

## Issues and Options for Housing the Urban Poor in India

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### Abstract

Housing has been globally valued for its role and importance as determinant of growth and development of human beings, communities and nations. Being one of three basic human necessities, UN has mandated for accepting the 'Right to Adequate Housing' as the basic human right. Considering multiple connotations and criticality of housing as provider of identity, security and determinant of quality of life besides promoting economy, generating employment, leveraging industrialization and rationalizing growth and development of human settlements, providing 'Housing for All by 2022', has been accepted by Government of India as prime objective of National Housing Policy and Prime Minister Awas Yojna, placing it high on the development/welfare agenda of the nation. Despite critical role and importance, housing still remains a distant dream for millions of people. UN Habitat Report on Right to Adequate Housing finds, 'Well over a billion people are not adequately housed. Millions around the world live in life- or health threatening conditions, in overcrowded slums and informal settlements and conditions which do not uphold human rights and their dignity'. India Habitat III National Report, 2016 identifies 65.49 million urbanites living in slums in 2011 besides 1.77 million counted to be homeless - without any kind of shelter, roof and walls. Considering the magnitude, complexity, cost & resource intensive nature and ever-growing mismatch between demand and supply in the lower income categories, creating appropriate housing for urban poor remains the most challenging and formidable national task. Limitations imposed by land, materials, construction technologies, skilled manpower, limited housing options, non-involvement of stakeholders, private sector and inadequate financial resources have emerged as the major road blocks in ensuring adequate supply of housing for poor. In search for realistic solutions and for defining agenda for action, paper tries to explore options involving; creating land bank; optimizing land resource; promoting convergence; using innovative construction technologies; promoting rental housing; ease of doing business; creating skilled manpower; ensuring quality project management; involving private sector/ all stakeholders etc. to achieve the national goal of housing the urban poor in India.

Key Words; land, slums, standardization, pre-fabrication, green habitat, affordable living

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## Business Intelligence for Employee Retention: A Strategic Perspective

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### Abstract

Pinnacle of technological advancement are still hunting for the solution of a critical problem of employee turnover. The firms are still in dilemma between dual dependence of firm's performance on technology and human brain. Till now, all levels of technological advancements are still struggling to find solution(s) regarding the human factor in a firm's value chain. Uncertainty involved in a turbulent economy coupled with strengthened competition and work place diversity has forced various organizations to lure their top performers for staying in (at the organization) at whatever cost they have to pay. The reason for the same being that recruiters are finding harder and harder to hire professionals with appropriate and matching skills set. This has forced firms to rethink about the 'Quantity' vs 'Quality' debate in respect to human resources thereby shifting the focus from employee 'recruitment' to 'retention'. The process of employee retention requires crucial human resource management related decisions to be taken not only precisely but rapidly as well. Progress in analytics domain has made it a reality for business to use largely available data in order to create valuable information and knowledge. Business Intelligence converts silos of data available to firms into useful business knowledge which can be utilized by human resource management people in not only recruiting better employees but also in formulating strategies for retention of star employees as well.

This paper is a qualitative attempt to provide an insight regarding how application of 'Business Intelligence' can help firms in bridging the chasm that exists between employee and organization thereby encouraging employee retention. The presented work tries to examine the future outlook concerning Business Intelligence activities in Human Resource domain alongside role and benefits of BI systems in employee retention process thereby creating competitive advantage for the organization by way of suggesting a framework for the same.

**Keywords:** Business Intelligence, Employee retention, Competitive Advantage

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## Current Research Trends on the Application of Supercapacitors in Electric Vehicles

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### Abstract

The concerns towards environment pollution and depleting fossil fuels have surged research towards renewable energy sources. Recently attention of governments, politics, and social workers worldwide has led significant push towards research and use of electric vehicles. Electric vehicles are different than the fuel-based vehicles in two ways; energy storage and motor. The electric motor in principle can have infinite life and therefore, the vehicle may require zero maintenance and may survive for very long-time spans. However, the batteries are still not efficient enough when compared with cost/weight of electric vehicles to fuel-based vehicles. Supercapacitor have potential to fit in selective use at present and may be as substitute in future to achieve competing or better performance than batteries. This article includes data statistics from SCOPUS on January 05, 2021, to examine the research progress on supercapacitors' use in electric vehicles.

**Keywords:** Supercapacitors, batteries, electric vehicles, supercapacitors in electric vehicles, research trends on electric vehicles.

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## Critical Analysis of Multiple Exit Options from Four-Year Degree Programs as Prescribed by NEP 2020 and Development of Flexible Engineering Faculty Training Programs

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### Abstract

The Indian National Policy on Education (NEP2020) contains discrepancies as follows: 1. Multi-entry from the Bachelor Degree programs at the end of the first year and the students will be awarded Diploma (8+3+3+1= 15 years), and at the end of the second year and the students will be awarded Advanced Diploma. Under Vocational Education, the students can get Diploma in Vocational Education through 10+2+1=13 years as per UGC. The Industries have approved the skills and competencies of Polytechnic Diploma holders (10+3=13 years) in the last 70 years. The NEP 2020 prescription can be adopted in the case of Computer Science degree programs. It is suggested that the Engineering Faculty Development-Programs can have multiple exits to get a Certificate, Advanced Certificate, Diploma, and Postgraduate Diploma at the end of first, second, third and fifth semesters. It is concluded that Four-year Engineering degree programs can't be designed with multiple exits which would create conflict with industrial training certificate and diploma. However, the students are enrolling in ITIs and Polytechnics to suit their career needs. Further, they are enrolling in the Bachelor's degree programs to go up in the career ladders. The three-year Bachelor degree with one-year research courses in arts and science can't be suitable to enter into Ph.D., degree due to insufficient research skills and competencies. Many Ministries have established standalone deemed universities and institutions to cater to the needs of many industries with autonomous Boards which offer certificates to postdoctoral degrees and their structure need to be preserved under NEP 2020 instead of adding many liberal arts and science programs in these institutes as per the NEP 2020.

**Keywords:** Multiple Entries and Exits, Flexible Engineering Teacher Education, Vocational Education, Research degree from four-year Bachelor's Degrees in Arts, Science, Commerce and Business Administration, Standalone Institutions.

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# Performance Analysis of s-identical k-out-of-n System using Reliability Block Diagram and Fault Tree Technique: A Case Study

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## Abstract

In this work, performance analysis of a thermal power plant has been presented as a case study. The four units of the plant and components in each unit are statistically s-identical having, at least, k out of its n components in function. The reliability and availability of the components have been evaluated using generic failure data. Functional or logical relationship between components has been used to model and simulate the system. This has been accomplished by using Reliability Block Diagram (RBD) and Fault Tree (FT) techniques. The reliability and availability of the steam flow cycle (assumed equivalent to one unit) and of the plant has been assessed. RBD and FT effectively gave same numeric values of reliability and availability of the plant. The performance analysis highlighted poor capability aspect of the plant and persuaded maintenance engineers for better maintenance policies.

**Keywords** reliability block diagram, fault tree, reliability, availability, thermal power plant, outage data and failure.

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# OLEDs for Low Power Flexible Electronic Devices and Optical Fiber Communication System

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## Abstract

Organic light-emitting diodes (OLEDs) are used recently in most flexible electronic devices due to their manifold flexibility, less complexity, and lightweight. Due to these properties, it is attached with or bends easily to construct bendable devices, transmitting devices, receiving devices, and different types of sensors. This paper presents a review on OLED used in the last decade for different flexible electronics devices as well as sensors. OLEDs are used in Optical Fiber Communication for data transmission over the world as well as under seawater to connect different countries under the concept of WAN.

**Keywords:** OLED, Optical fiber, IoT, low power, flexible devices, WOLED, TOLED, FOLED.

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## PSO based energy efficient clustering protocol for WSNs

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### Abstract

The nodes in Wireless sensor networks are battery driven that are difficult or even impossible to recharge and change at deployed places. In Wireless Sensor Network research area energy conservation is a challenging task. Clustering and routing protocols enhances the performance of wireless sensor networks. The uneven cluster formation is a main cause of faster energy exhaustion in nodes. In this paper, we analyze a protocol that considers inter-cluster and intra-cluster distances to overcome the problem of uneven clusters. A PSO based technique is proposed for the selection of optimized cluster heads. Simulations have been carried out for demonstration of proposed protocol.

**Keywords:** Cluster heads, Sensors, Energy, Wireless sensor networks.

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