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IIM AHMEDABAD

RESEARCH Newsletter
of the Research & Publications Committee, IIMA

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Chairperson's Message

Dear Readers

I am happy to inform you that the *Research Newsletter* has been restarted with a new look and design. The objective is to inform the faculty and research staff about research papers by faculty members that have appeared in a peer reviewed journal. We have restarted the *Newsletter* with interviews of Profs. Diptesh Ghosh, S. Manikutty, Navdeep Mathur, Arvind Sahay and myself covering various topics.

Prof. Asha Kaul was very enthusiastic and has kindly agreed to undertake the assignment as Editor/Coordinator of the *Newsletter*. She has come up with a few new ideas and the R&P Committee wholeheartedly has welcomed her ideas.

On behalf of the R&P Committee, I am thankful to Prof. Kaul for her efforts in rejuvenating the *Newsletter.* I also thank the members of R&P Committee for their inputs and valuable guidance.

If any one of your papers has appeared in a peer reviewed journal, kindly bring it to our notice. We would like to cover the same. Additionally, we also look forward to your suggestions for further improving the *Newsletter*.

Goutam Dutta

Goutam Dutta
Chairperson, Research & Publications Committee

"OR Can Do Many Things..."
Professor Goutam Dutta

Q As the Research and Publication Committee Chairperson, how do you see the research potential at IIMA? Does this match with the current research output?

Unfortunately IIMA has not tapped the research potential of its faculty and students. We are perceived as a teaching school. Faculty publication per year in refereed international journals should be close to one. We are much below that. To be on the top 25 of the world ranking (we may be 98 now!) we need a plan that promotes research in a long term basis. This is what Kellogg did in the eighties to move up in the rankings.

Q Your doctoral work has been selected for EURO Excellence in Practice Award 2006. Congratulations Professor!!! Share with us the experience.

It was one of the four finalists in the international competition. Optimization is considered very difficult to understand by managers at the shop floor. I developed a system where, without any knowledge of OR, a manager can use optimization. Armco Steel (currently Armco Kawasaki Steel) used the model and it definitely helped them improve their bottom line.

Q Tell us something about the research projects which you are guiding or supervising.

I am generally working/supervising thesis in four areas. First one, optimization of supply chain in process industries. I have been working in this area for the last fifteen years. The second relates to revenue management and dynamic pricing. Third is finance and insurance models etc. Fourth is mathematical modelling of health care systems. I do not think I will be able to elaborate on all four areas in this brief space.

Q You have closely worked with the steel industry. Can you elaborate on the significance of this work?

I worked with Tata Steel from 1980 to 1991. In 1985-86 we had a serious problem of power distribution. While production went up, profits plummeted. The net profit became negative.

Then we developed a system based on linear programming which was implemented by Tata Steel. This system directed power distribution on an hourly basis, ensured that in times of crisis there was power so that there was maximization of profits. Eventually it saved the company. The company accrued a profit to the tune of almost Rs.93 crore, which is close to 73 million US dollars, in six months. Dr J.J. Irani presented this work in America in 1994 and we got the first prize in Edelman Competition – competing with one Chinese, one Japanese and three American companies. I think it was one of the most memorable moments. In brief, the work demonstrated what OR can do to the bottom line of an Indian company.

Q What kind of interface do you see between the specific industry you have worked with and a business school like IIMA?

The interface may be research, training and skill development. With respect to research, developing solutions on strategic and operational problems should be a priority item. Case research continues to be our priority, but we must develop competency on non-case research projects. Various centres at IIMA need to play a positive role there. Focus should be on long term projects on solving real problems and on technology developments.

Take the example of OR which is completely systematized. Decision support systems and solvers are there as tools. If someone wants to use the revenue management system, they don't develop from scratch. There are companies which have developed it. They just have to fine-tune the data. What we did for TISCO was developing a problem from scratch. This can be done by a DSS much quickly today. Business schools can there in play a role. Once these tools are developed training becomes an essential element of our interface with industry.

I have worked in development and implementation of quantitavive models during my industry experience. I can talk much about that. I think the industry interface is below average. My own sense is that OR itself is a gold mine for Indian industry. Many American companies have their office in India in revenue management. We do not have the expertise to develop the software, they have it. So they take our people, develop the software and sell it to us at a high price. We have to build that type of capability to develop it on our own.

Q **Where does OR stand in Indian business schools? Are you happy with it? What more needs to be done?**

Five quantitative methods courses are offered at IIMA: Quantitative Methods I, II and III and Operations Management I and II. There are number of other courses in the second year. OR in India has a lot of potential and people are aware of it. Talking about Indian business schools in general, I think the tendency is to focus more on methodology and less on application. OR started with the Second World War and at that time it was not hooked on to methodologies. Methodology has to come from problems and that's not happening. So we should tell students to go and work on real problems. Give a company or organization to them which has real or genuine problems that need to be solved.

I see OR as a set of tools which can increase the productivity of an organization. It is not something that can be labelled as mathematical or linear programming. One should see how we could improve from this situation. I see OR as change agent. The approach should be such that people are willing to go and solve practical problems. If you are willing to take the first step, OR can do many things. Unfortunately that is not the case.

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"Striking Balance Between Research and Teaching"

Professor Diptesh Ghosh

Congratulations for receiving the "Distinguished Young Faculty Award for Excellence in Research at IIMA".

Q Academic Institutions in India are often reported to have very little research output. How have you struck a balance between research and teaching?

On the issue of striking a balance between teaching and research, there is not much of a choice involved since teaching and research are both parts of my job description. I am sure everyone at the Institute does both; only the ratio of the time that they devote to teaching and research varies.

Q Tell us something about the project, "Mathematical Programming for Management Students". Has this evolved from the classroom?

This is a book in progress. Prof. G.S. Ravindra and I both taught the compulsory course called Quantitative Methods I to several batches of students at IIMA. We could not find any book that dealt with the subject matter at the level at which we teach it. Most "textbooks" were too elementary for the course, while more advanced texts were extremely mathematical. So we ended up writing copious notes for each of the topics and then distributed them in the class. While teaching the course, several students asked interesting questions, the answers to which we added in the notes. At the end of the exercise, we thought that it would be a good idea to put a cover, a preface, a table of contents, and an index to the collection of notes, and call it a book. That is the history behind the book.

Q You have worked extensively on 'Tolerance-based branch and bound algorithms'. What is the significance of this work and what have been some of your major findings?

This is a project on which we (three colleagues of mine and I) started to work a couple of years ago. We have a couple of papers out on the topic last year. The work looks at a new variation of the implementation of branch and bound algorithms, which are still the algorithms of choice for handling what are called hard problems. Our finding is that this variation can help algorithms to handle larger problems using less memory. However, since we have not been able to make the algorithms run very fast, we are currently working on it.

Q What is your advice to young researchers and academics?

I think this question is better answered by more established members in the field.

Q What kind of synergy do you find between your work and other managerial fields like finance, marketing, and human resources?

Most managerial fields, be it finance, marketing, operations, or human resources, use computational tools to take decisions. These computational tools run by implementing algorithms. Since the complexity of the problems being handled is increasing, we need better and better algorithms to handle them. I believe that some of my work contributes to the building of such algorithms.

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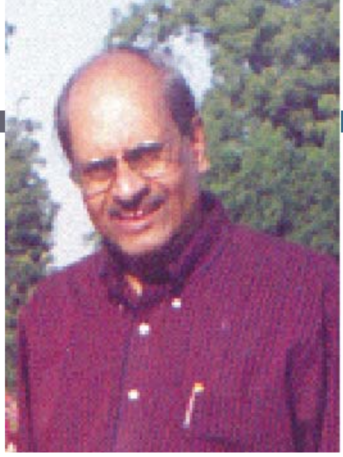
"Culture Influences Learning Style"
Professor Manikutty



Q Let us begin by asking the very obvious question on your article titled "Does culture influence learning styles in higher education?" To what extent does culture influence learning?

Culture definitely influences learning style in many ways. This is a conceptual paper which has to be developed further, to be examined against actual data we have collected. Briefly, cultural aspects such as power distance, collectivism etc. govern the way we learn as individuals as well as in dyadic interactions and in class room situations. Our paper (mentioned above) has been accepted for publication in *International Journal of Learning and Change* and we are now working on the next paper incorporating the results. The results are also being published in another book titled *Cross Cultural Approaches to Learning and Studying: A Comparative Study of Austria, Germany, and India* edited by Stephan Keuchal, Martin Neubauer, and N.S. Anuradha, and published by Macmillan.

Q What are some of the learning experiences of working on the paper?

We were a heterogeneous team: three persons from India, two from Germany, and three from Austria; they were also from different functional areas. The understanding of the cultures they came from, their way of approaching the questions, and delivering the project was itself a learning experience. We tried to look at the way their own culture and our culture influenced our way of looking at many of the problems. We found many variations.

Q Do you find that research is becoming more and more collaborative in academia?

Collaborative research is the order of the day. If you look at practically all journals today, you will find at least 80 percent of the articles will have multiple authors. Some of them are teams of thesis advisors and their students, but most of them is basically collaborative work by different people. This is because of the way in which publishing itself has changed. Research has become quite demanding and most of the time one person cannot handle it.

Q It brings multiple disciplines together.

Not really; sometimes it does, and sometimes it may not. Many of the papers, in fact, do not. If you look at the *Strategic Management Journal*, they do not carry articles with multiple disciplines.

Q In your paper you have critiqued the widely used framework on learning styles, i.e one developed by Kolb. Any particular reason for going with the Entwistle model considering the fact that both have an element of self reporting.

The point is not about self reporting. Why we chose the Entwistle over Kolb are already explained in our paper and essentially it is because Kolb's framework is built on the linkage of learning styles on personalities of individuals rather than with groups and culture. Hence this framework does not lend itself well when we try to understand the linkage of learning styles with culture. Kolb also fails to look at the study environment as a whole in his framework. The environment itself is a product of culture. All these influence learning styles.

Q Has the presence of the media and exposure to literature availability and so on, movement of students from one place to another – presence of mobility hasn't brought the change in the way we look at cultural dimensions?

I have not studied the effect of media whether it has resulted in a change or not.

Q Lots of students in India aspire to study abroad and similarly there are others who get opportunity to travel abroad as part of exchange programmes. What are some of the practical hints for students moving out to study in different cultures (for higher education)?

Our detailed recommendations will be there in our book quoted above. This study was basically a formulation of hypothesis, and as such does not get into these recommendations. But broadly speaking, teachers and administration need to take into account the differences in learning styles from different cultures, and tailor teaching styles as well as the administration to give some support for these people. Evidently, you cannot tailor your teaching style to every single student differently. That is not possible. The issues that need to be kept in mind relate to evaluation, grading, observing class participation, etc.

Q What are your suggestions for the teaching fraternity who increasingly face the issue of dealing with students from diverse cultures?

It has basically to do with understanding the differences in culture among students. For instance, how do they behave in the dimension of collectivism. That determines how individual they are in class preparation and presentation as compared to students from a culture that is individualistic. Similarly, on the power distance – when a student with low power distance society comes, he/she would feel comfortable questioning the teacher, and the teacher should not take it as lack of respect. It is their way of discussing and debating. It is in such dimensions that you have to appreciate the effect of culture and try to relate it to the difference exhibited in learning styles as well as classroom interaction by students and then move ahead.

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Manikutty, S.; Anuradha, N. and Hansen, Katrin (2007). "Does Culture Influence Learning Styles in Higher Education?", accepted for publication by *International Journal of Learning and Change*.

The Role of Values in Policy Research

Professor Navdeep Mathur

Q What has led to the momentum that we see in urban revitalization and participatory governance?

Going back to Harold Lasswell's (1951) concerns in *The Policy Sciences* about the tension between technocracy and democracy, there has been a re-orientation in the literature, scholarship, and practice of policymaking, and policy analysis to bring the study of the policy process within considerations of democracy. Several substantive areas have contributed to this new democratic orientation in policy analysis such as public health, immigration, poverty, international relations, administrative reforms, economic development, environment, and climate change to cite a few.

My paper utilizes an interpretive epistemological orientation, and a discursive methodology to show how different publics act upon urban revitalization as a policy issue, and traces how political power embedded in the governance of development projects can be seen to benefit particular publics over others.

Q As a professor of public policy what are some of the challenges you think that policy analysts face in analysing normative structures that come into conflict in the policy world?

The first challenge that I would see is that of simply comprehending what "normative" means in policy analysis where the field has increasingly become technocratic, with a pretense to value-neutrality. The training for policy analysts is mainly (at least from a US perspective) geared towards technocratic activity and mostly is based on specific models of economic behaviour and unidimensional rational choice theories. There is little understanding of the significance of norms, even though underpinning those activities are usually implicit norms and values and uninterrogated sets of assumptions about human behaviour. And therefore, the artificial subjective and objective division appears as a rhetorical device to provide a veneer of 'hard science', even though there are clearly demonstrated ways of integrating rigour in policy analysis based on the methods of the interpretive human sciences.

The thrust of this "normative" orientation in policy analysis is that scholars, practitioners, and students are using methods that are value-oriented in nature, and not neutral. When that recognition becomes institutionalized, then this concern about normative won't be set apart, it would be integrated in teaching and research.

Q You have emphasized the importance of using the discursive orientation in policy analyses. Can you elaborate on the concept?

The discursive orientation emerges mainly, but not exclusively, from a book called the *Argumentative Turn in Policy Analysis and Planning,* written by Fisher and Forester (1993) who were engaged in highlighting the transformations occurring in the field of policy analysis. It's about how discourses (models, metaphors, and other analytical representations of reality) are the way in which we understand social reality. There are existing dominant discourses through which we frame our understanding of social, political, and various other kinds of phenomena. The discursive orientation seeks to make explicit the layers of beliefs, values, frames implicit in our analytical orientation and then provides alternative tools and techniques to understand policy phenomenon. What is important is really that it brings into focus aspects that are neglected. It brings into focus values, relationships between factors and actors that may be hidden, while political action or decision making in public management is being carried out.

Q Tell us your experience of data collection in Newark, New Jersey.

It was wide ranging, and spanned over two years. It entailed deep immersion in the life of the city's various overlapping publics such as residents, government officials and planners, industrialists, MNCs, and non-profit institutions engaged in infrastructure development in the policymaking arena. The study was carried out in Newark in New Jersey, in USA. It is a once wealthy, now poor city and has a long record of racial discrimination, violence, and deprivation. Each decade has its own story of development initiatives, policy conflicts, and power struggles in Newark. When I was carrying out my empirical work, it was experiencing one of the most recent waves of revitalization amidst increasing out-migration due to joblessness and rising deprivation. Apart from conducting interviews, collecting current and archival data on planning and development, and carrying out detailed analysis of documentation, the fieldwork experience was really immersing oneself in the local area, to attend meetings of resident groups, of tenants' associations, planning hearings, meetings of government and industry where developmental plans were discussed, debated, and made. The human dimension had to be brought out and the only way one could do it was by being a participant in the life of the city and still being a kind of an observer. The idea was to analyse the policy making process while being a participant. The political conflict surrounding this was raging at the time, so it was sometimes frustrating, but very rewarding and enriching too.

Q Insights which you developed as a researcher in the field?

There were a lot of insights along the way. Some have to do with the ethics of doing research on a policy issue that really has a deep impact on the lives of people. Development is a very sensitive issue, and talking to people directly in a development situation is no easy task. There are ways to think about how one talks to the people about something that has a tremendous impact on their life, going beyond textbook tickboxes of calling them participants or co-researchers.

Another insight for me was that policy analysis is really enriched with a good ethnographic and qualitative understanding of a particular problem. That also helps us interrogate more clearly how data variables in standard desk-based research are constructed.

Q How do you find the research activities in this Institute?

I am relatively new here. But it seems that there is an open and constructive approach to research, with incentives for publication of research and generous support for research projects. I don't think it is very different from other schools abroad in the mix of activities we do here – teaching, consulting, and research.

Q What kind of a research agenda have you set for yourself?

At the moment, I am trying to complete the remaining chapters of a book, and a number of articles on policy analysis methodology, and transformations in the nature of local governance in the post-economic liberalization period focusing on accountability and legitimacy. I have a couple of research projects which I am currently developing.

Mathur, Navdeep. 2007. Urban Revitalization and Participatory Governance: Methodology for a Discursive Policy Analysis. *Policy and Society*. Special Issue on 'Critical Perspectives in Policy Analysis: Discourse, Deliberation and Narration'. 25, 2, 77-108.

Using Dynamic Pricing Leads to Higher Profits

Professor Arvind Sahay

Q What is the level of awareness among the consumers in developed countries regarding dynamic pricing?

In developed countries, dynamic pricing depends on the industry sector. In airlines and hotels it is quite high and in apparel retailing and consumer electronic retailing it is becoming more prevalent. In other industry sectors it is probably a little less. But the phenomenon is growing as more and more retailers and manufacturers perhaps try to implement dynamic pricing given that the cost of implementing it from a technology viewpoint is now reasonable. Of course, firms are interested in implementing dynamic pricing as they would then be able to extract more of the consumer surplus.

Q Does dynamic pricing lead to a win-win situation for both buyer and seller?

Dynamic pricing is more intended for the seller to extract what is known as the consumer surplus. Basically, the seller tries to get each individual consumer to pay what he or she is capable of paying or what he or she values that particular product as rather than simply coming up with the cost plus base pricing and saying this is my cost and I have a 10% margin and so that this is going to be my price even if the consumer is willing to pay 1.3 X instead of X. So it is much more about the seller rather than the buyer.

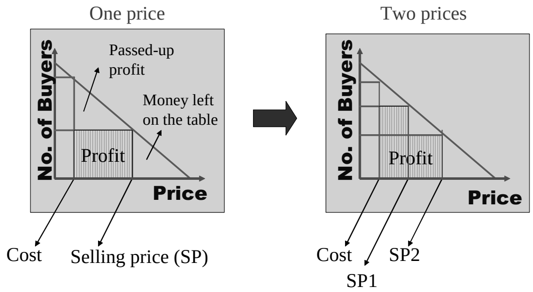
Q What is the single most important factor which has contributed to the changed scenario in terms of pricing in real time or near real time?

The main factor has to do with greater accessibility and implementability of dynamic pricing technology, which now allows companies to do it for much less. Earlier only airlines and to a certain extent large hotel chains were able to use it but now it can be used by medium and small enterprises also.

Q In your paper you have talked about customer participation in the pricing process. Tell us a bit more about this interesting phenomenon.

When you are participating in an auction or you are participating in a group buying process, in a sense, the firm and its customers are jointly setting the price. The seller might set a reserved price in the classic English auction. But ultimately if there is, let us say, a collectable item or a second hand car which is available for sale auction, then a group of consumers who are interested in that car or that collectable item will bid to get the price and ultimately the final price is dependent on what the customer bids for - car or collectable item. In that sense, therefore, while the firm sets the reserve price, customer is participating in the pricing process and is deciding the final price. Similarly in a group buying process which is the way of doing volume discount, groups of customers collectively determine the price and volume discount process.

Beyond the point where costs have been covered, as the number of price points (relative to an existing fixed price level) increases, so do the potential profits.



Q To what extent have industries in India embraced the concept of dynamic pricing? Is this more evident in, let's say, apparel retail, aviation and financial services than other sectors?

In India it is mostly hotels and airlines which are doing dynamic pricing right now in the organized sector. To some extent organized retail chains have started doing it. Of course, the unorganized sector does it in a big way (e.g., negotiations in weekly markets and *haats*). But it is not as widespread as in western Europe and the United States.

Q Please share with us an interesting insight from the data collection experience.

We collected data for mobile phones, DVD players and apparel over phone in UK. There were at least two to three people who did not want to reply to the questionnaire and they were wondering where we had got their names from. In the western world, now increasingly I think a lot of people do not want to receive a call for data collection and they have started subscribing to various regulatory bodies which can prevent people from calling them even for market research. For example, if you call someone who is in national do-not-call-subscriber-list you can be penalized or even jailed. And people do not necessarily appreciate calls for collecting data especially over the phone. So the first time you run into this problem, it is a kind of setback. It was a setback in a sense but fortunately it was a very small proportion and so it did not matter too much. Most people were very cooperative and keen to share the data and were easily able to understand the questionnaire, once we took them through it. In that sense, I think there is a fairly large difference in the data collection process in UK vs. India. In India even for the educated class, normally a face to face interview is required even if you have a very structured questionnaire whereas in the West because lot of people are much more accustomed to data collection, face to face interviews are normally not required. It may be required in particular instances but normally structured questionnaire can be used even over a phone.

Q What is the significance of your work to businesses?

For too long, so far as pricing is concerned, companies have been using the media's response. This is our cost we need to make this much progress and therefore there should be a fixed price. And in these days of increasing competition, where you need every edge that you can find, dynamic pricing offers a way of being able to extract more of the consumer surplus, with the caveat, of course, that the consumer has to be comfortable with dynamic pricing. Given the fact that since the industrial revolution we have been training people to buy on fixed prices, it is not necessarily the easiest of things to now get consumers to switch back to the earlier mode of dynamic prices.

Actually before the industrial revolution, you used to buy not on a fixed price. You used to negotiate and buy on a daily basis and to some extent in India that phenomenon still exists. If you go to the local markets, or to a vegetable market or many other places, you still negotiate the prices. In a sense in India the scope for the dynamic pricing in a larger sense is still there. Large proportions of customers are still not necessarily trained to buy on fixed price. They expect variation on prices especially at the bottom of the pyramid and in that sense there is scope for a lot of companies to be able to price in a dynamic fashion. Definitely the potential is there.

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Sahay, Arvind, "How to Reap Higher Profits with Dynamic Pricing," *MIT Sloan Management Review,* Vol 48 (4), Summer 2007