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REVUE EUROPEENNE D ETUDES EUROPEAN JOURNAL OF MILITARY STUDIES
Social Science Journal

Validity And Reliability for Cashless Transactions Behaviour Element Instrument

By

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Abstract

Malaysia is a country that's also facing the challenges with the consequences of a cashless society related to particularly developing cashless transaction behaviour in higher education institutions. It's also required to solve the challenges of the Covid-19 pandemic, to reduce cash transactions behaviour. This study aims to determine the validity and reliability of key elements of cashless transactions behaviour instrument. Attitudes, subjective norms, perceived behaviour control, intention, behaviour in cashless transactions, perceived trust, perceived usefulness, perceived cybersecurity, transaction procedures, perceived hidden costs, motivation to comply, social norms, and self-efficacy are the main elements of cashless transactions behavior in this study. A total of 30 Kolej Komuniti Pasir Gudang residents who were users of cashless transactions were involved as samples in this study. Therefore, to ensure that this questionnaire is verified and reliable researchers do the validity as well as the pilot study. The first phase of the validity phase was implemented by giving a questionnaire to two face validity experts and two content validity experts. The quantitative measurement method through the Content Validity Index (CVI) has been used to evaluate the items whether they should be retained or dropped. According to the results, the Item Content Validity Index (I-CVI) for this study achieved 1.00. After obtaining expert reviews and validity as well as CVI analysis, all the reviews were improved to continue the reliability phase through the pilot study. Next, the instrument reliability phase is implemented. The results obtained were analyzed using the Rasch Measurement Model with a WinSteps version 3.69 to examine the item and person reliability. Additionally, the item measure quality was assessed by analyzing the PTMEA CORR, infit and outfit MNSQ values to examine the construct validity. The results also showed the reliability of instrument items was 0.81 and the person reliability index was 0.98 which show that this instrument is reliable and acceptable with a high level of consistency for measuring the instrument for cashless transactions behavior element. While all the PTMEA CORR is in positive values which show that the item can differentiate the ability of the respondent.

Introduction

Digitalization will grow in a cashless society's culture. The environment of the digital generation era, which always has to be digitally smart, is now concerned with a country's growth through digital technology development [1]. Changes in digital technology have been aided by the emergence of electronic payments, which involve cashless transactions performed

through electronic commerce [2] [3]. All parties must seek to bring forward changes in the digital society environment. Traditional business transactions must be connected to digital aspects, linking customers' interactions as digital users in trade transactions. The increase in electronic payment transactions occurred from year to year. There's an increase in households per capita in Malaysia to 144 electronic payment transactions in 2019, compared to just 125 transactions in 2018 [4]. This perfectly indicates that cashless transactions are increasingly being used. Even the use of online electronic payment platforms has transformed conventional business dealings dramatically through online digital business transactions. In 2018, 79 per cent of trade accepted payments electronically, compared to 90% who still received cash from retail consumers [4]. However, nowadays there is still a user will use traditionally rather than cashless transactions in terms of cashless transaction use as behavioural practices. It has also had an impact on different perceptions and practices among individuals from different social backgrounds to continue to deal with traditionally. Therefore, a higher education institution may portray the early readiness towards a cashless society environment to fulfil the digital entrepreneurship ecosystem by understanding digital user behaviour.

According to the study, the lack of a strategy for the formation of cashless transactions behaviour has an impact on the implementation of a cashless society in higher education institutions. Furthermore, among students of Public Higher Education Institutions, the use of cashless transactions is still at a moderate level [6]. It is important to consider elements that may prevent them from performing cash transactions and influence attitudes toward cashless transactions behaviour in higher education institutions. To measure that, researchers need to construct items that aim to investigate a person's behaviour in cashless transactions by developing cashless transactions behaviour element instrument. Consequently, there are a few steps in testing the research instrument namely validity test and reliability test. Face validity, content validity, and construct validity are the three basic approaches used to assess the validity of a research instrument in this study. It's also critical to be aware of the important task of constructing high-quality items [7].

To help a researcher analyse the reliability and validity of the items developed, the Content Validation Index and Rasch measurement analysis provide general guidelines. If the items were given to other respondents with comparable levels of ability, an instrument with a high item reliability index indicates the replicability of the item placements along the pathway [8]. Therefore, to ensure the quality of data and research instrument, this study was performed to produce empirical evidence in measuring validity and reliability of items in cashless transaction behaviour instrument using Content Validity Index (CVI) and the Rasch Measurement Model. Cashless transaction behaviour desperately requires the value of belief that can affect the attitude of digital users. Beliefs in various issues vulnerable to the problem and required by the parties are necessary [9]. The reviewer mainly focused on the key elements required in performing cashless transactions that influence attitudes toward behaviour in the context of this study. It is an item in the Perceived Trust, perceived usefulness, cybersecurity, transactions procedure, perceived hidden costs, self-efficacy, attitude, subjective norm, social norm, motivation to comply, and intention are among the Cashless Transactions Behaviors Element.

Validity And Reliability of Instruments

The validity and reliability of an instrument are the most important factors in determining its suitability and usability. The study's validity and reliability should be considered while creating the questionnaire survey to verify that it complies with the study's

objectives. The face validity and content validity of the instrument were used to evaluate its validity in this study.

Validity is a term used to describe and measure the accuracy of a measurement employed in a study, as well as to explain the data collected to cover the entire research. The appropriateness, meaningfulness, correctness, and usefulness of instruments that allow data to be inferred are defined as validity [10]. Its purpose is to ensure that the measurements or indicators employed in the measured concept include all of the necessary characteristics. The researcher conducts face validity as a procedure that must be performed before initiating a pilot study.

Face validity refers to researchers' subjective judgment on the operationalization of a construct [11] and relevance of the measuring instrument as to whether the items in the instrument appear to be relevant, reasonable, unambiguous and clear [12]. Furthermore, the content validity of the questionnaire used in this study was determined to establish the validity of the experts involved.

Contents validity is an important consideration in instrument development as it determines whether items on an instrument accurately measure a specific content domain [13]. Therefore, the Content Validity Index (CVI) is used to gain expert validity. The CVI is a quantitative method for demonstrating that items and instruments meet content validity requirements. CVI considers elements that experts agree should be maintained (relevant and highly relevant), the number of items, and the number of experts participating in the judging process [14] [15].

The validity index of content is determined by Item-level Content Validity Index (I-CVI) and entire instrument verification by Scale-level Content Validity Index (S-CVI). The I-CVI is calculated by dividing the total number of experts by the number of experts who gave a rating of 3 or 4 (thus dichotomizing the ordinal scale into relevant and not relevant) [16]. The average value of items agreed upon by experts is being used to calculate the I-CVI value. Each item will be assigned an I-CVI value that will indicate whether it should be maintained or dropped. S-CVI for the entire instrument, which gives information for evaluating the instrument's quality based on expert validation. Following that, the content validity of this sequence is determined using the Scale-level Content Validity Index based on the average method of S-CVI(AVE) related to relevant items (3 and 4).

Furthermore, this study conducted a pilot test after completing the content validity results and then evaluated the instrument's reliability. The pilot study in this study was analyzed using the Rasch Measurement Model approach. The Rasch Measurement Model is a psychometric technique to improve the precision with which researchers construct instruments, monitor instrument quality, and compute respondents' performances [17] and it also provides a technique for obtaining insight into how the data cooperate to construct measures [18].

Thus, in measuring the quantitative data for this research, the Rasch Measurement Model which assists with the WinSteps version 3.69 has been applied to examine the reliability of the constructs and items developed in the competency assessment instrument for Cashless Transactions Behavior Element. Alpha Cronbach's coefficient is a commonly used indicator for evaluating reliability. However, by using the Rasch Measurement Model, the remaining two reliability values, namely person and item reliability, can be obtained. Person and item

reliability are equivalent to the Cronbach Alpha that is usually used in traditional test reliability [19]. It involves checking the diagnosis of the functionality of the item in aspects as below:

- reliability, and the separation of the item-respondent;
- detect the polarity of an item measuring a construct based on the PTMEA CORR value;
- item fit measuring construct; and
- determine dependent items based on standardized residual correlation values.

All of these diagnoses complete the required conditions for evaluating the instrument's reliability. When evaluating the level of difficulty of a questionnaire item, the Rasch Measurement Model considers each respondent's ability to answer the questionnaire.

Research Objectives

This study aimed to see whether the Cashless Transactions Behavior Element Instrument was valid and reliable. The objectives lead to the following two questions, which must be discussed:

1. What is the content validity of the Cashless Transactions Behavior Element Instrument?
2. What is the reliability level of the Cashless Transactions Behavior Element Instrument?

Methodology

The application of certain procedures in the process of obtaining research data is referred to as research methodology [20]. The methodology of this study is explained further in the instrument validity and reliability section.

Validity Of Instruments

The reviewers employed four experts with more than five years of experience in the field for this study. Two face validity experts and two content validity experts possess relevant knowledge. Before the questionnaires are distributed to the respondents, that's questionnaire are given to two experts in the field to checked content validity. Experts involved in the content validity analysis needed to review the questionnaire's content and give feedback and suggestions.

Experts involved in content validity also have characteristics in the areas under consideration, as well as experience and expertise credentials in the areas of cashless transactions being studied. A variety of other indexes capture interrater agreement in content validity. According to Lynn [14], the 4-point Likert Scale was employed to determine the number of agreements among content validity experts for relevance or representativeness. Several labels for the 4-point Likert Scale along the item-rating continuum have been proposed in the literature, but the one proposed by Davis [21] appears to be in frequent use. Below is the relevance scale using the Likert Scale in this research:

Table 1. *4-Point Likert Scale (Davis, 1992)*

Likert Scale	Relevance Scale
1	Not Relevant
2	Somewhat Relevant
3	Quite Relevant
4	Highly Relevant

Then, for each item, the I-CVI is computed as the number of experts giving a rating of either 3 or 4 (thus dichotomizing the ordinal scale into relevant and not relevant), divided by the total number of experts [16]. Following that, depending on the agreement of field experts, the CVI value is used to determine the validity of the content. CVI values of 0.8 and higher are accepted or agreed upon by experts [21]. However, some opinions believe that the three experts and above should have a score of 0.78 or higher [16]. The results of a content validity index performed by two experts to validate the item's content of Cashless Transactions Behaviour Element Instrument. Table 2 shows the fictitious ratings on a 58-item scale using a 4-point rating relevance scale.

Table 2. *Fictitious Ratings of Two Experts On A 58-Item Using A 4-Point Rating Relevance Scale (Adapted From Polit And Beck, 2006)*

Item	Expert 1	Expert 2	Number Of Agreement (Items Rated 3 Or 4)	Item I-CVI	Item	Expert 1	Expert 2	Number Of Agreement (Items Rated 3 Or 4)	Item I-CVI
1	3	4	2	1.00	30	4	4	2	1.00
2	4	4	2	1.00	31	4	4	2	1.00
3	3	4	2	1.00	32	4	4	2	1.00
4	3	4	2	1.00	33	4	4	2	1.00
5	4	4	2	1.00	34	4	4	2	1.00
6	4	4	2	1.00	35	4	4	2	1.00
7	4	4	2	1.00	36	4	4	2	1.00
8	4	4	2	1.00	37	4	4	2	1.00
9	4	4	2	1.00	38	4	4	2	1.00
10	4	4	2	1.00	39	4	4	2	1.00
11	4	4	2	1.00	40	4	4	2	1.00
12	4	4	2	1.00	41	4	4	2	1.00
13	4	4	2	1.00	42	4	4	2	1.00
14	4	4	2	1.00	43	4	4	2	1.00
15	4	4	2	1.00	44	4	4	2	1.00
16	4	4	2	1.00	45	4	4	2	1.00
17	4	4	2	1.00	46	4	4	2	1.00
18	4	4	2	1.00	47	4	4	2	1.00
19	4	4	2	1.00	48	4	4	2	1.00
20	4	4	2	1.00	49	4	4	2	1.00
21	4	4	2	1.00	50	4	4	2	1.00
22	4	4	2	1.00	51	4	4	2	1.00
23	4	4	2	1.00	52	4	4	2	1.00
24	4	4	2	1.00	53	4	4	2	1.00
25	4	4	2	1.00	54	4	4	2	1.00
26	4	4	2	1.00	55	4	4	2	1.00
27	4	4	2	1.00	56	4	4	2	1.00

Table 2: *Continued*

Item	Expert 1	Expert 2	Number Of Agreement (Items Rated 3 Or 4)	Item I-CVI	Item	Expert 1	Expert 2	Number Of Agreement (Items Rated 3 Or 4)	Item I-CVI
28	4	4	2	1.00	57	4	4	2	1.00
29	4	4	2	1.00	58	4	4	2	1.00
					Proportion Relevant	1.00	1.00		
					(A) Total Number in Agreement (3/4)			116	
					(B) Total Items I-CVI				58.00
					(C) Total Relevan Item Ratio = (A) / Total Items			2.00	
					S-CVI/AVE = (B) /Total Items			1.00	

Refer to Table 2, the I-CVI for this study is achieved 1.00 for each item. Furthermore, the number of expert agreements, with each item obtaining only a 3 or 4 rating. When employing less than 6 experts, the agreement index should achieve 1.00, according to Lynn [14]. This means the item should be maintained in its entirety. This study's S-CVI(AVE) value indicates a result of 1.00 for the item's average quality. As a result, the instument that were developed showed the content's validity.

Pilot Test

The pilot study conducted was a survey involving quantitative methods using questionnaires and presented using the Rasch Measurement Model approach. Quantitative data is collected through questionnaires. The researchers distributed a set of questionnaires to 30 respondents who were experienced consumers doing cashless transactions at Kolej Komuniti Pasir Gudang. A pilot study was carried out on users with similar characteristics to the survey's actual respondents. In the initial study, a minimum of 30 respondents was needed to analyze validity and reliability [22]. Before the pilot study, the construct and number of items were determined. The following table (Table 3) includes a list of 13 constructs and 58 items.

Table 3. *List Of Constructs and Items Before Pilot Test*

Constructs	Items No.	Total Items
Attitude	1-4	4
Subjective Norms	5-8	4
Perceived Behavior Control	9-14	6
Intention	15-19	5
Cashless Transactions Behavior	20-24	4
Perceived Trust	25-28	4
Perceived Usefulness	29-32	4
Perceived Cybersecurity	33-36	4
Transactions Procedure	37-41	5
Perceived Hidden Costs	42-44	3
Motivation To Comply	45-48	4
Social Norms	49-53	5
Self-Efficacy	54-58	5
Total		58

Reliability Of Instrument

As mentioned earlier in this study, reliability of the instrument is implemented by performing diagnosis of the functionality of the item on reliability and separation items and person, PTMEA CORR value for polarity item, item fit in measuring the constructs, and standardized residual correlations value.

Reliability and Separation Items and Person

The acceptable reliability of Cronbach's Alpha, according to the Rasch Measurement Model, is between 0.71-0.99, which is the best level (71 % - 99 %) [8]. The reliability obtained based on the Cronbach Alpha (α) is 0.99, according to the findings of the pilot study. As a result, this value indicates that the instruments employed are in good condition and effectively well with a high level of consistency, indicating that they can be utilised in actual research.

The index separation value that exceeds 2.00 is good [19]. In Table 4, the person separation index value of 7.56 and item separation index value of 2.05 for this instrument identified. Refer to Bond dan Fox [8], item and person reliability value that should exceed 0.8. The person reliability index as highlighted in Table 4, the value was 0.98 and item reliability index value of 0.81 of this instruments. Thus this shows that the items used to measure cashless transactions behaviour element are highly acceptable.

Table 4. *Reliability And Separation Value For The Entire Constructs Of Instrument Summary Of 58 Measured Person*

	TOTAL SCORE	COUNT	MODEL MEASURE	ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	337.7	58.0	3.23	.23	1.02	-.3	.98	-.5
S.D.	54.5	.0	1.95	.06	.62	2.7	.57	2.7
MAX.	398.0	58.0	6.60	.39	2.76	5.5	2.47	4.9
MIN.	116.0	58.0	-3.30	.14	.07	-5.6	.05	-6.0

REAL RMSE .26 TRUE SD 1.93 SEPARATION 7.56 Person RELIABILITY .98
MODEL RMSE .23 TRUE SD 1.93 SEPARATION 8.29 Person RELIABILITY .99
S.E. OF Person MEAN = .36

SUMMARY OF 58 MEASURED Item

	TOTAL SCORE	COUNT	MODEL MEASURE	ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	174.7	30.0	.00	.29	.99	-.1	.98	-.1
S.D.	8.8	.0	.71	.03	.46	1.5	.39	1.3
MAX.	189.0	30.0	1.85	.35	2.64	4.2	2.22	3.5
MIN.	145.0	30.0	-1.36	.22	.25	-3.3	.26	-3.3

REAL RMSE .31 TRUE SD .64 SEPARATION 2.05 Item RELIABILITY .81
MODEL RMSE .29 TRUE SD .64 SEPARATION 2.22 Item RELIABILITY .83
S.E. OF Item MEAN = .09

PTMEA CORR Value for Polarity Item

To attain the validity of the constructs found in the instrument, Point Measured Correlation (PTMEA CORR) value in every item was examined. Table 5 shows the PTMEA CORR value to identify the polarity items in the study. From the findings, it was found that a positive PTMEA Corr value is displayed in every item examined. The value found in the PTMEA CORR section is positive (+), and it indicates the respective item can achieve its goals of measuring the construct that needs to be measured. The smallest value found is 0.59. Therefore, there is no negative value recorded in the PTMEA CORR. This shows that the entire item has been well-developed, orientated, and paralleled to the constructs to be measured.

Table 5. *Point Measure Correlation Value*

ENTRY NUMBER	TOTAL SCORE	MODEL COUNT	MEASURE	S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PT-MEASURE CORR.	EXACT MATCH EXP.%	EXACT MATCH OBS%	Item
7	162	30	.96	.24	2.64	4.2	2.22	3.5	.59	.79	43.3	50.7	C03
6	145	30	1.85	.22	2.40	3.9	1.90	2.9	.59	.79	40.0	44.1	C02
5	162	30	.96	.24	1.73	2.2	1.48	1.7	.64	.79	60.0	50.7	C01
44	161	30	1.02	.24	1.55	1.8	1.59	2.0	.65	.79	46.7	49.3	K03
8	159	30	1.13	.24	1.84	2.6	1.58	2.0	.68	.79	46.7	49.3	C04
45	167	30	.64	.26	1.01	.1	1.32	1.1	.69	.79	53.3	54.1	L01
37	169	30	.51	.26	1.31	1.0	1.57	1.8	.71	.79	53.3	58.7	J01
43	170	30	.44	.27	.85	-.4	1.06	.3	.73	.79	63.3	59.3	K02
40	187	30	-1.12	.34	.96	.0	.95	.0	.74	.77	60.0	67.3	J04
41	187	30	-1.12	.34	.92	-.1	.91	-.1	.75	.77	60.0	67.3	J05
10	184	30	-.79	.33	1.17	.6	1.43	1.2	.75	.78	66.7	66.4	D02
14	180	30	-.38	.31	1.37	1.1	1.31	1.0	.75	.79	63.3	66.7	D06
2	178	30	-.20	.30	1.75	2.0	1.57	1.6	.75	.79	63.3	65.2	B02
46	167	30	.64	.26	.66	-1.2	.88	-.3	.77	.79	56.7	54.1	L02
50	169	30	.51	.26	.82	-.5	.94	-.1	.77	.79	66.7	58.7	M02
47	170	30	.44	.27	.71	-1.0	.85	-.4	.77	.79	70.0	59.3	L03
36	186	30	-1.01	.34	1.34	1.1	1.12	.4	.78	.78	56.7	67.0	I04
25	188	30	-1.24	.35	1.09	.4	1.31	.9	.78	.77	56.7	66.9	G01
28	184	30	-.79	.33	.91	-.2	1.19	.6	.79	.78	70.0	66.4	G04
17	174	30	.14	.28	1.21	.7	1.15	.6	.79	.80	60.0	62.5	E03
34	187	30	-1.12	.34	1.21	.7	1.00	.1	.79	.77	56.7	67.3	I02
31	164	30	.84	.25	1.08	.4	1.21	.8	.80	.79	46.7	52.1	H03
51	179	30	-.29	.30	.75	-.7	.87	-.3	.80	.79	63.3	65.6	M03
32	171	30	.37	.27	.88	-.3	.96	.0	.80	.79	73.3	60.5	H04
16	175	30	.06	.29	.90	-.2	.99	.1	.81	.80	66.7	63.1	E02
33	189	30	-1.36	.35	.84	-.4	.71	-.7	.81	.76	63.3	67.3	I01
49	173	30	.22	.28	.89	-.2	.99	.1	.81	.80	63.3	61.6	M01
38	188	30	-1.24	.35	.94	-.1	.82	-.4	.81	.77	56.7	66.9	J02
39	183	30	-.68	.32	1.09	.4	1.02	.2	.81	.79	76.7	66.7	J03
27	172	30	.29	.27	1.05	.3	1.21	.8	.81	.80	70.0	61.1	G03
42	169	30	.51	.26	.45	-2.2	.54	-1.8	.81	.79	73.3	58.7	K01
20	177	30	-.11	.29	1.49	1.4	1.29	.9	.81	.79	60.0	64.9	F01
26	174	30	.14	.28	1.05	.3	1.22	.8	.81	.80	63.3	62.5	G02

35	187	30	-1.12	.34	.87	-.3	.75	-.6	.82	.77	60.0	67.3	I03
12	178	30	-.20	.30	1.29	.9	1.19	.7	.82	.79	66.7	65.2	D04
13	177	30	-.11	.29	1.24	.8	1.08	.4	.82	.79	70.0	64.9	D05
4	180	30	-.38	.31	1.24	.8	1.12	.5	.82	.79	76.7	66.7	B04
24	160	30	1.07	.24	1.02	.2	1.00	.1	.82	.79	43.3	49.3	F05
52	177	30	-.11	.29	.64	-1.2	.76	-.7	.82	.79	73.3	64.9	M04
1	180	30	-.38	.31	1.16	.6	.92	-.1	.82	.79	70.0	66.7	B01
11	179	30	-.29	.30	1.16	.6	1.02	.2	.82	.79	76.7	65.6	D03
19	164	30	.84	.25	.80	-.7	.97	.0	.83	.79	53.3	52.1	E05
55	174	30	.14	.28	.74	-.8	.66	-1.1	.84	.80	73.3	62.5	N02
15	177	30	-.11	.29	.85	-.4	.84	-.4	.84	.79	60.0	64.9	E01
23	164	30	.84	.25	.91	-.2	.93	-.2	.84	.79	43.3	52.1	F04
9	185	30	-.89	.33	.56	-1.6	.47	-1.8	.85	.78	90.0	67.2	D01
53	173	30	.22	.28	.59	-1.4	.68	-1.1	.85	.80	83.3	61.6	M05
54	176	30	-.02	.29	.60	-1.3	.57	-1.5	.85	.80	76.7	64.4	N01
57	171	30	.37	.27	.39	-2.5	.44	-2.3	.86	.79	80.0	60.5	N04
21	179	30	-.29	.30	.75	-.7	.70	-.9	.86	.79	63.3	65.6	F02
56	172	30	.29	.27	.55	-1.6	.55	-1.7	.86	.80	63.3	61.1	N03
58	174	30	.14	.28	.43	-2.2	.50	-1.9	.87	.80	80.0	62.5	N05
3	180	30	-.38	.31	.62	-1.3	.56	-1.5	.87	.79	83.3	66.7	B03
30	175	30	.06	.29	.69	-1.0	.62	-1.3	.89	.80	86.7	63.1	H02
22	166	30	.71	.25	.53	-1.8	.55	-1.9	.89	.79	60.0	53.5	F03
18	184	30	-.79	.33	.30	-3.0	.30	-2.8	.89	.78	90.0	66.4	E04
48	173	30	.22	.28	.31	-3.0	.36	-2.7	.89	.80	73.3	61.6	L04
29	176	30	-.02	.29	.25	-3.3	.26	-3.3	.95	.80	90.0	64.4	H01
MEAN	174.7	30.0	.00	.29	.99	-.1	.98	-.1			65.1	61.4	
S.D.	8.8	.0	.71	.03	.46	1.5	.39	1.3			12.1	6.0	

Item Fit in Measuring the Constructs

Items fit in measuring constructs can be seen through the infit and outfit Mean Square (MNSQ) values. Based on the pilot study analysis conducted, there is an MNSQ value of more than 1.40 and less than 0.6. This indicates that there are items that confuse respondents as well as predictable items. This item should be noticed and dropped in the list of existing items. Refer to Bond dan Fox [8], the outfit MNSQ and infit MNSQ value should be in the range between 0.6 to 1.4 to ensure that the developed item is suitable for construct measurement.

However, considering the different types and forms of fit statistics, outfit MNSQ used to evaluate misfit. Although varying recommendations have been presented and recommend examining outfit MNSQ first [23][24]. This suggestion is based on valued guidance in the Winsteps manual because the outfit statistic is more sensitive to outliers and has a more familiar calculation [19].

Refer to Table 6, outfit MNSQ values for items are C03, C02, C04, B02, B03, C01, D01, E04, F03, H01, K03, K01, L04, N01, N05, N04, N03, and J01 that are not in range from 0.6 to 1.4. It can be improved by considering the researcher's needs as well as expert advice.

Table 6. *Item Fit Based On MNSQ Value*

ENTRY NUMBER	TOTAL SCORE	COUNT	MODEL MEASURE	S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PT-MEASURE CORR.	EXACT MATCH EXP.%	EXACT MATCH OBS%	Item
7	162	30	.96	.24	2.64	4.2	2.22	3.5	A .59	.79	43.3	50.7	C03
6	145	30	1.85	.22	2.40	3.9	1.90	2.9	B .59	.79	40.0	44.1	C02
8	159	30	1.13	.24	1.84	2.6	1.58	2.0	C .68	.79	46.7	49.3	C04
2	178	30	-.20	.30	1.75	2.0	1.57	1.6	D .75	.79	63.3	65.2	B02
5	162	30	.96	.24	1.73	2.2	1.48	1.7	E .64	.79	60.0	50.7	C01
44	161	30	1.02	.24	1.55	1.8	1.59	2.0	F .65	.79	46.7	49.3	K03
37	169	30	.51	.26	1.31	1.0	1.57	1.8	G .71	.79	53.3	58.7	J01
BETTER FITTING OMITTED												
3	180	30	-.38	.31	.62	-1.3	.56	-1.5	k .87	.79	83.3	66.7	B03
54	176	30	-.02	.29	.60	-1.3	.57	-1.5	j .85	.80	76.7	64.4	N01
9	185	30	-.89	.33	.56	-1.6	.47	-1.8	i .85	.78	90.0	67.2	D01
56	172	30	.29	.27	.55	-1.6	.55	-1.7	h .86	.80	63.3	61.1	N03
22	166	30	.71	.25	.53	-1.8	.55	-1.9	g .89	.79	60.0	53.5	F03
42	169	30	.51	.26	.45	-2.2	.54	-1.8	f .81	.79	73.3	58.7	K01
58	174	30	.14	.28	.43	-2.2	.50	-1.9	e .87	.80	80.0	62.5	N05
57	171	30	.37	.27	.39	-2.5	.44	-2.3	d .86	.79	80.0	60.5	N04
48	173	30	.22	.28	.31	-3.0	.36	-2.7	c .89	.80	73.3	61.6	L04
18	184	30	-.79	.33	.30	-3.0	.30	-2.8	b .89	.78	90.0	66.4	E04
29	176	30	-.02	.29	.25	-3.3	.26	-3.3	a .95	.80	90.0	64.4	H01
MEAN	174.7	30.0	.00	.29	.99	-.1	.98	-.1			65.1	61.4	
S.D.	8.8	.0	.71	.03	.46	1.5	.39	1.3			12.1	6.0	

Standardized Residual Correlations Value

The correlation of the standardised residuals may be used to detect local dependence, whether or not the items are dependent on each other. Thus, the measurement of standardised residual correlation values may be used to detect local dependency, or if one item is dependent on another. Local dependence would be a large positive correlation. If the correlation of the two items above 0.7 (Corr. > +.7) with highly locally dependent items, suggesting that only one of the two items is needed for measurement [19]. Therefore, only one item is selected for use in measurement and one of the items should be dropped to produce a good and quality instrument. Item selection refers to the value of MNSQ, where values close to 1.00 will be maintained [19]. There should be no correlation value greater than 0.7.

The list of retained items is N03, I04, I02, J04, C04, I03, D03, L02, C01 because it has an MNSQ outfit value of close to 1.00. In this study, refer to Table 7, 10 pairs of overlapping items were detected, as the correlation value of items exceeded 0.7 between N03/N05, I01/I04, I02/I03, J04/J05, C03/C04, I01/I03, D03/D04, I01/I02, L02/L03, and C01/C04 items. However, after being referred to the value of MNSQ which is close to 1.00, the items to be dropped are N05, I01, I03, J05, C03, D04, L03 & C01.

Table 7. *Largest Standardized Residual Correlations Used To Identify Dependent Item*

CORREL-ATION	ENTRY NUMBER Item	ENTRY NUMBER Item
.90	56 N03	58 N05
.90	33 I01	36 I04
.90	34 I02	35 I03
.88	40 J04	41 J05
.88	7 C03	8 C04
.87	33 I01	35 I03
.83	11 D03	12 D04
.82	33 I01	34 I02
.81	46 L02	47 L03
.81	5 C01	8 C04

Discussions

From the analysis of the findings, it can be concluded that the development of questionnaire items is an important consideration. The results from the analysis of the Rasch measurement analysis showed that the instrument has a desirable quality to be used to analyze the cashless transactions behaviour element. The instrument of the study did portray the positive cashless transactions behaviour element though nine of the items needed to be rewritten to satisfy the desired objectives of the study. Since the findings of the reliability and validity of the instrument using Rasch Measurement Model show high value, this instrument could be used for Cashless Transactions Behaviors Elements. These basic steps of using the Rasch Measurement Model should be employed by the researcher before they use any instrument found to be related to their areas of study.

Based on Table 8, overlapping findings were detected between items that need to retained, need to drop, should be dropped, and note to be dropped. It is related to item C04. I03 also overlap between items that need to retained and need to drop. However, in this study, that items was retained because that item is close to 1.00 MNSQ and important to satisfy the desired objectives of the study.

Table 8. Comparison Of Findings To Retained, Need To Drop, Should Be Dropped & Note To Be Dropped And Suggestions To Maintain Items

Total Retained Items	Need To Drop	Should Be Dropped, And Note To Be Dropped	Suggestions Items To Maintain With Improvements
C01,C04,D03,I02, I03,I04,J04,L02, N03	C03,C04,D04,I01, I03,J05,L03,N05	B02,B03,C01,C02, C03,C04,D01,E04, F03,H01,J01,K01, K03,L04,N01,N03, N04,N05	B03,C01,C02,C04, K01,K03,L04,N01, N03

Furthermore, Table 9 shows the summary final result of the items survey. This summary of the items survey's final results will assist researchers in produce a high-quality instrument. The retained items in this study are B01, B03, B04, C01, C02, C04, D02, D03, D05, D06, E01,

E02, E03, E05, F01, F02, F04, F05, G01, G02, G03, G04, H02, H03, H04, I02, I03, I04, J02, J03, J04, K01, K02, K03, L01, L02, L04, M01, M02, M03, M04, M05, N01, N02 and N03. Correspondingly, the study found that the retained survey items were important and relevant constructs to be maintained in this study.

Table 9. *Summary Final Result of Items Survey*

No	Construct	Retained Items	Total Retained Items	Dropped Items	Total Dropped Items
i	Attitude	B01,B03,B04	3	B02	1
ii	Subjective Norms	C01,C02,C04	3	C03	1
iii	Perceived Behavior Control	D02,D03,D05,D06	4	D01,D04	2
iv	Intention	E01,E02,E03,E05	4	E04	1
v	Cashless Transactions Behavior	F01,F02,F04,F05	4	F03	1
vi	Perceived Trust	G01,G02,G03,G04	4	-	0
vii	Perceived Usefulness	H02,H03,H04	3	H01	1
viii	Perceived Cybersecurity	I02,I03,I04	3	I01	1
ix	Transactions Procedure	J02,J03,J04	3	J01,J05	2
x	Perceived Hidden Costs	K01,K02,K03	3	-	0
xi	Motivation To Comply	L01,L02,L04	3	L03	1
xii	Social Norms	M01,M02,M03,M04,M05	5	-	0
xiii	Self-Efficacy	N01,N02,N03	3	N04,N05	2
Total Items			45		13

Conclusion

Researchers must ensure the validity of instruments suitable to be used as a measuring tool against the study population. In furthermore, instrument reliability testing is crucial in every research conducted. This is since it is used to evaluate each question item to obtain consistent instrument features even when used frequently on the place, throughout time, and with different samples. Regardless of whether an instrument is created or adapted, the process of determining the instrument's reliability and validity should be the primary focus of any researcher. Because the instrument used in this study was adapted from previous research, the researcher needs to measure these two elements first before applying them to a wide group of people. Accordingly, based on the results obtained from the validity and reliability of the instrument, a total of 13 question items were removed from the instrument of this study. The remaining 45 items can be used as a measure to identify the most crucial elements of cashless transactions among community college members. The conclusion is based on a review of items used to evaluate the instrument's reliability and validity, indicating that it fits the requirements for researcher usage. This instrument is also required to solve the challenges of cashless transactions behaviour in the face of the Covid-19 pandemic, to reduce cash transaction behaviour. In addition, a preliminary study in this research showed positive perceptions of cashless transactions behaviour element to develop the study model.

Suggestions

Using the Rasch Measurement Model, this study shows how to validate and reliability for cashless transactions behaviour element instrument. This method can be used to test various

measurement tools in similar contexs. Rasch measurement can also be used to assist the creation of measurement instruments as well as to establish validity and reliability evidence.

Acknowledgements

The authors would like to acknowledge the support of Universiti Tun Hussein Onn, Malaysia (UTHM) & Department of Polytechnic and Community College Education, Ministry of Higher Education, Malaysia.

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