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DESCRIPTIVE APPROACH TO CONTENT VALIDITY

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Abstract:-

This research addresses the lack of psychometrically some research instruments. Analysis of content validity was conducted by using descriptive method for some research measures. Descriptive analysis of median was conducted on the ratings from the expert panel members. Expert panel of four judges specialized in psychometrics, English language, and industry were asked to rate the relevancy of items to their domains in order to obtain evidence of content validity. No items were deleted from this study. This research aims to bring more attention to the importance of psychometric properties in some research measures. It is also hoped to shed some lights on which content validity analysis would best be used under certain circumstances. Limitations of study were also discussed.

Keywords: content validity, descriptive analysis of median, aberrant judges, psychometric.

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INTRODUCTION

According to DeVellis (2003), content validity explores the degree to which the items of an instrument reflect the construct of a test. Rogers (2010) described content validity as being based on professional judgments of test content relevancy to the content of the test domains, and representation of items to their domains. Therefore analysis of the content is mainly subjectivity of the judges (Allen & Yen, 1979). According to Messick (1990), the judgment results indicate the relevancy of the "test content to the content of a particular behavioral domain of interest" (Messick, 1990, p. 8). However, the question of how one should deal with the results from expert judgment is rarely mentioned in the literature. Analysis of content validity was conducted using descriptive method for this research study to determine the quality of items and how well they fit into the assigned domains (Hellsten, 2008).

Methods

Sample

Descriptive analysis of median was conducted on the ratings from the expert panel members. The median item ratings or the number that indicates the midpoint of all ratings was calculated for each scale or measurement variable. A higher median value indicates a more relevant item. Following the work of Hellsten (2008), based on a scale of 0 to 4, an item with a median of 2.75 or above was considered as acceptable in this study.Lynn (1986) advised a minimum of four experts, but indicated that more than 10 was probably unnecessary. So, four judges or experts who are professionals in their respective fields involved in this study. All the participants were from Universiti Malaysia Pahang and invited to participate through electronic mail.

The psychometrician was included in this study due to the psychometric component of this study, and to greater ensure the overall quality of the items. English language judge was also included because of the presence of the pragmatic language domain in this study and to ensure the definition and their associated items were accurately categorized. Experts in industry were chosen due to their knowledge and experience with the topics of this study. The following table listed the distribution of judges:

Table 1: Distribution of judges' expertise.

Expertise	Number of	Education Level	Experience
	Judges		
Psychometrics	1	Doctorate	>5 years
English Language	1	Doctorate	>10 years
Industrial	2	Master and	>15 years
		Doctorate	

Measurement

People who agreed to participate were given a package containing: (i) the expert opinion form that comprises the research introduction letter; (ii) questionnaires; and (iii) the Item Content Rating Review Forms. Details of all the documents are presented in Appendix. Participants were given a month to complete the package and return it to the researcher. Participants were informed that their responses would always be kept confidential and that only the researcher would have access to the data. Participation was always voluntary and individuals were free to withdraw anytime. At any time, if a participant should wish to withdraw from the study, they were instructed not to return the package.

Upon receipt of the expert panel members' ratings, and separating the participants' names from the data, the ratings of the judges were entered into the Microsoft Excel computer program. In order to accumulate evidence of content validity, the expert panel members' ratings for each of the items on each of the measurement variables were compared and contrasted. As discussed earlier, content validity is based on professional judgments of test content relevancy to the content of the test domains, and representation of items to their domains (Rogers, 2010). In this research, descriptive analysis of median was used to determine the quality of the items. Before discussing the results of the descriptive analysis of median for each measurement variable, aberrant judges must be identified.

Although the judges were experts in their selected field, there is the possibility that some judges scored the items in an aberrant manner. For example, lack of understanding of the procedure or directions, inattention during the ratings, lack of time, and/or personal motivation may result in measurement error across the ratings. In this study, identification of lie items method was used to identify aberrant judges. This method examined if each judge was able to correctly identify the "lie item" placed within each domain. If necessary, following the identification of any aberrant judges, decisions were made to remove such aberrant judges from further analysis.

A table was created which lists all the domains and the number of lie items accurately detected by each judges. This process allowed the researcher to identify which judge, if any, should be excluded due to his/her potential inaccuracy of ratings (Hellsten, 2009). As all items were rated on a scale ranging from 0 No Fit to 4 Excellent Fit, a lie item should have a low rating (i.e., either 0 or 1) because it was specifically designed to not fit the domain. If the judges read the domain definition and examined each item carefully, they should be able to correctly identify the lie item by rating it low. Each judge who correctly identifies the lie item was identified by a check mark. The percentage of lie items correctly identified was also calculated for each judge. There are a total of eight lie items (i.e. one in each measurement variable), and the researcher set the criteria that five or more lie items (< 60%) correctly identified would be considered as acceptable (Karen, 2010). This criterion was based on the rational that if the judges correctly identified 50% or more of the lie items, then it is more likely that the correct response was not made due to chance. A table representing the accuracy in identifying the lie items by judges is shown in Table 2.

Judges	WRE	JCTR	SSPT	JFIT	AFCOM	TINT	DSEF	OCI	# ID	% ID
Judge 1	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	8	100
Judge 2	\checkmark	\checkmark	\checkmark	-	\checkmark	-	\checkmark	\checkmark	6	75
Judge 3	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	-	7	87.5
Judge 4	\checkmark	-	-	\checkmark	\checkmark	-	\checkmark	-	4	50

Table 2: Identification of lie items by judges.

Note: DSEF: discretionary effort; AFCOM: affective commitment; JCTR: job control; JFIT: job fit; WRE: work engagement; OCI: organizational culture; SSPT: supervisory support; TINT: turnover intention.

As shown in Table 2, only one judge identified all eight lie items (Judge 1). Two of the judges identified more than five lie items. It was determined by the researcher, that a minimum of 60% accuracy rate (5 out of 8 items) should be obtained for an expert to be maintained in this study. Thus, judge 4 is a potential aberrant judge, with 50% accuracy rate in identifying lie items. Before any decision was made, the field of expertise of the judges was considered. Judge 1 was an expert in Psychometric, and one explanation for his ability to correctly identify all the eight lie items may be due to the individual's ability to spot items that clearly distinguish themselves from others (or maybe the lie items were too easily identified) whereas judge 4 was an expert in Industry. Besides, before any decision was made to remove judge 4, the researcher must consider a minimum requirement of four judges in order to evaluate the content validity of all the items in this study (Lynn, 1986). Therefore, after considering the expertise of judge 4, in which he may have had limited psychometric knowledge and the minimum requirement of four judges by Lynn(1986), the researcher decided to maintain the four judges for this research study.

Results

Descriptive analysis was used to show the properties of the items. The result of descriptive analysis of median for each item was calculated as a measure of the central tendency and can be found in Table 3.6. A median of 3 or above means at least 50% of the judges gave an item a rating of 3 or 4. Generally, the items received quite high ratings. No items were deleted from the study. Even though one item (item 10) from the Utrecht Work Engagement Scale (UWES) received low ratings, the judge that was expert in Psychometrics recommended the researcher not to remove the item. He suggested that item 10 needs to be reworded for clarity because the statement may be confusing to some individuals.

Items	WRE	JCTR	SSPT	JFIT	AFCOM	TINT	DSEF	OCI
1	4	3.5	3.5	4	3.5	3	3	3
2	3.5	3	3.5	4	3	3	LIE	3
3	3	3	3	LIE	3	3	3	3
4	3	LIE	3	3	3.5	LIE	3.5	3.5
5	3	3	3	3	LIE		4	3
6	4	4	4	3	3.5		3	3
7	LIE	3	LIE		3		3	3
8	3		4				3.5	4
9	3							3

Table 3: Median of items by scales

10	2.5				3
11					3.5
12					4
13					4
14					LIE
15					3
16					3.5
17					3
18					3.5
19					3
20					3
21					4
22					3
23					3.5
24					3
25					3

Note: Bold numbers indicate acceptable median and LIE indicates lie items.

Discussion

The result of this research developed a potential and useful item pool for some research instruments with good evidence of content validity. This evidence was determined by using descriptive analysis of median, in which items receiving the most consensus was retained. No items were deleted from this research. This result may be due to the well-established instruments, employed in this study. In addition, the method of median analysis was so lenient that it did not discriminate very well between items. In terms of selection of judges, this study has demonstrated the importance of ensuring that the judges are experts in the field of the research context and examining the aberrant judges.

Conclusion

The finding of this study has some implications. The results present the theoretical and empirical research regarding the descriptive approach to content validity since there have been few researches in this regard. Besides, more validity evidence in addition to reliability evidence should be collected in order for the instrument to be a truly useful test with proper psychometric properties.

Finally, there are some limitations to this study which need to be considered. One significant limitation of this study was the low number of expert judge members involved in this study. If more judges were involved in the related field, then the content validity evidence may be more powerful. A second limitation of this study was the lack of judges outside the state of Pahang, Malaysia. This limits the generalization of this study for the use outside of Pahang state. The last limitation was the use of one kind of content validity descriptive analysis. Many kinds of content validity analyses can be used such as item ambiguity and percentage agreement. This study provides the resources for better development of assessment measures in the field of organizational behaviors, in the hope to bring more attention to the importance of appropriate psychometric properties in the related field tests. For benefits in the psychometric field, this research examined the popularly used content validity analyses to shed a light on which methods should be used.

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APPENDICES

EXPERT OPINION FORM Professor / Assoc. Prof. / Dr. / Mr. / Mrs.:-Institution:-Dear Professor / Assoc. Professor / Dr. / Mr. / Mrs.

My name is Dr. Wan Emril Nizar bin Wan Embong, a lecturer from University College Shahputra and currently doing some research. I am conducting a research that explore the determinants of work engagement and its effect on turnover intention and discretionary efforts that have been suggested but not integrated and tested in a single model in other research. Therefore, I would very much appreciate if you could participate in my study by giving your expert opinion on the **validity of items** used in the survey questionnaire. Please indicate your evaluation of each item in the questionnaires provided. Additional comments are welcome. Thanking you in advance for your precious time and kind cooperation.

Warm regards, Dr. Wan Emril Nizar bin Wan Embong Faculty of Education and Social Sciences University College Shahputra Kuantan, Pahang Malaysia.

ITEM CONTENT RATING REVIEW

QUESTIONNAIRE ON WORK ENGAGEMENT

Work Engagement refers to a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli et al., 2002).

	No Fit			Excellent Fi		
Item 1	0	ï	2	3	4	
Item 2	0	1	2	3	4	
Item 3	0	1	2	3	4	
Item 4	0	1	2	3	4	
Item 5	0	1	2	3	4	
Item 6	0	1	2	3	4	
Item 7	0	1	2	3	4	
Item 8	0	1	2	3	4	
Item 9	0	i.	2	3	4	
Item 10	0	1	2	3	4	

QUESTIONNAIRE ON JOB CONTROL

Job Control (autonomy) which is often defined as the degree of employees' independence in making work related decisions (Demerouti et al., 2001).

	No Fit		Exceller				
Item 1	0	1	2	3	4		
Item 2	0	1	2	3	4		
Item 3	0	1	2	3	94		
Item 4	0	1	2	3	4		
Item 5	0	1	2	3	4		
Item 6	0	1	2	3	4		
Item 7	0	1	2	3	4		

QUESTIONNAIRE ON JOB FIT

Job Fit is defined as the degree to which a person feels his or her personality and values fit with the current job (Resick et al., 2007).

	No Fit				Excellent Fit
Item 1	0	1	2	3	4
Item 2	0	1	2	3	4
Item 3	0	1	2	3	4
Item 4	0	1	2	3	4
Item 5	0	1	2	3	4
Item 6	0	1	2	3	4

QUESTIONNAIRE ON SUPERVISORY SUPPORT

Supervisory support is the positive social relationship between supervisors and employees, which serves as the functions job demands (work overload), helpful in getting tasks completed and enhance personal growth, learning and development (Bakker & Demerouti, 2007; Salanova et al., 2005; Richman et al., 2011).

	No Fit		Excellent				
Item 1	0	1	2	3	4		
Item 2	0	1	2	3	4		
Item 3	0	1	2	3	4		
Item 4	0	1	2	3	4		
Item 5	0	1	2	3	4		
Item 6	0	1	2	3	4		
Item 7	0	1	2	3	4		
Item 8	0	1	2	3	4		
Item 9	0	1	2	3	4		

QUESTIONNAIRE ON AFFECTIVE COMMITMENT

Affective Commitment is defined as a sense of belonging and emotional connection with one's job, organization or both (Rhoades et al., 2001).

	No Fit		Excellent F			
Item 1	0	1	2	3	4	
Item 2	0	1	2	3	4	
Item 3	0	1	2	3	4	
Item 4	0	1	2	3	4	
Item 5	0	1	2	3	4	
Item 6	0	1	2	3	4	
Item 7	0	1	2	3	4	

QUESTIONNAIRE ON TURNOVER INTENTION

Turnover Intention is defined as an employee's voluntary intention to leave (Saks, 2006) and is more predictive of actual turnover than any other variables (Berry & Morris, 2008)

	No Fit				Excellent Fit
Item 1	0	1	2	3	4
Item 2	0	1	2	3	4
Item 3	0	1	2	3	4
Item 4	0	1	2	3	4

QUESTIONNAIRE ON DISCRETIONARY EFFORT

Discretionary effort is defined as consisting of an employee's willingness to go above minimal job responsibilities (Lloyd, 2008).

	No Fit		Excellent Fi				
Item 1	0	1	2	3	4		
Item 2	0	1	2	3	4		
Item 3	0	1	2	3	4		
Item 4	0	1	2	3	4		
Item 5	0	1	2	3	4		
Item 6	0	1	2	3	4		
Item 7	0	1	2	3	4		
Item 8	0	1	2	3	4		

QUESTIONNAIRE ON SUPERVISORY SUPPORT

Supervisory support is the positive social relationship between supervisors and employees, which serves as the functions job demands (work overload), helpful in getting tasks completed and enhance personal growth, learning and development (Bakker & Demerouti, 2007; Salanova et al., 2005; Richman et al., 2011).

	No Fit		Excellent			
Item 1	0	1	2	3	4	
Item 2	0	1	2	3	4	
Item 3	0	1	2	3	4	
Item 4	0	1	2	3	4	
Item 5	0	1	2	3	4	
Item 6	0	1	2	3	4	
Item 7	0	1	2	3	4	
Item 8	0	1	2	3	4	
Item 9	0	1	2	3	4	

QUESTIONNAIRE ON ORGANIZATIONAL CULTURE

According to Wallach (1983), an organization's culture can be a combination of three categories – **bureaucratic**, **innovative or supportive**– to varying degrees.

	No Fit			E	xcellent Fit
Item 1	0	1	2	3	4
Item 2	0	1	2	3	4
Item 3	0	1	2	3	4
Item 4	0	1	2	3	4
Item 5	0	1	2	3	4
Item 6	0	1	2	3	4
Item 7	0	1	2	3	4
Item 8	0	1	2	3	4
Item 9	0	1	2	3	4
Item 10	0	1	2	3	4
Item 11	0	1	2	3	4
Item 12	0	1	2	3	4
Item 13	0	1	2	3	4
Item 14	0	1	2	3	4
Item 15	0	1	2	3	4
Item 16	0	1	2	3	4
Item 17	0	1	2	3	4
Item 18	0	1	2	3	4
Item 19	0	1	2	3	4
Item 20	0	1	2	3	4
Item 21	0	1	2	3	4
Item 22	0	1	2	3	4
Item 23	0	1	2	3	4
Item 24	0	1	2	3	4
Item 25	0	1	2	3	4

Section A:

Kindly circle the answer to indicate how you feel at work with following the statements below.

Point Scale

- 0 Never
- 1 Almost Never (A few times a year or less)
- 2 Rarely (Once a month or less)
- **3** Sometimes (A few times a month)
- 4 Often (Once a week)
- 5. Very Often (A few times a week)
- 6. Always (Everyday)

1.3	At my work, I feel bursting with energy.	0	1	2	3	4	5	6
2.	At my job, I feel strong and vigorous.	0	1	2	3	4	5	6
3.	I am enthusiastic about my job.	0	1	2	3	4	5	6
4.	My job inspires me.	0	1	2	3	4	5	6
5.	I am proud of the work that I do.	0	1	2	3	4	5	6
6.	When I get up in the morning, I feel like going to work.	0	1	2	3	4	5	6
7.	I enjoy going back home.	0	1	2	3	4	5	6
8.	I feel happy when I am working intensely.	0	1	2	3	4	5	6
9,	I am immersed in my work.	0	1	2	3	4	5	6
10,	I get carried away when I am working.	0	1	2	3	4	5	6

Section B:

Kindly circle the answer to indicate the degree of independence in making work related decisions with the statements below

Point Scale

- 1. Very little
- 2 Somewhat little
- 3 Moderate amount
- 4 Quite a bit
- 5. Very much

Section C:

Kindly circle the answer to indicate whether you agree or disagree with the following statements below.

Point Scale

- 1. Strongly Disagree
- 2 Disagree
- 3 Neutral
- 4 Agree
- 5 Strongly Agree

1.	How much are you left on your own to do your work?	1	2	3	4	5
2.	To what extent are you able to act independently of your own supervisor in performing your job function?	1	2	3	4	5
3.	To what extent are you able to do your job independently of others?	1	2	3	4	5
4.	I like to control myself.	1	2	3	4	5
5.	The freedom to do pretty much what I want on my job.	1	2	3	4	5
6.	The opportunity for independent thought and action.	1	2	3	4	5
7.	The control I have over the pace of my work.	1	2	3	4	5

Section D:

Kindly circle the answer to indicate whether you agree or disagree with the following statements below

Point Scale

- 1. Strongly Disagree
- 2 Disagree
- 3 Neutral
- 4 Agree
- 5. Strongly Agree
- I feel my values "match" or fit this organization and the 1 2 3 4 5 current employees in this organization.
- I think the values and personality of this organization 1 2 3 4 5 reflect my own values and personality.
- I think my personality can be changed.
 1 2 3 4 5
 The values of this organization are similar to my own 1 2 3 4 5 values.
- 5. My values match those of current employees to this 1 $\,$ 2 $\,$ 3 $\,$ 4 $\,$ 5 organization.
- 6. I feel my personality matches the "personality" or image 1 2 3 4 5 of this organization.

Section E:

Kindly circle the answer to indicate whether you agree or disagree with the following statements below

Point Scale

- 1. Strongly Disagree
- 2 Disagree
- 3 Neutral
- 4 Agree
- 5. Strongly Agree

1.	I feel a strong sense of belonging to my organization.	I	2	3	4	5
2.	I feel personally attached to my work organization.	I	2	3	4	5
3.	I am proud to tell others I work at my organization.	1	2	3	4	5
4.	Working at my organization has a great deal of personal meaning to me.	ľ	2	3	4	5
5.	I feel lonely at work.	1	2	3	4	5
6.	I would be happy to work at my organization until I retire.	1	2	3	4	5
7.	I really feel that problems faced by my organization are also my problems.	I	2	3	4	5

Section F:

Kindly circle the answer to indicate whether you agree or disagree with the following statements below

.Point Scale

- 1. Strongly Disagree
- 2 Disagree
- 3 Neutral
- 4 Agree
- 5. Strongly Agree

1.	I frequently think of quitting my job.	1	2	3	4	5
2.	I am planning to search for a new job during the next 12 months.	1	2	3	4	5
3.	If I have my own way, I will be working for this organization one year from now.	1	2	3	4	5
4.	My plan is long-term plan.	I	2	3	4	5

Section G: Kindly circle the answer to indicate whether you do or not with the following statements below.

Point Scale

- 0 Never
- 1 Almost Never (A few times a year or less)
- 2 Rarely (Once a month or less)
- 3 Sometimes (A few times a month)
- 4 Often (Once a week)
- 5. Very Often (A few times a week)
- 6. Always (Everyday)

1.	When I work, I really exert myself to the fullest, beyond that what is expected.	0	1	2	3	4	5	6
2.	I like to finish my work earlier.	0	1	2	3	4	5	6
3.	I finish a job even if it means sacrificing breaks or lunches.	0	1	2	3	4	5	6
4.	I do more than is expected of me.	0	1	2	3	4	5	6
5.	I voluntarily put in extra hours to achieve a result faster.	0	1	2	3	4	5	6
6.	I persist in overcoming obstacles to complete an important task.	0	1	2	3	4	5	6
7.	I put in extra effort when I find it necessary.	0	1	2	3	4	5	6
8.	I work harder that expected to help my organization be successful.	0	1	2	3	4	5	6

Section H:

Please circle the score which most closely corresponds with how you see your organization.

		Does not describe my organization	Describe my organization a little	Describe my organization a fair amount	Describe my organization most of the time
1)	risk taking	1	2	3	4 0
2)	collaborative	1	2	3	4
3)	hierarchical	1	2	3	4
4)	procedural	1	2	3	4
5)	relationships- oriented	1	2	3	4
6)	results-oriented	1	2	3	4
7)	creative	1	2	3	4
8)	encouraging	1	2	3	.4
9)	sociable	1	2	3	4
10)	structured	1	2	3	4
11)	pressurized	1	2	3	4
12)	ordered	1	2	3	4
13)	stimulating	1	2	3	4
14)	boring	1	2	3	4
15)	regulated	1	2	3	4
16)	personal freedom	1	2	3	4
17)	equitable	1	2	3	4
18)	safe	1	2	-3	4
19)	challenging	1	2	3	4
20)	enterprising	<u>1</u>	2	3	4
21)	established, solid	2	2	3	4
22)	cautious	1	2	3	4
23)	trusting	1	2	3	4
24)	driving	1	2	3	4
25)	power-oriented	1	2	3	4