Abstracts
Indian Management Research
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An efficient stock market is believed to play a vital role in setting the price of its securities. In an efficient market, all the relevant available information about a firm is expected to be fully and immediately absorbed in its share prices. This paper investigates the Indian stock market to see if it is informationally efficient in weak form or not. The weak form asserts that current prices fully and instantaneously reflect all information implied by historical sequence of prices. Such price adjusting mechanism does not ensure consistent extra-normal return to market participants. This study tests the weak form of efficiency in the Indian context using a random walk model where a price series has no memory and cannot be used as a basis of future forecast. The objective is to confirm whether the Indian stock market is efficient in reflecting historical price information in its price. It uses the monthly return of 53 stocks traded in the Bombay Stock Exchange for the period 1987:1-1996:6 and two stock market price indices namely, BSE sensitive index and BSE national index. The results provide evidence for the existence of market efficiency in weak form.


The venue, where informed traders choose to trade, is stated to have important implications for security price movements as well as for the behaviour of related prices. This paper investigates the informational links between options markets and equity markets by developing a multi-market sequential trade model that incorporates book options and stock. The model allows the informed traders to choose whether to buy or sell the stock, buy or sell a put, or buy or sell a call. The conditions under which informed traders use options, stocks, or a mixture of the two assets in equilibrium are determined. The thesis is that under certain conditions, a pooling equilibrium occurs in which some informed traders may choose to trade in the options market, resulting in particular options trades being informative for the future movement of stock prices. The predictions of the model are then empirically investigated for the price volume linkage between options and equity markets. The results provide evidence that stock price changes lead option volumes. No evidence was found for put or call option volumes leading stock price changes. However, after aggregating option trades into positive news trades and negative news trades, the authors conclude that markets are not in a separating equilibrium with no informed trade in the options market. Options volumes respond to stock price changes with lags of between twenty and thirty minutes, while option volumes effect stock price changes much more rapidly. Information, however, is not the only factor influencing stock and option market short-term movements, the authors add.


Although announcement of equity is normally taken as an indication regarding the firm's future cash flows, there is no consensus on the issue. This paper studies the phenomenon of information release when firms revise the number of shares issued in a seasoned stock offering. There are two types of hypotheses regarding information release: market originated and firm originated information. The former refers to individual investors' reservation prices and believes that issue size revisions provide investors with useful feedback about the reservation prices of fellow investors and the size of the firm's investor base. On the other hand, firm originated information directly relates to future cash flows and is intentionally or accidentally released by the firm. The results provide no evidence of firm originated news. It is argued that offering size revisions convey information and investors react to these announcements but the information conveyed does not appear to come from the firm. Instead, the results support the market originated information hypothesis and suggest that revisions are events that investors use to learn about the demand for an offering.


The theory of corporate governance suggests that long-term assets and permanent working capital should be funded with long-term liabilities leaving the remaining working capital to be funded with short-term liabilities in order to minimize risk. This paper provides a simple demonstration that pure maturity matching will not always be even the lowest risk policy for corporate managers who face correlated interest rate risk. The authors consider appropriate funding and hedging strategies for non-financial firms when operating cash flows are correlated with interest rates. A simple two-period mean/variance example is given where the manager chooses among alternative levels of short-term borrowing. It is shown that the optimal funding solution in an imperfect market is a function of: a) the bias in forward rates versus expected future spot rates and b) the minimum risk amount of short-term financing. It is argued that matching will generally not be optimal unless the expected costs of short-term and long-term financing are the same and the firm's operating profits are uncorrelated with interest rates. For a large percentage of firms in the sample, the matched maturity position is not the minimum risk one. Since changes in profits and changes in rates are significantly positively correlated, short-term financing is minimum risk for these firms. Further, no firms in the sample display a statistically significant countercyclical relationship between operating returns and interest rate, the authors observe.

While some acquisitions prefer cash payment, others are found going for stock. This paper investigates how preferences for control rights by both acquiring and target firm managers motivate the method of payment for corporate acquisitions. The focus is primarily on target corporations and the motivation of their managers to obtain influence in combined firms after acquisitions. The analysis of a sample of 50 large, successful acquisitions shows a strong and positive association between managerial ownership of target firms and the incidence of acquisitions for stock. This supports the hypothesis that target firm managers who own large percentages of their firms' shares and who presumably value influence in combined firms negotiate to receive stock rather than cash. The results indicate that the targets' managerial ownership is even more important than the acquirers' managerial ownership in explaining the method of payment for acquisitions. The results also show that managers of target firms are more likely to retain jobs in combined firms when they receive stock instead of cash. Other factors such as capital gains taxes, firm size, and the friendly versus hostile nature of take-overs also explained the association between target firms' managerial ownership and the method of payment.


Conventional wisdom suggests that exchange-rate movements affect both the cash flows of a firm's operations and the discount rate employed to value these cash flows. This study investigates whether the value of a Japanese multinational corporation is affected by exchange-rate changes and whether lagged exchange-rate changes have any explanatory power for current stock returns. About 25 per cent of the firms in a sample of 171 Japanese multinationals experienced economically significant positive exposure effects for the whole period of January 1979 to December 1993. The multinationals with significant exposure are found to be concentrated mainly in electric machinery, precision and transport equipments. The results further indicate that exchange rate exposure is positively related to a firm's export ratio. Consistent with optimal hedging theories, the results of this study show that the extent to which a firm is exposed to currency fluctuations can be explained by variables that are proxies for a firm's hedging incentives. Evidence indicates that Japanese multinational firms with low short-term liquidity or with high financial leverage are less exposed to fluctuations in exchange rates, and that foreign exchange-rate exposure increases with firm size. Finally, Keiretsu multinationals are found to be more exposed to exchange-rate risk than the non Keiretsu firms. The authors attribute this to the difference in the hedging motives of these firms.

**Marketing and Advertising**


The choice of a brand name is believed to influence brand awareness and help in creating a favourable brand image for a newly introduced product. The authors are interested in the second branding strategy which they refer to as choosing a "suggestive" brand name. This paper looks at how the suggestiveness of a brand name influences marketing communication effectiveness. An experiment was conducted to manipulate whether a brand name explicitly conveyed a particular product benefit and the number, nature, order, and timing of advertised benefit claims for the brand. The results indicate that a suggestive brand name facilitates a recall of initially advertised benefit claims consistent in meaning with the brand name compared with a brand name containing no product meaning. Conversely, a suggestive brand name leads to lower recall of a subsequently advertised benefit claim unrelated in product meaning. The implications of these findings are discussed for marketers regarding advertising strategies and the optimal use of meaningful brand names in building and managing brand equity. Limitations of this study are also explained and future research guidelines are offered taking these limitations into consideration.


In comparative advertising, firms may improve their competitive position by repositioning a brand into a more valued class or by incorporating a desired attribute from another class into their own attribute mix. In such cases, across-class within category comparative advertising is believed to facilitate or even produce an attribute upgrading. This study addresses various issues and perspectives associated with using comparative ads in communicating attribute upgrades. It investigates across-class retail positioning involving both new and same-name identities as well as direct and indirect comparative ad claims. The study involved the parents of an elementary school children who were familiar with the local toy market. An analysis of their similarity judgements reveals the ineffectiveness of using non-suggestive same identity names in targeting the leader in a more valued product class. The results also suggest the efficacy of using a suggestively oriented name for the challenging firm. The across-class claims using a non-suggestive existing name for the challenger were able to create a superior perceptual position relative to current within-class competitors, or attribute upgrading. The study concluded that class claims have the potential to create reference points for evaluation and may be used to upgrade attributes, thus providing better brand trade-offs for consumers.


It is the general contention that brand size has a strong influence on the behavioural loyalty of consumers. This study demonstrates that brand size alone does not dictate behavioural loyalty and that attitudes toward a brand do

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have an important role to play in determining a brand's success. The paper first reviews the fact that there are strong Double Jeopardy relationships within categories: push and pull. Push mechanisms are the result of marketing activity's direct influence on consumer decisions at the point of purchase. Pull mechanisms, on the other hand, are a result of marketing efforts that establish a longer-term positive consumer predisposition toward a brand. The authors then show that stable deviations from category relationships do exist and are the result of the particular brand's strengths and weaknesses. It is argued that brands grow by temporarily deviating from the normal category achievement to achieve a better position relative to other brands. A survey research tool, "The Brand Dynamics System" was developed for explaining behavioural and attitudinal loyalty to help the marketing team better understand how they might break the existing status quo if they are to grow their brand effectively. A measure of attitudinal loyalty called the Brand Strength is shown to have a clear relationship with longer-term changes in market share. This relationship is far stronger than would be expected on the basis of size alone. Brand can thus be both big and strong, conclude the authors.


One of the pervasive recent trends has been the use of co-marketing or joint branding, in which two or more brands are offered simultaneously to consumers. Considering the complexities, it is important to know the consumer's reaction to such alliances. This paper identifies and examines empirically the antecedents of brand alliance evaluations to see (a) if brand evaluations "spill over" on subsequent evaluations of the individual partner brands and (b) what effect does brand familiarity have on the system of relationships, including the possible spillover effects of the alliance on each partner's brand. The results of the main study and two replication studies together consistently show the potentiality of brand alliances to modify subsequent attitudes toward the partnering brands. Spillover effects of brand alliance were observed even after controlling for prior brand attitudes. The results also indicate that prior brand attitudes as well as product fit and brand fit are related to attitudes toward the brand alliance. Brand familiarity is found playing a key role in influencing the relative contributions of the two brands on brand alliance evaluations and in affecting the relative magnitude of their spillover effects across partners. Consistent with the effects of information integration, a partner brand that is more salient because of familiarity exerts a relatively greater effect on the alliance. This research is believed to constitute a sound foundation for further research on collaborative market phenomena.


In the course of a new product development (NPD), costs are stated to increase at an accelerated rate as the product moves towards commercialization. It, therefore, becomes necessary to eliminate failures before they lead to a major loss. However, most companies are found reluctant to terminate the problem projects in time thus allowing the products to fail in the market at substantially higher costs. This paper studies the conceptualization of the new product development process to see how managers evaluate NPD projects and make new product decisions for innovative versus incremental new products. A NPD decision-making experiment was used to test the research hypotheses that the reluctance may be even more pronounced for innovative new products than for incremental NPD efforts. The authors suggest that perhaps the excitement that really new products engender within a company makes managers more reluctant to shut down the NPD project, even in the face of clear-cut evidence that the project is not a winner. The results of the experiment support the hypothesized relationship between product innovativeness and managers' reluctance to terminate a failing NPD project. Given identical, poor performance forecasts, the managers who participated in this experiment were more optimistic about the likelihood of success, were more committed to the project, and were more likely to opt for continuing the project when it involved the more innovative product. Implications of the results for managerial practice are discussed.


In the dawn of the 21st century, marketers face a dual challenge. While the demand-side pressures are forcing them to adopt high-variety strategies, the pressures on the supply side are putting hold on the prices. This paper proposes platform thinking as a key to leveraged high-variety strategies — strategies that allow firms to achieve high-variety and high growth, without a corresponding increase in costs or complexity. Platform thinking is basically the process of identifying and exploiting commonalities among a firm’s offerings, target markets, and the processes for creating and delivering offerings. It can be applied to the firm's products, brands, target markets, geographical markets, and business processes. Through simultaneous improvements in speed, cost, differentiation and quality, platform thinking allows firms to overcome inherent contradictions in variety management. This paper discusses the various aspects of platform thinking highlighting the insights that emerge from the synthesis of the cross-functional dimensions. The five most important dimensions include the product platform, the customer platform, the brand platform, the process platform, and the global platform. Marketers are strongly suggested to orient their platform thinking along these dimensions to cope with the challenges of the 21st century.

Organizational Behaviour

Managers are often found caught between the two distinctly divergent perspectives on 'fit' — one that reinforces and develops the firm's existing strengths and the other that extends the range of the firm's strengths. While the former is favoured by the advocates of organizational cohesiveness, the latter is supported by those believing in organizational diversity. This paper reviews both these perspectives and argues that they are not mutually exclusive. Both have their own advantages and limitations. The organizational cohesiveness perspective recommends a selection strategy of searching for person-organization fit that enhances an organization's culture and thereby its effectiveness. The organizational diversity perspective, on the other hand, recommends a selection strategy of searching for employee diversity that enhances an organization's overall creativity and responsiveness to diverse segments of the marketplace and thereby its effectiveness. The need, the authors feel, is to build on the advantages of the two perspectives, move beyond and adopt an integrative organizational perspective regarding the merits of fit. The paper suggested certain basic principles to consider in determining when the pursuit of each type of fit is best for the organization. The organizations and the managers are suggested to select new employees and develop current employees along these principles.

Perceptions of intergroup conflict are often believed to depend on the interpersonal interactions with members of different departments. This paper takes a close look at the interpersonal relationships to see how they actually affect perceptions of intergroup conflict, and vice versa. A social network perspective was adopted to include both positive and negative affective relationships for a better understanding of the social geography within which interpersonal relationships and perceptions of conflict occur. The study also investigated whether positive and negative relationships were additive and compensatory. Interpersonal relationships and perceptions of intergroup conflict were viewed as reciprocally interdependent. Like these causal processes, network structure is also both cause and effect; hence a social network approach was considered useful. Overall, the results of this study indicate that perceptions of intergroup conflict are related to the social network context in which the conflict is embedded. An analysis of direct relationships found no support for the contact hypothesis. While an individual's number of friendships was not significantly related to perception of intergroup conflict, the number of negative relationships was significantly associated with higher perceptions of intergroup conflict. No support could be found for the hypothesis relating high perceived intergroup conflict with high intergroup cohesiveness. The findings suggest that in a non-crisis situation, a group's internal relationships may create a positive or negative cognitive frame that group members use to view intergroup relations or vice versa.

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Organizational trust is considered to have an important impact on cooperative relationships. Though inherently an individual level concept, trust is translated into an organizational level outcome. This study examines how trust operates at both individual and organization levels of analysis and draws on theories of interorganizational relations to develop a model of exchange performance. It is argued that in an actual exchange relationship, the role of individual boundary spanners, acting on behalf of their organizations, has an important influence on interfirm exchange. In particular it is proposed that institutionalized practices and routines for dealing with a partner organization create a stable context within which interorganizational and interpersonal trust develop. The authors further maintain that there is a reciprocal relationship between trust at two levels of analysis and neither alone is sufficient for understanding rational exchange performance. The study conceptualizes the trust performance link as being mediated by interfirm negotiation processes and assesses the effects on negotiation costs, conflict, and ultimate performance. The propositions were tested with data from a sample of 107 buyer-supplier interfirm relationships using a structural equation model. The results indicate the interpersonal and interorganizational limit are related but distinct constructs, and play different roles in affecting negotiation processes and exchange performance.

Although organizational decline has been studied extensively, the authors find inconsistency in the implications of different research streams regarding the consequences of decline. While some studies consider organizational decline as stimulating for innovation, others regard it as interfering. This paper integrates the inconsistent perspectives and findings in these research streams by identifying variables that moderate the relationship between organizational decline and innovation and present them in the form of a contingency framework. The authors argue that the effect of decline of innovation will depend on a series of environmental, organizational, and individual level factors. It is believed that the presence of highly institutionalized missions, widely diffused power structures, and high levels of resource commitment negatively affect organizational innovation in response to decline. The study further suggests that attributions made towards temporary or uncontrollable causes of decline would lead to less innovation in response to decline. This framework, the authors feel, can serve as a focal point for future theoretical and empirical research on innovation in organizations in response to decline. The implications of the proposed relationships are discussed for future research.


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Affective reactions of employees and performance appraisal are the two extensively but separately studied streams. This paper corrects the two streams by examining the relationship between them. It uses the earlier developed Perceived Systems Knowledge (PSK) construct and studies its effects on appraisal reactions and job attitudes, particularly job satisfaction and organizational commitment. Two studies were conducted with the employees from the banking institutions that used the same appraisal systems. The results provide very strong support for the hypotheses that PSK is an important predictor of both appraisal related variables (reactions and fairness) and more general organizational variables, namely, job satisfaction and organizational commitment. The authors argue that individuals who believe that they understand the performance appraisal system used in their organization appear to be more satisfied with their jobs, more committed to their organizations, and are more likely to evaluate the appraisal process fairly. The findings further indicate that how organizations manage and implement performance appraisal system influences employee reactions toward the system and the organization.


Earlier research has demonstrated moderation in reward allocation in the case of Asia where group harmony is believed to be preferred to individual merit. This paper examines the moderation effect of the goal of group harmony at the level of individual allocators and then specifies the loci of such an effect. The loci was expected to be in the allocation rule (I), overt response (J) or input valuation (H). The subtractive versus ratio model is tested with the monotonically rescaled and original data for group harmony and fairness in reward allocation. Although both the models are considered viable for fair allocation, more participants, particularly the Asians, preferred the subtraction model with monotonic J Patterns in the moderation effect across the raw and monotonically rescaled data of individual participants further indicated that the response distortions, input distortions, and response-input distortions are the most, moderate, and least frequent responses to the goal of group harmony, respectively. The results also confirmed the wide individual differences in reward allocation by Indians — not only in terms of allocation strategies but also in dealing with the goals by interpersonal fairness and group harmony. Implications of these findings are discussed and several suggestions on rescaling of the data and the analytical tools are offered.

Human Resources Management, Personnel Administration, and Industrial Relations


Negotiation is guided by a variety of social motives, the two prominent ones being the individualistic and the cooperative motive. While individualists are interested only at maximizing their own outcomes, cooperators aim at maximizing their own outcomes in combination with the outcomes of their opposing negotiator. This study examined the effects of negotiators' social motive and punitive capability on trust, negotiation behaviour, and joint outcomes. Punitive capability refers to the degree to which an individual negotiator may negatively affect his opposing party's outcomes. Applying the structural goal expectation theory to this context, it was argued that compared with individualistic motives, cooperative motives lead to higher levels of trust, which in turn facilitates information exchange and the development of integrative agreements. However, higher punitive capability, in case of cooperative motive, produced lower trust, less information exchange, and agreements of lower joint value than low punitive capability. The study shows these effects as the result of increased conflict avoidance of higher levels of punitive capability of the cooperative negotiators. Individualistic negotiators were not influenced by punitive capability. These results suggest that negotiation relations are more effective under low rather than high punitive capability. It also projects cooperative motivation as a key to constructive (conflict) management.


The skill-based pay programmes are becoming more popular in comparison to the traditional job-based approach that considered only the attributes of task to be completed. In contrast, skill-based pay rewards work-related attributes and thus encourage employees to get inclined towards developmental opportunities and skill seeking behaviour. Realizing a lack of evidence regarding the outcomes of skill-based pay programme, this study considers the operations and behavioural approach and integrates them to see which organizational outcomes (namely, productivity, quality, labour cost) and to what extent were affected by the implementation of skill-based pay. Time series data were obtained from both treatment and comparison facilities by interviewing the respective managers and archival data were compiled and pooled cross sections of time series data. The pooled cross sections of data were then analysed to estimate the size of the pay programme's effects on important organizational outcomes. The results indicate greater productivity, lower labour costs and favourable quality outcomes with skill-based pay. It offers a unique approach to addressing the challenges of increased competition and technological change, the authors conclude.


Downsizing — an organizational reality for many organizations, means devastating consequences for the layoff survivors. This paper reports the findings of a study that
examined the reactions of male and female survivors as well as the reactions of survivors at different organizational levels to organizational downsizing that involved a workforce reduction. The specific reactions studied included perceived injustice, perceived job insecurity, coping strategies, and emotional responses. The study participants included female clerical employees, male and female technicians, and male first-level supervisors employed in a major corporation in the telecommunication industry. Overall, male and female survivors did not differ in perceived job insecurity, in the ways in which they coped with the workforce reduction, or in their emotional reactions to the layoffs. The only significant difference was for perceived injustice, with the female technicians perceiving greater procedural and distributive injustice. The survivors were found responding to workforce reduction more on the basis of their organizational level for procedural injustice, sense of powerlessness, positive thinking, direct action and help-seeking coping. Because of these differences in reactions, the author suggests that intervention programmes be tailored to meet the needs of different groups of survivors based on organizational levels, gender, and prior experience with workforce reduction.


Merit pay relates adjustments in an employee’s basic pay directly to his job performance and is thus in conformity with the theories of human motivation. In spite of intuitive appeal and theoretical support, merit pay often fails to bring about desirable results. This paper examines the problems associated with merit pay and evaluates the proposed traditional solutions. The problems relate to issues associated with measurement, feedback and acceptance, reward desirability, timing and reward system inconsistencies and unintended consequences which may arise after a firm adopts a merit pay approach. The authors feel that these problems have been underemphasized and consider important attribution errors that attenuate merit pay effectiveness finally proposing a work unit based alternative to individually oriented merit pay systems. In this approach, the work group uses performance indicators to systematically review the purposes, products, and processes of the unit to develop a shared understanding of areas and activities critical for unit performance. It addresses most of the problems associated with the traditional system, thus improving measurement accuracy, feedback, and reducing noise in appraisal system and unintended consequences. It is, however, stated to ignore or discourage individual performance and create certain work unit level problems. The managers are suggested to carefully study the implications of a PI system to ensure its compatibility with both organizational culture and employee expectations.


Withdrawal from international assignments may result in direct and indirect losses for the firm as well as for the expatriates. For the firm, it means, besides monetary loss, a reduction in market share, competitive position, supplier relations and a discredited image. The expatriates also lose by way of diminished self-esteem, impaired relationships, and interrupted careers. This paper integrates the organizational withdrawal and relocation literatures to develop a model of the expatriates' early return decision process. The model explicitly considers the role of adjustment, the project-based nature of international assignments, and the importance of several non-work and family context factors in this withdrawal process. The model is tested with a sample of 452 expatriates and a matched subsample of 224 expatriates and spouses living in 45 countries. Multiple regression analysis showed work-related factors of job satisfaction and organizational commitment as significant predictors of expatriate withdrawal cognitions. Although family structure did not have a direct effect, it did strengthen the impact of non-work satisfaction. However, spouse adjustments showed evidence of a direct impact on expatriate withdrawal cognitions. The authors suggest implementation of such HRM policies that would focus on supporting the expatriates' family and thus improve retention.


The development of HRM practices in any country involves a set of historical processes, societal systems, structures and policies. In view of the growing cross-country collaborations in the globalized regime, international managers are required to understand the character of the national patterns of HRM and their propensity for change. This paper builds on an earlier study measuring international differences and similarities in HRM—a empirical framework against which each country is measured and mapped. A set of nine HRM factors is identified and with reference to this set, India's position is interpreted. Applied to the Indian context, the Indian HRM and cultural profile did not match with that of the other countries. India, in this sense, is a "cultural island." However, in terms of proximity, the Indian recipe is comparable with that of Japan. Both the countries have low structural empowerment, low accelerated resource development, high corporate responsibility and high long-termism. India, however, has lower level of efficiency emphasis than Japan. India's high power distance culture, low risk taking propensity and importance of familiar and social networks explain its low efficiency orientation. Certain changes, though small, are noticed among the priorities of the HRD agenda towards promoting flexible packages, sharing of risks and benefits between employees, continuous training and an equality based corporate culture. This changed recipe would harden the HRD agenda and make it competitive in the cross-cultural business environment, the authors hope.

Production/Operations Management, Quantitative Methods


Various kinds of uncertainties have to be considered while planning for energy-environment. These uncertainties arise mainly out of the complexities in the climate change process or due to the long planning horizons. This paper describes an application of stochastic programming to incorporate future uncertainties in long-term energy-environment planning. An innovative approach to the MARKAL model is used to stimulate price sensitive demands within a linear formulation. MARKAL is a large scale technology oriented activity analysis model, integrating the supply and end-use sectors of an economy, with emphasis on the description of energy related sub-sectors. It often ignores the macroeconomic impact of implementing carbon mitigation, mainly in terms of demand reductions induced by increased energy prices. The analysis incorporating future uncertainties suggests that it is prudent to reduce carbon emission in anticipation of a global regime in future. The elastic IM (Indian MARKAL) confirms that a part of the macroeconomic impact of carbon taxes can be easily captured in a detailed bottom-up analysis, within a linear formulation. A useful estimate of emission reduction due to demand loss under severe carbon taxes is also obtained.


The scope of logistics begins with the sources of supply and ends at the point of consumption and is actually concerned with distribution of anything at any point in the supply chain. The authors argue that the ability of logistics to achieve its aim of interfunctional co-ordination efficiently and effectively is likely to be hindered if it continued to be governed by its current functional paradigm. This paper begins by defining and setting out the objectives of both 'traditional' and 'non-traditional' forms of logistics and expresses apprehensions regarding the proper interfunctional co-ordination and acceptance of even the newer form in the practitioner community. The meta-theoretical framework of Burrell and Morgan is used to explore the underlying principles which constitute the paradigm on which logistics is based. The paradigm analysis reveals that both traditional and non-traditional logistics are 'functionalist' in nature. The authors feel that although traditionalists may perceive that they have radically reconstructed logistics in response to the problems encountered, they actually have not. What is required is full comprehension of the assumptions on which the work is based. And for this, logistics would need its own revolutionaries who will explore other paradigms to see what these have to offer. Of course, what logistics would look like after a revolutionary transformation is another subject of debate.


This paper focuses on the single product level problem of managing stocks in the distribution centre. This work was initiated and supported by a manufacturer of mail processing equipment, which stocks 30,000 distinct parts in a distribution centre to support field maintenance of their equipment. To find an effective stocking policy for this system, a constrained optimization model was formulated. The objective was to minimize overall inventory investment at the distribution centre subject to constraints on customer service and order frequency. Size, integrality, and nonconvexity made this problem intractable to exact analysis. Hence, three heuristic algorithms were developed based on simplified representation of the inventory and service expressions. These lead to the 'easily implementable' inventory policies, in which the control parameters for a newly introduced part can be computed in closed form without reoptimizing the rest of the system. Numerical comparisons against a lower bound on the cost function show that even the simplest heuristic works well when a high service level is required. The authors also compare their heuristics with the earlier methods and find the performance of the policies generated by this approach to have significantly lower cost and better customer service.


The concept of a unified and integrated communication network has so far assumed that customers, in general, are tolerant of losses. Reality, however, suggests that reliability may be highly desirable in some applications and the interested customers would even be willing to pay more for it, if such a service were available. With this consideration, the paper proposes a design of a hybrid network, which is capable of supporting two classes of traffic. These classes are based on reliability alone, and can be further subdivided on the basis of other quality of service requirements. Type 1 traffic is supposed to have zero cell losses, and type 2 traffic is loss tolerant. Thus, time is broken up into frames and cells are then allowed from and to specific ports to be transmitted only during some of the slots in the frame. The authors show the switch architecture on which this discipline can be implemented easily. An algorithm is then developed to reduce the number of buffers required for type 1 traffic at the output modules to zero. Finally, a difficult queuing problem which is useful in designing the buffer size for type 2 traffic is solved.


In an environment of Just-in-Time and customization manufacturing, where shorter cycle time and on-time delivery is important, scheduling becomes necessary for the manufacturers' competitive advantage. Minimizing total tardiness of the jobs, though often cited as the due-date related performance measure, has not been adequately addressed statedly due to its computational complexity. This study considers simulated annealing to solve the sequencing problem to particularly see if it provides an efficient, heuristic solution approach to minimize tardiness in a single...
processor job shop when set-up times are sequence-dependent. Simulated annealing randomizes the search procedure and can thus handle real-time performance data and changes in job requirements adequately. The experimental results show that the algorithm can find a good solution fairly, quickly, and can, therefore, rework schedules frequently in reaction to variations in the schedule. It is thus considered as a viable approach for generating predictable and dependable schedules to meet the delivery commitments. The results also suggest ways in which more complex job shop environments, such as multiple machines with higher number of jobs in the sequence, and other scheduling objectives can be modeled.


Restructuring of many large organizations has resulted in downsizing, decentralized decision-making and outsourcing thus reflecting a major shift in the environment in which OR is conducted. It is very important that the OR groups embodying different competencies and following different strands of practices collaborate so that their knowledge is productively integrated. This paper considers two kinds of collaborative relations, one within an entrepreneurial OR firm, and the other between an external and an internal group. The OR practice is studied at the micro level of individual practitioners, for exploring the problems and dynamics of collaboration among OR workers, the difficulties of integrating different competencies, and the effects on the potential for renewal of OR practice. Taking competence-based view of OR practice, the kinds of problems are illustrated in the context of an entrepreneurial, external OR firm's experience over ten years. The study reports on how, within an external, entrepreneurial, and innovative OR group, multiple strands of practice emerge over time, how tensions arise between these strands, and how ensuing organizational dynamics undermine the group's capacity for renewal. The 'micro-level' problems of collaboration between the individual practitioners and between groups are believed to cause serious impediments to the integration of OR knowledge in practice and may thus undermine the renewal of OR practice.

Computers and Information Systems


Many managerial decisions involve placing a case into one of the multiple classes based on currently known predictors concerning the case. Though some of the recently developed computer-based classification decision (CBCD) techniques have proved to be important assets to organizations, the studies examining their predictive accuracy give inconsistent results. This paper employs statistical prediction theory as a foundation for productive CBCD research. The authors first describe the classification decision and introduce three popular machine learning techniques and one statistical technique that are the bases of most CBCD studies. A framework is then developed with a focus on the notion of accuracy, what it is and how it can be accomplished in the CBCD context. Research propositions derived from the framework are presented and CBCD research associated with each proposition is described. This provides insight into the research focus, results interpretation and context equivalency issues. As new techniques are developed, the framework provides guidance as to what algorithmic aspects should be explored in order to determine relative predictive accuracy.


With the rapid increase in size and performance, computer networks are becoming more and more pervasive. However, the evolution of computer networks from the old simple communication technologies to the modern large scale innovative media faces the problems of scalability, flexibility, extensibility and customizability. The notion of 'mobile code' is emerging as an important concept to deal with these problems concerning the design and implementation of a large scale distributed applications. Code mobility refers to the capability to dynamically change the bindings between code fragments and the location of their execution. This paper proposes a conceptual framework structured along three classes of code mobility concepts: applications, design, paradigms, and technologies. It provides a set of terms and concepts to foster understanding and comparison of the approaches based on the notion of mobile code. The paper also introduces criteria and guidelines that support the developer in the identification of the classes of applications that can leverage off mobile code in the design of these applications and in the selection of the most appropriate implementation technologies. Finally, a case study in network management is presented to illustrate how the stated classifications can actually be used to guide the software engineer through the design and implementation phases of the application development process.


Multimedia applications are developing fast in many areas of business, such as training, education, business presentation, communications, etc. However, the authors find a gap in the research on the effect of multimedia on information analysis and its outcomes. The objective of this study is to fill this gap by examining whether multimedia is a useful addition to the executive support system (ESS) for decision makers in performing information analysis. Effectiveness of multimedia is measured by the number of threats and opportunities identified for a business event. The subjects for the study included 40 managers or professional employees with adequate information scanning, analysis, and/or decision making experience in three business organizations. Contradicting the earlier studies, the results of this study
suggest that multimedia may not be an appropriate presentation format for analytical tasks. Managers and professionals who used a multimedia ESS identified fewer threats and opportunities than those who used a text-based system. Contrary to the results of several previous studies, the use of multimedia did not improve information retention. During the post-experiment interview, in fact, the subjects indicated that the use of sound annotations had adversely affected their ability to analyze information. Certain multimedia components, such as animated charts and text blocks were particularly stated to be unnecessary. The authors suggest that the organizations should cautiously evaluate the pros and cons of the multimedia technology before committing significant resources to it.


In the context of Internet and Intranets, workgroup computing systems are emerging as useful tools to support group users to perform tasks individually in a distributed environment while achieving enhanced productivity in group work through shared information. The role of a change management framework becomes crucial so as to facilitate sharing of group objects and maintaining consistency between a base-shared object and its dependent user views. This paper presents an object-oriented database model for a change management framework that can manage dependency relationship between transient user views and persistent shared objects in databases and coordinate change propagation between the two in workgroup computing systems. It first identifies the requirements of workgroup systems and focuses on the change management aspects of these systems. The author then describes the basic constructs and core mechanisms of a change management framework, including dependency management and change notification mechanisms. These constructs are finally integrated for implementation of the change management framework in a client-server computing environment.


Branch and cut (B&C) is an enumeration technique for solving mixed-integer programs. It is based on the polyhedron that results when the integrality requirements are relaxed, leaving a continuous feasible region. The success of B&C relies on the ability to generate strong valid inequalities for the associated polyhedron. The authors had earlier developed several valid inequalities for two different formulations of the sequence-dependent setup time (SDST) flowshop. This paper empirically evaluates those valid inequalities within a branch and cut framework, and shows the effectiveness of this approach as compared to the conventional branch. Two different mathematical formulations are considered. Model A is based on a travelling salesman problem-like formulation. Model B uses fewer binary variables and constraints, but is less structured than model A. The empirical evaluation of the valid inequalities establishes the superiority of the B&C approach.


Assignments of courses to faculty members in the desirable time slots is a periodic problem that all the academic departments face. On the one hand is the changing demand for particular courses, and on the other, is the contractual agreement on faculty teaching loads. This paper introduces and applies a zero-one goal programming model. The model examines the conflicting objectives of departmental policies and uses an optimization procedure to maximize faculty preferences to teach certain courses and during certain time blocks. The core of the procedure is formed by a matrix, with rows divided into three sections, indicating course priorities and with letters indicating priorities for a specific time-block. The paper then describes the application of the model to the Department of Statistics, College of Business and Economics at the UAE University. The results of the application demonstrate the model's capability to provide an assignment that satisfies departmental policies and procedures with regard to course offerings, as well as recognizing the personal preferences of the faculty to courses and times, the authors conclude.

General Management: Policy, Technology, and Management in Government


Entrepreneurial self-efficacy is the strength of an individual's belief that he or she is capable of successfully performing the roles and tasks of an entrepreneur. This paper explores whether entrepreneurial self-efficacy distinguishes those who pursue, or intend to pursue, a career of owning and running their own businesses from those who do not. Two surveys were conducted: one, on students to examine whether entrepreneurial self-efficacy affected entrepreneurial intentionality and the other, on small business executives to examine whether it distinguished entrepreneurs from managers. Some conceptual and measurement issues of self-efficacy are first discussed. In search of an individual characteristic that is distinctively entrepreneurial, an entrepreneurial self-efficacy (ESE) construct is proposed. The results from both students and business executives indicated a significant and consistent positive effect of entrepreneurial self-efficacy on the likelihood of being an entrepreneur. Those students who reported stronger ESE also expressed a stronger intention to start a business of their own. Moreover, business-founding executives held stronger ESE than non-founding executives. Discussing the implications of the findings, the authors state that ESE can be used to identify reasons for entrepreneurial avoidance.
or to assess the entrepreneurial potential of both an individual and a community. Two approaches are suggested to enhance and sustain ESE. However, ESE is only one variable in the complex process of entrepreneurial decision and action, they clarify.


Technology acquisition or innovation is usually associated with the larger enterprises while smaller companies are mostly stated to be technology-contingent where technology, if at all, is used on an ad-hoc basis. This paper is concerned with those technology-contingent small and medium sized enterprises (SMEs) that have traditionally taken a passive attitude towards technological change but are now moving away from that position. The activities of both technology-contingent and technology-intensive enterprises in terms of acquisition are compared through a survey study on technological networking in the UK. The technology-contingent enterprises are not necessarily technologically incompetent; the problem rather lies in the lack of knowledge of available technology. Compared to technology-intensive enterprises, technology-contingent SMEs lack absorption capacity and are therefore required to increase their activities to acquire new knowledge across the board through training of skilled personnel. The major vehicle for technological learning in these enterprises, however, is technology transfer in regular business relations. Networking is suggested as a means to encourage enterprises to exchange information on all relevant issues within the context of existing business relations. The introduction of explicit technology management is, thus, expected to change not just the behaviour of individual enterprises, but also the character of competition and the structure of industries.


It is generally observed that some kind of local freedom allows a subsidiary to develop a strategic response that meets local pressures and needs. An integration-responsiveness (I-R) framework was earlier developed by Jarillo and Martinez, who identified three clusters, namely 'receptive subsidiaries,' 'autonomous subsidiaries,' and 'active subsidiaries.' This paper critically reviews the model of subsidiary strategy of Jarillo and Martinez and proposes an extension of the model based on the data from a survey of 171 MNC manufacturing affiliates in the UK. A group of firms is located in each of the four quadrants of the I-R framework. In addition to the earlier clusters, a fourth cluster was identified in the low I-low R sector and its members named as 'quiescent subsidiaries.' The clusters are found to change positions over time within the framework in a systematic manner. This four-group typology is believed to give a reliable and robust taxonomy. The characteristics of the quiescent affiliate type are discussed and the determinants of strategy stability and strategy change over time are evaluated. The study indicates that quiescent position is a less than desirable strategy locus for both corporate managers and affiliate managers and thus may not be knowingly applied. The author points towards certain weaknesses of the proposed approach and tentatively suggests guidelines for future research in the area.


Uncertainty is a reality in today's business environment. However, with the help of analytical tools, managers can gauge the level of uncertainty and tackle it. There can be four broad levels of uncertainty: a clear enough future, alternate futures, a range of futures, and true ambiguity. According to the levels of uncertainty, the company can decide on its strategic posture: whether to be a shaper, an adapter, or to reserve the right to play. For instance, in a predictable business environment, companies are usually adapters, making positioning choices about where and how to compete. For alternate futures, a shaping strategy is designed which could be supplemented with options that let them change course quickly in case the shaping strategies fail. At level 3, since there is a range of potential futures, the shaping strategy tries to move the market in a general direction. Alternatively, the companies can also choose adaptive postures or reserve the right to play. Level 4 situations, being the most uncertain, induce the shaper to provide a vision of an industry structure and standards coordinating the strategies of other players to drive the market towards a more stable and favourable outcome.


Earlier research has shown strategy as the art of allocating resources. The authors argue that the creation and sustainability of a firm's competitive advantage depends to a great extent on how the firm's resources are acquired and managed. Such a resource-based view, the authors feel, would allow reframing of the relationship between strategies and structures. This paper offers both theoretical and empirical perspective of analysing resources, competencies, and capabilities and also the organizational forms that permit their acquisition and exploitation. The theoretical concepts provide an analytical framework for studying a French firm, Salomon, and understanding how it implements a breakthrough strategy based on radical innovations. The case shows how an integration of the concepts of competencies, capabilities, organizational structure and learning are integrated for the success of the firm.

Economic Growth, Planning, and International Trade


Prior to globalization in the nineties, India followed an inward-oriented industrialization protecting the economy from internal and external competition. With no incentive
to integrate with the global economy, even the available technological capabilities were under-utilized leading to an inefficient industry and low export shares in world trade. This paper looks at the pattern of India’s industrialization in relation to indigenous technology development and acquisition of foreign technology. It also examines separately the technology policy, its strengths and weaknesses and reviews those initiatives that would help upgrade R&D skills, acquire new skills, and develop new linkages. The options for technology upgradation in any country include acquisition of technology from abroad, import of capital goods, use of capital goods manufactured indigenously, using indigenous innovations and continuous operational improvements. India was found to lag behind in all these areas. However, in the process of globalization, India is taking up cooperative research with the foreign firm and increasing technological collaborations involving foreign direct investment. Technology has now become the key element for creating and sustaining competitiveness. Hence, economic policies in India and elsewhere have to be necessarily designed towards inducing technological change for taking advantage of dynamic gains of the global growth.


In the face of increasing global competition, China has undertaken reforms in the large scale industries sector. However, the pattern of the relationship between multinational business and emerging big business in China is going to be shaped by the international politico-economic relationships. This paper takes a close look at the process of building modern big business in China in the perspective of fast changing international relations. The world’s leading corporations have developed with the help of extensive government support. Chinese state finds it difficult to control the vast country that it is and has thus made important institutional innovations in the large scale sector to support the growth of powerful and autonomous big businesses that can compete with the global giants. The reform orthodoxy recommended close integration with free trade and free movement of capital. In contrast, the Chinese government adopted a planned ‘strategic’ integration with a strong support for emerging indigenous big business while simultaneously attempting to benefit from capital and technology transfer from multinational companies. With regard to state-owned enterprises (SOEs), China followed the policy of ‘grasp the large, let go of the small.’ As a result, many fast growing and fast modernizing large SOEs emerged with high degree of managerial autonomy. However, the authors see some threats in terms of conflicts of interests among different personnel, departments and regions arising out of the enhanced autonomy. Moreover, the Chinese enterprises, in effect, are found becoming subcontractors to the multinationals. Highlighting the importance of the state, the authors consider the interaction between the national government, international organizations and MNCs as the key to future politico-economic development in China and in the rest of the world.


Backed strongly by the government policies in the planned era, the public enterprises in India grew in size but failed to perform effectively. While the majority in the nation nurture this belief, and the debates are found increasingly tilting in favour of the private sector, the authors express concern over what they call an ignorant criticism of the public sector. It is true that there is considerable room for improvement, but the problems related to the functioning of the public sector are not beyond corrections they feel. The problem is stated to lie in the appropriate evaluation of performance and efficiency of public enterprises which is often measured in terms of commercial indicators such as financial profitability. Knowing the social welfare objectives with which the public enterprises were established, such an evaluation purely in terms of profits is considered unethical. This paper examines the suitability of the concept of "public profit" for evaluating the real contribution of public enterprises to the society. Public profit is the adjusted profit which not only takes care of public ownership of the enterprise but also makes alterations in the normal accounting concerning the real surplus generated by the public enterprise. It implies that while a private manager is considering only one economic group, the private shareholder, the manager of a public enterprise has to take care of the interests of all the domestic economic groups — shareholders and non-shareholders. The value to the society is measured in terms of difference between what the enterprise takes out of the economy (costs) and what it puts back (benefits) in any one period. This alternative, though effective, is not yet accepted in India, the authors lament.


Globalization implies international integration of commodity, capital, and labour markets. While this undoubtedly opens up new opportunities, there are also fears about employment contraction and reduced standard of living due to globalization. This paper explores the rationale underlying the case for structural reforms with a focus on market and globalization. The experiences of three countries, namely Ghana, Malaysia and Poland are discussed to examine the outcome of market integration. In all these countries, real wages were found to have changed with the aggregate economic performance. Similarly, in different Indian states too, real wage changes over time reflect the underlying economic performance in terms of aggregate output. Growth, in turn, depends upon not only capital and labour expansion but also on the quality of these inputs, technology and how efficiently these resources are allocated across sectors and used in production. In this respect, globalization can only be expected to play a promotional role. However, international integration results in increased economic competition with implications for workers across countries. Lower wage payments may result from the efforts to reduce cost, and the loss of bargaining power both due to increased
competition. In some developing countries like India, employment reduction in unviable sectors takes place immediately whereas employment creation in new competitive activities takes time because of economic bottlenecks. Hence, the author stresses on the need for the government to formulate policies to remove the bottlenecks and to improve international competitiveness while guarding the national economies against the instabilities and negative implications of the global financial system.

**Agriculture, Natural Resources, and Rural Development**


Technology, an important input development, is yet to reach the rural sector, feels the author. Although there has been some technological development in terms of high-yield variety seeds, food processors, etc., their applications are still very limited. This paper discusses the present status of technology development and application in India and conceptualizes a model for ensuring utilization of sustainable technology in the rural areas. Sustainable technology is stated to arise out of indigenous creativity in response to local needs. It, therefore, requires to be relevant for improving the life of the common people, and derive maximum leverage from the local cultural environment, maintaining harmony between people and nature. An appropriate technology would be user friendly, environment-friendly and cost-effective so as to have easy adaptability and replicability. The case of the Orissa Tribal Development Project is presented to demonstrate how technologies were transferred and systematically used for meeting the economic and ecological needs of the tribals. The income of the tribals increased and the degradation of natural resources was checked through proper transfer of technologies. The author suggests creation of institutional framework, development of infrastructure and effective human resources to have a complete technology network for sustainable technology transfer towards achieving higher growth and an improved quality of rural life.


This is a reproduction of the Presidential address delivered for the Indian Society of Agricultural Economics. Touching upon the obvious importance of irrigation in the agricultural development, the author proceeds to present the structure of the Indian irrigation sector, discussing the benefits and costs of canal irrigation, finally analysing the issues in irrigation from the policy perspective. The author cautions against the prevalent conception that major irrigation is ill-conceived and unwanted while minor irrigation is an ideal cost-effective choice. The minor irrigation capacity is stated to be highly unutilized. With a renewed interest in canal irrigation in the reforms regime, the discussion focuses on the benefits and costs of the same. What is important in this context is to know how much of the costs are recoverable and how much of its subsidization unavoidable. An evaluation of incidental costs and benefits is also considered necessary for analysing the economic viability of canal investments. In light of the observations on these aspects, certain policy prescriptions are offered. The choice is not between whether to have canal irrigation or not. The choice has to be made regarding the source of funds for supporting the canal irrigation schemes. While advocating for certain amount of subsidization, the author suggests the rate to be curtailed to augment fund availability. A proper management of available resources for the resettlement of dam oustees and an objective presentation of the case for major irrigation works would help dispel some of the prevailing disinformation about dams and gain confidence about their economic viability.


Scanty and erratic pattern of rainfall has made sustenance difficult for the increasing population depending on farming-system, particularly in the dryland regions. This, along with the realization about the near exhaustion of the existing capacity of groundwater and the irrigated land, brought into light the importance of conservation of rain water and checking soil erosion. Integrated Watershed Development (WSD) Programmes were devised to enhance productivity of land and water resources. However, the author believes that environmental concerns have diverted the WSD policies from the basic obligation of shifting the investment priorities in favour of land development and enhancement of soil fertility. A comparative profile of India and Africa is presented to examine the development of watershed programmes in a historical perspective. In the case of India, the programme beginning with some amount of coercion yielded significant results initially but became somewhat diffused especially under the increasing influence of environmental concerns. The analysis also notes a shift of policy emphasizing long-term environmental sustainability instead of enhancing farm productivity per se. Referring to the failure of the WSD programmes, the author argues that it is not the excessive intervention, neglect of indigenous technologies, imposition of high-cost external inputs or coercive measures that has contributed to the low selective impact. It is rather the low priority and inadequate investments in these programmes that is believed to have led to poor performance and farmers' indifference towards such indifference. An intensive intervention is, therefore, suggested in terms of technology and other inputs support besides strengthening the rural infrastructure and formal institutional arrangements.


The technological development is generally associated with the urban economy. The author, however, sees a challenge in creating new economic opportunities in rural areas through the application of science and technology. This
paper proposes a practical conceptual approach with the idea of setting up an interactive mechanism in the rural areas involving the technology receiver, the technology producer, and several other stakeholders in technology management. At the practical level, the author advocates the need for establishing a technology delivery system compatible with the local conditions for upgrading traditional technology. The Bankura experiment, designed along these lines is studied and reported to demonstrate the utility of the stated model. Four components make the model: one, assessment of techno-economic status and identification of needs of the local people, two, understanding social and economic relations of the people, three, establishing a mechanism of interaction among stakeholders and finally, setting up an appropriate organizational and management structure for sustaining innovation, production, and commercialization. The case study finds benefits of application of computer aided design for the design and simulation of 'Baluchari' saris in terms of increased income, reduced cost of production and expanded markets.


Much of what is known or believed about poverty, standard of living, or the distribution of income, depends on the quality of the survey or the distributional data available with each country. Although efforts to improve the quality of data and coverage of survey are on, there is still a long way to go, feel the authors. This article provides a broad picture of the evolution of measures of distribution and poverty since the mid-1980s and analyses the correlation of these changes with growth and contraction in average levels of living. Data from household surveys in 67 developing and transnational economies over 1981-84 have been considered for the purpose. The analysis finds that changes in inequality and polarization were uncorrelated with changes in average living standards. Distribution improved as often as it worsened in growing economies, negative growth being more detrimental to distribution than positive growth. Strong evidence was found for an association of higher rates of growth in average living standards with higher rates of poverty reduction. For the developing countries as a whole, however, there is no significant trend distributional effect for or against the poor.