A study of the theories and perceptions of the focus group method as a research tool

JOSEPH KIM-KEUNG HO
Independent Trainer
Hong Kong, China

Abstract:
The topic of focus group has been studied in a diversity of fields for many years with a quite substantial existing literature accumulated. This paper reports another theoretical and empirical study on the topic. In the discussion, it examines the focus group method, with some consideration from the Multi-perspective, Systems-based Research perspective, which is uncommon in the existing focus group literature. The discussion is also informed by a Facebook-based survey on focus group perceptions and experience from respondents, who are mainly located in Hong Kong. The survey data is further analyzed with the multiple-regression method using the MS Excel tool. As a whole, the paper investigates both the theories and perceptions of the focus group method. The general picture revealed by the survey is that the focus group method is known to the majority of the respondents but is under-estimated on the challenges of its usage. The field of focus group study also encounters a few theoretical issues. The findings from this paper should have some academic and pedagogical values to those who are interested in this topic.

Key words: Excel; Facebook-based survey; Focus group method; Key multi-perspective, systems-based (MPSB) concepts; Multi-perspective, systems-based (MPSB) Research; Multiple regression analysis.

Introduction

The recent dissertation project supervision work of the writer draws his attention to the research method of focus group. The initial impression of the method for the writer and his
dissertation project students is that it is flexible and convenient to apply. What is needed is to invite a few participants for a brief group brainstorming session and some useful research findings can be produced out of the exercise. The focus group method also appears to be an acceptable research method in students’ dissertation projects. After all, the method is covered in research method textbooks such as Bryman and Bell (2007) and Saunders et al. (2012). The lingering question, for the writer, is: could it be that simple to apply the focus group method? It is under this background that the writer decides to take up the task to go through a more serious investigation on the focus group method. To be specific, this paper has two objectives:

Objective 1: To review the ideas underlying the focus group method, with some consideration from the Multi-perspective, Systems-based (MPSB) Research lenses.¹

Objective 2: To examine the Facebook-based survey findings on the perceptions and experience on the focus group method.

Conducting the literature review of the focus group method to meet objective 1 also informs the evaluation of the Facebook-based survey findings on the topic (objective 2), and vice versa. Thus, the two objectives are related. The study as reported in this paper has (i) pedagogical value for teaching the focus group method to students and (ii) academic value for enhancing understanding on the focus group method and the Multi-perspective, Systems-based (MPSB) Research. As a result, it also informs focus group practices.

¹ The topic of the Multi-perspective, Systems-based Research has been reported in European Academic Research, e.g., Ho (2013; 2014a). Readers are referred to those sources for a more detailed elaboration of the topic.
Basic ideas of the focus group method

Focus group is a “non-standardized” group interview “where the topic is defined clearly... and there is a focus on enabling and recording interactive discussion between participants” (Saunders et al., 2012). In a focus group interview, there are several participants as well as a moderator/facilitator (sometimes with an assistant moderator). As a research method, a focus group is usually conducted in a series, “with at least three separate sessions, exploring the subject areas using different group compositions” (Langford and McDonagh, 2003). The focus group method was first used in the 1940s (Langford and McDonagh, 2003) and has subsequently been much employed in other social sciences fields, notably in market research. The range of topic areas investigated with the focus group method is wide. This is reflected in the diversity of academic journals that publish works on focus group research from time to time, e.g., *BMC Health Services Research* (BioMed Central), *Journal of Advanced Nursing* (Blackwell Science), *Library Management* (Emerald), *Marketing Intelligence & Planning* (Emerald), *Performance Measurement and Metrics* (Emerald), *Qualitative Market Research* (Emerald), *Social Indicators Research* (Springer), and *Quality of Life Research* (Kluwer Academic Publishers), etc. Other than the academic references, there are also Youtube videos on the focus group method (see Ho (2015a).)

The literature on the focus group method is quite forthcoming with practice advices, although they are incompatible sometimes. Examples of advices are: (i) size of group should in general be six to ten; its size should be reduced “when participants are likely to have a lot to say on the research topic” (Morgan (1988) cited in Bryman and Bell (2007).); (ii) participation in the group meeting is voluntary (Langford and McDonagh, 2003); (iii) questioning in the group meeting should be around a “fairly tightly defined topic”
(Bryman and Bell, 2007); (iv) opportunities should be made for participants to “probe each others’ reasons for holding a certain view” (Bryman and Bell, 2007); (v) keeping track of who say what in the meeting is required to record the group dynamics for subsequent analysis (Bryman and Bell, 2007); (vi) a rather charismatic moderator who can orchestrate participant engagement is recommended (Muijzer et al., 2012); and (vii) avoiding to invite participants who know each other as “pre-existing styles of interaction or status differences may contaminate the session” (Bryman and Bell, 2007). Besides, there are specific practice advices for virtual focus groups, see Bryman and Bell (2007), Kenny (2005) and Mitzi et al. (1998). Furthermore, evaluation of the strengths and weaknesses of the focus group method has also been reported in the literature, e.g., Krueger et al. (2001), Onwuegbuzie et al. (2009) and Grudens-Schuck et al. (2004). For instance, compared with Q-sorts, Scenario analysis and ethnographic methods, Krueger et al. (2001) state that the focus group method is: (i) medium in terms of information reliability, (ii) medium in terms of speed of analysis, (iii) medium-expensive in terms of cost, (iv) capable of understanding people’s thinking and feeling in terms of the technique strength, and (v) not building consensus nor providing empirical reality in terms of the technique limitation. Lastly, a number of challenges of doing focus group research have been studied (Langford and McDonagh, 2003), e.g., (i) difficulty to analyze focus group data, which have little structure, (ii) difficulty to manage the group settings, and (iii) difficulty to deal with privacy and highly controversial topics, etc.. The weaknesses and challenges of the focus group method reflect theoretical and pragmatic issues encountered in its study and employment. They are examined further in the next section from an overall perspective.
The focus group study and its key theoretical issues

From the study of the focus group literature, the writer identifies 3 key theoretical issues of the focus group method. It is indicated in Figure 1 which depicts the macro-intellectual landscape of the focus group field.

Key theoretical issue 1 - Incompatible theoretical perspectives: As explained by Freeman (2006), qualitative research, to which the focus group method belongs, is a heterogeneous field with diverse epistemological views. These diverse epistemological views offer conflicting practice advices (issue 3 in Figure 1). Moreover, very often, a focus group method offered by a theorist is not explicitly anchored on a specific theoretical perspective, e.g., realism and constructionism (Madill et al., 2000). This issue resonates with the topic of incommensuability of different research paradigms in systems thinking (Jackson, 2003; Flood and Romm, 1996) and perspective anchoring\(^2\) in the Multi-

\(^2\) Perspective anchoring is a key Multi-perspective, Systems-based concept (Ho, 2013). It means the intellectual effort to explicitly relate a methodology to a
perspective, Systems-based (MPSB) Research\textsuperscript{3} of Ho (2013; 2015b). From the MPSB Research perspective, recognizing the incommensurability of research paradigms, e.g., realism and constructionism, and willing to switch perspective\textsuperscript{4} in studying and employing the focus group method allows its method employers to achieve creative holism (Jackson, 2003) in focus group application. Nonetheless, even with that, the focus group employers will still experience the inbuilt tension of pluralism\textsuperscript{5} in the focus group exercises.

**Key theoretical issue 2 - Impacts of Political, Economic, Social and Technological (PEST) factors:** The reception of an idea, e.g., the focus group method, depends on the social and climate (Merton (1987) as cited by Lee (2010)). Specifically, the major stimulus for employing the focus group method as a cost-effective one, in the 1970s was the poor state of the economy at that time (Lee, 2010). Its present popularity is due to its low cost, speed of employment and broad scope of employment (Fern, 1982). Another example of the impacts of the PEST factors has been the adoption of the virtual focus group method with the advancement of Information Technology, notably the availability of the Internet infrastructure. The PEST factors, according to Merton (1987), are able to influence the historical continuity\textsuperscript{6} of an idea, such as the focus group.

\textsuperscript{3} *The Multi-perspective, systems-based (MPSB) Research* is a research programme that applies critical systems thinking to review management disciplines so as to produce knowledge structures of management disciplines and make theoretical advancements in Systems Thinking (Ho, 2013).

\textsuperscript{4} A *perspective switch* is the switching of perspective by the problem-solver (in this case, the focus group employer) from one moment of reflection based on one perspective to another moment based on another perspective (Ho, 2013).

\textsuperscript{5} The *in-built tension of pluralism* is the feeling of tension arising from the difficulties in considering and respecting fundamentally different perspectives in an intellectual exercise, e.g., a focus group exercise (Ho, 2013).

\textsuperscript{6} *Historical continuity* studies the social and cultural processes that link similar ideas, e.g., the focus group and the focused interview, over time (Merton, 1987).
Key theoretical issue 3 - Conflicting recommended focus group practices: Partly due to the influence of key issue 1 and partly owing to the myriad contextual and idiosyncratic factors involved in the focus group employment, the practice advices on the focus group method from different theorists are conflicting sometimes (Freeman, 2006) and “a wide range of notions about why focus groups work” can be found in the literature (Fern, 1982). The existence of conflicting advices with diverse justifications on focus group practices inevitably confuses users of the method.

Key theoretical issue 1 exists at the theoretical level of the focus group method while key theoretical issues 2 and 3 have more to do with methods and guidelines. As a whole, the three theoretical issues located in various inter-related elements, together with other elements and feedback loops of Figure 1, portray the dynamic and problematic intellectual landscape of the focus group field of study. Yet, another way to gauge the current status of our knowledge of the focus group method is to conduct an empirical survey on its perceptions and experience from people in the society. The next section offers an account of survey findings on this topic.

Findings from a Facebook-based survey on the perceptions and experience with the focus group method

A Facebook-based survey was conducted from August 2 to August 8, 2015 on the writer’s Facebook. At the time of the survey, there were 563 friends on the writer’s Facebook. Most of them have been the writer’s students in Hong Kong. Facebook messages were sent to them to participate in the survey as well as to forward it to their friends for participation. Ultimately, there are 158 participants to the survey. Interested readers are referred to Ho (2014b) for a discussion of the Facebook-based questionnaire survey method. It is not repeated here. The
following are the main findings from the survey (also see Appendix 1 for the basic survey statistics):

**Basic findings**

**Finding 1 (re: question 5):** Out of 157 respondents, 87 of them (55.41%) feel that they are either quite or mildly familiar with the focus group method. It indicates that the method is still not popular among the respondents. This finding is related to the element of “Actual focus group practices & outcomes” in Figure 1.

**Finding 2 (re: questions 6, 7 and 9):** 67 out of 156 respondents (42.95%) have participated in a focus group as a participant and only 30 out of 157 respondents (19.11%) have done so as a facilitator/ moderator. Also, only 26 respondents out of 157 (16.56%) have had experience in focus group research design. Direct experience with the focus group method is not very common, as indicated by these figures. Finding 2 is associated with the element of “Actual focus group practices & outcomes” in Figure 1.

**Finding 3 (re: question 8):** 104 out of 157 respondents (66.24%) feel strongly or mildly that they will be able to offer more and better ideas in a focus group meeting if other participants are similar to their profile. In general, the majority of the respondents endorse this viewpoint. This finding is related to the element of “Conflicting recommended focus group practices” in Figure 1.

**Finding 4 (re: questions 10 and 13):** 94 out of 157 respondents (59.87%) feel strongly or mildly that the focus group method is a practical research tool useful to their organizations while 88 out of 156 respondents (56.41%) feel that the focus group method is always better than the individual interview method. From these figures, it can be said that the slight majority of the respondents embrace a positive impression on the focus group as a research method. This
Joseph Kim-Keung Ho- A study of the theories and perceptions of the focus group method as a research tool

finding is associated with the element of “Actual focus group practices & outcomes” in Figure 1.

Finding 5 (re: questions 14 and 15): 112 out of 157 respondents (71.34%) feel strongly or mildly that, given a brief proper training, everybody can be a competent facilitator/moderator in a focus group. In the meantime, 77 out of 157 respondents (49.04%) do not feel that focus group data is difficult to analyze while only 12 respondents strongly feel that such data is difficult to analyze. Overall, the majority of the respondents perceive the focus group method as not challenging to employ. The difficulty of employing the focus group method appears to be under-estimated by the respondents in general. Finding 5 is associated with the element of “Conflicting recommended focus group practices” in Figure 1.

These five survey findings cover the popularity of the focus group concept (re: Finding 1), the prevalence of direct experience with the focus group method (re: Finding 2), recommended practices (re: Finding 3), the perceived practical value of the method (re: Finding 4), and the perceived ease of its employment (re: Finding 5). They provide some empirical data to evaluate the elements of “Current literature on focus group methods”, “Conflicting recommended focus group practices” and “Actual focus group practices & outcomes” in Figure 1.

Additional finding based on multiple regression analysis

By exporting the survey data to Excel, a multiple regression analysis (Lind et al., 2001) can be conducted on the data based on the following multiple regression formula:

\[
\text{Interest in learning the focus group method} (y) = a + b_1 x (x_1: \text{gender}) + b_2 x (x_2: \text{age group}) + b_3 x (x_3: \text{educational background}) + b_4 x (x_4: \text{perceived difficulty to learn the method}) + b_5 x (x_5: \text{perceived usefulness of the method}) + b_6 x (x_6: \text{perceived difficulty on data analysis})
\]
In the multiple regression formula, there is one dependent variable (y) and six independent variables x (1 to 6). They are:

- Dependent variable y (interest in learning the focus group method) comes from survey question 11.
- Independent variable x1 (gender) comes from survey question 1.
- Independent variable x2 (age group) comes from survey question 2.
- Independent variable x3 (educational background) comes from survey question 3.
- Independent variable x4 (perceived difficulty to learn the method) comes from survey question 12.
- Independent variable x5 (perceived usefulness of the method) comes from survey question 10.
- Independent variable x6 (perceived difficulty on data analysis) comes from survey question 15.

The following coding scheme is employed on the survey data set for the multiple regression analysis:

*For perception items:*

Yes, I strongly feel this way: 3
Yes, I mildly feel this way: 2
I do not feel this way: 1

*For age group:*

18 to 27: 22.5
28 to 37: 32.5
38 to 47: 42.5
48 to 57: 52.5
58 to 67: 62.5
68 or above: 72.5
For education background:
Finished Ph.D. Degree study: 4
Finished Master Degree study: 3
Finished Undergraduate Degree study: 2
Not yet a degree-holder: 1

For gender:
Female: 1
Male: 2

Finding 6: The following multiple regression formula incorporates the regression report figures from Excel (re: Appendix 2):

\[
\text{Interest in learning the focus group method (y) = 0.8208} + 0.1725 \times (x_1: \text{gender}) + 0.0005 \times (x_2: \text{age group}) + 0.0238 \times (x_3: \text{educational background}) + 0.0932 \times (x_4: \text{perceived difficulty to learn the method}) + 0.4831 \times (x_5: \text{perceived usefulness of the method}) - 0.0576 \times (x_6: \text{perceived difficulty on data analysis})
\]

Interpretation: The figures from the Excel report reveal very weak correlation between the y variable of “interest in learning the focus group method” and all the independent variables, except variable x5 (perceived usefulness of the method). In this case (re: x5), there is a positive b value of 0.483, indicating that higher “perceived usefulness of the focus group method” is correlated to higher “interest in learning the focus group method” (the y variable). As the p value, at 2.52162E-07, is much lower than 5% (the critical value for a two-tailed hypothesis test), the null hypothesis that the b value of x5 is zero can be rejected. Nevertheless, it is clear that a correlation, in this case between the y variable and the x5 variable, is not capable of establishing a cause-effect relationship between them. Failure to identify strong correlations among the y variable and the independent variables of x1, 2, 3, 4 and 6 is still a useful survey finding from the multiple regression analysis. On the whole, Finding 5
reveals some information on the elements of “specific situational factors” and “Actual focus group practices & outcomes” in Figure 1.

Overall, the Facebook-based questionnaire survey provides some empirical findings that improve our knowledge of the focus group topic, though mainly in the context of Hong Kong. Nevertheless, its external validity is limited (Ho, 2014b) and it is unable to unearth why the respondents possess such perceptions in the first place.

Concluding remarks

The existing literature on the focus group method is quite broad in application domain as well as rich in discussion on theoretical and pragmatic issues. The key issues of the topic can be further clarified via the Multi-perspective, Systems-based Research (MPSB) lenses, which is quite original in the focus group literature. While this is done very briefly with a few key MPSB concepts, e.g., a perspective switch, perspective anchoring and the in-built tension of pluralism, etc, no systematic MPSB knowledge compilation on the topic is attempted here. The Facebook-based survey on the perceptions and experience with the method largely reveals the limited extent of its popularity in Hong Kong and under-estimation of the challenges involved in its employment. All in all, the paper makes some, albeit limited, contribution to the focus group study. More theoretical review on the focus group method and learning by its practitioners remains highly valuable. In particular, the key theoretical issues in the focus group field can be further examined with similar and rich experience from the systems thinking field.
BIBLIOGRAPHY:


KwikSurveys.com. An online survey builder (url address: https://kwiksveys.com/).


APPENDIX

Appendix 1: The Facebook-based survey questions (15 questions) and responses statistics (from August 2 to 12, 2015).

<table>
<thead>
<tr>
<th>Survey questions</th>
<th>Survey statistics</th>
</tr>
</thead>
</table>
| Question 1: What is your gender?                      | Male: 70 (44.3%)  
Female: 88 (55.7%)  
Standard deviation: 9  
Responses: 158 |
| Question 2: What is your age?                         | 18 to 27: 8 (5.06%)  
28 to 37: 70 (44.3%)  
38 to 47: 65 (41.14%)  
48 to 57: 15 (9.49%)  
58 to 67: 0 (0%)  
68 or above: 0 (0%)  
Standard deviation: 29.59  
Responses: 158 |
| Question 3: What is your education background?        | Not yet a degree-holder: 26 (16.46%)  
Finished University Undergraduate Degree study: 102 (64.56%) |
### Question 4: What is the major field of study of your tertiary education?

- Finished Master Degree study: 29 (18.35%)
- Finished Ph.D. Degree study (or equivalent): 1 (0.63%)
- Standard deviation: 37.69
- Responses: 158

### Question 5: Do you feel that you are familiar with the focus group method?

- Yes, very much so: 23 (14.65%)
- Yes, I have this feeling mildly: 64 (40.76%)
- No, I am not familiar with it: 53 (33.76%)
- No idea: 17 (10.83%)
- Standard deviation: 19.75
- Responses: 157

### Question 6: Have you ever participated in a focus group session as a participant?

- Yes: 67 (42.95%)
- No: 66 (42.31%)
- Cannot remember/ not sure: 23 (14.74%)
- Standard deviation: 20.51
- Responses: 156

### Question 7: Have you ever participated in a focus group session as a facilitator/ moderator?

- Yes: 30 (19.11%)
- No: 101 (64.33%)
- Cannot remember/ not sure: 26 (16.56%)
- Standard deviation: 34.45
- Responses: 157

### Question 8: Do you feel that you will be able to offer more and better ideas if other participants are similar to your profile in a focus group meeting?

- Yes, I have this feeling strongly: 28 (17.83%)
- Yes, I have this feeling mildly: 76 (48.41%)
- No, I do not feel this way: 27 (17.2%)
- No idea: 26 (16.56%)
- Standard deviation: 21.23
- Responses: 157

### Question 9: Have you ever designed a focus group research yourself?

- Yes: 26 (16.56%)
- No: 123 (78.34%)
- Cannot remember/ no idea: 8 (5.1%)
- Standard deviation: 50.51
- Responses: 157

### Question 10: Do you feel that the focus group method is a practical research tool useful to your organization?

- Yes, I strongly feel this way: 25 (15.92%)
- Yes, I mildly feel this way: 69 (43.95%)
- No, I do not feel this way: 28 (17.83%)
- No idea/ Not applicable: 35 (22.29%)
- Standard deviation: 17.56
- Responses: 157

### Question 11: Do you feel that you are interested in learning more about the focus group method?

- Yes, I strongly feel this way: 39 (24.84%)
- Yes, I mildly feel this way: 82 (52.23%)
- No, I do not feel this way: 16 (10.19%)
- No idea/ Not applicable: 20 (12.74%)
- Standard deviation: 26.17
- Responses: 157

### Question 12: Do you feel that the focus group method is complicated and difficult to learn?

- Yes, I strongly feel this way: 9 (5.73%)
- Yes, I mildly feel this way: 39 (24.84%)
- No, I do not feel this way: 71 (45.22%)
- No idea: 38 (24.2%)
A study of the theories and perceptions of the focus group method as a research tool

<table>
<thead>
<tr>
<th>Question 13: Do you feel that the focus group method is always better than the individual interview method?</th>
<th>Standard deviation: 21.94</th>
<th>Responses: 157</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, I strongly feel this way: 25 (16.03%)</td>
<td>Yes, I strongly feel this way: 26 (16.56%)</td>
<td>Yes, I strongly feel this way: 12 (7.64%)</td>
</tr>
<tr>
<td>Yes, I mildly feel this way: 63 (40.38%)</td>
<td>Yes, I mildly feel this way: 86 (54.78%)</td>
<td>Yes, I mildly feel this way: 37 (23.57%)</td>
</tr>
<tr>
<td>No, I do not feel this way: 39 (25%)</td>
<td>No, I do not feel this way: 28 (17.83%)</td>
<td>No, I do not feel this way: 77 (49.04%)</td>
</tr>
<tr>
<td>No idea: 29 (18.59%)</td>
<td>No idea: 17 (10.83%)</td>
<td>No idea: 31 (19.75%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 14: Do you feel that, given a brief proper training, everybody can be a competent facilitator/ moderator in a focus group session?</th>
<th>Standard deviation: 14.76</th>
<th>Responses: 156</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, I strongly feel this way: 26 (16.56%)</td>
<td>Yes, I strongly feel this way: 25 (16.03%)</td>
<td>Yes, I strongly feel this way: 12 (7.64%)</td>
</tr>
<tr>
<td>Yes, I mildly feel this way: 86 (54.78%)</td>
<td>Yes, I mildly feel this way: 63 (40.38%)</td>
<td>Yes, I mildly feel this way: 37 (23.57%)</td>
</tr>
<tr>
<td>No, I do not feel this way: 28 (17.83%)</td>
<td>No, I do not feel this way: 39 (25%)</td>
<td>No, I do not feel this way: 77 (49.04%)</td>
</tr>
<tr>
<td>No idea: 17 (10.83%)</td>
<td>No idea: 29 (18.59%)</td>
<td>No idea: 31 (19.75%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 15: Do you feel that data collected from the focus group method is difficult to analyze?</th>
<th>Standard deviation: 23.67</th>
<th>Responses: 157</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, I strongly feel this way: 12 (7.64%)</td>
<td>Yes, I strongly feel this way: 10 (6.41%)</td>
<td>Yes, I strongly feel this way: 0 (0.00%)</td>
</tr>
<tr>
<td>Yes, I mildly feel this way: 37 (23.57%)</td>
<td>Yes, I mildly feel this way: 35 (22.35%)</td>
<td>Yes, I mildly feel this way: 26 (16.56%)</td>
</tr>
<tr>
<td>No, I do not feel this way: 77 (49.04%)</td>
<td>No, I do not feel this way: 75 (48.31%)</td>
<td>No, I do not feel this way: 68 (43.57%)</td>
</tr>
<tr>
<td>No idea: 31 (19.75%)</td>
<td>No idea: 29 (18.59%)</td>
<td>No idea: 30 (19.18%)</td>
</tr>
</tbody>
</table>

Appendix 2: Multiple regression report from Excel for the Multiple Regression Formula.

**SUMMARY OUTPUT**

**Regression Statistics**

| Multiple R | 0.517558434 |
| R Square | 0.267866733 |
| Adjusted R Square | 0.220632329 |
| Standard Error | 0.561927035 |
| Observations | 100 |

**ANOVA**

<table>
<thead>
<tr>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>6</td>
<td>10.74413467</td>
<td>1.7906891</td>
</tr>
<tr>
<td>Residual</td>
<td>93</td>
<td>29.36586533</td>
<td>0.315762</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>40.11</td>
<td></td>
</tr>
</tbody>
</table>

**Coefficients**

| Intercept | 0.820751675 | 0.463054154 | 1.7724745 | 0.07959041 |
| Gender | 0.172463216 | 0.115878378 | 1.4883123 | 0.14005168 |
| Age group | 0.023793701 | 0.008270762 | 0.0566671 | 0.954931923 |
| Education background | 0.023793701 | 0.102380479 | 0.2324047 | 0.816734938 |
| Perceived difficulty to learn the method | 0.093248946 | 0.101735729 | 0.9165801 | 0.36173345 |
| Perceived usefulness of the method | 0.483090054 | 0.086820309 | 5.5642517 | 2.52162E-07 |
| Perceived difficulty on data analysis | -0.057572648 | 0.095255277 | -0.6044038 | 0.547046945 |