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The prediction model for low birth weight in Batang district, central Java, Indonesia

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Abstract

Background: In Indonesia, the prevalence of low birth weight, was high (10.7%). Batang District had the highest low birth weight prevalence in Central Java. Maternal and environmental factors are the strongest factors, therefore these risk factors were investigated, and prediction model for birth weight was designed. Method: This case-control study was done on 163 low birth weight (<2500 g) as cases and 163 normal weight (≥2500 g) babies and their mothers as controls. The cases were all of the singleton birth low birth weight babies aged <6 months in Batang District. The controls were normal birth weight and matched for gender, age and village. Data were collected by interviews and review of maternal and child health handbooks. The risk factors which were investigated including mother's characteristics, nutritional status, health condition, behavioral factor, environmental factor, and health service factor. Among the most important risk factors, the multiple linear regressions were run to find the best prediction model. Results: The significant risk factors of

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Contents | Supplementary Data

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RESEARCH ARTICLE

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Commercial Potential of University Patents Through Patent Cooperation Treaty Application

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Technology transfer is the process of technologies developed by universities or by other government's institutions to ensure that scientific and technological developments are accessible to a wider range of users who can then further develop and exploit the technology into new products, processes, applications, materials or services. The best transferable results are patents. The aim of the study is to introduce new system of commercialization of patented inventions, where transferring inventions into marketable products could be more efficient than it is now. If technology transfer office manager determines that an invention has sufficient internationally commercial potential, university will probably choose to file a Patent Cooperation Treaty (PCT) application on an invention. This study try to evaluate commercial potential of university patenting through participation of PCT application in patent portfolio and a country's degree of concentration of PCT application filings.

Keywords: Technology Transfer Office, University Patenting, Commercialization Potential, Patent Cooperation Treaty, Patent.

1. INTRODUCTION

Today's business press is constantly full of articles about companies and their competitive advantages resulting from their intellectual property or intellectual capital. New industries, based on technologies like are emerging which are totally based on intellectual properties of the new companies. Business managers with basic intellectual property knowledge and intellectual property professionals are becoming increasingly influential leaders in the information age.[1] Patents and utility models are among the traditional and, at the same time, the most important tool of legal protection for technical solutions and inventions.

Universities have many assets: know-how, human capital, facilities, prototype equipment, networks etc., but why universities should be focused on patented and owned technology in the long term? The process of getting product into the market is most complex and as such requires much specialized professional expertise and expert knowledge.

The developing of invention is only beginning phase, but the final phase of the innovation process is the marketing and commercialization phase which is crucial for the success of any invention and innovation.[2] Patents valuation methods are mostly income or income-market-based. In these methods one of the key estimate is the cost of capital.[8]

This paper is not intended as an instruction on how to commercialize inventions, but is intended to present some new ideas that could serve as a basis for discussions how to increase commercialization potential of university patents and assesses collaboration between university entities and other partners. The question therefore arises whether specific detachment of scientifically technological thinking stems from a meagre university involvement in the process of commercialization of inventions developed by them, whether it also has other institutional base? The main research question for this study is: Looking at the university patenting and evaluate PCT patent portfolio. PCT applications provide a high comparability among different countries and are frequently used in international analyses. Inventions, which are crucial for licensing, are frequently used to capture the innovative capacity of universities. As a further check of robustness, we include the number of patent families per university.

2. LITERATURE OVERVIEW

The geographical filing breadth represents the number of filing countries (or 'jurisdictions' as some patent office's represent regions) in which a university entity filed applications for the same invention. Patent applicants only receive patent protection in those jurisdictions where an application was filed. As such, geographical filing breadth is an indicator of commercialization potential.[3] By filing one international patent application under the PCT, applicants can simultaneously seek protection for an invention in 148 countries throughout the world. Local patent application followed within 12 months by international application under the PCT, claiming Paris Convention priority, with "national phase" commencing at 30 months.[4]

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RESEARCH ARTICLE

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Academic Writing in Science: Iraqi EFL Postgraduates' Difficulties in Writing Abstracts of Theses and Dissertations in Physical Disciplines

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Academic writing has been a crucial area of research development in a various number of scientific disciplines and the need to this process increases and become more significant and complicated as the students shift to a higher level of education. Although many studies have been devoted to investigate the textual features of the thesis and dissertation as academic genres, few have been concerned with actual problems of EFL postgraduate students when writing these genres particularly in scientific disciplines. The abstract of thesis/dissertation represent one of the important forms of scientific discourse and scientific communication so, it is a crucial compulsory genre that has an important role in scientific academic writing especially for foreign learners of English language. This paper sheds light on the language of the abstract as a scientific academic genre and discusses its importance in thesis/dissertation. The types of the abstract as well as the common structures are also highlighted in the paper. It tackles and examines the difficulties faced by Iraqi EFL postgraduate students in physical disciplines during writing the abstracts of their theses/dissertations in English language and reasons that cause these difficulties. To achieve this purpose, the researcher uses a semi-structured interviews that were answered by the participants who were 20 M.A. and Ph.D. postgraduate students from five physical disciplines at five Iraqi universities. The data were gathered depending on two parts of the questionnaire: part1 closed questions and part2 open-ended questions. The results showed that the Iraqi EFL postgraduate students in all physical disciplines as novice writers face similar difficulties in writing the abstracts of their theses/dissertations in English language. Some of these difficulties are related to language use and linguistic realizations like grammar, vocabulary, and words. Others are related to the structural organization of abstract. These difficulties are contributed to the lack of previous experience and knowledge about the academic writing and abstract writing models, in addition the lack of integration between language development and academic development.

Keywords: Academic Writing, Abstract Genre, EFL.

1. INTRODUCTION

In the past decades, an attention has been increased to be given to the notion of different genres and their application in language teaching and learning. This growing interest has specifically assisted ESP teachers as well as the students because it reveals how language is used in various contexts and how the gained knowledge can be applied academically. Academic Writing varies to fulfill different needs of study subjects thus, students are demanded to carry out a variety of writing forms during their studies ranging from short essays to long theses and dissertations. The academic writing represents a flexible course that recognizes the variety of study needs and helps the students of all subjects and levels from foundation to Ph.D., in order to practice those forms of writing which are most important for their studies. The abstract of thesis/dissertation is one of these practices in academic writing, as it constitutes a gateway to the reading or publication of the study.[1–3] Salager-Meyer[4] realizes abstract genre as a distinctive category of discourse intended to communicate factual new knowledge for members of different academic communities. For Ref. [5] because the abstract is the first part of the thesis/dissertation to be read, so it has "become a tool of mastering and managing the ever increasing information flow in the scientific community." Ventola[6] emphasizes that "abstracts should be taken as a serious object of linguistic study" and claims that they should not the restricted to theoretical studies but also to the application of such studies to reveal their importance to scientific writers. Moreover, Ventola[5] emphasizes on abstract to be investigated in terms of textual and syntactic analysis concerning the problems of writing in English as a foreign language. English has become the main language of international scientific communications and

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RESEARCH ARTICLE

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Design Suggestions for Building Enclosures Towards Energy-Efficient Lit Office Environments

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The purpose of this study is to analyze how the lighting system in office buildings affects the effectiveness of work environments and suggest the proper guidelines for designing energy-efficient lit office spaces. For this study, research targets have been chosen with building configurations for office buildings in the period of 1930s through today, and reorganized investigations through the classified redesign perspectives. As a result, this paper suggests for a research method to reveal the relationship between energy efficiency, design elements and spatial configuration with correlation analyses.

Keywords: Lighting System, Lit Office Environments, Energy Efficiency, Spatial Configurations, Building Enclosures.

1. INTRODUCTION

Buildings are normally using about forty percent of the entire energies consumed in the Earth, and especially eighty percent of the total amount is needed for building maintenance and fifty six percent occupies for operating lighting, heating and cooling. In other words, applicable suggestions in the architectural field could help resolve problems mentioned above. Building energies used for utilities such as heating, ventilation and air-conditioning (HVAC) and lighting are deeply related to the envelope system that causes severe energy loss depending on its configuration.[11]

The aim of the study is to analyze how the lighting system in office buildings affects the effectiveness of work environments and suggest the proper guidelines for designing energy-efficient lit office spaces. For this study, research targets have been chosen with building configurations for office buildings from the past to the contemporary age, and reorganized investigations through the classified redesign perspectives for the building enclosure based on the light shelf system known as one of efficient eco-friendly lighting technologies.

Through this study, in addition, further innovated envelope systems have been suggested, and one of the representative instances is the kinetic façade motorized to operate them by programmed logics in order to control daylighting for lit office environments in smarter way. It is expected to examine a possible resolution to reform fundamental functions of building envelopes, adaptability to the façade design, energy efficiencies through controlling the lighting system, and so on.

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2. CONFIGURATION OF LIT OFFICE ENVIRONMENTS

2.1. Spatial Changes in Office Environments

Office conditions have changed a lot in the past thirty years. Fluorescent lighting, the mainstay of office lighting since the 1930s, mostly consisted of regular arrays of recessed lighting systems with the lamps covered by prismatic acrylic lenses as shown on Figure 1. These direct lighting systems provided bright walls and very bright horizontal surfaces. Bright working surfaces were believed to be important to maintain task visibility. The concern with providing good visibility was justified; it was not uncommon for people to spend many hours a day.

Today, almost every office worker spends at least part of the day working on a computer. This change in technology has profound implications for office lighting. Instead of a piece of paper on a horizontal surface, these employees read from a self-luminous, vertical, glass screen. The lensed lighting systems that provided good horizontal illumination on desks suddenly became sources of unwanted screen reflections. Screen glare can reduce the visibility of the material on the screen, with consequences ranging from the inconvenient to the disastrous, depending on the importance of the task and the extent of the problem. For example, stock traders need to read, precisely and quickly, the stock prices on their monitors.[7]

However, the paperless office is still a long way away. In addition to computer-based work, most people review documents on paper. Laser printers have reduced the difficulty of many visual tasks in offices, but poor-quality faxes can still be visually challenging. Lighting systems for offices today must provide good glare control on vertical surfaces, and yet provide adequate light

RESEARCH ARTICLE

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Trend Changes on Socio-Spatial Configuration by the Heating System Conversion in Korea

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The purpose of this study is to analyze how the heating system conversion affects the change of socio-spatial configuration to Korean housing systems and suggest the proper method based on quantitative data using simulation analyses. For this study, research targets have been chosen with plans from single-family houses and apartments in the period of 1950s through 1980s, and reorganized investigations through the classified space elements. As a result, this paper suggests for a research method to reveal the relationship between energy use, fuel types and spatial configuration with simulation techniques.

Keywords: On-dol Heating System, Heating Systems Conversion, Fuel Changes of Home Heating System, Spatial Configuration Change, Simulation of Heating Systems.

1. INTRODUCTION

Currently, one of most commonly-used heating systems in Korea is the radiant panel-heating system using water boilers in the floor. It was originated and developed from the traditional type of the heating system called On-dol that has recently been recognized as an excellent heating technology world-wide. For, it would be important to keep developing and maintaining its fundamental theories and to investigate how it affects socio-spatial configurations.

This study attempts to analyze the traditional heating system first of all with comparison between the type of single-family housing and the apartment unit, one of collective housing type appeared in the period of 1950s through 1980s in Korea. After that, periodic changes of heating equipment, type of fuel and planar composition by its fuel conversion for the above two target spaces have been investigated. Then, this paper suggests the most appropriate analysis methodology using 3D modeling that produces quantitative simulation data and multiple techniques.

The aim of this study is, eventually, to analyze how the heating system conversion affects the change of socio-spatial configuration from Korean traditional planar composition to its modern space system; it would include the classification of the spatial types that differentiates functions, positions and connections of spatial elements such as bedroom, living room, kitchen and so on.

1.1. Research Method

The temporal scope of the analysis has been set as the period between 1950s and 1990s, normally known as the most active era towards new appearance of variable housing types in Korea showing critical increase for the dissemination of modern housings. Every periodic step was separated by 10 years and classification and characteristics are shown each in Table I.

2. CONFIGURATION OF KOREAN TRADITIONAL RESIDENTIAL SPACE

2.1. Position on Spatial Features

The spatial composition of the traditional house has been determined by the plan in accordance with location of furnace kitchen and On-dol system.[a] The basic form of the plan consists of On-dol room and multi-purpose kitchen for mixed-use of cooking and heating. On-dol room has not been connected to the kitchen located next to the master bedroom differentiated by the size of the house. Otherwise, it tends to be independently located; in this case, the furnace is called Ham-sil[b] form that means the inside space of a closed mass.

On-dol room has continuously located around the kitchen, seems more complex, and been developed in the furnace form with a factor of angular format. As a result, it is placed on both sides around the kitchen, and this space shows two furnaces for heating each On-dol room mentioned above.

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[a]Oxford dictionary is mentioning that On-dol in Korean traditional architecture, is underfloor heating which uses direct heat transfer from wood smoke to the underside of a thick masonry floor.

[b]This is in the form of direct burning under the floor without any furnace room or cage.

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