

Research@GBU

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From the desk of the Vice Chancellor

It gives me immense pleasure and great satisfaction to learn that researchers' fraternity of Gautam Buddha University is coming out with its first edition of research bulletin. With a vision to become an institution of excellence with an interdisciplinary and integrated approach in creating and disseminating knowledge, we started with this noble initiative in August 2008 that has grown into a mission now. In order to accomplish our mission, we are working tirelessly towards achieving our collective goal of academic excellence.

Research is a process that is rigorous in nature and demands greater efforts in terms of discipline, focus, perseverance, and dedication to the cause. At the same time it is instrumental in guiding and shaping up knowledge, training, and intellectual growth of an individual and the organization as well. In this context, it becomes imperative that our young and dynamic faculty members work unabatedly towards setting up a benchmark for excellence that meets global standards. We aspire to take research out of the confines of libraries and laboratories to the real world and influence practices in different disciplines for contributing in developing a new knowledge order that creates high-end entrepreneurs and leaders in their respective fields.

I hope that this kind of initiative will enshrine a deeper sense of responsibility and inspire everyone to contribute in this academic pursuit. This shall not only help individual faculty members in his or her career growth but also contribute qualitatively in developing curriculum and classroom input for teaching, as learning at one end certainly improves learning at the other.

I wish all the scholars and faculty members a very productive, creative, and innovative research experience and hope they all contribute to our collective responsibility with their novel outcome.

Prof. R. S. Nirjar



About the University

Gautam Buddha University, established by the Uttar Pradesh Act (9) of 2002, commenced its first academic session at its 511 acres lush green campus in Greater Noida, Gautam Budh Nagar in August 2008. The University is funded by the New Okhla Industrial Development Authority (NOIDA) and the Greater Noida Industrial Development Authority (GNIDA). The University encourages multidimensional growth through its education and training. The emphasis is laid on inculcating a sense of responsibility in the young minds and inspiring them to harness these skills for developing a dynamic, dependable, and entrepreneurial model for sustainable growth of the society.

The University envisions to become a world class centre for excellence in education with a special focus to serve the under privileged, economically challenged and down trodden sections of the society. The University is modeled in line with some of the best institutions of higher learning around the world. The uniqueness of its reputation is acknowledged through the format, content and pedagogy of its programmes and their relevance to the society. In order to promote value-based education, research and training, the University has established four schools to begin with: School of Management, School of Information & Communication Technology, School of Biotechnology and School of Humanities & Social Sciences. The University plans to establish four new schools in coming years, which will be School of Law & Social Justice, School of Vocational Studies, School of Engineering & Design, and School of Buddhist Studies & Civilization.



About the Research Bulletin

Research being at the core of its academic activities, the University patronizes attempts to provide new theoretical frameworks which enable reassessment and refinement of current practices and theory. The path-breaking interdisciplinary research by the faculty helps directly enhance qualitatively teaching-learning environment of the University and caters to the needs the practicing professionals in the field. Bringing out the *Research@GBU*, the research bulletin of the University is a noble initiative to document all research related activities of the University. This bulletin shall be published quarterly and shall contain information about papers published in journals and presented in national and international conferences, defense of research work by the research scholars, GBU faculty seminars and any other relevant research activities of the University.



Papers Published

Kumar, Raj (2009). 'Post-merger corporate performance: an Indian perspective', *Management Research News*, Vol. 32, No. 2, pp 145-157.

(Dr. Raj Kumar is an Assistant Professor at School of Management. E-mail: raj@gbu.ac.in)

The paper attempts to examine the post-merger operating performance of thirty acquiring companies involved in merger activities during period 1999-2002 in India. It attempts to identify synergies, if any, resulting from mergers. It is found that the post-merger profitability, assets turnover and solvency of the acquiring companies, on average, show no improvement when compared with pre-merger values. So it seems that, contrary to common beliefs and expectations, mergers usually do not lead to improve the acquirer's financial performance. The results show that mergers are not aimed at maximizing wealth of owners. This suggests the need for managers to better focus on post-merger integration issues in order to create merger-induced synergies, rather than simply acquiring bigger firm size and achieving hidden objectives.

Muyal, J P; Muyal, V; Kaistha, B P; Seifart, C and Fehrenbach, H (2009). 'Systematic comparison of RNA extraction techniques from frozen and fresh lung tissues: checkpoint towards gene expression studies', *Diagnostic Pathology*, 4:9.

(Dr. J P Muyal is an Assistant Professor at School of Biotechnology. E-mail: jmuyal@gbu.ac.in)

The study aimed at systematically comparing silica-gel column (SGC) and guanidine isothiocyanate (GTC) techniques of RNA isolation for the downstream molecular analysis. Frozen lungs and fresh lungs were harvested and processed. The purity and quantification of RNA was determined with a spectrophotometer and with iCycler detection system. Total yield of RNA was higher with GTC than SGC technique in frozen as well as fresh tissues while the purity of RNA remained comparable. The icycler PCR data revealed that higher mean copy numbers of 28S and a longer fragment (1400 bp) were obtained from RNA isolated with SGC than GTC technique using fresh as well as frozen tissues. Additionally, a high mean copy number of 18S and medium fragment (700 bp) were obtained in RNA isolated with SGC technique from fresh tissues, only. For the shorter fragment, no significant differences between both techniques were noticed. Our data demonstrated that the SGC technique was much more superior with respect to the reliable generation of an intact RNA and effectively amplified longer products in fresh as well as in frozen tissues.

Kumar, Sunil and Rooprai, K Y (2008). 'Developing emotional intelligence for efficient management', *Advances in Management*, Vol. I (5), pp. 25-28.

(Dr. Sunil Kumar is a Research Associate at School of Management. E-mail: sunil@gbu.ac.in)

This paper introduces the concept of emotional intelligence and a framework is developed to throw light on the nature and characteristics of emotional intelligence and to explore how one actually goes about developing emotional intelligence. This work is intended to provide guidelines on developing emotional intelligence. The Emotional Intelligence Inventory (ECI) was used for data collection and data was collected on a sample of 40 students. In present study Self Awareness, Social Awareness, Self-Management, and Social Skills are the core competencies, which are required to develop Emotional Intelligence.



Papers Presented in Conferences

Kumar, Sunil and Rooprai, K Y (2009). 'Role of emotional intelligence in managing stress and anxiety at workplace', a paper presented at 16th Annual Conference of American Society of Business and Behavioural Sciences during February 19-22, in Las Vegas-NV (USA).
(Dr. Sunil Kumar is a Research Associate at School of Management. E-mail: sunil@gbu.ac.in)

The phenomenon of emotional intelligence is a growing topic for behavioural investigation as researchers strive to understand its influence on various social interactions. Recent research indicates that emotions play an integral part in Managing stress and Anxiety at workplace. A review of the literature highlights the need for examination of the relationship of emotional intelligence as an overarching concept to the Management of Stress and Anxiety. The researcher examines two null hypotheses that investigate the measurement of emotional intelligence as a predictor in managing Stress and Anxiety. 120 Management students were taken for the study. Emotional Intelligence Scale, Stress Inventory and General Anxiety test were used for the measurement of all the variables. Descriptive statistics, Correlation and Regression analysis were used for data analysis. Results indicate that there was a significant relationship between Emotional Intelligence and the variables of Stress and Anxiety. Stress management component and anxiety component emerge as statistically significant with respect to the relationship with Emotional Intelligence.

Nirjar, A and Kumar, Raj (2008). 'Corporate responses to affirmative actions in India: a new perspective of CSR', a paper presented in an International Conference of Strategic Management Society (SMS), USA hosted by Indian School of Business, Hyderabad, December 12-14.
(Dr. Raj Kumar is an Assistant Professor at School of Management. E-mail: raj@gbu.ac.in)

The study aimed at learning the responses of private sector companies towards affirmative actions (AAs) for disadvantaged groups in India – whether industry is really interested to help them under its CSR initiatives? The study reveals that private companies do not seem to practice what they appear to have expressed through media. If at all we see some positive signals, these tend to avoid legalization of implementing affirmative actions. There are only exceptions. We observe that the companies should not consider AAs as some sort of political burden; rather as type of CSR initiatives. We support win-win approach of CSR through AAs which may be the source of competitive advantage.

Pandla, Kapil; Sharma, Manisha and Gupta Prashant (2009). 'Mentoring at elementary education', a paper presented and published in the proceedings of an International Conference on Education and Leadership (ICEL) at IIM Bangalore, Jan 5-7.
(Dr. Kapil Pandla is an Assistant Professor and Dr. Prashant Gupta is an Associate Professor at School of Management. Dr. Manisha Sharma is currently an Assistant Professor at School of Management. E-mail: kapil@gbu.ac.in; prashant@gbu.ac.in; manisha@gbu.ac.in)

The purpose of the study is to understand the role of mentoring at the elementary level to create leaders. Using primary data collected through questionnaire from thirty Schools, thirty Parents and ten CEOs of companies, the study concludes that large number of schools,

parents and CEOs realize the importance of mentoring at school level to create leaders. However, a large number of schools do not have formal provision of mentoring. In agreement with the results of earlier researches, this study shows that mentoring is very important to create leaders for tomorrow and hence it should start at early stage of life i.e. at elementary level only. Parents as well as schools will have to understand the importance of mentoring the kids at the early age so that they can become successful leaders tomorrow.

Kumar, Raj and Sharma, D K (2009). 'Impact of merger announcements on value creation for shareholders of acquirers in India', a paper presented at Strategic Management Forum Annual Conference organised by Indian Institute of Management Bangalore, May 27-29.
(Dr. Raj Kumar and Dr Dinesh K Sharma are Assistant Professors at School of Management. E-mail: raj@gbu.ac.in; dinesh@gbu.ac.in)

Studies conducted across the world on post-merger value creation indicate mixed results. However, there is lack of empirical evidences on post-merger corporate performance in Indian context. This study attempts to identify the value creation in case of 125 merger events announced during the period of 2006-2008 in India. The paper uses event study methodology to examine merger-induced value creation, measured in terms of abnormal returns by the acquiring firms. The study reports cumulative abnormal returns to the shareholders of the acquiring companies in a window of 11 days as 3.06% ($t=1.09$), which is statistically insignificant. The findings of this study indicate that there is no impact of merger announcement on value creation for the shareholders of acquiring firms. So it seems that, contrary to common beliefs and expectations, mergers usually do not create value.

Sharma, Manisha; Pandla, Kapil and Gupta, Prashant (2008). 'Six sigma at Wipro technologies: thrust on quality', a paper presented at Strategic Management Forum Annual Conference organised by IIT Kanpur, May 8-10.
(Dr. Kapil Pandla is an Assistant Professor and Dr. Prashant Gupta is an Associate Professor at School of Management. Dr. Manisha Sharma is currently an Assistant Professor at School of Management. E-mail: kapil@gbu.ac.in; prashant@gbu.ac.in; manisha@gbu.ac.in)

Wipro has one of the most mature Six Sigma programs in the industry ensuring that 91% of the projects are completed on schedule, much above the industry average of 55%. Six Sigma provides the tools for continuous improvement on existing processes thereby helping sustain the SEI-CMM Level 5 and CMMi certifications. This case focuses on the initiatives taken by Wipro Technologies to implement the Six Sigma Quality tool to achieve sustained strategic business results. It explores the implementation procedure at Wipro Technologies and the benefits reaped by the company on account of adopting Six Sigma. The case also throws light on the recent developments in the Six Sigma concept including Wipro's Six Sigma Skill base and consulting experience and explains how the company intends to build its expertise and experience to bring continuous process improvement to the organization.

Kumar, Sunil and Rooprai, K Y (2008). 'Role of five-factor model of personality and intelligence in coping style and visual search', a paper presented in XVIII Annual Conference of NAOP held at IIT Guwahati, December 14-17.
(Dr. Sunil Kumar is a Research Associate at School of Management. E-mail: sunil@gbu.ac.in)

The paper aimed at studying the Role of five - factor model of personality and intelligence in coping style and visual search. The tentative relationships were: Higher intellectual level will positively correlate with visual search and Personality attribute will positively correlate with intelligence. The specific research approach of this study was a basic associational/correlation approach. Using the data of 260 college students selected

randomly, it determines whether and to what degree variables are related. The data collected through standard tools was analysed with Pearson Correlation and Regression analysis. The findings reveal significant contribution of personality variables such as extraversion, and conscientiousness in visual search. Similarly maladaptive coping style and intelligence plays a vital role in visual search.

Anand, Shweta (2008). 'Ensuring financial literacy of the technical workforce before they step into the industry', a paper presented at 38th National Annual Convention of Indian Society of Technical Education, organised by KIT, Bhubaneswar, Dec 19th to 21st.

(Dr. Shweta Anand is an Associate Professor at School of Management.

E-mail: shwet.anand@gbu.ac.in)

This paper tends to understand and analyze the amount of financial illiteracy or ignorance that exists amongst the Technical Professionals that set out on the journey of their working life each year. Though they are technically sound and adaptable as per Industries needs, they are personally left with a feeling of being handicapped when it comes to handling personal finance matters; hence the overall purpose of leading a working life to be able to meet financial goals as they arise gets distorted. The conclusions drawn confirmed that this is a challenge area which the Technical Education system must address before the students are awarded their degrees. The detailed paper also carries some suggestions as to how this challenge can be addressed going forward.

Kumar, Raj and Gupta S K (2008). 'Social Responsibility among Sports Goods SMEs', a paper presented in an International Conference organized by National Institute of Financial Management, Faridabad in association with University of Maryland Eastern Shore, USA & Modern Technology and Management Institute, USA, July 31-Aug 1.

(Dr. Raj Kumar is an Assistant Professor at School of Management. E-mail: raj@gbu.ac.in)

This paper attempts to identify the extent and motives of social responsiveness of Indian small and medium sized enterprises in the Sports Goods sector at Meerut. The data were collected through a questionnaire from twenty two SMEs. The study revealed that entrepreneurs had almost similar initiatives, which are apparently focused more on the internal stakeholders. The firms depicted both enterprise and sector level initiatives of welfare and charity initiatives. The prime motives for engaging in social responsible behaviour were confined to having a satisfied workforce with high morale and to build credibility of a responsible business entity thereby enhancing their acceptability across different markets. An integrated approach is required for SMEs to appreciate what social responsibility means to them and how it can go hand in hand with normal business activities.



Enrolment in Ph.D. Programme

Ms. Kavita Singh, Research Associate, Gautam Buddha University School of Management got enrolled in Ph.D. programme. Her research supervisors are Dr. Abhishek Nirjar, Indian Institute of Management Lucknow and Dr. Raj Kumar, School of Management, Gautam Buddha University. She defended her research proposal "A Study of Corporate Social Responsibility and Business Sustainability in Indian Sugar Industry" before the Research Degree Committee in Sep 2008.

Ms. Samar Raqsin, Gautam Buddha University got enrolled in Ph.D. programme of the School of Management. Her research supervisor is Dr. Lovy Sarikwal, School of Management, Gautam Buddha University. She defended her research proposal "Role of Leadership in Leveraging Innovativeness and Performance of High Technology Enterprises" before the Research Degree Committee in June 2009.

Ms. Monika Bhati, Gautam Buddha University got enrolled in Ph.D. programme of the School of Management. Her research supervisor is Dr. Kapil Pandla, School of Management, Gautam Buddha University. She defended her research proposal "Managing Employees Commitment in Manufacturing Industry: A Study of Automobile Industry in NCR" before the Research Degree Committee in June 2009.

Mr. Sandeep Singh Rana, Assistant System Manager, Gautam Buddha University got enrolled in Ph.D. programme of the School of Information and Communication Technology. His research supervisor is Dr. Sanjay Jasola, School of Information and Communication Technology, Gautam Buddha University. He defended his research proposal "Performance Evaluation of Intelligent Algorithm for Data Mining" before the Research Degree Committee in June 2009.



Faculty Seminars

Date	Presenter	Remarks
14 Feb 2009	Dr. Sunil Kumar School of Management	Presentation on 'Role of Emotional Quotient in Stress and Anxiety' before going for a paper presentation in an International Conference at Las Vegas-NV, USA
19 Mar 2009	Dr. Sunil Kumar School of Management	Shared his academic and general experience of participation in the International Conference held at Las Vegas, USA.
25 Mar 2009	Dr. Raj Kumar School of Management	Presented his learning and experience of a Faculty Development Programme on 'Strategic Management Research & Case Writing' attended at Indian Institute of Management Bangalore in March 2009
23 May 2009	Dr. Raj Kumar School of Management	Presentation on 'Impact of Merger Announcements on Value Creation for Shareholders of Acquirers in India' before going for a paper presentation in Strategic Management Forum Annual Conference at IIM Bangalore during May 27-29, 2009
23 Jun 2009	Dr. Gunjan Garg School of Biotechnology	Presentation on 'Phytoremediation Potential of Raphanus Sativus, Brassica juncea and Triticum Aestivum for Copper Contaminated Soil' before going for a paper presentation in an International Conference at University of Queensland, Brisbane, Australia, 12-17th July, 2009



New Research Method in Biotechnology

DNA Microarray Technology – a Powerful Technique of Functional Genomics

Dr. Jai Prakash Moyal, School of Biotechnology

In a given living organism thousands of genes and their products (i.e. proteins) operate in a complex and orchestrated way. However, traditional methods in molecular biology generally work on a "one gene in one experiment" basis, which means that the throughput is very limited and the "whole picture" of gene function is not easy to obtain. During the past several years, DNA-microarray technology has attracted tremendous interest among biologists. This technology promises to monitor the whole genome or at least the majority of genes on a single chip so that researchers may obtain a better picture of the relationships between thousands of genes simultaneously.

A DNA microarray (also commonly known as gene chip, DNA chip, or gene array) is a multiplex technology used in molecular biology and in medicine.

DNA-microarray technology was developed in the laboratory of P. Brown (Stanford University Medical Centre, United State). He suggested that the global patterns of gene activities become observable with few microarray experiments. The application of DNA-microarrays for expression profiling was first published in 1995 (Schena *et al.*, 1995). Since then, the number of publications related to microarrays increased steadily. This demonstrates the rapidly increasing importance of this technology for toxicological research, genetic diagnostics, drug discovery and basic research applications. DNA-microarray technology consists of an arrayed series of thousands of microscopic spots of DNA oligonucleotides, commonly representing single genes, arrayed on a solid surface by covalent attachment to chemically suitable matrices. Such short sections of a gene are used as probes to hybridize a complementary DNA (cDNA) or cRNA sample (called target) under high-stringency conditions. Probe-target hybridization is usually detected and quantified by detection of fluorophore-, silver-, or chemiluminescence-labeled targets to determine relative abundance of nucleic acid sequences in the target (for detail, see figure 1). Thus, DNA microarrays technique allow scientists to detect DNA (as in comparative genomic hybridization), or detect RNA (most commonly as cDNA after reverse transcription) that may or may not be translated into proteins. The process of measuring gene expression via cDNA is called expression analysis or expression profiling. Today, several companies offer different commercial platforms for the DNA-microarray system and believe to perform equally well.

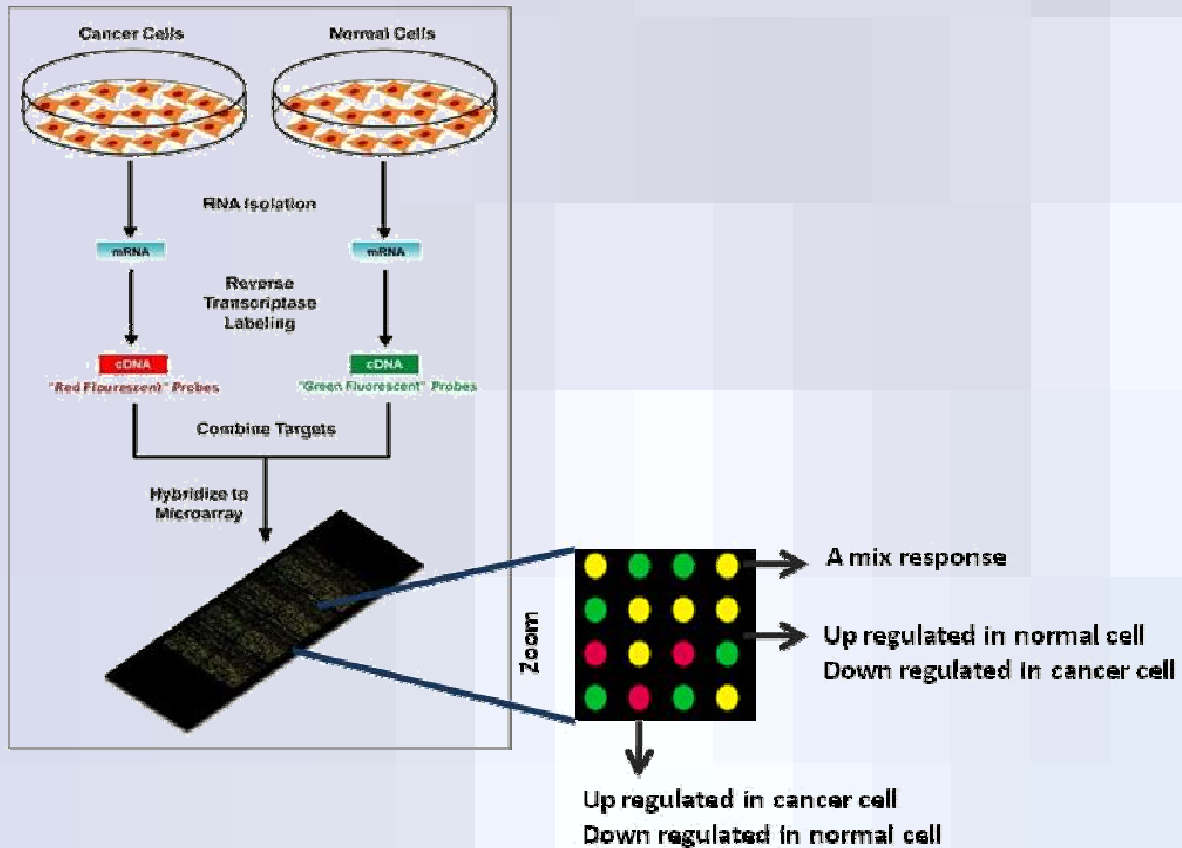


Figure 1: Schematic of microarray technology

Step 1-RNA is extracted from two different samples and converted into fluorescently labelled cDNA (Step-2). Step-3, the labelled cDNAs of the two samples are then mixed and hybridized to the array. Step-4, the array is finally scanned to get the relative fluorescence intensities for each spot.

(Source: Moyal J P, Singh S K, Fehrenbach H (2008). 'DNA-microarray technology: comparison of methodological factors of recent technique towards gene expression profiling', *Crit Rev Biotechnol*, 28(4):239-51).



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