavior can potentially happen to students since most students receive income from their parents (Suratno et al., 2021). Furthermore, this situation can occur because students are the young generation transitioning from adolescence to adulthood (Khalisharani et al., 2022). During the transition, students often experience problems controlling their consumption and finances.

Considering economic behavior and the few studies linked with economic behavior. The existing survey on this theme involved instruments that solely focused on consumptive behavior or rationale behavior (e.g., Surindra, 2022; Zahra & Anoraga, 2021), and productive activities are calculated using entrepreneurial instruments (e.g., Suratno et al., 2021; Liu et al., 2019). At the same time, the measurement of economic behavior as a part of productive and consumptive behavior is overlooked by scholars. Therefore, there is a great concern about providing a valid measurement of economic behavior that will be beneficial in capturing economic behavior as an entire variable and avoiding ambiguous constructs of economic behavior. To the best of our knowledge, this is the first comprehensive measurement of economic behavior in capturing from the perspectives of productive and consumptive behaviors.

Scholars and academicians who measure the construct of economic behavior have the potential to raise misleading since it involves respondents' psychological and economic perspectives. Instruments for measuring economic behavior have developed from simple measurements to more complex tools that can capture individual economic behavior, which also involves psychological factors in behavioral economics. The assessment instrument to measure economic behavior should be validated to deal with. The validity of instruments is performed to assess the extent to which the instrument that has been formed to be used in a study accurately according to the study's goal. Conducting content validity also provides useful information to the researcher by obtaining constructive feedback from experts regarding the quality of the measures developed to assess the items in the new instrument (Rubio et al., 2003; Almanasreh et al., 2019).

This paper will contribute to the literature on economic behavior among students by providing a new measurement of this construct that is missing in the prior survey. In addition, this valid instrument will assist the government, universities, and policymakers in dealing with students' economic behavior. It can enhance surveys on this topic in Indonesia and other countries. Measuring students' economic behavior is crucial as it helps the government and educational institutions design effective programs to enhance students' economic decision-making. Later, developing the instrument of students' economic behavior will be beneficial in preparing students for remarkable digital changes and enabling them to be wiser and more productive in economic and financial activities. The development of this instrument also provides essential insights into student-consumer behavior that facilitates effective resource allocation in educational institutions.

This paper is presented as follows. Section 1 deals with economic behavior and the matter of providing new measurements. Section 2 concerns the instrument development and validity method using content validity. Section 3 presents the findings of the validation and exploration. Section 4 provides the conclusion, limitations, and suggestions for further research.

Methods

This paper provides two stages of data analysis, including content validity by an expert panel and exploratory factor analysis using a statistical approach, respectively. In detail, the research procedure is provided as follows.

Content Validity

This paper aims to describe a valid measurement of economic behavior among Indonesian university students. This paper adopted the expert judgment approach, considering this technique is reliable and relatively simple, and it is frequently involved in the content validation of instruments among scholars (Summers et al., 2004). Furthermore, Vakili and Jahangiri (2018) suggested that the expert panel consists of three (3) to eight (7) individuals who are experts in the field being studied and also those who are skilled in the selected survey technique, where they will check the survey form from various perspectives. In detail, there are several stages of assessing the construct and content validity, namely (1) developing the instrument, (2) providing a validation form, (3) selecting a review panel of experts, (4) performing content validation, (5) providing the score of items and content validity index (CVI).

Phase 1: Developing instruments

The initial phase of developing the research instrument has outlined a questionnaire draft. The questionnaire draft is developed from relevant theories and considers some preliminary papers published in reputable journals. The design of questionnaires in this research followed the criteria of Zikmund et al. (2013), which mentioned that the items should be concise, clear, simple, and understandable language and avoid ambiguity. We also followed the suggestion from Sekaran and Bougie (2016), which mentioned that a good item should be provided concisely and clearly and not in more than 20 words. Also, the item is presented in a positive statement to reduce misleading in answering the questionnaires. This is important because the role of questionnaires in quantitative research is prominent. The questionnaire was written in English and provided to experts at Balai Bahasa dan Budaya, Universitas Negeri Malang, for translation. This process used a back-to-back translation approach, which was translated from English to Bahasa Indonesia and translated back to English to avoid ambiguity and increase the respondents' understanding.

Phase 2: Providing validation form

A content validity form was provided to ensure the same perception between panel experts, authors, and the purpose of the research. It is essential to ensure everything is understood in estimating the relevance and representativeness of the targeted construct. The researcher created the form for content validity used by the expert panel. This paper adopted a content validity index largely used for content validity by Yusoff et al. (2019). In detail, Figure 1 illustrates the form validation for experts and the scale measurement.

In addition to assessment guidelines, the economic behavior among students in this study covers both productive and consumptive behaviors. The instrument to measure students' economic behavior was adapted from Houdek and Koblovsky (2017), Wahyono et al. (2021), and Wahyono and Narmaditya (2022). It involves the perception of respondents about their experience toward economic behavior. In detail, the items and scare measurements for the construct of economic behavior are illustrated in Table 1.

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Table 1. Content Assessment and Criteria

Code	Item	Degree of Relevance				Comments
SEB1	I have made long-term plans for education and career [Saya telah membuat rencana jangka panjang untuk pendidikan dan karier]	1	2	3	4	
SEB2	I have set a specific target for the education and career in the future [Saya telah menetapkan target khusus untuk pendidikan dan karier di masa depan]	1	2	3	4	
SEB3	I am capable of creating business opportunities to obtain additional income [Saya mampu menciptakan peluang bisnis untuk mendapatkan penghasilan tambahan]	1	2	3	4	
SEB4	I have a business sense and can gain advantages from the existing opportunities [Saya memiliki naluri bisnis dan dapat memperoleh keuntungan dari peluang yang ada]	1	2	3	4	
SEB5	I can sell certain products using an online platform [Saya mampu menjual produk tertentu menggunakan platform daring]	1	2	3	4	
SEB6	I acquire knowledge from online sources [Saya memperoleh pengetahuan dari sumber daring]	1	2	3	4	
SEB7	Technology makes my work as a student easier so that I can use the time for other activities (e.g., business) [Teknologi memudahkan pekerjaan saya sebagai pelajar sehingga saya dapat menggunakan waktu untuk kegiatan lain (misalnya, bisnis)]	1	2	3	4	
SEB8	I set aside some of my income and saved it to start a business [Saya menyisihkan sebagian pendapatan saya dan menabung untuk memulai bisnis]	1	2	3	4	
SEB9	I have another business besides being a student [Saya memiliki bisnis lain selama menjadi pelajar]	1	2	3	4	
SEB10	I can use technology to look for new opportunities [Saya dapat menggunakan teknologi untuk mencari peluang baru]	1	2	3	4	
SEB11	I plan my monthly needs and do my monthly shopping to meet them [Saya merencanakan kebutuhan bulanan saya dan melakukan belanja untuk memenuhinya]	1	2	3	4	
SEB12	To buy expensive things, I plan from the start, save, and buy them after I have accumulated enough money [Untuk membeli barang-barang mahal, saya merencanakan dari awal, menabung, dan membelinya setelah saya mengumpulkan cukup uang]	1	2	3	4	
SEB13	I always set aside income for basic needs first and the rest for additional needs and wants [Saya selalu menyisihkan pendapatan untuk kebutuhan pokok terlebih dahulu baru sisanya untuk kebutuhan dan keinginan tambahan]	1	2	3	4	
SEB14	I record income and expenses every month to manage consumption activities [Saya mencatat pemasukan dan pengeluaran setiap bulan untuk mengatur kegiatan konsumsi]	1	2	3	4	

SEB15	I often comply with wants more than needs when buying goods or services [Saya sering lebih mengutamakan keinginan daripada kebutuhan ketika membeli barang atau jasa]	1	2	3	4
SEB16	I wait for the item I want to buy to be discounted due to it is cheaper instead of following the trend [Saya menunggu barang yang ingin saya beli didiskon karena harganya lebih murah daripada mengikuti tren]	1	2	3	4
SEB17	I look for information when I want to buy goods that are quite expensive to ensure the quality and price [Saya mencari informasi ketika ingin membeli barang yang harganya cukup mahal untuk memastikan kualitas dan harganya]	1	2	3	4
SEB18	I am often amazed by the new innovative products offered on social media and usually buy them [Saya sering terkesima dengan produk-produk inovatif baru yang ditawarkan di media sosial dan biasanya membelinya]	1	2	3	4
SEB19	I am diligently incorporating e-money (e.g., *Ovo, Gopay*); the discounts and bonuses are good for shopping [Saya rajin menggunakan e-money (misalnya Ovo, Gopay); diskon dan bonusnya bagus untuk berbelanja]	1	2	3	4
SEB20	I am not tempted by the offer to buy 2 get 3 because why buy two goods when only need one [Saya tidak tergoda dengan tawaran beli 2 dapat 3 karena buat apa beli dua ketika hanya butuh satu]	1	2	3	4

Sources: Adapted from Wahyono et al. (2021)

Phase 3: Selecting a review panel of expert

Content validity aims to ensure that the items to measure a construct or variable are sufficient and accomplish the purpose of the research. In this research, we invited seven experts from several universities in Indonesia, considering the respondents are Indonesian university students. The experts involved in this study are lecturers with a minimum degree of doctorate and experience in publication, shown by the h-index of the Scopus profile. In general, all experts involved in this content validity have experienced in publishing papers in the field of entrepreneurship and behavior. The selection of a panel of experts is intended to evaluate instrument elements and rate them based on their relevance and representativeness to the content domain. Panel members are asked to rate instrument items in terms of clarity and their relevancy to the underlying construct study as per the theoretical definitions of the construct and dimensions on a 4-point ordinal scale. The detail of experts for accessing students' economic behavior is presented in Table 2.

Table 2. Domain Expert and Experience

No	Domain expert	Organization	Experience	H-index
1	Professor	Universitas Negeri Jakarta	25 years	7
2	Professor	Universitas Negeri Malang	25 years	5
3	Professor	UIN Satu Tulungagung	21 years	7
4	Associate Professor	Universiti Malaya, Malaysia	15 years	3
5	Associate Professor	Universitas Negeri Jakarta	15 years	8

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6	Associate Professor	Universitas Negeri Jakarta	11 years	11
7	Associate Professor	Universitas Negeri Semarang	12 years	3

Sources: Personal Data (2023).

Phase 4: Performing content validation

This study followed a synchronous content validity to the expert using the form that was prepared previously. Initially, we sent out email, WhatsApp, and Telegram invitations to assess the instruments. Once the review was agreed upon, we supplied a university cover letter and a form to evaluate students' economic behavior. Additionally, our email included comprehensive instructions on reviewing, scoring, and assessing the instruments. However, we informed the contact number and emailed to ensure there was a misunderstanding in filling out the evaluation form. In this case, the experts were asked for the subjectivity to evaluate the instruments. The session continues with the expert panel filling in the answers on the form prepared by the researcher, and the form is taken back by the researcher at the end of the session to make the following analysis. Moreover, the researcher explained to the expert panel about the survey and comment forms used in the session. All expert panels will evaluate the appropriateness and clarity of all the indicators used in the study instrument using the scoring technique as in Appendix.

Phase 5: Providing the score of items and content validity index (CVI)

For an objective assessment of the content validity, an item-level content validity index (I-CVI), scale-level content validity index (S-CVI), and S-CVI/Ave based on a formula by Yusoff et al. (2019) was used. The relevance rating was recorded as 1 (relevance scale of 3 or 4) or 0 (relevance scale of 1 or 2). Since this study employed seven experts for evaluation, the lower limit of I-CVI and S-CVI/Ave should be 0.83. Items with an I-CVI value of more than 0.83 were retained in this questionnaire. In more detail, the criteria of the acceptable cut-off are illustrated in Table 3.

Table 3. Comparison Between Total Experts and Cut-off Value

Number of experts	Acceptable CVI	References
3 – 5 experts	Should be 1	Polit et al. (2007)
At least six experts	At least .83	Polit et al. (2007)
6-8 experts	At least .83	Lynn (1986)
At least nine experts	At least .78	Lynn (1986)

Exploratory Factor Analysis

Exploratory factor analysis (EFA) is a widely utilized and broadly applied statistical technique in the social sciences. The design of EFA is exploratory, and there are no inferential statistics. It was designed and is still most appropriate for exploring a data set. Once an instrument has been developed using EFA and other techniques, it is time to move to confirmatory factor analysis. EFA is beneficial for exploring the underlying dimensions or factors of the construct.

Data Collection

The respondents of the present study were undergraduate students at several educational-based universities in East Java, Indonesia. The sample was selected based on the simple sampling method by randomly choosing students in the sample area. This research's criteria for participants are students involved in entrepreneurship courses or entrepreneurial activities. The questionnaires were provided to 141 respondents, and found 136 valid responses for further analysis. It indicates that the response rates were 96.45%, included in the sufficient category. We deleted three respondents from those universities above and deleted two outlier respondents based on the statistical estimations. The deleted respondents'

questionnaires were purposed for several reasons. First, the authors deleted three respondents from the three universities mentioned above. In addition, the authors also deleted two respondents who were determined as an outliers in the statistical estimation.

Instrument Development and Measurement

This study used a Likert scale measurement for each item representing a variable in the study framework. The Likert scale was used because it is easy to interpret. In addition, the Likert scale also helps in increasing the response rate and saving respondents' time. In this study, we incorporated a 5-point Likert scale, ranging from 1= strongly disagree and 5 = strongly agree. In this paper, a total of 114 items were used to measure students' economic behavior (SEB), family economic education (FEE), lecturer competencies (LC), economic literacy (EL), digital literacy (DL), and entrepreneurial literacy (ENL). The instruments were adopted from preliminary papers and relevant literature reviews.

Data Analysis

Data analysis was carried out using EFA concerning the suitability index recommended by Hair et al. (2010). Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy should exceed 0.60, eigenvalues greater than 1, and Bartlett's Test of Sphericity (<0.05) (Taherdoost, 2018). The factor rotation operation is carried out through the Varimax cycle with a load factor value exceeding 0.50 (Field, 2005; Pallant, 2020). When determining which items need to be preserved, the loading value of the items together with or greater than ±0.50 is generally efficient to be preserved for further analysis purposes.

Results and Discussion

This paper examines the content validity and exploratory factor analysis of economic behavior among university students. The instrument to measure students' economic behavior was adapted from relevant literature and preliminary studies, which consist of consumptive and productive behavior. The expert consent value of an item was obtained by summing the relevant evaluation scores given by all experts for each item. In detail, the experts' evaluation is presented in Table 4.

Table 4. The Relevance Rating on the Items Scale

Item	Ex.1	Ex.2	Ex.3	Ex.4	Ex.5	Ex.6	Ex.7	Expert in Agreement	I-CVI	UA
SEB1	1	1	1	1	1	1	1	7	1	1
SEB2	1	1	1	1	1	1	1	7	1	1
SEB3	1	1	1	1	1	1	1	7	1	1
SEB4	1	1	1	1	1	1	1	7	1	1
SEB5	1	1	1	1	1	1	1	7	1	1
SEB6	1	1	1	1	1	1	1	7	1	1
SEB7	1	1	1	1	1	1	1	7	1	1
SEB8	1	1	1	1	1	1	1	7	1	1
SEB9	1	1	1	1	1	1	1	7	1	1
SEB10	0	1	1	1	1	1	1	6	0.85	0
SEB11	1	1	1	1	1	1	1	7	1	1
SEB12	1	1	1	1	1	1	0	6	0.85	0
SEB13	1	1	1	1	1	1	1	7	1	1
SEB14	1	1	1	1	1	1	1	7	1	1
SEB15	1	1	1	1	1	1	1	7	1	1
SEB16	1	1	1	1	1	1	1	7	1	1
SEB17	1	1	1	1	1	1	1	7	1	1
SEB18	1	1	1	1	1	1	1	7	1	1
SEB19	1	1	1	1	1	1	1	7	1	1
SEB20	1	0	1	1	1	1	0	5	0.71	0
								S-CVI/Ave	0.97	
	0.95	0.95	1	1	1	1	0.90	S-CVI/UA		0.90

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Proportion relevance	Average proportion of items judged as relevance across the seven experts	0.97

Note(s): Ex. = Expert; I-CVI = agreed item/number of experts; UA = universal agreement; S-CVI = the sum up of I-CVI
Sources: Authors own (2023).

The sum measures experts in agreement with ratings performed by all experts for each item. For instance, expert agreement for items of students' economic behavior (SEB2) is 6 (1 + 0 + 1 + 1 + 1 + 1 + 1= 6). In addition, the universal agreement (UA) score is presented as 1 when the item accomplished 100 percent experts in agreement. Otherwise, the UA score is provided as 0. The instrument to measure students' economic behavior was adapted from relevant literature and preliminary studies, which consists of productive (SEB1-SEB10) and consumptive behavior (SEB11-SEB20). The expert consent value of an item was obtained by summing the relevant evaluation scores given by all experts for each item. I-CVI (Item-level content validity index) is calculated using the formula I-CVI=agreed item/number of experts. S-CVI (scale-level content validity) is the sum of I-CVI scores. As illustrated in Table 4, students' economic behavior is calculated by two dimensions: productive and consumptive behavior. From the evaluation, it can be seen that I-CVI, S-CVI/Ave, and S-CVI/UA accomplish a satisfactory level. Thus, the scale of the questionnaire has met the level of content validity. However, only one item (SEB20) needs to be deleted since the score of I-CVI is under the threshold. After receiving the final result of content validity, thus we performed exploratory factor analysis by involving 136 respondents in Universitas Negeri Malang and Universitas Negeri Surabaya of East Java, Indonesia.

Demographic Respondents

Table 5 informs the demographic participants involved in this pilot test. Most respondents involved in this pilot test were female university students from Universitas Negeri Malang and Universitas Negeri Surabaya in East Java, Indonesia, with a percentage of 85.29 percent. The respondents came from various study programs, including economic development (8.09%), accounting (7.35%), economic education (34.56%), accounting education (0.74%), management (2.94%), business education (40.44%), office administration education (1.47%), and Islamic economic (4.41%). The demographic respondents also showed that approximately 21 percent of students have started to run a business. From the parents' occupations, the higher percentage was entrepreneurs (31.32%), while the lowest percentage was soldiers and police (2.21%). However, some respondents mentioned other occupations, i.e., online drivers, blue-collar workers, helpers, etc. In addition, from the parents' education, most parents have completed high school with a percentage of 50.73, and only 2.21 percent of them accomplished a master's degree.

Table 5. Demographic of Respondents

No	Demographic Characteristics	Total	%
1	Gender		
	Female	116	85.29
	Male	20	14.71
2	Age		
	< 18 years	4	2.94
	19-20 years	56	41.17
	21-22 years	73	53.68
	>23 years	3	2.21
3	Study Program		
	Economic development	11	8.09
	Accounting	10	7.35
	Management	4	2.94

	Economic education	47	34.56
	Accounting education	1	0.74
	Business education	55	40.44
	Office administration education	2	1.47
	Islamic economic	6	4.41
4	Business ownership		
	Yes	29	21.32
	No	107	78.68
5	Parents occupation		
	Entrepreneurs	43	31.32
	Private employees	30	22.06
	Farmer	17	12.5
	Civil servant	13	9.56
	Soldier/Police	3	2.21
	Educators	9	6.62
	Others	21	15.44
6	Parents education		
	Elementary school	15	11.03
	Secondary school	23	16.92
	High school	69	50.73
	Bachelor	25	18.38
	Master	3	2.21
	Doctoral	0	0
7	Monthly expenses		
	< IDR 500.000	64	47.06
	IDR 500.000 – IDR 1.000.000	57	41.91
	IDR 1.000.001 – IDR 2.000.000	17	12.5
	IDR 2.000.001 – IDR 4.000.000	3	2.21
	IDR 4.000.001 – IDR 6.000.000	0	0
	> IDR 6.000.001	0	0

Sources: Authors own (2023).

Exploratory Factor Analysis of Students' Economic Behavior

Table 6 shows the EFA results for the students' economic behavior construct. The round varimax method has been applied, and the results indicate that two factors have an eigenvalue greater than 1.0. The hundredths of the variance explained by the two factors are 42.90 percent and 38.98 of the total variants. The KMO sample measuring value was .785 for the first and .784 for the second, indicating sufficient intercorrelation. At the same time, the Bartlett test also showed a significant value at the p-level < .001.

The first dimension or factor has nine items with initial content from .529 to .826. On the other hand, the second factor is represented by eight items with loadings ranging from .512 to 0.746. Both factors have a Cronbach's alpha value that exceeds the minimum condition Cronbach's alpha of .70, ensuring internal consistency for each item in the hidden variable. However, we removed two items (SEB 6 and SEB 14) that do not meet the thresholds as required by Taherdoost (2018) and Hair et al. (2010).

Table 6. EFA for Students' Economic Behavior

Code	Item Description	Exploratory Factor Analysis				Reliability Test
		KMO	Eigen-values (EV)	% of variance (TVE)	Factor Loading	(Cronbach's Alpha)

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Factor 1: Productive Behavior						
SEB1	I have made long-term plans for education and career	.785	4.291	42.909	.679	.816
SEB2	I have set a specific target for the education and career in the future				.687	
SEB3	I am capable of creating business opportunities to obtain additional income				.826	
SEB4	I have a business sense and can gain advantages from the existing opportunities				.769	
SEB5	I can sell certain products using an online platform				.671	
SEB7	Technology makes my work as a student easier so that I can use the time for other activities (e.g., business)				.529	
SEB8	I set aside some of my income and saved it to open a business				.609	
SEB9	I have another business besides being a student				.617	
SEB10	I can use technology to look for new opportunities				.612	
Factor 2: Consumptive Behavior						
SEB11	I plan my monthly needs and do my monthly shopping to meet them.	.784	3.509	38.988	.643	.834
SEB12	To buy expensive things, I plan from the start, save, and buy them after I have accumulated enough money.				.746	
SEB13	I always set aside income for basic needs first and the rest for additional needs and wants				.743	
SEB15	I often comply with wants more than needs when buying goods or services				.588	
SEB16	I wait for the item I want to buy to be discounted due to it is cheaper instead of following the trend				.595	
SEB17	I look for information when I want to buy goods that are quite expensive to ensure the quality and price.				.691	
SEB18	I am often amazed by the new innovative products offered on social media and usually buy them.				.548	
SEB19	I am diligently incorporating e-money (e.g., *Ovo, Gopay*), and the discounts				.512	

	offered and the bonuses are good for shopping.

Sources: Authors own (2023).

The content's validity and exploratory factor analysis indicate that instruments to measure students' economic behavior are valid. This study remarked that students' economic behavior is proxied by consumptive behavior and productive behavior. Measuring students' economic behavior is essential in assisting the government and educational institutions in achieving the educational goal that not only focuses on academic achievement but also considers behavior. It is reasonable because economic behavior among students will affect their economic, financial, and entrepreneurial activities. In addition, measuring students' economic behavior is crucial as it helps the government and educational institutions design effective programs to enhance students' economic decision-making. This effort can influence their future economic and entrepreneurial activities that can contribute to more comprehensive educational goals.

This instrument has enabled educational institutions and the government to access students' economic behavior to create an appropriate learning method, model, and approach to focus on shaping economic behavior. As previously mentioned, understanding economic behavior is prominent in preventing consumptive behavior and debt traps and potentially enhancing economic well-being. Suratno et al. (2021) Wardana et al. (2020) stated that university graduates are expected to provide productive behavior, such as entrepreneurial activities. This aligns with the Indonesian government program in enhancing the number of entrepreneurs from university graduates or senior high school students.

Conclusion

This study aims to provide a new measurement of students' economic behavior using content validity and exploratory factor analysis for evaluating construct validity. Based on the analysis of the questionnaire scale, it can be concluded that the content validity using I-CVI, S-CVI/Ave, and S-CVI/UA is satisfactory except for item SEB20, which was subsequently dropped. Therefore, this study can provide an evidence-based systematic approach to content verification. In other words, almost all the indicators used in the study instrument are appropriate to the purpose of the study. They are also clear so that the study respondents understand them. I-CVI calculation using this instrument should utilize empirical data from expert scores. In the validation process, items were deleted from the cut-off values. As a consequence, this research is not devoid of limitations. In addition, the results of EFA showed that three items must be deleted since it does not meet the thresholds. The findings of this study might reflect the demographic characteristics of the respondents. Therefore, a wider distribution of the survey is warranted to cover youth in different demographic settings to improve the validity and reliability of the survey. Future scholars can elaborate more testing to cover youth in the several age criteria to understand this instrument better.

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Conflict of Interest

Authors declare that there are no conflict of interest regarding the publication of this paper.

Author Contribution

BSN provided a conceptual model, writing the original draft, methodology; SS devised the conceptual framework, data analysis, data inclusion, and editing final paper; MH performed data analysis and discussion, visualization, supervision, and data inclusion. All authors have approved and agreed with the final version of the paper.

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Appendix

Assessment Guide of Content Validation

This inventory is a related determinant of students' economic behavior. The measurement items will be provided on a 5-Likert scale ranging from 1= strongly disagree and 5=strongly agree. Please examine the degree of relevance of each item to the measured domains. The review should be based on the definition and relevant terminology provided in the text. Please be objective and constructive in your review and use the following rating.

Degree of relevance:

1 = The item is not relevant to the measured domain

2 = The item is somewhat relevant to the measured domain

3 = The item is quite relevant to the measured domain

4 = The item is highly relevant to the measured domain

Code	Tested items	Relevance			
	Productive Behavior				
SEB1	I make long term plans for my education and career and try to achieve them according to plan.	1	2	3	4
SEB2	I set a specific target for the education and career in the future	1	2	3	4
SEB3	I am adequate to create business opportunities that can make additional earning	1	2	3	4
SEB4	My friends often say that I have a high business sense and good in taking advantage of opportunities.	1	2	3	4
SEB5	I sell certain product/services online to my classmates, universities and other people I know.	1	2	3	4
SEB6	I am diligent in increasing knowledge via the internet and mastering technology for the sake of smooth study and business opportunities	1	2	3	4
SEB7	The use of technology makes my work as a student easier so that I can use the time for other activities (e.g., business)	1	2	3	4
SEB8	I set aside some of my income and saved it to open a business	1	2	3	4
SEB9	I have another business besides being a student and the results are good enough to increase my income.	1	2	3	4
SEB10	I have ability to use technology to look new opportunities	1	2	3	4
	Consumptive Behavior				
SEB11	I plan my monthly needs and do my monthly shopping to meet them.	1	2	3	4
SEB12	To buy expensive things, I plan from the start, save and buy them after I have accumulated enough money.	1	2	3	4
SEB13	I always set aside income for basic needs first, the rest for additional needs and wants	1	2	3	4
SEB14	I record income and expenses every month to manage consumption activities	1	2	3	4
SEB15	I often comply with wants more than needs when buying goods/services.	1	2	3	4

SEB16	I patiently wait until the item I want to buy discounted item due to it is cheaper even though the item is no longer in current trend.	1	2	3	4
SEB17	I diligently look for information when I want to buy goods that are quite expensive, to ensure the quality and price.	1	2	3	4
SEB18	I am often amazed by the new innovative products offered on social media and usually buy them.	1	2	3	4
SEB19	I am diligent in incorporating with e-money (e.g., *Ovo, Gopay*), the discounts offered and the bonuses are good for shopping.	1	2	3	4
SEB20	I am not tempted by the offer to buy 2 get 3, because why buy two people only need one.	1	2	3	4

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