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Validity and Lecturer's Different Perceptions in Organizational Citizenship Behavior Instrument Using Rasch Model

Yuyun Elizabeth Patras, Eka Suhardi, Rais Hidayat
Education Administration Study Program
Universitas Pakuan
Bogor, Indonesia
yuyunpatras64@gmail.com, eka.suhardi@unpak.ac.id
rais72rais@gmail.com

Eri Sarimanah
Faculty of Teacher and Education
Universitas Pakuan
Bogor, Indonesia
Sarimanah.herty@gmail.com

***Abstract*—The external and internal environment of educational organizations continues to change so that lecturers, as key holders of success in universities, are required to have organizational citizenship behavior (OCB). OCB is a behavior where the lecturer performs his/her duties and functions beyond what has been described in his/her work on his/her own awareness to help the university achieve its goals. This research aims to test OCB lecturer instrument. The sample used was 132. The data collection used a questionnaire containing 4 sub-constructs of OCB (altruism, sportsmanship, civic virtue, and boosterism), and 35 items. The finding of this research shows that 30 out of 35 items of OCB lectures instrument can be used for research. It is also found that the most difficult items and most easily items were approved by the lecturers. The most difficult items that were approved can be used as an indication of OCB that must be corrected by the management of a private university. This research is expected to be the subject of discussion and development of further research on OCB lecturers in Indonesia.**

Keywords—organizational citizenship behavior; organizational citizenship behavior lecturers; rasch model

I. INTRODUCTION

Lecturers are a very important resource in a university. Lecturers play a crucial role in the effectiveness, efficiency and productivity of a university [1]. If the university only relies on the lecturers' behavior that has been specified in the job description, then the university will not be able to achieve its goals, therefore the university must strengthen the lecturers' behavior beyond their formal obligations. The performance of lecturers needed is no longer focused on the behavior of their in-role, but extra-role. In connection with this, the university needs an overview of the Lecturer's Organizational Citizenship Behavior (OCB).

Organizational citizenship behavior (OCB) is an effective tool to accomplish the organizational goals [2]. OCB affects performance and commitment [3] and influences organizational culture [4]. OCB is needed by the survival of an organization's life [5], employees who have OCB make a positive contribution to the organization [6], this behavior of OCB gives very large contribution to support the sustainability of the organization [7].

Research on OCB lecturers' instruments is very important. The existence of valid and reliable lecturers' OCB instruments can be used conclusively in OCB research, this is because OCB is very helpful for creating an academic climate in universities [8]. The university can use the lecturer OCB instrument to improve its sustainability. However, universities need lecturer OCB instruments that use the latest methods in testing their validity and reliability.

The lecturers' OCB instrument in this study was tested based on the Rasch Model. The use of Rasch Model in testing lecturers' OCB instruments can be classified as something new. Previous testing of OCB instruments used item total correlation and the Cronbach alpha coefficient analysis [9]. Sub-construct which was tested in this study is also different from previous research. In 1993 testing was only carried out on 3 sub-constructs [10], while in this study the test was carried out on 4 sub-constructs with 35 items, and previously only 24 items [11].

Based on the explanation that the lecturer OCB instrument is very important, this research formulates the research questions as follows: (1) Could Rasch Model test the lecturer's OCB instruments better than another? (2) What kind of items is the easiest and most difficult to be approved by male and female lecturers?

A. Organizational Citizenship Behavior (OCB)

An organizational citizenship behavior (OCB) is a term that encompasses anything positive and constructive that employees do, of their own volition, which supports co-workers and benefits the organization [12]. OCB is a voluntary behavior that is not a formal part of the work required [13]. OCB refers to the behavior of employees who when they do their work, not only do the core tasks that have been included in the job description but exceed the core task requirements [14]. OCB is an employee's behavior that exceeds his job obligations [15], the behavior of employees who when performing their duties and responsibilities are carried out voluntarily which may not

be valued or rewarded, but contribute to improving the quality of work performance [16]. OCB lecturer is a behavior in which the lecturer performs his duties and functions in excess of what has been described in his work (extra role) for his own awareness to help the university achieve its goals [17].

OCB is built on two dimensions, that are interpersonal citizenship behavior that occurs between employees and organizational citizenship behavior that occurs for organizations [16]. Dimensions of OCB: (1) altruism: helpful behavior with fellow colleagues; (2) conscientiousness: keep working even though the work time is finished; (3) civic virtue: work voluntarily to advance the organization; (4) sportsmanship: mutual support among colleagues in the team for organizational success; (5) courtesy; understanding and having high empathy [18]. OCB domains were along the possibility of faculty being virtuous, disrespectful, sportsmanlike, and benevolent/malevolent [1].

B. Rasch Model

Rasch analysis is a statistical approach to measuring performance, attitudes, and human perception. Named after the name of its inventor, Georg Rasch, a Danish nationality, he published his theory in 1960 and died in 1980 [19]. The Rasch Model applied to human Sciences [20], we recommend using the Rasch model more broadly to improve the quality of measurements both qualitative and quantitative [21].

Rasch analysis, based on item response theory, provides a better alternative for examining the quality of assessment of psychometric scales and informing scaling up [22]. Rasch can be used in various studies. The use of Rasch analysis in education, for example, is to create instruments to measure conduciveness for teaching and learning and measuring professional development [23]. The advantage of Rasch Model is that it can explain items and person [24]. The unit of measurement of scale for ability and item difficulty is generally known as "logit", the contraction of "unit odds log". The Rasch model helps to overcome item measurements in the right way [25].

II. METHOD

This research is part of quantitative research. The purpose of this research is to test the items in the lecturer OCB instrument. The test is to find out which items are valid and which items cannot be used for OCB research. This research also describes the differences in perceptions between male and female lecturers on instrument items. Then the researcher discussed several significant findings for the professional development of lecturers in universities.

The research was conducted in three different private universities in Bogor, Indonesia. The respondents of this research were 132 lecturers, consisting of 62 men and 70 women, who had National Lecturer Identification Number (NIDN). This research measures the organizational citizenship behavior (OCB) of lecturers. Measurements are based on OCB lecturers. Measurement of the OCB lecturers used 4 sub-constructs: (1) altruism, (2) sportsmanship, (3) civic virtue, (4) boosterism. The demographic aspects of the lecturers collected in this study gender. The type of scale used is the Likert rating scale with five ranking choices [26]. The greater the score of the respondent's answer is that it is more agreed to the item and vice versa.

Rasch modeling is used to test questionnaire data. The raw data from the questionnaire on the OCB lecturers in the form of an ordinal scale will then be converted to an interval scale using Rasch modeling with Winsteps software version 3.73. Rasch modeling addresses data integrity problems by accommodating logit transformations, by applying logarithms at odd ratios of raw data obtained from respondents [27].

Analysis of the instrument validity testing uses Rasch modeling with criteria: (1) Outfit Mean Square (MNSQ) accepted: 0.5 <MNSQ <1.5, (2) Outfit-Z Standard (ZSTD) accepted: -2.0 <ZTSD <+ 2.0, and (3) Acceptable PT Mean Correlation accepted: 0.4 <Pt Mean Corr <0.85. If the instrument items meet one of these criteria, the OCB instrument is suitable for use [28]. Tools of analysis to assess differences in measurement of instrument items using Rasch modeling by looking at the person Differential Item Functional (DIF) plot [28]. The criteria for differences are seen from the zero line, where if the person above the zero line shows the more agree and vice versa [29].

III. RESULTS AND DISCUSSION

The first sub-construct of Lecturer's OCB was validated: altruism, with items: (al1) I am willing to replace teaching for fellow lecturers who are ill; (al2) I am willing to help provide guidance on making syllabus to fellow lecturers who need it; (al3) I am willing to provide input as a way out of problems experienced by colleagues; (al4) I am willing to explain how to write journals to fellow lecturers who are still newly involved in conducting research; (al5) I provide the latest information about journal writing seminars to fellow lecturers; (al6) I help teach how to analyze data with colleagues; (al7) I motivate fellow lecturers to participate in community service activities; (al8) I visited isolated areas which became a place for community service; and (al9) I and my fellow lecturers provide education about education in remote areas.

Based on the results of the validation test using items measure as shown in figure 1, items that cannot be used are items al1 and al5. Because it does not meet the validity requirements, items al1 and al5 must be repaired or eliminated.

Base on items measure as shown in figure 1, the most easily approved item is al2, and the most difficult items to agree are al3, al6, and al4. Based on the items that are most difficult to agree, it can be concluded that lecturers working in private universities are lack of interaction [11], the lecturers focus more on teaching than interacting with the lecturer and others [30]. With this fact, altruism already exists in private universities [11], but lecturer altruism still needs to be improved. Without high interaction between lecturers, altruism in private universities is very poorly developed [31].

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PT-MEASURE CORR.	PT-MEASURE EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	Item
1	282	132	1.51	.13	1.31	2.3	1.72	3.9	.67	.76	54.2	55.6	al1
2	345	132	.49	.13	.99	.0	.98	-.1	.75	.74	50.4	52.0	al2
5	349	132	.43	.13	1.55	4.1	1.55	3.8	.69	.74	41.2	51.7	al5
8	363	132	.21	.13	.69	-2.9	.73	-2.3	.79	.73	61.1	50.9	al8
9	368	132	.13	.13	.74	-2.4	.74	-2.2	.82	.73	65.6	52.0	al9
7	393	132	-.27	.13	.68	-2.9	.68	-2.9	.81	.72	65.6	53.9	al7
4	416	132	-.65	.13	.93	-.5	.91	-.7	.73	.71	59.5	55.2	al4
6	427	132	-.83	.13	.86	-1.2	.86	-1.1	.71	.71	57.3	55.6	al6
3	438	132	-1.03	.13	1.07	.6	1.15	1.2	.62	.70	60.3	56.7	al3
MEAN	375.7	132.0	.00	.13	.98	-.3	1.04	-.1			57.3	53.7	
S.D.	46.1	.0	.75	.00	.28	2.2	.35	2.4			7.3	2.0	

Fig. 1. Validity test results of altruism with the rasch model.

The attitude of male lecturers (line M) and female lecturers (line F) towards the instrument items in the first sub-construct of OCB has no difference. This finding is in line with research in the Netherlands and Australia [31]. This finding can be seen in the results of the person DIF plot analysis in figure 2.

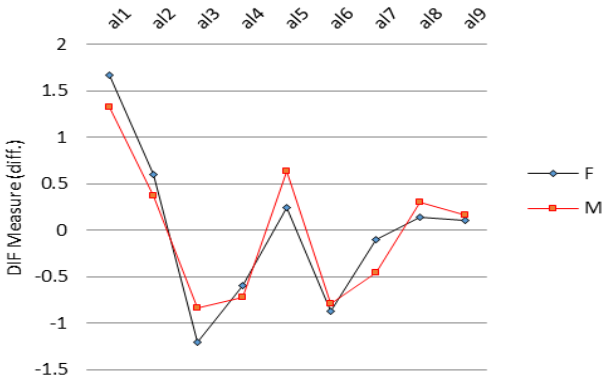

Fig. 2. Results of person dif plot analysis between altruism and gender.

The second sub-construct of OCB was validated: sportsmanship, with items: (sp1) I cancel the lecture because the projector has been damaged; (sp2) I keep teaching with limited facilities; (sp3) I improve my competence in teaching by attending various seminars and training; (sp4) My passion in research decreased when I heard criticism from colleagues; (sp5) The limitations of scientific sources in research have become an obstacle for me to continue to research; (sp6) I conduct research if research funding from the university is provided adequately; (sp7) My enthusiasm in community service activities became loose because of the dirty village conditions; (sp8) I continue to carry out community service activities with insufficient funds; (sp9) I still visit the community service area even though the funds are minimal.

Based on the results of the validation test using items measure as shown in figure 3, it shows that items that cannot be used is item sp1. Therefore, the SP1 item must be repaired or eliminated.

Based on items measure as shown in figure 3, the easiest item to be approved is SP8, and the most difficult items to approve are SP5, SP4, and SP3. Based on the data, lecturers at private universities can be said to have high sportsmanship [1,32]. This can be seen from the behavior of lecturers who stated that they would continue to teach, research and do community service even though the funds and facilities were not satisfactory. Such lecturer behavior greatly helps private universities to be sustainable [8].

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PT-MEASURE CORR.	PT-MEASURE EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	Item
8	249	132	1.84	.12	.95	-.3	.85	-.9	.75	.68	58.0	52.4	sp8
1	381	132	.32	.11	2.39	8.7	2.59	9.4	.37	.66	22.9	44.5	sp1
7	389	132	.23	.11	.73	-2.5	.73	-2.4	.75	.65	55.7	44.8	sp7
9	418	132	-.10	.11	.82	-1.6	.77	-2.0	.70	.64	55.7	47.4	sp9
2	422	132	-.15	.11	.85	-1.3	.93	-.6	.62	.64	53.4	47.6	sp2
6	434	132	-.29	.11	.89	-.9	.92	-.6	.69	.63	57.3	48.4	sp6
3	445	132	-.43	.11	.93	-.5	1.12	1.0	.56	.62	58.8	48.6	sp3
4	455	132	-.56	.11	.60	-3.7	.63	-3.4	.71	.61	61.8	49.4	sp4
5	477	132	-.85	.12	.62	-3.4	.68	-2.7	.71	.60	59.5	50.7	sp5
MEAN	407.8	132.0	.00	.11	.97	-.6	1.02	-.3			53.7	48.2	
S.D.	63.0	.0	.74	.00	.51	3.5	.57	3.6			11.1	2.4	

Fig. 3. Validity test results of sportsmanship with the rasch model.

The attitude of male lecturers (line M) and female lecturers (line F) on the instrument items in the second sub-construct (sportsmanship) has no difference. Other studies show that older lecturers show higher OCB than younger lecturers [8]. Results of Person DIF Plot Analysis between Sportsmanship and Gender can be seen in figure 4:

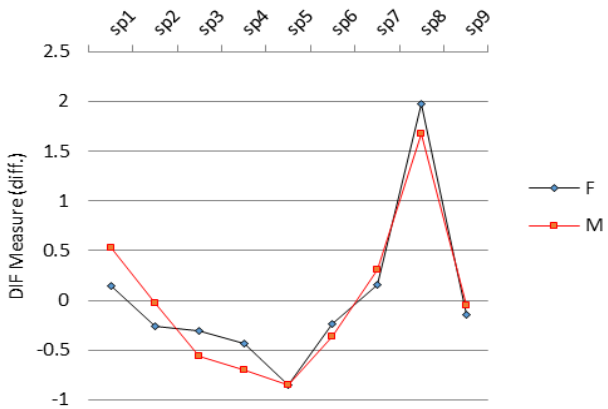

Fig. 4. Results of person dif plot analysis between sportsmanship and gender.

The third sub-construct of OCB was validated: civic virtue, with items: (ct1) I reminded the students of the vision and mission of the university when I was conducting lectures; (ct2) I told a bad thing about a university when I was conducting lectures; (ct3) I ask students to accept the shortcomings at the university; (ct4) I object to writing the name of the university in my scientific writing; (ct5) I was absent when the university invited me to a research workshop; (ct6) I was present on time

at every meeting on research; (ct7) I fully support the community service program held by the university; (ct8) I actively participate in university service programs; and (ct9) I took the initiative to help the university program in the field of mapping the problems faced by the community.

Based on the results of the validation test using items measure as shown in figure 5 it can be concluded that that items that cannot be used are items ct3. Therefore, the ct3 item must be repaired or eliminated.

Based on items measure as shown in figure 5, the most easily approved item is ct6, and the most difficult items to approve are ct2 and ct1. Based on these data, it can be said that the lecturers even found "bad" things at the university, they still had a high spirit of civic virtue [33]. The lecturers maintain the reputation of the university where they work. However, the lecturers were less helpful in promoting their university. The attitude of this lecturer benefits the university. Therefore, it can be said that OCB makes the organization better [34].

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PT-MEASURE CORR.	PT-MEASURE EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	Item
6	374	132	1.25	.12	.93	-.5	.97	-.2	.67	.69	54.6	48.5	ct6
9	384	132	1.12	.12	1.04	.4	1.07	.6	.69	.68	50.8	49.0	ct9
5	405	132	.82	.12	.89	-.9	.89	-.9	.68	.68	50.0	50.8	ct5
7	442	132	.28	.12	.80	-1.7	.77	-2.0	.72	.66	57.7	52.8	ct7
4	444	132	.24	.12	.90	-.7	.88	-.9	.70	.66	50.8	52.8	ct4
8	446	132	.21	.12	.78	-1.9	.79	-1.7	.74	.66	57.7	52.8	ct8
1	525	132	-1.15	.14	.90	-.8	1.13	1.0	.62	.60	63.1	58.1	ct1
2	529	132	-1.23	.14	1.15	1.1	1.18	1.3	.56	.60	61.5	58.2	ct2
3	545	132	-1.55	.15	1.66	4.4	1.73	4.2	.42	.58	45.4	59.5	ct3
MEAN	454.9	132.0	.00	.13	1.01	-.1	1.05	.1			54.6	53.6	
S.D.	60.5	.0	.99	.01	.26	1.8	.28	1.8			5.5	3.9	

Fig. 5. Validity test results of civic virtue with the rasch model.

There are differences in attitudes of male lecturers (line M) and female lecturers (line F) in the item ct4. Female lecturers have a stronger decision to agree on the statement "I object to writing the name of the university in my scientific writing", if compared to male lecturers. This fact shows that female lecturers have a higher motivation to be involved in advancing the organization [1], women have more souls to sacrifice than men [35]. Results of Person DIF Plot Analysis between Civic Virtue and Gender can be seen in figure 6.

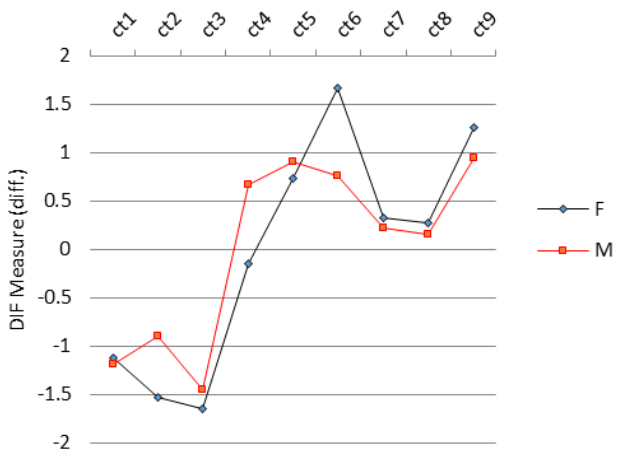

Fig. 6. Results of person dif plot analysis between civic virtue and gender.

The fourth sub-construct of OCB was validated: boosterism, with items (po1) I tell about the achievements of the university in the field of education to students when I was teaching; (po2) I tell the achievements of universities in the field of education to outsiders; (po3) I tell about the university's achievements in the field of education to fellow lecturers from other universities; (po4) I share the success of the university in the field of research at national and international seminars; (po5) I use university-made research reference books; (po6) I clarify the negative news about my university; (po7) I keep the good name of the university wherever I am; and (po8) I promoted the university when I held community service activities.

Based on the results of the validation test using items measure as shown in figure 7, the item that cannot be used is po3. Therefore, the po3 item must be repaired or eliminated.

Based on items measure as shown in figure 7, the most easily approved item is po2, while the most difficult item to approve is po6. Based on these data, lecturers at private universities can be said to be lack of defense when there is negative information about their university. They can also be said to be less promoters for their universities [11]. When lecturers are less interested in promoting their university, the university is not maximally socialized to the community. University achievements and excellence will slowly disappear. Therefore the university must have efforts such as rewarding extra role behaviors that might help academic staff's citizenship behaviors [30].

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PT-MEASURE CORR.	PT-MEASURE EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	Item
2	458	132	.66	.13	1.02	.2	.98	-.1	.78	.77	53.3	51.2	po2
8	461	132	.61	.13	.85	-1.2	.93	-.6	.78	.77	59.8	51.3	po8
5	474	132	.40	.13	.56	-4.0	.58	-3.8	.84	.76	68.0	52.6	po5
1	476	132	.37	.13	.92	-.6	.92	-.6	.77	.76	58.2	52.7	po1
7	484	132	.24	.13	.62	-3.4	.62	-3.3	.82	.75	68.9	53.0	po7
4	486	132	.20	.13	1.13	1.0	1.20	1.5	.72	.75	51.6	53.2	po4
6	539	132	-.76	.14	1.25	1.7	1.17	1.1	.66	.69	59.0	58.8	po6
3	581	132	-1.71	.16	1.93	5.3	1.61	2.7	.48	.62	52.5	63.6	po3
MEAN	494.9	132.0	.00	.13	1.04	-.1	1.00	-.4			58.9	54.6	
S.D.	40.1	.0	.77	.01	.40	2.8	.31	2.1			6.2	4.1	

Fig. 7. Validity test results of boosterism with the rasch model.

The attitude of male lecturers (line M) and female lecturers (line F) towards instrument items in the fourth sub-construct of OCB (Boosterism) has no difference. The results of Person DIF Plot Analysis between Civic Virtue and Gender in figure 8:

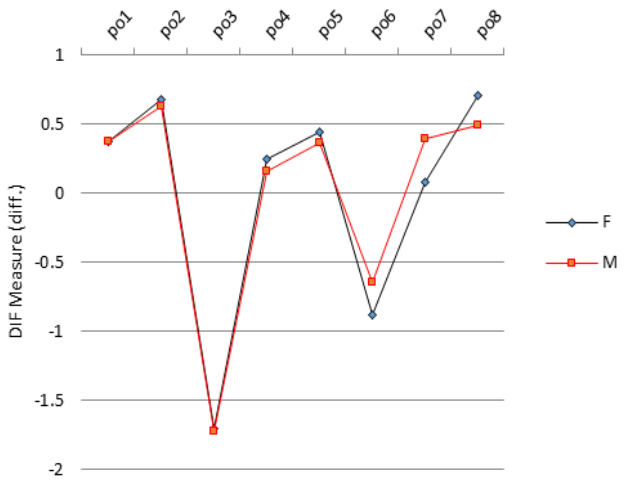

Fig. 8. Results of person dif plot analysis between boosterism and gender.

IV. Conclusion

The results of testing the validity of the instrument using Rasch model on 4 sub-constructs about organizational citizenship behavior, 30 out of 35 items were found to be able to be used for OCB lecturer research. This proves that Rasch Model is able to be an alternative for making research instruments.

Only one of the 30 items shows that the approval of female and male lecturers is different. However, in general there is no significant difference between the perceptions of male and female lecturers on items in this instrument.

Based on the items that are most difficult to agree, it can be said that lecturers working in private universities are: (1) lack of interaction; (2) have a high sportsmanship; (3) have a high spirit of civic virtue, and (4) lack of defense of their university and to be less promoters for their universities.

This research suggests the university to pay more attention to the findings of this study. The university is expected to elicit several policies to overcome problems related to the weak interaction between lecturers, and the unwillingness of lecturers to promote universities. Research that can be done to continue this research, among others, looks for factors that can increase lecturers' OCB. These findings are expected to be the subject of further discussion and research on OCB lecturers in Indonesia.

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