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INVESTIGATION PROBLEMS OF DOCUMENTATION, UPDATING INFORMATION AND FOLLOWING UP CONSTRUCTION PROJECT IN IRAQ

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Abstract: The type of works in construction companies and projects imposes dealing with large and complicated amount of documentation and information due to the multi processes and stakeholders involved in construction companies and projects. The processes of documentation, exchanging information, and updating these documentation and information became management challenges. This study aims to investigate the existence of the problems which related with documentation, updating information and following up construction project in Iraq. These problems could be summarized with the following shortcuts: Exchanging information, Updating Documents, Profitability and productivity, Working Efficiency, Competitiveness Requirements, keeping Up to date with Changes, Information Access, Recording Delay and Resources Allocation. Based on the related previous studies, the researcher detected the research questions to build the questionnaire form. Five scales of answer options have been adopted in the questionnaire form. The research population of this study is the team parties involved in the construction works of the companies and projects. 150 questionnaire forms have been distributed, but only 80 forms are collected. Accordingly, the responding rate is about 53%. The findings of this study revealed that the problems which related with Exchanging Information, Updating Documents, Profitability and productivity, and Working Efficiency exist, but a company sometimes faces it. The problem of Competitiveness Requirements exists and a company always suffers from it. The problems of keeping Up to date with Changes, Information Access, Recording Delay and Resources Allocation exist and most of the companies sometimes safer from it, so, however, these problems are existing. In a brief conclusion, the problems of documentation, updating information and following up construction project in Iraq exist but not so big because most of companies and projects are not big enough.

Keywords: *Documentation, Information, Construction Project, Problems of Construction Project.*

تحري مشاكل التوثيق، تحديث المعلومات و متابعة المشروع الانشائي في العراق

الخلاصة: نوع الاعمال في شركات البناء والمشاريع تتطلب التعامل مع كمية كبيرة ومعقدة من الوثائق والمعلومات بسبب العمليات المتعددة و الاطراف المتعددين المتضمنين في شركات البناء والمشاريع. عمليات التوثيق، تبادل المعلومات و تحديث البيانات والمعلومات اصبحت من التحديات الادارية. هذه الدراسة تهدف الى تحري وجود المشاكل التي تتعلق بانشاء المستندات، تحديث المعلومات و متابعة المشروع الانشائي في العراق. هذه المشاكل ممكن تلخيصها ما يلي: تبادل المعلومات، تحديث الوثائق والبيانات، الربحية والانتاجية، كفاءة العمل، المتطلبات التنافسية، متابعة التغيرات اول باول، الوصول الى المعلومات، تسجيل التاخير و تخصيص موارد المشروع. منهجية البحث لهذه الدراسة تتكون من جزئين، المراجعة الادبية والاستبيان، استنادا الى الدراسات السابقة ذات الصلة بموضوع الدراسة، حصل الباحث على اسئلة البحث لبناء استمارة الاستبيان. خمس خيارات للاجابة تم اعتمادها في استمارة الاستبيان. مجتمع البحث لهذه الدراسة هم اعضاء فريق العمل في الاعمال الانشائية في الشركات والمشاريع. 150 استمارة استبيان تم توزيعها و تم جمع 80 استمارة فقط ، أي معدل نسبة الاجابة كانت حوالي 53%. أظهرت نتائج هذه الدراسة بانه في بعض الاحيان توجد المشاكل المتعلقة بتبادل المعلومات، تحديث الوثائق والبيانات، الربحية والانتاجية و كفاءة العمل. مشكلة الحاجة الى المتطلبات التنافسية موجودة دائماً. اما المشاكل المرتبطة بمتابعة

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التغيرات اول باول، الوصول الى المعلومات' تسجيل التاخير و تخصيص موارد المشروع فان اغلب الشركات تواجهها احياناً، في حين البعض الاخر من الشركات تواجهها غالباً او دائماً فهي مشاكل موجودة على اية حال. باختصار،نستنتج ان المشاكل المتعلقة بالتوثيق، تحديث المعلومات، ومتابعة المشاريع الانشائية في العراق موجودة ولكن ليست كبيرة جداً بسبب كون اغلب الشركات والمشاريع ليست كبيرة.

1. Introduction

The type of work in construction companies and projects imposes dealing with large and complicated amount of documentation and information due to the multi processes and multi parties involved in construction companies and projects [1]. The processes of documentation, exchanging information, and updating these documentation and information become management challenges [2]. Construction management under the pressure of a number of new challenges to construction industry and some are centuries old and should be addressed and managed by construction manager to ensure success to a project [3].

A number of problems in construction work are stand out when lunching multiple overseas construction projects, or when one project being constructed by more than one construction company [2]. One of the problems grown up among construction companies presented in the competitiveness criterion which became a global interested issue [4,5]. The current research conducted in Iraq which is one of the growing countries where there is a need for a number of planed housing and industrial construction projects being implanted currently. Most of these projects are huge and complicated required management role to handle the large amount of data and information being generated and exchanged.

This study investigates the problems related with the processes of documentation, updating information and following up construction project in Iraq observed by the parties involved in a number of construction companies. A number of previous research studies conducted in developed and industrial countries to investigate and discuss these problems such as [6,2,8]. However, the researcher didn't find any of the previous studies conducted in developing countries where they are not depending on computer based completely. The current study will discuss and compare the results and findings with the findings of the previous study to obtain the conclusions.

2. Documentation and Information Problems

Based on the literature review of the related previous studies, such as Nkomo and Thwala, (2009), the researcher highlighted and adopted a number of problems which related to documentation and information issues in construction companies and projects. These problems are in the following areas: -

1. Exchanging information.
2. Project records update.
3. Profitability and productivity.
4. Work flow effectiveness.
5. Industries innovation.
6. Flowing up project changes.

7. Access information resources.
8. Registering activity delay.
9. Project resources allocation.

3. Questionnaire Design

The quantitative method, which presenting in questionnaire survey, considered as a best methodology in research works because it covers a wide range of research population [10]. The questionnaire consists of closed-ended questions by asking the respondents to choose one among a set of alternatives given as options of answers. Based on the related previous studies such as [6,2,7,8], the researcher highlighted the research questions to build the questionnaire survey. The latest study [8] which conducted in Malaysia identified the research questions which will being slightly modified and adopted in the current study. However, one dimension only involved in the questionnaire form of the current study consists of nine items in addition to four demography questions.

These items contained questions to investigate the existence and severity of the problems in the contexts of construction companies and projects in Iraq**.** The research questions are the following: -

1. Is there a problem of difficult and slow exchanging companies and projects?
2. Is there a problem of difficult and slow in updating data and records of companies and projects?
3. Does the construction industry suffer from poor productivity and profitability?
4. Do the construction companies have problems with effectiveness and efficiency of their work flows?
5. Is there a need for a technology development and innovation to satisfy competitiveness requirements?
6. Is it difficult to keep the project team up to date with the changes in the design and project tasks?
7. Is it difficult to give company employers access to internal and external information sources?
8. Is there a time delay after activities were actually performed until registered in the management?
9. Is it difficult to ensure that project resources of time, materials, equipment and manpower were fairly allocated to construction projects being performed by the company?

five scale have been adopted for the answers as I don't know, Never, Sometimes, Almost, and Always where 0= I don't know and 4=always, accordingly. For these designations, "I do not know" refers to an undefined answer, "never" means a problem is not existing; while "sometimes" means a problem is existing but the company sometimes faces it. "always" means that a problem exists and the company always safer from it.

After preparing the preliminary questionnaire form, a pilot study has been conducted with 10 experts and professionals from the field to test whether the questions are clear

understandable then a little modification has been made and the final questionnaire form became ready to be distributed.

4. Questionnaire Distribution And Data Collection

The scope of this study limited to the parties involved in the construction works of the companies and projects. These parties are CEO, Engineer, Managing Director, Project Manager, Financial Director, IT Manager and IT User. The survey covered a number of construction companies and projects in Iraq specialized in different types of projects such as Housing, General & Commercial Buildings, Roads & Bridges, Dams, Industrial Building, and Others. 150 questionnaire forms have been distributed. Within six months, the incomplete questionnaire form and the answers of "I don't know" have been ignored, so that only 80 collected completed and usable data. However, the responding rate is about 53% which represents more than half of the respondents.

5. Data Analysis, Findings and Discussion

SPSS software was used to analyze the collected data. The analysis process was based mainly on the means and frequencies. For the respondents' demography, more than half of the respondents (53 respondents, 66%) are engineers. However, they are the most dealers connected with these problems, as explained in table 1. More than half of the respondents (52 respondents, 65%) are Bacholar and 20% of the respondents (16 respondents) are master. However, 85% (Bacholar and master holders) are the most respondents who are active in working in projects, as explained in table 2. More than half of the respondents (51 respondents, 64%) have 5 years' experience and more, however they are the most dependable in work, as explained in table 3. 46 respondents (57%) are working in Housing, General and Commercial Buildings which are, currently, the most construction projects being implemented in Iraq currently, as explained in table 4.

Table 1: Respondents Position

	Respondent Position	Frequency	Percent
Valid	Other	1	1.2
	IT User	6	7.5
	Engineer	53	66.2
	Financial Director	1	1.2
	Managing Director	6	7.5
	IT Manager	4	5.0
	Project Manager	6	7.5
	CEO	3	3.8
	Total	80	100.0

Table 2: Respondents Education

	Respondent Education	*Frequency*	*Percent*
Valid	Diploma	6	7.5
	Bacholar	52	65.0
	Master	16	20.0
	PhD	6	7.5
	Total	80	100.0

Table 3: Respondents' Experience

	Respondent Experience	Frequency	Percent
Valid	<5	36.2	29
	5 -10	43.8	35
	>10	20.0	16
	Total	100.0	80

Table 4: Projects Types

	Projects Types	Frequency	Percent
Valid	Housing	17	21.2
	General and Commercial Buildings	29	36.2
	Roads and Bridges	13	16.2
	Dams	4	5.0
	Industrial Building	7	8.8
	Other	10	12.5
	Total	80	100.0
	Housing	17	21.2

In order to analyze the answers of the respondents, there is a need to consider the exist-not exist level as shown in table 5. The general mean analysis of the problems showed that all the answers (except answers for competitiveness requirements) fall in the interval of "sometime", as explained in table 6. Accordingly, sometimes there is a problem in Exchanging Information, Updating Documents, Profitability and productivity, Working Efficiency, keeping Up to date with Changes, Information Access, Recording Delay and Exchanging Information. These problems existing, but the company sometimes faces it. However, the results show that a problem of Competitiveness Requirements exists and the company always safer from it.

Table 5 considered exist-not exist level results from the scale quantification.

Scale	Availability level
1.00-1.50	never
1.51-2.50	sometimes
2.51-3.50	almost
3.51-4.00	always

Table 6: general mean analysis of the documentation, updating information and following up problems.

	Exchanging Information	Updating Documents	Profitability and productivity	Working Efficiency	Competitiveness Requirements	Up to date with Chan	Information Access	Recording Delay	Resources Allocation
N Valid	80	80	80	80	80	80	80	80	80
Missing	0	0	0	0	0	0	0	0	0
Mean	2.5000	2.2875	2.2125	2.2625	3.4250	2.587ᴇ	2.5375	2.4000	2.2250
Std. Deviation	.87149	.78262	.66929	.79147	.79197	1.11029	.84109	.94935	.98051
Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00
Maximum	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

Table 7 and figures 1, 2, 3 and 4 show the frequencies and presents of the problems Exchanging Information, Updating Documents, Profitability and productivity and Working Efficiency respectively. More than half of the respondents recognized that sometimes these problems exist and sometime the company faces it. The low agreement with the availability of these problems could be because of the small size of projects and companies while these problems become bigger in large size of projects and companies. However ed with the availabil

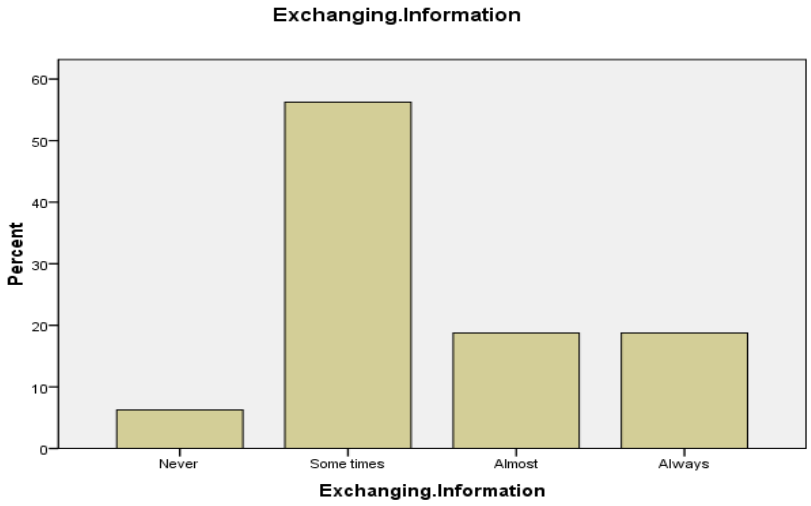

Figure1: Frequency and present of Exchanging Information

Table 7: Frequencies of Exchanging Information, Updating Documents, Profitability & productivity and Working Efficiency.

Problem	Answer alternatives	Frequency	Percent
Exchanging Information	Never	5	6.2
	Some times	45	56.2
	Almost	15	18.8
	Always	15	18.8
	Total	80	100.0
Updating Documents	Never	9	11.2
	Some times	46	57.5
	Almost	18	22.5
	Always	7	8.8
	Total	80	100.0
Profitability and productivity	Never	8	10.0
	Some times	50	62.5
	Almost	19	23.8
	Always	3	3.8
	Total	80	100.0
Working Efficiency	Never	10	12.5
	Some times	46	57.5
	Almost	17	21.2
	Always	7	8.8
	Total	80	100.0

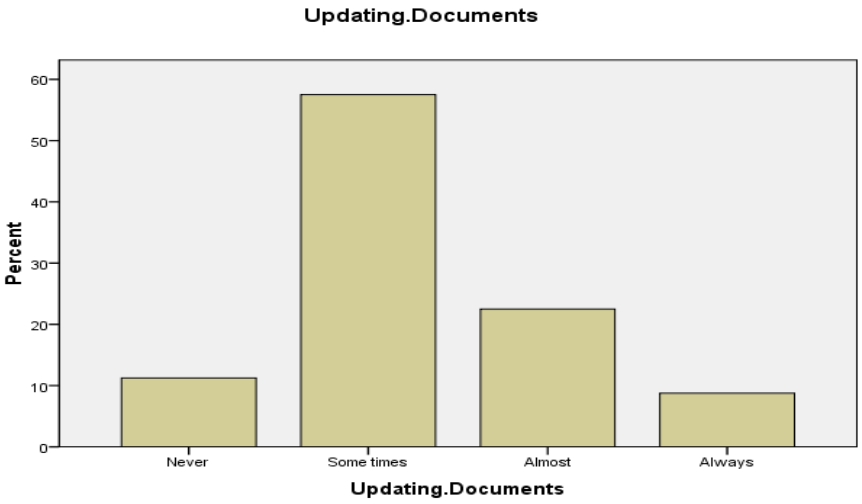

Figure 2: Frequency and present of Updating Documents

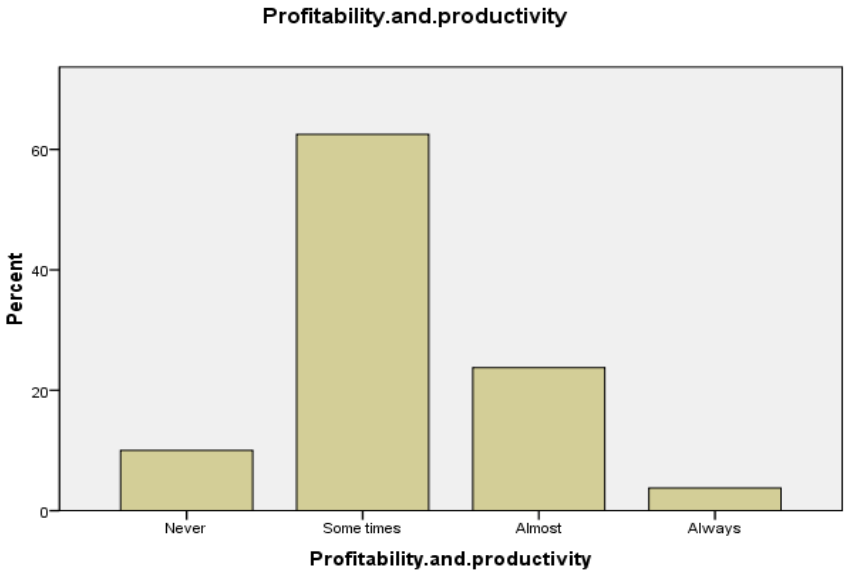

Figure 3: Frequency and present of Profitability and productivity

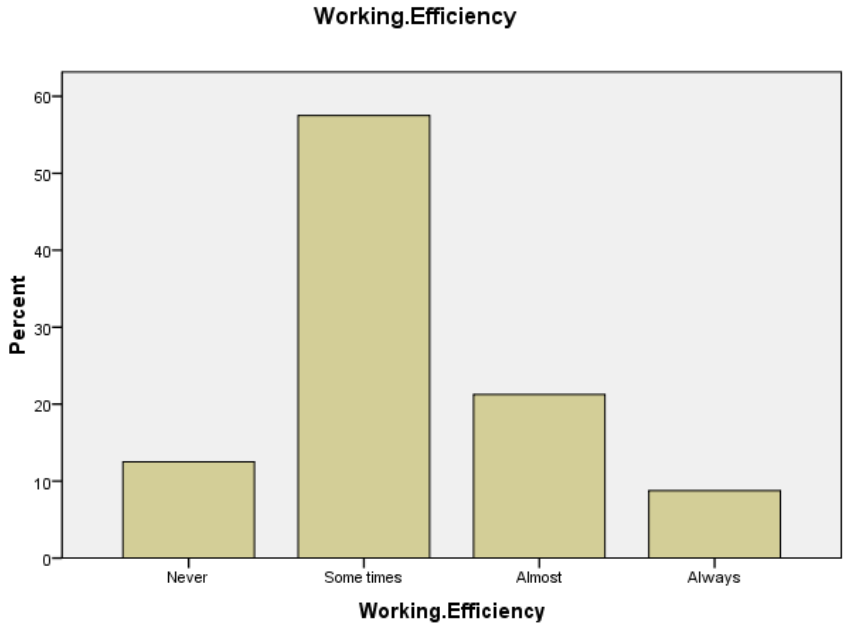

Figure 4: Frequency and present of Working Efficiency

60% of the respondents (48 respondents) recognized that always there is a Competitiveness Requirements where these requirements could be covered by using the latest technologies that could minimize the errors and make the work faster. However, only small percentage (about 1%) of respondents disagreed with the availability of these problems. A number of old and new studies such as [11] found that this problem is a quite common problem in construction business. Table 8 and figure 5 show the frequency and present of the problem Competitiveness Requirements.

Table 8: Frequency and present of the problem Competitiveness Requirements.

	Competitiveness Requirements	Frequency	Percent
Valid	Never	1	1.2
	Some times	12	15.0
	Almost	19	23.8
	Always	48	60.0
	Total	80	100.0

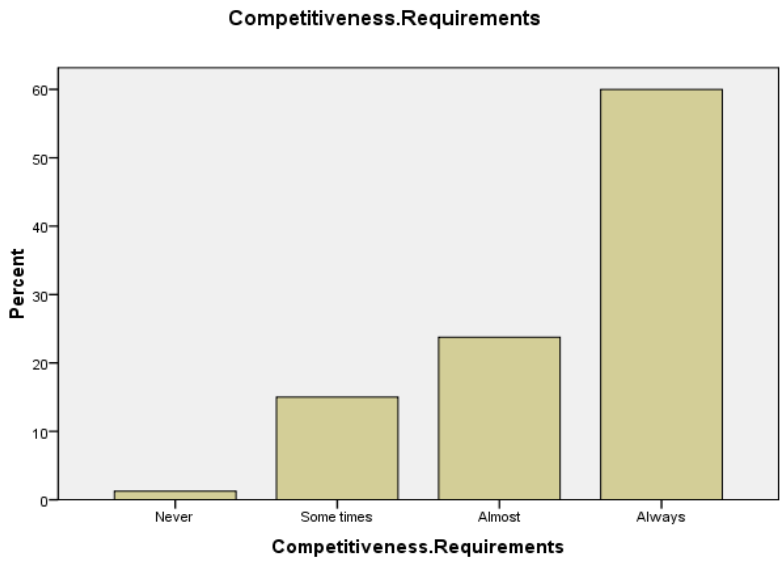

Figure 5: Frequency and present of the problem Competitiveness Requirements

For the problems of Up to date with Changes, Information Access, Recording Delay and Resources Allocation there is no a clear agreement with any of the answer intervals, but the more percentage of answers go to sometimes because these problems are difficult to be recognized in small works and companies. However, only small percentage of respondents disagreed with the availability of these problems. Table 9 and Figures 6, 7, 8 and 9 show the frequencies and presents of the problems of Up to date with Changes, Information Access, Recording Delay and Resources Allocation respectively.

Table 9: Frequencies and presents of Up to date with Changes, Information Access, Recording Delay and Resources Allocation

Problem	Answer alt	Frequency	Percent
Up to date with Changes	Never	16	20.0
	Some times	24	30.0
	Almost	17	21.2

	Always	23	28.8
	Total	80	100.0
Information Access	Never	6	7.5
	Some times	37	46.2
	Almost	25	31.2
	Always	12	15.0
	Total	80	100.0
Recording Delay	Never	13	16.2
	Some times	35	43.8
	Almost	19	23.8
	Always	13	16.2
	Total	80	100.0
Resources Allocation	Never	11	13.8
	Some times	40	50.0
	Almost	21	26.2
	Always	8	10.0
	Total	80	100.0

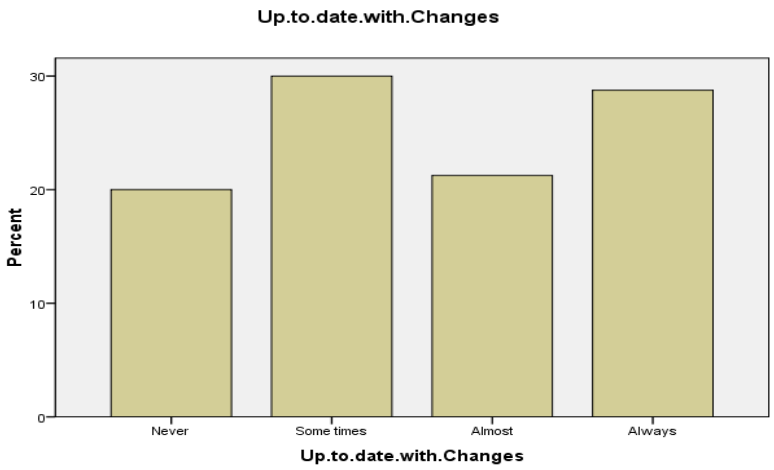

Figure 6: Frequency and present of Up to date with Changes

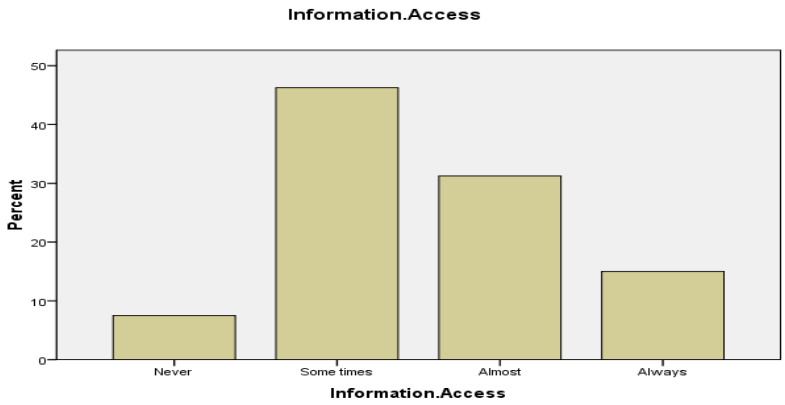

Figure 7: Frequency and present of Information Access

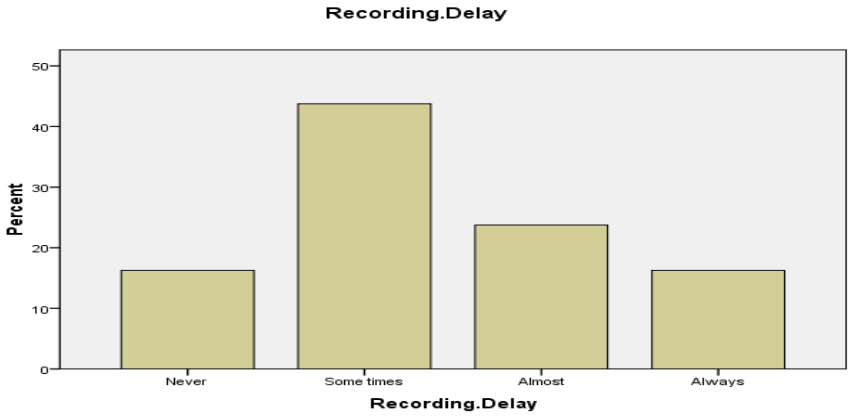

Figure 8: Frequency and present of Recording Delay

Figure 9: Frequency and present of Resources Allocation

In general, except the competitiveness requirements, the problems are sometimes existing because most of companies and projects are not big enough while these problems appear clearly in large companies with big overseas projects. However, all the problems are existing sometimes, almost and always because only a few respondents chose that the problems are never exist. The previous study of Abdul-kareem, et al. (2009) in Malaysia found that the problems exist stronger than the current study in Iraq because the size of construction projects is bigger and the number is higher in Malaysia than in Iraq, so the problems stand out more in Malaysia than in Iraq.

6. Conclusions

The problems in Exchanging Information, Updating Documents, Profitability and productivity, and Working Efficiency exist, but a company sometimes faces it. The problem of Competitiveness Requirements exists and a company always safer from it because always there is a need to increase the criterion of competitiveness against other companies. However, this requirement could be covered by using the latest technologies that could minimize the errors and make the work faster

The problems of keeping Up to date with Changes, Information Access, Recording Delay and Resources Allocation exist and most of the companies sometimes safer from

it, others often face it and the rest always face it. However, only a few companies indicated that these problems not exist.

In general, the problems of documentation, updating information and following up construction project in Iraq exist because most of companies and projects are not big enough, while according to the literature review, these problems appear clearly in large companies with big overseas projects. Also, the findings of this study conclude that there is a real need to use and apply Information Technology IT to overcome these problems.

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