DOI 10.18551/rjoas.2019-01.53

ANALYSIS OF THE CAUSATIVE FACTORS OF DELAY IN PROJECT COMPLETION OF THE VETERAN BUILDING THROUGH APPLICATION OF REGRESSION MODEL

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ABSTRACT

This research aims to: find out the causative factors of delay in project completion and the rank based on the perception of service providers on the causative factors of delay in project completion. It is expected that this research will be useful for service providers in East Kalimantan and those directly related to project management. Thus, the delay in the project completion under the auspices of the Public Works Agency can be anticipated in the future and the project can be completed in accordance with the timetable (on time). This research is survey research that collects the samples from a population by using interviews and questionnaires as a data collection instrument which is then distributed to respondents who hold positions as project and field managers of 30 (thirty) respondents in the East Kalimantan Province. The SPSS program is used to calculate interest indexes in order to analyze the rank of causative factors of these interests. Based on the research findings, the quite important causative factors of delay in project completion under the auspices of the Public Works Agency in East Kalimantan Province, have a rank sequence (rank) as follows: (1) lack of labor, (2) errors in planning and specifications, (3) bad weather (heavy rain/ flooded locations), (4) non-optimal productivity by the contractors, (5) material management errors, and (6) changes in scope of work by consultants.

KEY WORDS

Rank, causative factors, delay, project completion.

It is a common thing that the implementation of the project experiences unwanted and unknown delays. The delay is very detrimental to the concerned parties including the contractor and project owner it. Presidential Decree No. 61 of 2004 stated that fines (financial sanctions) will be imposed on service providers if they cannot carry out the project according to the time stated in the contract. Project delays can come from service providers, service users, or other parties that have an impact on additional time and costs beyond the initial plan (Fugar & Agyakwah-Baah, 2010). If the delay comes from the contractor (service provider), the contractor will be fined. Likewise, if the delay comes from the service user, the service user will pay the loss borne by the service provider. The amount of fine is stipulated in the contract in accordance with the applicable law. There is a lot of research that has been conducted to find out the causative factors of delay in project completion.

According to Chalibi & Camp (1984), in their research entitled Causes of Delay and Overruns of Construction Projects in Developing Countries, the causes of delay in construction projects in developing countries were during project planning and construction stages. The research was carried out when the construction project workers generally carried out their jobs. It can be concluded that careful planning throughout the initial stages of a construction project is very important to minimize delay and cost in construction projects in developing countries. Assaf et. al. (1995), in their research entitled Causes of Delay in Large Building Construction Project, stated that the causes of delay could be seen from the aspects of material, labor, equipment, costs, design changes, relations with relevant agencies, scheduling and control, slow monitoring and testing procedures used in projects, the environment, contract issues, and the absence of professional manager consultants. The conditions in the East Kalimantan Provincial Government are not much different in which

there are always delays in construction projects every year. The following is the example of projects experience delay.

METHODS OF RESEARCH

This research is survey research that collects the samples from a population and uses questionnaires as a data collection instrument (Singaribun, 1995). A variety of research strategies include opinion research that seeks the opinions or views of people who are experienced and very instrumental in implementing construction projects. The data collection is carried out by collecting primary data. It is done by making direct contact with the respondent by giving a number of questions in the form of a questionnaire provided by the researcher.

The research sampling technique is intended to provide equal opportunities for each member of the population to become a member of the sample. The research sampling technique uses probability sampling which will collect 30 samples.

This analysis aims to simplify data into a form that is easier to read and interpret. This process often involves statistics because one function of statistics is to simplify data. The analytical methods that will be used include: determining the score on the questionnaire statements and determining the rank in the respondent's answers.

The Chi-Square test is used to determine whether or not there are differences in respondents' perceptions on the causative factors of delay in building construction projects caused by material factor. The Chi-Square test is a non-parametric statistical method that is used to test whether there is a correlation between two or more variables which are ordinal scale. The alternative hypothesis (H1) is also stated to test the null hypothesis (H0) as follows:

H0: Factors of differences in respondents' positions, respondents' experiences, project values, project types, and building floor area do not cause differences in respondent's perceptions on the causative factors of delay in the project completion under the auspices of the Public Works Agency.

H1: Factors of differences in respondents' positions, respondents' experiences, project values, project types, and building floor area cause differences in respondent's perceptions on the causative factors of delay in the project completion under the auspices of the Public Works Agency.

Furthermore, the basis for decision making is done by comparing Chi-Square calculate and Chi-Square table. If Chi-Square calculate < Chi-Square table, then H0 is accepted. It can also be based on the probability stated by the Asymp. Sig/ Asymptotic Significance. If the probability is > 0.05, then H0 is accepted, if the probability is < 0.05, then H0 is rejected. Considering that there are a lot of data that will be processed, to speed up data the processing, the author uses the help from a computer program of SPSS for Windows.

RESULTS OF STUDY

This section determines what items greatly affect the causative factors of delay in project completion.

Based on table 1, after sorting them from rank 1 to 6, the 6 (six) these items include: (1) lack of labor, (2) errors in planning and specifications, (3) bad weather (heavy rain/ flooded locations, (4) non-optimal productivity by the contractors, (5) material management errors, and (6) changes in scope of work by consultants. It has an interval value between 1.50 - 3.00 with sequential ranks. Furthermore, these results are distributed back to the respondents to get an assessment. After filling out the questionnaire, respondents' answers were collected and presented in table 2.

Based on Table 2 for more details, the rank of causative factors of delay in project completion from the results questionnaire round 2 multiplied by weight then analyzed and presented as follows:

Rank 1: Lack of Labor. This item is considered very influential by respondents due to the lack of labor/ workers who have the expertise and experience in completing work in the field. General work, for example; excavation of the land and installing the bottom foundation, do not experience significant difficulties. However, jobs involving engineering capabilities have few certified experts (Mahamid, 2013).

Table 1 – Rank of Causative Factors of Delay in Project Completion

No	Causative Factors of Delay	Mean	Rank
1	Late payment by owner	1.40	21
2	Poor stage implementation	2.00	11
3	Material management errors	2.27	5
4	Lack of labor	2.57	1
5	Bad weather (heavy rain/ flooded location)	2.30	4
6	Land condition	1.63	14
7	Extra work	1.43	19
8	Job changes (structure, ME, plumbing)	1.97	12
9	Errors in planning and specifications	2.47	2
10	Uncertainty in planning and specifications	2.03	10
11	Changes in planning and specifications	2.23	7
12	Errors in interpreting images/ specifications	2.10	9
13	Changes in work methods by contractors	1.27	22
14	Improper schedule planning by contractors / partners	1.63	15
15	Non-optimal productivity by the contractors	2.30	3
16	Changes in scope of work by consultants	2.27	6
17	Strike	2.20	8
18	Work repair	1.47	18
19	Repair of damage caused by strike	1.80	13
20	Delay in shop drawing approval	1.53	17
21	Schedule clash with Ramadan and Eid	1.63	16
22	Project implementation at the beginning of the year	1.43	20

Table 2 – The Rank of Causative Factors of Delay in Project Completion After Multiplied by Weight / Number of Corrections

No	Causative Factors of Delay	Pure Mean (a)	Corrected Mean Weight (b)% (a x b)	Rank
1	Lack of labor	2.6	25% 0.65	1
2	Errors in planning and specifications	2.5	22% 0.56	2
3	Bad weather (heavy rain/ flooded location)	2.4	19% 0.43	3
4	Non-optimal productivity by the contractors	2.3	15% 0.35	4
5	Material management errors	2.2	10% 0.22	5
6	Changes in scope of work by consultants	2.1	9% 0.19	6

Rank 2: Errors in Planning and Specifications. This item is considered very influential when the consultant is conducting the planning. Basically, in the field implementation, it is possible that some materials are difficult to find in the market and must be bought from other regions; for instance, the Italian marble in which the item must be bespoke (Leveson, 2000).

Rank 3: Bad Weather (Heavy Rain/ Flooded Location). This item is considered very influential because in its main implementation: initial/ land and foundation work are outdoor work. The implementation is greatly affected by good weather conditions (Dey & Ogunlana, 2004).

Rank 4: Non-Optimal Productivity by the Contractors. This item is considered very influential because according to observations in the field productivity is good if it is able to achieve the desired progress. However, maximum productivity is usually not achieved in the initial weeks of the project (Hashimoto, M., & Yu, 1980).

Rank 5: Material Management Errors. This item is considered very influential by the respondents because material management errors will have a direct impact on the chaos of construction operations. Based on the results of observations in the field of material control in the form of a schedule for each type of work is very necessary. By having a schedule, time control will be arranged so as not to cause material delays. Material procurement must take into account when the execution of the work item begins. Therefore, making a material procurement schedule must be based on the work schedule (Kerzner & Kerzner, 2017).

Rank 6: Changes in Scope of Work by Consultants. This item is considered important and influential by the respondent because the changes in scope of work by consultants are closely related. The results of the Chi-Square calculation above are then compared with the results of the Chi Square calculation using the SPSS computer program for item 1 presented in Table 3 below.

Table 3 – Chi Square Test from SPSS Calculation Results on Differences in Respondent Perceptions of Item 1 Based on Respondent's Position

n/n	Value	df	Asymp. Sig
Pearson Chi-Square	1.4834	3	0.816
Total	30		

Based on calculations using the Chi Square (X^2) formula, the results are the same as using the SPSS computer program. The conclusions for this case are:

H0 = There is no difference in respondent perception based on the respondent's position in assessing this case.

H1 = There is difference in respondent perception based on the respondent's position in assessing this case.

Table 4 – Respondent Perceptions on Causative Factors of Delay in Project Completion Based on Respondent's Position

No	Causative Factors of Delay in Project Completion	Asymp. Sig
1	Late payment by owner	0.816
2	Poor stage implementation	0.409
3	Material management errors	0.627
4	Lack of labor	0.802
5	Bad weather (heavy rain/ flooded location)	0.061
6	Land condition	0.747
7	Extra work	0.275
8	Job changes (structure, ME, plumbing)	0.131
9	Errors in planning and specifications	0.027
10	Uncertainty in planning and specifications	0.886
11	Changes in planning and specifications	0.418
12	Errors in interpreting images/ specifications	0.883
13	Changes in work methods by contractors	0.599
14	Improper schedule planning by contractors / partners	0.364
15	Non-optimal productivity by the contractors	0.114
16	Changes in scope of work by consultants	0.553
17	Strike	0.623
18	Work repair	0.513
19	Repair of damage caused by strike	0.578
20	Delay in shop drawing approval	0.696
21	Schedule clash with Ramadan and Eid	0.774
22	Project implementation at the beginning of the year	0.269

Table 4 explains the respondent perceptions on the causative factors of delay in project completion based on the respondent's position. Knowing whether or not there are differences in perceptions is carried out by looking at Asymp. Sig. If the Asymp. Sig of each item is greater than 0.050, there is no difference in perception based on respondent's position. Table 4 shows that all Asymp. Sig values are greater than 0.05. It means that there is no difference in respondent perceptions of in assessing the causative factors of delay in project completion based on respondent's position except item 9. Errors in the planning and specifications have the Asymp. Sig value = $0.027 < 0.05$. It means that there are differences in respondent perceptions in which there are 21 items of H0 are accepted and 1 item of H0 is rejected or H1 is accepted.

Table 5 explains the respondent perceptions on the causative factors of delay in project completion based on the respondent's experience. Knowing whether or not there are differences in perceptions is carried out by looking at Asymp. Sig. If the Asymp. Sig of each item is smaller than 0.050, there is difference in perception based on respondent's

experience. Table 5 shows that most of Asymp. Sig values are greater than 0.05. It means that there are similar respondent perceptions based on respondent's experience except item 6 and item 17. Land condition has the Asymp. Sig value of 0.031 and strike has the Asymp. Sig value of 0.023. Both of these items are smaller than 0.05, which means that there are differences in respondent perceptions based on the respondent's experience in which there are 20 items of H0 are accepted and 1 item of H0 is rejected or H1 is accepted.

Table 5 – Respondent Perceptions on Causative Factors of Delay in Project Completion Based on Respondent's Experience

No	Causative Factors of Delay in Project Completion	Asymp. Sig
1	Late payment by owner	0.339
2	Poor stage implementation	0.081
3	Material management errors	0.169
4	Lack of labor	0.088
5	Bad weather (heavy rain/ flooded location)	0.721
6	Land condition	0.031
7	Extra work	0.691
8	Job changes (structure, ME, plumbing)	0.089
9	Errors in planning and specifications	0.704
10	Uncertainty in planning and specifications	0.659
11	Changes in planning and specifications	0.339
12	Errors in interpreting images/ specifications	0.490
13	Changes in work methods by contractors	0.384
14	Improper schedule planning by contractors / partners	0.580
15	Non-optimal productivity by the contractors	0.217
16	Changes in scope of work by consultants	0.153
17	Strike	0.023
18	Work repair	0.218
19	Repair of damage caused by strike	0.093
20	Delay in shop drawing approval	0.229
21	Schedule clash with Ramadan and Eid	0.789
22	Project implementation at the beginning of the year	0.527

Table 6 – Respondent Perceptions on Causative Factors of Delay in Project Completion Based on Project Values

No	Causative Factors of Delay in Project Completion	Asymp. Sig
1	Late payment by owner	0.424
2	Poor stage implementation	0.907
3	Material management errors	0.590
4	Lack of labor	0.942
5	Bad weather (heavy rain/ flooded location)	0.825
6	Land condition	0.166
7	Extra work	0.525
8	Job changes (structure, ME, plumbing)	0.880
9	Errors in planning and specifications	0.517
10	Uncertainty in planning and specifications	0.795
11	Changes in planning and specifications	0.645
12	Errors in interpreting images/ specifications	0.422
13	Changes in work methods by contractors	0.132
14	Improper schedule planning by contractors / partners	0.883
15	Non-optimal productivity by the contractors	0.100
16	Changes in scope of work by consultants	0.928
17	Strike	0.684
18	Work repair	0.284
19	Repair of damage caused by strike	0.025
20	Delay in shop drawing approval	0.060
21	Schedule clash with Ramadan and Eid	0.683
22	Project implementation at the beginning of the year	0.628

Table 6 explains the respondent perceptions on the causative factors of delay in project completion based on the project values. Knowing whether or not there are differences in perceptions is carried out by looking at Asymp. Sig. If the Asymp. Sig of each item is smaller than 0.050, there is difference in perception based on project values. Table 6 shows that all Asymp. Sig values are greater than 0.05. It means that there are similar respondent

perceptions in assessing causative factors of delay in project completion except item 19. Repair of damage caused by strike has the Asymp. Sig value of 0.031. It means that there are differences in respondent perceptions based on the project values in which there are 21 items of H0 are accepted and 1 item of H0 is rejected or H1 is accepted.

Table 7 – Respondent Perceptions on Causative Factors of Delay in Project Completion Based on Project Types

No	Causative Factors of Delay in Project Completion	Asymp. Sig
1	Late payment by owner	0.410
2	Poor stage implementation	0.198
3	Material management errors	0.000
4	Lack of labor	0.009
5	Bad weather (heavy rain/ flooded location)	0.628
6	Land condition	0.046
7	Extra work	0.155
8	Job changes (structure, ME, plumbing)	0.311
9	Errors in planning and specifications	0.819
10	Uncertainty in planning and specifications	0.520
11	Changes in planning and specifications	0.280
12	Errors in interpreting images/ specifications	0.120
13	Changes in work methods by contractors	0.003
14	Improper schedule planning by contractors / partners	0.292
15	Non-optimal productivity by the contractors	0.517
16	Changes in scope of work by consultants	0.952
17	Strike	0.304
18	Work repair	0.194
19	Repair of damage caused by strike	0.470
20	Delay in shop drawing approval	0.515
21	Schedule clash with Ramadan and Eid	0.767
22	Project implementation at the beginning of the year	0.286

Table 7 explains the respondent perceptions on the causative factors of delay in project completion based on the project types. Knowing whether or not there are differences in perceptions is carried out by looking at Asymp. Sig. If the Asymp. Sig of each item is smaller than 0.050, there is difference in perception based on project types. Table 7 shows that all Asymp. Sig values are greater than 0.05. It means that there are similar respondent perceptions in assessing causative factors of delay in project completion except item 3, 4, 6, and 13. Material management errors have the Asymp. Sig value of 0.000, lack of labor has the Asymp. Sig value of 0.009, land condition has the Asymp. Sig value of 0.046, and changes in work methods by contractors has the Asymp. Sig value of 0.003. The four items are smaller than 0.05, which means that there are differences in respondent perceptions based on the project types in which there are 18 items of H0 are accepted and 4 items of H0 is rejected or H1 is accepted.

Table 8 explains the respondent perceptions on the causative factors of delay in project completion based on the building floor area. Knowing whether or not there are differences in perceptions is carried out by looking at Asymp. Sig. If the Asymp. Sig of each item is smaller than 0.050, there is difference in perception based on building floor area. Table 8 shows that all Asymp. Sig values are greater than 0.05. It means that there are similar respondent perceptions in assessing causative factors of delay in project completion based on building floor area.

Table 9 explains the respondent perceptions on the causative factors of delay in project completion based on yes or no questions. Knowing whether or not there are differences in perceptions is carried out by looking at Asymp. Sig. If the Asymp. Sig of each item is smaller than 0.050, there is difference in perception based on yes or no questions. Table 9 shows that all Asymp. Sig values are greater than 0.05. It means that there are similar respondent perceptions in assessing causative factors of delay in project completion based on yes or no questions.

Tables 4-9 show that based on the respondent's position, respondent's experience, project values, project types, building floor area, and yes or no questions on the causative

factors of delay in project completion, the significance level values greater than (> 0.05). In other words, based on the facts in the field, generally the respondents accept the H_0 . It means that there are similar respondent perceptions in assessing the level of importance on the causative factors of delay in project completion.

Table 8 – Respondent Perceptions on Causative Factors of Delay in Project Completion Based on Building Floor Area

No	Causative Factors of Delay in Project Completion	Asymp. Sig
1	Late payment by owner	0.069
2	Poor stage implementation	0.102
3	Material management errors	0.876
4	Lack of labor	0.662
5	Bad weather (heavy rain/ flooded location)	0.530
6	Land condition	0.713
7	Extra work	0.577
8	Job changes (structure, ME, plumbing)	0.091
9	Errors in planning and specifications	0.296
10	Uncertainty in planning and specifications	0.285
11	Changes in planning and specifications	0.712
12	Errors in interpreting images/ specifications	0.715
13	Changes in work methods by contractors	0.088
14	Improper schedule planning by contractors / partners	0.130
15	Non-optimal productivity by the contractors	0.649
16	Changes in scope of work by consultants	0.832
17	Strike	0.618
18	Work repair	0.186
19	Repair of damage caused by strike	0.136
20	Delay in shop drawing approval	0.066
21	Schedule clash with Ramadan and Eid	0.095
22	Project implementation at the beginning of the year	0.133

Table 9 – Respondent Perceptions on Causative Factors of Delay in Project Completion Based on Yes or No Questions

No	Causative Factors of Delay in Project Completion	Asymp. Sig
1	Late payment by owner	0.513
2	Poor stage implementation	0.471
3	Material management errors	0.866
4	Lack of labor	0.427
5	Bad weather (heavy rain/ flooded location)	0.073
6	Land condition	0.162
7	Extra work	0.336
8	Job changes (structure, ME, plumbing)	0.522
9	Errors in planning and specifications	0.214
10	Uncertainty in planning and specifications	0.524
11	Changes in planning and specifications	0.063
12	Errors in interpreting images/ specifications	0.330
13	Changes in work methods by contractors	0.123
14	Improper schedule planning by contractors / partners	0.886
15	Non-optimal productivity by the contractors	0.352
16	Changes in scope of work by consultants	0.698
17	Strike	0.244
18	Work repair	0.746
19	Repair of damage caused by strike	0.962
20	Delay in shop drawing approval	0.800
21	Schedule clash with Ramadan and Eid	0.512
22	Project implementation at the beginning of the year	0.252

Table 10 – Categories that Have Significant and Insignificant Items

Categories	Total of Items	Total of Significant Items (Sig. > 0.05)	Total of Insignificant Items (Sig. < 0.05)
Position	22	21	1
Experience	22	20	2
Project Values	22	21	1
Project Types	22	18	4
Floor Area	22	22	-
Yes/No Questions	22	22	-

Based on Table 10 above, it is concluded that the floor area and yes/ no question categories indicated that 22 items of the causative factors of delay in project completion have the same respondent perception or H_0 is accepted. Meanwhile, the respondent's position category shows that 21 items of H_0 are accepted and 1 item of H_0 is rejected, the respondent's experience shows that 20 items of H_0 are accepted and 2 items of H_0 are rejected. The project value indicates that 21 items of H_0 are accepted and 1 item of H_0 is rejected. In addition, the project types show that 18 items of H_0 are accepted and 4 items of H_0 are rejected. They each have 1 item, 2 items, 1 item and 4 items with Asymp. Sig <0.05, which means that there are no similar respondent perceptions. However, the results in Table 10 above can generally be considered significant.

CONCLUSION

The causative factors of delay in project completion under the auspices of the Public Works Agency in East Kalimantan Province resulted 6 ranks as follows:

Lack of labor and inaccurate time schedule planning obtained the r-calculate value greater than r table for alignment 5% and 1% ($0.498 > 0.463 > 0.361$). Thus, it can be concluded that there is a positive and significant correlation of 0.498 with a coefficient of determination $r^2 = 0.498^2 = 0.248$. It means that the 24.80% of schedule planning average value is determined by lack of labor value through the regression equation $Y = 0.899 + 0.283 X$. The remaining 75.20% is determined by other factors.

Errors in planning and inaccurate time schedule planning obtained the r-calculate value greater than r table for alignment 5% and 1% ($0.487 > 0.463 > 0.361$). Thus, it can be concluded that there is a positive and significant correlation of 0.487 with a coefficient of determination $r^2 = 0.487^2 = 0.237$. It means that the 23.70% of schedule planning average value is determined by 'errors in planning and specifications' value through the regression equation $Y = 1.663 + 0.029 X$. The remaining 76.30% is determined by other factors.

Bad weather (heavy rain/ flooded location) and inaccurate time schedule planning obtained the r-calculate value greater than r table for alignment 5% and 1% ($0.474 > 0.463 > 0.361$). Thus, it can be concluded that there is a positive and significant correlation of 0.472 with a coefficient of determination $r^2 = 0.472^2 = 0.225$. It means that the 23.70% of schedule planning average value is determined by 'bad weather (heavy rain/ flooded location)' value through the regression equation $Y = 2.058 + 0.003 X$. The remaining 77.50% is determined by other factors.

Non-optimal productivity by the contractors and inaccurate time schedule planning obtained the r-calculate value greater than r table for alignment 5% and 1% ($0.474 > 0.463 > 0.361$). Thus, it can be concluded that there is a positive and significant correlation of 0.472 with a coefficient of determination $r^2 = 0.472^2 = 0.223$. It means that the 22.30% of schedule planning average value is determined by 'non-optimal productivity by the contractors' value through the regression equation $Y = 1.607 + 0.012 X$. The remaining 77.50% is determined by other factors.

Material management errors and inaccurate time schedule planning obtained the r-calculate value greater than r table for alignment 5% and 1% ($0.478 > 0.463 > 0.361$). Thus, it can be concluded that there is a positive and significant correlation of 0.472 with a coefficient of determination $r^2 = 0.478^2 = 0.229$. It means that the 22.90% of schedule planning average value is determined by 'material management errors' value through the regression equation $Y = 1.943 + 0.042 X$. The remaining 77.10% is determined by other factors.

Changes in scope of work by consultants and inaccurate time schedule planning obtained the r-calculate value greater than r table for alignment 5% and 1% ($0.467 > 0.463 > 0.361$). Thus, it can be concluded that there is a positive and significant correlation of 0.467 with a coefficient of determination $r^2 = 0.467^2 = 0.218$. It means that the 21.80% of schedule planning average value is determined by 'changes in scope of work by consultants' value through the regression equation $Y = 1.699 + 0.012 X$. The remaining 78.20% is determined by other factors.

The test of the six variables as a whole obtained F-calculate value of 3.34 which is greater than F-table ($3.34 > 3.54 > 2.45$). The conclusion is F-calculate $>$ F-table which means that the multiple correlation coefficient is significant with the determination coefficient (R^2) = 0.531. Thus, the overall schedule planning value of 53.10% is determined by the six variables and the remaining 46.90% is determined by other factors.

Based on the SPSS test, Chi Square test and regression test above, it obtained the same conclusion for the six variables in which the respondent has the same perception or has the same significance as the result of the calculation (F-calculate) is greater than the table (F-table). Meanwhile, in the above example ($df = 3$), df is the degree of freedom obtained by the equation: $df = (k - 1) (m - 1)$ in which k is the number of categories and m is the number of groups. So, $df = (4 - 1) (2 - 1) = 3$.

If the confidence level is 95% or $\alpha = 0.050 = 5\%$, Chi Square table = 7.815 and Chi Square calculate $1.4834 <$ Chi Square table = 7.815. Thus, H_0 is accepted or the Asymp. Sig value is $0.816 > 0.050$ which means that H_0 is accepted and H_1 is rejected. It is concluded that there are similar respondent perceptions in assessing the importance of the causative factors of delay in project completion.

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