**وه‌زاره‌تی خوێندنی باڵا و تۆێژینه‌وه‌ی زانستی**

 **Ministry of Higher Education &**

 **Scientific Research**

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| **پرۆپۆزەلى توێژینه‌وه‌ بۆ به‌ده‌ستهێنانی بروانامه‌ی ماسته ر Msc Research Proposal**  |
| **ناونيشانی پرۆپۆزه‌لی تۆێژینه‌وه‌ی پێشنیازکراو 1. Title of MSc research proposal:****An Investigation into the Applications of Lean Management in Construction Projects in KRG-Iraq****The student name:** Sonia Majd Hussen |
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| Name and surnameof the supervisor 1 | **Khalil Ismail Wali** | ناوی سیانی سه‌رپه‌رشتیار 1  |
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| **3. Summary (Abstract) of Msc. research proposal**Construction management suffers many problems that makes construction industry overwhelmed by delay and often has suffered cost and time overrun also a very high level of wastes/non-value added activities is assumed to exist in construction. One of the new management philosophies that have been considered for improving construction industry performance is lean thinking [1]. Lean construction, much like current practice, has the goal of better meeting customer needs while using less of everything. The term ‘‘lean’’ was coined by the research team working on international auto production to reflect both the waste reduction nature of the Toyota production system and has adapted in construction industry. Managing construction under lean is different from typical contemporary practice because it (1) has a clear set of objectives for the delivery process; (2) is aimed at maximizing performance for the customer at the project level; (3) designs concurrently product and process; and (4) applies production control throughout the life of the project. lean construction possesses three main characteristics that differentiate itself from traditional construction management techniques: 1. Lean construction aims to lessen any kind of wastes, such as inspection, transportation, waiting, and motion. 2. Lean construction intends to decrease variability and irregularity in order to ensure uninterrupted material and information flows. 3. Lean construction prefers to have construction material on site only when it is necessary. According to previous studies lean management is leading construction industry to more sustainability and lowers cost and time of the projects with better quality from traditional management system, the adoption of this system in Kurdistan Region Iraq will be investigated and it is effect on the construction industry.  |
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| **5. Research objectives**1- Investigation the current situation of lean management application and examining the knowledge of managers and engineers about the lean construction management implementation in Kurdistan Region of Iraq.2- Investigate into the effect and impact of lean management on cost, time and quality of construction projects. 3- To compare between lean management and traditional management systems according to their effect on improving construction projects performance.  |
| **7. Scope and limit to the research** In the thesis we seek for a more effective management system for construction industry to minimize the waste and better performance of the industry (costumer stratification).  |
| **8. Duration and timeline**1-Within the first Four months data will be collected by adopting proper methodology.2-The last Six months the result of data will be obtained by using suitable tools for analysis |
| **9. Conclusions**The thesis will investigate that from adopting lean management in construction management how it will help the Kurdistan construction industry to improve its performance due to reduction of waste in the projects which will result in lower cost and shorter time and higher quality of the constructions, And find if it will be more efficient than traditional management methods or not. |
| **10. References** [1] S. Green, The missing arguments of lean construction, Construction Management and Economics 17 (2) (1999) 133– 13[2] J. Womack, D. Jones, D. Roos, The Machine that Changed the World: The Story of Lean Production, 1st Harper Perennial Ed., New York, 1991[3] L. Koskela, Application of the New Production Philosophy to Construction, Technical Report No. 72, CIFE, Stanford University, CA, 1992.[4] Construction Industry Institute (CII), Lean Implementation at the Project Level, vol. 234-1, The University of Texas at Austin, 2007, research summary, pp. 1–36.[5] Erol, H., Dikmen, I. and Birgonul, M.T., 2017. Measuring the impact of lean construction practices on project duration and variability: A simulation-based study on residential buildings. Journal of Civil Engineering and Management, 23(2), pp.241-251.[6] Thomas, H. R., Horman, M. J., Minchin, R. E., & Chen, D. (2003). Improving Labor Flow Reliability for Better Productivity as Lean Construction Principle. Journal of Construction Engineering and Management, 129(3), 251–261. doi:10.1061/(asce)0733-9364(2003)129:3(251).[7] Andersen B., Belay A.M., Amdahl Seim E. (2012) Lean construction practices and its effects: A case study at St Olav’s Integrated Hospital, Norway. Lean Construction Journal 2012 pp 122-149[8] Mao, X. and Zhang, X., 2008. Construction process reengineering by integrating lean principles and computer simulation techniques. Journal of construction Engineering and Management, 134(5), pp.371-381. |
| **11. General notes:** هەر زانیارییەکی گشتی دیکە کە سەرپەرشتیار بە گرنگی بزانێت |
| **12.** **په‌سه‌ندكردنی پرۆپۆزەل له‌ لایه‌ن لیژنه‌ی زانستی به‌ش**ژماره‌ی كۆنووسی كۆبوونه‌وه‌:رێكه‌وتی كۆبوونه‌وه‌:بریار: په‌سه‌ند كرا په‌سه‌ند نه‌كرا  ناوی سیانی و واژووی لیژنه‌ی زانستی به‌ش واژوو:  ناوى سه‌رۆكی لیژنەى‌ زانستی به‌ش مۆری به‌ش  واژوو:  ناوى سه‌رۆكی به‌ش:  |
| **13.****په‌سه‌ندكردنی پرۆپۆزەل له‌ لایه‌ن ئه‌نجومه‌نی كۆلێژ/فاکەڵتى**ژماره‌ی كۆنوسی كۆبوونه‌وه‌:رێكه‌وتی كۆبوونه‌وه‌:بریار: په‌سه‌ند كرا په‌سه‌ند نه‌كرا  واژوو: ناو راگری كۆلێژ: مۆری كۆلێژ |

**تێبینی:** تكایه‌ فۆرمه‌كه‌ ته‌نها به‌ یه‌ك زمان (زمانی توێژینه‌وه‌) پڕ بكرێته‌وه‌.