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of Innovation and Entrepreneurship
(AIE 2013)**

**Innovation and Entrepreneurship
for Inclusive and Sustainable Development**

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The 6th Academy of Innovation and Entrepreneurship Conference was held in Oxford on 29-30 August 2013. The AIE has a lively tradition of collegial engagement on important research and policy issues, and the meetings in Oxford continued that tradition.

The Conference theme this year was “Innovation and Entrepreneurship for Inclusive and Sustainable Development”. Long recognised as a key driver for growth and competitiveness in developed economies, innovation and entrepreneurship are now summoned to address the needs of the poor and the needs of sustainable development. Concerns of the widening inequalities and to combat the challenge of climate change and resource limitation are at the top of many policy governments’ agenda.

We convened in Oxford in 2013 to explore the concept of inclusive innovation, economic catch-up and sustainable development and to highlight the challenges and impacts associated with them. The primary objective of AIE 2013 was to stimulate the establishment of a knowledge-based development for the global South through high quality research and open discussion on relevant issues, as well as through policy debates on innovation and entrepreneurship in a collegial atmosphere.

The AIE 2013 Conference has offered a timely opportunity for researchers, policy-makers, business leaders, economists and representatives of civil society 1) to gain an in-depth understanding of the different forms of innovation such as information communication technologies but also grassroots innovation; 2) to access the current insights about innovation and entrepreneurship as solutions not only to increase productivity and competitiveness, but also to reduce inequalities and alleviate poverty; 3) to learn about challenges and policy needs in relation to innovation and inclusive development; 4) to benefit from the extensive networks that come with the exchange of research findings and views from the different academic disciplines and from colleagues from many parts of the world.

This year’s AIE Conference featured prominent speakers from academia, the business sector and international organisations as well as high quality research panels. The wide-ranging parallel sessions covered 9 major topics and 44 sub-themes that speak to the Conference focus. The Conference also featured several distinguished panel sessions with valuable inputs and the participation of world leading experts from universities and major international organisations such as OECD, UNCTAD, UNIDO and WIPO.



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Entrepreneurial Finance and Training

Upgrading Under Volatility

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Upgrading has been a main policy focus of the development literature for the past two decades. The predominant model has firms with low capabilities moving up the value chain through learning in global production networks and support of robust local institutions. Time after time when upgrading efforts fail, the recommended solution is to pour in more resources: new investments, more subsidies and more training. Yet little has changed. Using a critical case study of the Penang semiconductor cluster, this paper proposes an alternative set of hypotheses about upgrading in emerging economies. The real challenge for upgrading is demand volatility. The problem is not that there are only firms with low capabilities, but rather there are plenty of firms with high capabilities. These firms, by leveraging local policy, have developed sophisticated capabilities to meet the increasingly volatile production demand of global industries, in this case electronics. Contrary to conventional wisdom, they do not compete away profits or solely rely on cheap labor. The challenge is that these firms – the prime set of candidates to upgrade – have become sufficiently successful in this specialty that under the present policy regime, they have no incentive to do otherwise. They have created a sustainable niche, but one with no upward pathway. Firms that upgrade take a different route, avoiding volatile markets altogether. The case of Penang shows that volatility increasingly determines the international division of labor in emerging economies, not the search for low wages.

OTC Stock Market In China – The New Venture Capital Exit

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Venture capital is certainly important to a country in that it finances entrepreneurship and innovation. In recent years, secondary markets for private shares have emerged as an important node in the VC cycle by both facilitating interim liquidity for non-listed firms and providing external investors with the access to good pre-IPO shares. Ready and able to play an active role on both the exit and entry sides, are VCs more engaged in reducing or increasing their ownership in these markets? Based on a sample consisting of a total of 102 firms that have been quoted on China New Third Board from 2006 to 2011 year end, this paper finds that VCs were much more likely to increase than decrease their ownership? there have been 128 times of increases in contrast to 45 times of decreases. In particular, VCs actively took the opportunities of subscribing new shares issued in capital increases to increase their ownership. Out of the total 85 VCs that invested in the 102 firms, 33 were already there as of first quotation, 39 VCs subscribed new shares in capital increases, 33 VCs bought shares from existing shareholders, while only 11 exited. For the purposes of enhancing the attractiveness of the New Third Board as an exit venue, this paper argues that the government should reduce its intervention in selecting firms into the market. Although this is still not realized in the National Equities Exchange and Quotations, this successor of the New Third Board nevertheless manages to considerably broaden the pool of potential eligible firms and investors, and also make available various additional mechanisms such as market making and call auctions to boost share transfers. It is thus generally reasonable to predict that in the short run, the NEEQ will outperform the New Third Board in term of its depth and level of liquidity. However, as to whether it can realize its intrinsic competitive advantage relative to public stock exchanges, and grow into an indispensable platform to offer non-listed SMEs with the much needed interim liquidity in the long run, it still greatly depends on how much the relevant regulatory authorities are going to release their control? Not only of the brand has new NEEQ, but also of China stocked market as a whole.

Overseas Operations, Acquisition Experience and Performance in Chinese Enterprises Cross-Border Mergers and Acquisitions

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With the rapid development of Chinese economies more overseas operation practices, more and more Chinese companies switch their ways to globalizing to merging with or acquiring existing host country companies cross-bordered. This research focuses on the relationship among oversea operation, acquisition experience and acquisition performance. The findings contribute to the understanding of Chinese enterprises cross-border mergers and acquisitions in the countries that they have had branches or subsidiaries before the focal acquisition which provides new evidence to path dependence theories; second, acquisition experience and host country operation have positive impact on Chinese enterprises cross-border acquisition performance which is in line with the organization learning theories.

How Venture Capitalists Foster or Destroy Relational Rents - The Entrepreneurs Perspective

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The objective of this study was to gain a deeper understanding of the dynamics that drive the creation or destruction of relational rents as venture capitalists and entrepreneurs interact in pursuit of a venture's performance. Unlike prior empirical work that relies primarily on constructs borrowed from other contexts and correlational methods to test relationships among variables, we used a causal mapping methodology to generate variables grounded in the entrepreneur-VC relationship context and link them using causal loop diagrams. We find honest and frank communication—fundamental to generating relational rents—to be central in this model, related in positive feedback loops with three affect variables: the entrepreneur's perception of the VC's intentions, fairness, and respect. These, in turn, are strongly and negatively impacted by two behaviors that are typical governance mechanisms: the VC's involvement in management and the VC's use of the contract to resolve disputes. As a whole, the system model provides insights into how entrepreneurs may interpret venture capitalist behaviors and how the feedback loops can generate positive or negative relationship spirals. We extend our findings to suggest that successfully generating relational rents could have significant value for a VC beyond the focal investment or knowledge creation, in the form of goodwill represented by positive reputation, referrals and other discretionary behaviors by the entrepreneur.

Determinants of Shareholder Value in Asia Pacific

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The global banking industry has been transformed over the last two decades. Forces driving this transformation include technological innovation, structural deregulation, prudential reregulation, internationalization, and changes in corporate behavior, such as growing disintermediation and increased emphasis on shareholder value (Berger et al, 2010). The global financial crisis of 2008-2009 also accentuated these pressures and illustrated that bank performance can have dramatic

effects on capital allocation, company growth, and economic development – namely via increased capital and funding costs. It is well known that capital costs are linked to sovereign and other risks (see IMF 2011; BIS 2011). Post-crisis, regulators in the developed world have forced banks to raise massive amounts of new capital and these firms are struggling to achieve returns in excess of the cost of capital (ECB, 2012). The big, internationally active banks are being asked to hold even more capital and liquidity under Basel III. In such an environment, many banks are finding it too costly and therefore difficult to issue new capital and the only way they can boost capital is to refrain from capital costly activity – so they are cutting lending, selling or shrinking capital costly investment banking and other businesses (Economist, 2013). This is related to shareholder value creation that focuses on generating returns in excess of the cost of capital to create value for owners (namely, shareholder value creation). In a world characterised by increasing capital costs it may be difficult for banks (particularly from the developed world) to ‘add value’. A major motivation of this paper, therefore, is to investigate whether banks from Asia Pacific, (a region less affected by the global 2008–9 crisis) are creating value for their shareholders and whether operational efficiency influences value creation.

Signaling Legitimacy To Foreign Investors: Evidence from Chinese IPOs on U.S. Markets

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Chinese firms operate in a legal environment which is widely perceived to not meet Western governance standards. U.S. investors must rely upon cues to convince themselves that their agents will act in their interest. Since 2000, more young entrepreneurial Mainland Chinese firms (termed as Chinese Emerging Growth Firms or CEGFs) have undertaken an initial public stock offering (IPO) on U.S. markets than have entrepreneurial firms from any other nation outside the U.S. As CEGFs listings U.S. markets became more legitimate, it is showed that the increasing routinization of Chinese IPOs was accompanied by a general decrease in the U.S. experience of both TMT and BoD members. However, the extent of the changes differed by TMT function and BoD member affiliation. The proportion of CFOs and VC directors with U.S. experience decreased much more slowly than did that of the other directors, executives, and, especially the CEO though window-dressing was continued to create individual firm-level legitimacy

Entrepreneurship

Effects of Continuous Innovation as a Strategic Orientation on Success in SMEs

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In this study, we investigate the link between continuous innovation and entrepreneurial success in small and medium-sized enterprises (SMEs) with a focus on entrepreneur's own definition of success. Survey data is collected from 161 entrepreneurs managing SMEs in Turkey. Adopting a dynamic view of strategy, innovation was treated as a strategic orientation fostered by the entrepreneur at the level of the firm. Success was measured with a combination of financial and non-financial measures of firm success, along with entrepreneurs' subjective feelings of success. Measures were constructed on the basis of in-depth interviews conducted with entrepreneurs. Analyses showed that innovation, as a strategic orientation, affects success through its effect on differentiation strategy. Partial and full mediation effects were found for financial and nonfinancial firm success, as well as for entrepreneurs' subjective feelings of success. Findings revealed that, in SMEs, innovation may be treated as a strategic orientation leading to the creation of strategies for success.

Buddhist Smes Actions in Response to Competition: Case of Thailand

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Socio-culturally speaking, the avoidance of conflict is a social norm that has been observed for Buddhist, leading to a social and ethical obligation to present oneself as avoiding „clashes“ at any cost. A total of 178 SME respondents from 31 Buddhist provinces were interviewed using a survey questionnaire administered in-person on-site. In light of the Buddhist context which fosters peace loving entrepreneurs, it was found that “reactive” actions were taken in response to competition, instead of aggressive preemptive actions. Nevertheless, even under this seemingly passive socio-cultural setting where assertiveness is often frowned upon, it was found that proactiveness, risk-taking and innovativeness are positively correlated. These findings suggest that there is a need to consider alternative models of socio-economic development that offers a more holistic, more balanced approach for Buddhist cultures.

Growth Expectations of Entrepreneurs in Sub-Saharan Africa

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Growth is generally agreed to be a worthy goal for most firms and is considered a measure of entrepreneurship success. It is almost a foregone conclusion that every business has the will to grow.

Entrepreneurship for Inclusive Growth

Studying the Perception of Bankers Towards Frugal Innovations for Building an Inclusive Financial Ecosystem

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Spurring Innovation in the banking sector can prove to be a critical driver for pursuing the agenda of financial inclusion and inclusive growth. Frugal Innovations in the banking sector, targeted to reach out to unbanked marginalized social groups, can bring out significant improvement in inclusion levels by making the banking experience user friendly while also suiting the scale of banks operations. This paper identifies the frugal innovations implemented in the Indian banking sector in pursuit of the agenda of financial inclusion. While the Reserve Bank of India has been providing a conducive policy environment to promote financial inclusion, however it remains to be seen how aggressively and whole heartedly are banks pursuing this agenda. A survey questionnaire was formulated and circulated to bank managers of State Bank of India to determine their perception towards these innovations. Overall, branch managers perceive financial inclusion as a win-win situation in the long term. Amidst various models of promoting financial inclusion, the Self Help Group (SHG) model has proved to be a popular and suitable platform for effective and efficient diffusion of financial services. The findings of the study also revealed that the Indian Banking sector has embraced variety of frugal innovations in the right spirit and thus there is hope to establish the ideal of an inclusive financial system in India.

Social Innovation at The Base of The Pyramid: Lessons From Africa

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Recent literature has recognized the need for sustained academic research to better understand processes needed to create business models at the Base of the Pyramid (BoP), models that would yield social benefits while providing financial self-sufficiency. However, there is limited empirical evidence on social innovation approaches taken in that context, especially among organizations focused on Africa. This study investigates two social enterprises operating in BoP markets in Africa, through a multi-case study design. A model is developed following an in-depth analysis of similarities and differences, including a between these organizations in terms of their goals and objectives, balance between social and financial sustainability, market development, organizational resources, and, community engagement. The paper provides several lessons for organizations that can help them succeed in their social innovation efforts targeted at BoP markets in Africa.

How Social Entrepreneurs Conceptualize Innovation - The Case of Frugal Innovation

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Despite the focus in literature on attributing social innovation to social entrepreneurs, we know little about how social entrepreneurs themselves view innovation. This qualitative descriptive study fills that gap by investigating how social entrepreneurs view or conceptualize innovation. Descriptive research on management and strategy practices uses field work, interviews, and observations to create models of understanding, theory generation and eventual paradigms. So this paper reveals patterns of differences and similarities and contributes to theory for organizational theorists to better frame theoretical models to understand innovation among social entrepreneurs. I build propositions that stem from the findings of diverse perceptions of what innovation is for and among social entrepreneurs and suggest a model of innovation that can be summarized as one of frugal innovation.

Entrepreneurship for Sustainable Development

Establishing a Social Business Model for Sustainability Entrepreneurship: Stakeholder Collaboration for Green Innovation on Solar LED Lanterns

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No abstract

The Funding of New Technology Firms in an Emerging Renewable Energy Industry – The Role of Smart Capital

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In this article, we focus on how investors add value, in addition to finances, to resource-constrained young technology companies. With insight from the entrepreneurial finance literature, we group investors' value-added contributions into four categories: business development and strategy, technology development, investor's outreach and legitimacy. We build our study on six case studies of firms in the emerging marine energy industry in which firms are developing devices to harness energy from ocean waves and tides. Our case companies have received investments from business angels (BAs), venture capitalists (VCs) and larger corporations (CVCs). We observed that the contributions from the investors clearly differ and that the most important contributions are in investor's outreach and legitimacy. The involvement of CVC investors appears to be especially crucial to increasing young technology firms' credibility in emerging industries. Overall, engaging 'smart capital' in different stages can help a company move from a situation of true uncertainty to one of manageable risk.

Do The Firm Characteristics Matter? Hidden Drivers for Eco-Innovators

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Besides the conventional technology-push and market-pull drivers, environmental regulations and standards considered at the utmost importance for eco-innovation to be realized. However, the innovation process is highly complex, path-dependent and cumulative (Dosi, 1988, Pavitt, 1984) requiring certain firm specific characteristics to have determining role in eco-innovative process. Hence, the aim of this research is to identify those certain firm characteristics, which are thought to be essential in firms' innovation process, and to what extent these characteristics are inherent in the realization of ecoinnovation. We utilized the Heckman selection model on the 4th wave of the Community Innovation Survey (CIS 4).

The results assert that ecoinnovative firms tend to be large individual firms, that are open to use of internal and external sources of information and funded by the EU. Moreover, results also assert that eco-innovative firms may countervail their basic R&D efforts by cooperating with scientific institutions.

Entrepreneurship in and for Emerging Markets

Social Capital, Firms Creation and Cluster Emergence of The Chilean Biomedicine Sector

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This paper explores the relevance of social relations for the location decision of firms and the growth of the biomedicine cluster in the metropolitan region of Chile. From the analysis of 27 in-depth interviews and survey responses from different actors in the biomedicine sector, it is possible to reconstruct the main aspects in the establishment of companies, their growth and the creation of relations among organisations within the cluster. Main results highlight the importance of social capital for location decision and financial access during the first stages of companies. This study aims to contribute to a deeper understanding of the role of social relations in the creation of a knowledge-based cluster in a developing country, as well as their constraints and potential problems for their future growth.

The Effects of Corporate Governance on the Innovation Performance of Chinese SMEs

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We investigate the degree to which corporate governance and ownership affects the innovation performance of firms in China with a particular focus on privately owned small and medium enterprises (SMEs). We hypothesize that (1) board-related governance measures will enhance innovation because they improve monitoring and provide access to necessary resources; (2) ownership concentration initially facilitates innovation because large shareholders are more likely to commit to the long-term nature of innovation, and have the incentive to monitor managers whose time horizon may be shorter; however we argue that these effects weaken as large shareholders become entrenched at higher levels of concentration; and (3) hiring an external CEO will enhance innovation both by ensuring professional management of the company, and by alleviating the entrenchment possibilities associated with large shareholders. These hypotheses are tested using a unique sample of 370 mostly private and relatively small Chinese firms in Zhejiang province, for the period 2004 to 2006. The results suggest that for this sample, corporate governance and ownership affect innovation activity when measured by patenting activity, but not when measured by new product sales

International Knowledge Spillovers and Entrepreneurial Opportunities – A study of Chinese Returnees

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Innovation Capability Assessment Model (I-Cam) –An Integrated Perspective on Innovation Maturity in Business Organizations

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This paper is based on the research as part of Master Program in Strategy and Innovation from the University of Oxford by the author and it's further application in few firms. The subject of Innovation is protean and so are various notions on the same. This paper presents a pragmatic framework consisting of Innovation Drivers critical to Business organizations. The work is based on strong fundamental sources of inputs as Organization Study, Literature Research, Case Studies and Expert Discussions. The Framework called I-CAM has been developed predicated on the inputs and it comprises eighteen Innovation Drivers with numerical significance assigned to each. The Framework was comprehensively applied in three Business Organizations from sectors as TMT (Telecom/Media/Technology), Manufacturing and Services. The results were validated with success and the Framework has been recommended for adoption in business organizations embarking on an Innovation journey.

Which Factors Determine The Upgrading of Small and Medium-Sized Enterprises (SMEs)?

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Many low and middle income countries suffer from a lack of medium-size companies, which tend to be the main creators of higher income employment, motors of innovation and economic diversification. The chief reason is that few micro and small enterprises are able to upgrade, i.e. grow and become medium-size through innovation. An extensive literature discusses manifold explanations but has not yet concluded which are the most important factors: entrepreneur or firm characteristics, personal or business networks or the business environment. This article contributes to filling this gap on the basis of three extensive empirical case studies on Egypt, India and the Philippines. It argues that the entrepreneur matters much more than much recent literature makes believe. Due to chronic imperfections in the business environment, entrepreneurs in low and middle income countries take it upon themselves to compensate for deficits in the provision of credit, quality education and training and rule of law with their own capital, know-how and readiness to take risks. In addition, only the entrepreneurs can enable urgently needed investments in research and development, marketing, workers, networks and the drafting of firm strategies. As a consequence, no matter how extensive improvements in the business environment are, the bulk of micro and small enterprise is likely to fail in their upgrading efforts because inequalities of opportunity prevail due to differences in the endowment of entrepreneurs with financial, human and social capital.

SME Innovation Characteristics and Performance in a Developing Context Learning From Vietnam

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Recent research as documented the centrality of innovation for fostering the catching up process in developing countries. The paper takes this new stream of research one step further. The paper is based on a panel dataset for manufacturing SMEs in Vietnam. It is composed of three surveys in 2005, 2007 and 2009. The final analysis data consists of 3550 observations (1573 firm in 2005/2007 and 1977 firms in 2007/2009). Most papers assessing the specificities of innovation characteristics and performance rely on cross sectional data and fixed effect models; not panel data and random effects. Most panel data analysis, on the other hand, assume a mono-causality from innovation to performance. The paper adapts the model from cross sectional analysis and fits it to cross sectional panel data using a random effect-model and controls from multi-causality between innovation and performance. This sheds new light on the specific case of entrepreneurs in Vietnam but also contains general implications for developing country firms.

Social Capital, Knowledge Strategy, and New Venture Performance: Evidence From Graduate Entrepreneurial Ventures in China

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Objectives: This research examines the relationship between knowledge strategy (exploration or exploitation) and new graduate venture performance, and the effects of social capital (structural, relational, and cognitive dimensions) on trade-offs of knowledge strategy. *Prior Work:* We build our conceptual framework on Marsh's (1991) concept of exploration and exploitation and Nahapiet and Ghoshal's (1998) framework of social capital to investigate how social capital and knowledge strategies relate to new graduate venture performance. *Approach:* Our dataset was obtained from a sample of 156 graduate enterprises in two Shanghai-based, graduate-focused incubators. Hierarchical regression analysis was utilized as the main statistical procedure to test our hypotheses for social capital, knowledge strategies and new venture performance. *Results:* Results indicate that relational social capital is positively related to both exploration and exploitation, while cognitive social capital is negatively related to exploration. Additionally, we find that exploration and new venture performance is a U-shape nonlinear relationship, while exploitation and new venture performance is an inverted U-shaped relationship, indicating that there is a point at which focusing on either exploration or exploitation leads to reversed performance. *Implications and Value:* We extend the prior literature by empirically analyzing the effects of knowledge strategies on new venture performance. Second, we contribute to inter-organizational learning literature by examining factors influencing explorative versus exploitative learning outcomes from a social capital perspective. Third, we contribute to entrepreneurship literature by empirically examining social capital, learning and new venture performance in the context of graduate entrepreneurship

Corporate Entrepreneurship and Firm Innovativeness in Polish SMEs

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Although corporate entrepreneurship is thought to represent an important predictor of firm performance, research on its environmental context is hitherto missing. Our paper seeks to address this situation by exploring the link between corporate entrepreneurship and firm performance as indicated by innovativeness. We added to this central concern the accompanying question about different types of environment and their moderating role. We draw on the strategic management theory and the corporate entrepreneurship theory to develop and test hypotheses using a sample of 158 small and medium sized Polish enterprises. Results suggest that each facet of task environment differentially moderates the relationship between corporate entrepreneurship and firm performance. Implications for theory and practice as well as future research are discussed.

Impacts of Innovative Institution on Technology and Entrepreneurship in The Context of Sustainable Development in Rural China - What Are Lessons for Africa

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China has started its market economic reform in rural areas. In the past three decades, China has achieved a significantly agricultural growth, and it is one of the earliest countries to have reached the Millennium Development Goal 1. The achievements of poverty reduction and agricultural development are remarkable. This paper sheds the light on the innovative institution, as precondition for a successful technology change and entrepreneurship. This paper finds that transformation of market-directed economy has provided a foundation for entrepreneurship, which drives technological change. Decentralization organization helps to forge development capability—a form of entrepreneurship and facilities to coordination tasks of technological change. This paper provides policy recommendations on poverty reduction for Africa in the context of the China's development experience.

An Exploratory Cross-Country Analysis of The Relationship Between New Firm Entry and Income Inequality

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The effect of entrepreneurship on income distribution is ambiguous in the extant literature. Where empirical evidence exists, entrepreneurship has been measured by examining business owners or self-employed individuals. The perspective of new firm entry has not been specifically addressed, although the conceptual literature suggests that it is the activities of new enterprises, whether in the form of Schumpeterian creative destruction or Kirznerian opportunity arbitraging, which have potential redistributive outcomes. In this paper, we use data from UNU/WIDER and the World Bank for a sample of 32 developing and advanced economies. Gini coefficient values are regressed on lagged values of firm entry rates to determine if there is a causal effect of entrepreneurship on income distribution. We found that income inequality tends to increase with the rate of new firm entry, with the effect being mitigated by rising levels of national income. The policy implications of this disparity-widening effect of new firm entry are discussed, especially as they pertain to developing economies.

SMEs and The Necessitating Environment for Entrepreneurship Development: The Case of The Transitional Economy in Vietnam

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A transitional economy has been characterised as experiencing a large amount of economic and social change. SMEs can be considered as the vehicle for entrepreneurship development in such a context. The purpose of this paper is to further the investigation of the favourability of the transitional environment on SMEs and entrepreneurship in Vietnam. Using a new approach, we analyse the transitional economy discourse via examining government policies, international organisation reports and academic articles on Vietnam. Our findings suggest that, in Vietnam, compared to an overall 'best case' framework developed from a wide literature review, the settings generally support a vibrant transitional entrepreneurship development and SMEs. However, more needs to be done to build up favourable socio-cultural setting

and effective business support systems in the country. Implications for the relevant stakeholders and suggestions for future research are also provided.

Harnessing Stakeholder Strengths to Scale Inclusive Business - Lessons from Emerging Markets

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In large companies, intrapreneurs play a critical role in shaping inclusive businesses - ventures driven by product, process or business model innovations that simultaneously create value for companies and low-income populations. Achieving commercially viable scale for such inclusive businesses is perhaps the most challenging and pressing imperative for intrapreneurs. But achieving this goal is difficult. The key challenge is to harness strengths of various stakeholders associated with inclusive businesses. This paper discusses actions which intrapreneurs can take to leverage strengths of key stakeholders to achieve commercially viable and inclusive scale. These actions have been recommended based on insights generated from a qualitative comparative analysis of 18 inclusive business initiatives across five major emerging markets: Brazil, China, Ghana, India and Nigeria. The analysis shows that 'top management' is the most important stakeholder in terms of achieving scale. The analysis also highlights the importance of exploiting complementarity of strengths across stakeholders to improve scalability.

The Moderating Effects of Entrepreneurial Support Policies on Market Orientation and Technological Innovation Evidence from Chinese New Firms

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No abstract

Sustainable Value Creation and Internationalization through Base of Pyramid Market (BoP) Ventures for Inclusive Entrepreneurship

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Literature on of Base of Pyramid (BoP) is increasingly tilted towards producer-view of the poor communities in developing markets from the original concept of BoP by Parhalad and Hart (2002) as potential consumer market. Yet much less economic or business rationale other than the philanthropic one is available to managers in MNEs for engaging BoP suppliers in their supply chain networks. Moreover, theories of BoP cluster and firms' internationalization are well

established in the literature yet no theoretical postulation found which connects the two. This study postulates the theoretical foundations of 'doing well by doing good' concept by elaborating the differential impact of backward and forward supply chain linkages in BoP cluster on business and economic outcomes i.e. innovation, inclusive entrepreneurship, MNEs competitiveness, economic growth, employment and inflation. The study, moreover using multiple case study method, links BoP cluster with MNE internationalization performance and thereby proposes a model of sustainable internationalization through locally embedded and globally competitive entrepreneurial ventures at BoP. Secondary data on internationalization performance and BoP cluster linkages of two services and one manufacturing firm from Malaysia and Pakistan, respectively, is analyzed. The proposed model identifies MNE-linked BoP cluster as an exogenous variable that generates sustainable internationalization process. The paper offers insights to theorists and managers in the area of international business and entrepreneurship.

Innovation for Inclusive Growth

Coffee Co-operatives in Malawi: Building Resilience Through Innovation

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The paper is the first study of coffee co-operatives in Malawi, it explores how the largest coffee co-operative in Malawi has developed a resilient co-operative model able to enact innovation and improve the livelihoods of farmers. The innovations discussed in this paper include: sustainable technologies, development of market niches, women inclusion and business diversification. The paper argues that resilience and innovation are processes that can be developed in the context of the co-operative model. It also explores how this model promotes self-reliance, reflexivity and inclusion which in turn enable farmers to develop adaptive capacities.

MIRACLES! Innovation in India's Informal Economy

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No abstract

Strategic Framework for Social And Economic Viability in Inclusive Innovation Projects

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Entrepreneurs with the ambition to structurally cater the Base of the Pyramid (BoP) market face two challenges. On the one hand, they need to 'go local' to ensure local ownership. On the other hand, they have to work towards a scalable business model. This paper presents a framework which combines the innovation phases with the challenges of local ownership (social viability) and scalability (economic viability). The framework is addressed to entrepreneurs developing products or services for end-consumers at the Base of the Pyramid and illustrated with cases from the VOICES project.

Innovation and Inclusive Development

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Inclusive development is a key policy priority since growth processes have not always helped lower income groups. Innovation is a major driver of growth and its relationship with inequalities in income and opportunities raises some

important policy questions: Do innovation and the resulting technological change necessarily lead to increased inequalities? Do policies aimed at supporting innovation foster inequalities? To what extent can innovation be mobilised to improve the life conditions of the lower income groups? These questions are the basis of this report, which, prepared for the OECD-DST Conference on Innovation for Inclusive Development, reviews the existing evidence in response.

Conceptualising Inclusive Innovation: Modifying Systems of Innovation Frameworks to Understand Diffusion of New Technology to Low Income Consumers

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Inclusive innovation is the means by which new goods and services are developed for and/or by the billions living on lowest incomes. Although a topic of increasing interest, it has been relatively underresearched and underconceptualised to date. This paper studies arguably the most successful new technology to reach lowincome groups: the mobile phone, focusing specifically on its diffusion in Kenya. Systems of innovation are shown to be an appropriate frame for conceptualisation of inclusive innovation. However, the conventional content of this framework must be modified to allow for particular features of inclusive innovation, including the nature of innovations required, the actors involved and their interrelations, the type of learning they undertake, and the institutional environment in which they operate. Four system domains must be effective if inclusive innovation is to succeed: the product, its retailing and support, the microenterprises that provide these demandside services, and the wider context.

Opening the Doors to Innovation in Central America: Empowering the Most Marginalized to Address Their Development Challenges Through Participatory Research

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The psychological barriers of social and physical marginalization prevent poor farmers from trying to change their reality, enhance their practices, and improve their products or market linkages. Participatory Plant Breeding (PPB) programs seek to build new knowledge to help marginalized farmers improve their livelihoods, however new knowledge alone is not leading to the sustainable development these families need. The empowering effect of participation in such programs is the key that opens the door to innovation for these individuals. This study employed PhotoVoice to explore the mechanisms that connect PPB to psychological empowerment and innovative behaviour.

Diffusion of Innovations in Conservation Agriculture: A Network Approach

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While discussions promoting networks to enhance innovation have increased in the past decade, methods for how to construct those networks in the real world for developing countries have remained largely undeveloped. Data from

stakeholders involved in Conservation Agriculture practices are used to analyze innovations and innovators through a network approach. The results indicate that farmers learn principally from other farmers, practices are learned from different sources or pathways and adopted step by step. Actors involved in the network play different roles where knowledge follows different trajectories. A distinction can be made between prescribed networks where formal relations and vertical structures predominate, and emerging networks that dominate for informal relations and have a horizontal structure for knowledge. The main conclusion is that applying network analysis, helps to increase the fixation probability of innovation through promoting amplifiers and hindering suppressors in the diffusion of innovations.

Innovation under resources, capabilities and institutional constraints: The role of open innovation in low-income countries

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No abstract

The Two Worlds of Humanitarian Innovation

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There has been a gradual shift in the humanitarian world to considering the role that innovation can play in addressing endemic challenges of inefficiency, unsustainability, and dependency. Within this humanitarian turn? the dominant approaches have been top-down? mainly focusing on finding ways to improve organizational responses. Alongside this, though, there has been the emergence of an alternative discourse of bottom-up? Innovation. This approach has not yet been integrated into the current world of innovation practice within the typical humanitarian community, However, as this paper argues, it offers a potential way to engage the skills, talents and aspirations of so-called beneficiary populations, and thereby nurture self-reliance and sustainability. In order to develop a basic framework for thinking about bottom-up innovation, this paper draws three relevant pre-existing bodies of literature: innovation theory; design theory; and ideas on participatory approaches to development. Drawing upon the ideas and gaps in these literatures, the paper sets out a research framework capable of advancing the recognition and nurturing of existing local adaptation and innovation capacities within beneficiary communities as a source of sustainable humanitarian solutions.

Globalization, Rise of Biotechnology and Knowledge Dynamics in Agricultural Innovation: The Case Of The Diffusion of Bt Technology in India

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Inclusive Innovation Definition Conceptualisation and Future Research Priorities

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There is increasing policy, practice and academic interest in “inclusive innovation”. In simple terms, this is the means by which new goods and services are developed for and/or by those who have been excluded from the development mainstream; particularly the billions living on lowest incomes. However, there are many competing perspectives on inclusive innovation, which this paper resolves into an integrated ‘ladder’ model of different levels of inclusive innovation. Research has so far lagged practice and there is need for a more concerted effort at knowledgebuildin for inclusive innovation. Based on a threecountry interview study with 37 policymakers, strategists, private sector and NGO sector representatives – and founded on a review of existing literature on inclusive innovation – this paper reports findings about research priorities in inclusive innovation. Respondents identified a set of eleven priority research topics, which are categorised as stakeholder, systemic or process oriented. These priorities provide evidencebased guidance for future research on inclusive innovation.

Knowledge Policies for Inclusive Development Lessons From Uruguay

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During the last few years, Uruguay has participated in a process of consolidation and reconfiguration promoting interaction between science, technology, innovation and society. Two large processes of change in this area are described here in detail. One of these refers to the result of the creation of new institutions, organizations and national programs for Science, Technology and Innovation (STI), included in the first National Strategic Plan for Science, Technology and Innovation (PENCTI by its Spanish acronym). The other is the institutional reform of the University of the Republic (UdelaR) ʘnominated the Second Reform- which searches to fortify its contribution towards the country's development. Both these experiences share a formalized regulatory vocation designed to direct research agendas towards the solution of social problems. This paper studies the gap between the regulatory-formal setting and the effective implementation of policy, in terms of the tensions and difficulties they face. Recommendations are drawn from the analyses of these experiences, in search of creating knowledge policies oriented towards inclusive development.

Inclusive Development: A Transaction Cost Approach

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This research conducted a qualitative study of contextual factors and methods to reduce transaction costs for inclusive development. Analytic induction applied to data collected from 33 organizations in 4 different clusters revealed four factors: information symmetry, asset specificity, atmosphere, transaction frequency. These factors were influenced by three contextual conditions: regional characteristic, product characteristic, enterprise characteristic. By using this model, we are able to identify which conditions would produce high transaction costs related factors such as asset specificity, When such conditions are identified as present, regional governments or public actors can then reduce asset specificity by strengthening regional characteristics for example, via public service platform building. This results adds more understanding about the development of China in early stage from a transaction costs view, this may also applied to

understand the development of emerging economies such as India, and making policy guideline for the development of informal economies.

Innovation for Sustainable Development

Research on Chinese entrepreneurial Service Industry From The Perspective of Industry Classification Standard

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The entrepreneurial boom contributes to the economic phenomena that the industry division of labor is being refined continually and service to entrepreneurial is arising as a new industry. The economic activities of service to entrepreneurial increase in number and variety. Service to entrepreneurial units arise one by one. The innovation of entrepreneurial business is on the increase. As for the emerging entrepreneurial services industry, how to define it and when put it into the NICS to match the to related the industry and the industry classification, what the results will be and what these characteristics of the new industry, these all need a research. This study will make us understand clearer about the current development of China Venture Services industry, the vesting of industry in the national industry classification, the internal structure of the industry, industry characteristics, the overall development of the state, as well as other socio-economic association between the phenomena, so as to grasp the development and changes in the forefront of the industry of the national economy triggering by the practice of entrepreneurship.

Six Methodological Guidelines for Organizing Inclusive Innovation in BoP Projects

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Base-of-the-Pyramid (BoP) inclusive innovation projects aim to design, produce and market products and services for large and relatively poor market segments in developing countries, for example for people who have less than several dollars to spend per day. BoP projects have 'normal' goals, deliverables, budgets and timelines. In addition, there are six guidelines that are 'special' for projects in a BoP context. 'Special' as they might be different from how they are dealt with in regular innovation processes. Based on a literature review a conceptual framework is proposed following six elements: 1) Collaboration building and cooperation; 2) Business models and financing; 3) Scaling-up innovation; 4) Co-creation, active participation and social embeddedness; 5) Institutes, policies and strategic alignment; and 6) Focus on capabilities and evaluation. These guidelines are plotted on the phases of a typical inclusive innovation project, as a first attempt to support practitioners to practically apply the guidelines.

From Green Policy to Results in Greece- The Response of Greek Firms to the National Call for Boosting Green Entrepreneurship

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“Climate Change” Based Policy Rhetoric: Impact on Research and Industry–Science Collaboration in Energy Technologies

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This paper examines how climate change discourse has led to diverging trajectories in industry and science collaborations and innovation outputs. The rise of the climate change based policy discussion has influenced greatly R&D funding and more widely science and technology (S&T) policies. Academic debate, however, leaves notable gaps in the analysis when it comes to studying the interaction between interested actors and the actual innovative activities. This research proposes to tackle this gap by examining how research interests of scientists and further industry science linkages have changed under the discourse of ‘climate crisis’ in the field of energy technologies. The article suggests that the discursive change has influenced the direction of energy technology research. While, environmental and renewable energy themes have emerged in the agendas of research groups, from company demand and the multi-directional influence of industry science linkages, also incremental innovation towards energy efficiency has been on the rise. Research groups are found to be highly influenced by the local entrepreneurial mix and the technological capabilities they bring to ISLs. Here structural issues of the economy at large may play a significant role. Without more complex subsidies for ISL and R&D towards sustainable energy sources, the danger is that short-term carbon efficiency innovation projects will prevail. To avoid manipulation of environmental programmes – for example, overestimating the effects of incremental projects or continuing ‘business as usual’ while highlighting the environmental aspects – monitoring projects needs to be improved.

Innovation in and for Emerging Markets

The Risks Of Innovation: Are Innovating Firms Less Likely to Die

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While innovation matters for competitiveness it may expose firms to survival risks. Using plant-product data for Chile and discrete-time hazard models we show that innovating plants have higher survival odds. However, risk impacts strongly on the innovation-survival relationship: only innovators that retain diversified sources of revenue or face lower market risk survive longer. Single-product innovators are at greater risk of exiting. Exposure to technical risk does not affect survival odds differentially. We find that risk rewards single-product innovators with higher profits, rationalizing their innovation decision. The evidence for other types of risk points to explanations other than differential performance.

Innovation Required for Automotive Technology in China

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The paper investigates the factors that influenced innovation during the Ford 2013 Ecosport China program. A global technical team was assembled from Europe, America, Asia and Brazil. They worked together to develop and implement the company's innovative first small Sport Utility Vehicle to be manufactured and sold globally. The innovation building blocks were modeled using Atties Pyramid of Innovation developed from the feedback and analysis of 120 interviews over a period of two years. The current shift in the company's approach toward more innovation requires more money and time to be invested training employees in order to develop the expertise required to innovate.

Knowledge Transfer Within Clusters: A Social Network Perspective

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No abstract

Spatial-temporal Evolution Analysis of Technological Innovation Cluster in China

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This article sets 'agglomeration degree of technological innovation' indicators, by using ArcGIS software, in order to analyze the spatial-temporal evolutive patterns of technological innovation clusters in China since 2001, and indicate the

main reasons of its evolution. Based on this data, the author proposes three stages to understand China's technological innovation cluster development process: 1. 'Beijing single core'; 2. 'Beijing-Guangdong dual-core'; 3. 'Dual-core with Guangdong predominance'. To this process, a new configuration of cross-regional innovation clusters core is taking place in Shanghai, Jiangsu and Zhejiang, the region of Yangtze River Delta, which constitutes the first of its nature in the country. Although politics is still an important factor to explain the technological innovation cluster development in China, however, the key reasons are the focus on talents and platforms of innovation. Moreover, high intensity of innovation investment does not necessarily produce high-quality clusters. From this regard, the country needs to pay attention to the assessment of innovation performance in the future.

Constructing a Ladder For Growth Policy, Markets, and Industrial Upgrading in China

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No abstract

Complementarities Between R&D Investment And Exporting -- Theory And Evidence From China

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This paper explores a potential complementarity between a firm's decision to export or to invest in R&D, both theoretically and empirically. Using the Chinese manufacturing firm -level data, it documents (1) a systematic difference in the decisions of firm to export across labour-intensive and capital-intensive sectors in China; (2) a self-selectivity by more productive firm to conduct R&D across all sectors; (3) the lower productivity of R&D starters among exporters than their non-exporting counterparts; (4) the positive effect of ex- porting on the odds to invest in R&D and vice versa; (5) a complementarity between conducting R&D and exporting in improving the productivity of firm. These findings can be demonstrated by a theoretical model incorporating factor endowments and the decision of firm to invest R&D into Melitz (2003) model. Utilizing the super modularity theory, I prove the complementing effect of exports and R&D investment on improving firm portability.

Disruptions Driven by Business Model Innovations in China's Mobile Handset Industry: A Demand-Side Perspective

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Building upon Christensen's disruptive innovation theory, this paper identifies the interplay between business model innovations and the evolution of customers' preferences as a critical driving force behind three significant disruptions in China's mobile handset industry between 1998 and 2010. Adopting the perspectives of demand-side analysis, we find that the business models that caused disruptions to the industry were those focused on the most effective (though not necessarily the most efficient or novel) approach to organizing resources and capabilities to cater to the rapidly changing preferences of customers. This type of business model innovation, based on effectiveness, enabled entrepreneurial firms –

those which, though they possessed fewer technological endowments, were faster in understanding and catering to rapidly evolving preferences of customers – to identify and exploit disparities in the equilibrium of demand and supply of capabilities and resources across industry and geographic boundaries. The paper contributes to disruptive innovation theory by adding the importance of demand-side dynamics in industry disruptions in an emerging market like China.

EU Subsidiary Product Innovation in China: A Panel Study Analysis

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No abstract

Innovation Obstacles: Evidence From Eastern European and Central Asian Countries

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The current study uses the Investment Climate Survey 2009 (ICS) in Eastern European and Central Asian countries (EECA) to reveal the potential obstacles faced by firms. The findings exhibit that different types of obstacles are complementary with respect to the propensity of innovation. In contrast, substitutive relations are uncovered between finance and tax, labor and tax in regard to the new product sales.

Institutional Cooperation of Polish Manufacturing Enterprises. Determinants and Impact on Innovation Performance

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The aim of the study is to assess the impact of institutional cooperation (with research institutes and universities) on the innovation performance of enterprises, as well as identify the firm level determinants of such cooperation. Analysis is conducted on data from Polish CIS for 2008–2010. Sample covers 7783 medium and large manufacturing firms. The results of structural equation model show a significant association between institutional cooperation and innovation performance of surveyed companies, including (in the case of cooperation with national institutional partners) the impact on the introduction of product innovation new to the country, Europe and/or the world. Based on the analysis of critical values between parameters a hierarchy of attributes that determine institutional cooperation is established. These are: incentives for firm employees to create intellectual property, size of the company and its internal resources (including R&D facilities).

Innovation, Emerging Market Firms, and the Quest for Global Competitiveness – Evidence from Technology-Intensive, Long-Product Lifecycle Industries in China

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No abstract

Innovation and Survival of New Firms in Chinese Manufacturing, 2000–2006

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No abstract

In-house R&D and External Knowledge Acquisition – What Makes Chinese Firms Productive

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This paper analyses the influence of in-house R&D and external knowledge acquisition on the total factor productivity (TFP) of listed Chinese firms for the time period 2001–2010. We find a quantitatively important positive effect of in-house R&D. The achieved level of technological sophistication of Chinese firms is sufficient to benefit from R&D collaboration with domestic partners. We do not find a significant effect for employing inventors with access to international knowledge or for collaborating with international partners. International knowledge acquisition is only effective if conducted via joint ventures, i.e. if it is supported by a deep organizational relationship.

India and China as The Preferred Biopharmaceutical Investment Destination Choice for The Western Multinationals in Changed Patent Regime

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Chinese and Indian patent regimes did not protect IP around product innovations until each country joined the World Trade Organisation (WTO), in 2001 and 2005 respectively and adopted legislation in compliance with Trade Related Aspects of Intellectual Property (TRIPs). Thus instead of pursuing innovative R&D, domestic firms often pursued incremental innovations and thus basically pursuing generic innovation. The change in the patent regimes requires that both these biopharmaceutical industries, which are basically generic industries, to shift from generic manufacturing to novel drug manufacturing. Their generic manufacturing bases permit these countries to offer cost-efficient discovery research, testing and manufacturing support to Western Multinationals. The rising costs and risks involved in the drug development process can make the move of western MNCs to Asia for collaboration a cost effective decision. The paper explores and highlights comparisons between India and China as the preferred destination of choice for investment and partnering by multinational companies, by analyzing the relative strength of the parameter suggested by John Dunning for making the foreign investment.

An Exploratory Investigation of The Internalisation Strategies of French Knowledge-Intensive Multinational into Australia

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Utilising internalisation theory, this paper aims to highlight the importance of knowledge flows occurring between knowledge-intensive firms' HQ and their subsidiary. As expected, internalisation theory highlights the impact of three different variables (transaction costs, value chain activities and governance structures) related to decision-making process, demonstrating the flows of knowledge, know-how and technology happening within firms' internal network and how these flows are coordinated and controlled by a centralized system. The case study utilized for this paper, a French knowledge-intensive multinational and its Australian subsidiary, illustrates a tight control over subsidiary activities through rigorous governance structures and control mechanisms. The results of this analysis suggest that the transfer of technology, know-how and knowledge occurs largely within the firm's internal network to enable firm specific advantages to be transferred to new markets.

Innovation by Firms in High and Medium-High Technology Industries: An India Experience

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Innovation is vital in gaining advantage over other firms and to attain the competitive edge. An emerging economy like India needs to have an innovative industry with large R&D expenditure and patenting activity. The study thus focuses on real nature of Indian investment on innovation through R&D and patenting activities. The data covers all the firms of high-tech and medium-high-tech sectors during a period of 1995-2011. We employ a recursive simultaneous equation where the R&D expenditure used as a dependent variable in R&D equation and as an independent variable in patenting equation. We use Heckman's two-step procedure in R&D equation and Hurdle count data model in patenting equation that taking care of heterogeneity and selection bias problem simultaneously. The study finds that patent policy significantly influences R&D and patenting intensity. After the patent policy changes foreign firms are relocating their R&D units into India and taking patent from Indian patent office. The study does not find any direct evidence of R&D oriented patenting activity in India.

Case Study: Innovation in Philippine Transnational Corporations

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Although Philippine foreign direct investment outflows still lag behind some of its ASEAN neighbors, there are an increasing number of Philippine transnational corporations (TNCs) successfully investing abroad. This case study seeks to address a gap in the literature on the innovation profile of Philippine TNCs and focuses on four large indigenous firms, including a major industry player in China. The paper offers insights on their international knowledge flows and the factors contributing to their technology strategies and innovation activities. The paper finds that the TNCs primarily invest in countries that are also developing or less developed than the Philippines. Market expansion activities increase learning in TNCs that extend knowledge and technical assistance from the home office to affiliates in host countries. The firms

augment their capabilities and experience through long-term relationships with partners in production networks, in particular with regional suppliers who provide support for in-house innovation.

Dynamic R&D Model for Open Innovation Era

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Traditional R&D generation theory focused on the operational and static way to extract or model the best practices of R&D process across periods and industries. In both R&D management and R&D generation theory, it however lacks a dynamic and strategic framework for R&D strategy. This paper addresses the very issue on dynamic R&D strategy formulation for the firm in terms of both the internal situations and external environments, with methodologies, such as literature review and case studies of several companies. Based on the evolvement of the R&D generations, two key factors that caused the progress in each R&D generation were identified and summarised in details, namely, business environment and R&D management that includes four R&D's strategic orientation with their corresponding strategic capabilities and four different organisations of R&D. From an integrated and strategic perspective, a dynamic model for R&D management is, therefore, proposed with the alignment and the dynamics of the two key components. The new model for the first time links the tactical and operational R&D generation theory to the strategic management literature. It seeks to create or reinforce the dynamic capability to exploit the R&D ability for the support of the firms' strategy. The strategy actually presents a feasible way for practitioners to better formulate R&D strategy in a systematic and dynamic approach that meet both internal and external requirements for the firm.

Nature of Innovation Channels at The Micro-Level: Evidence From Russian Manufacturing Firms

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The main purpose of the paper is to analyse different channels for innovations. We analyze the influence of various incentives for innovation in Russian companies taking into account the organization of industries — vertical or horizontal orientation, peculiarities of corporate demography, role and motives of different owners (including government and foreign investors), demand trends, customers' profile, nature and intensity of competition in relevant markets. An empirical base for our study is provided by two surveys of Russian industrial companies conducted in 2011 and 2012. One of our hypotheses: in vertically organized sectors that define innovation activeness in the economy (for example, mechanical engineering), the innovative development of the head producers is constrained by the risk of technological gap with its partners in the supply chain. We find out that innovations in Russian industry spread in accordance with two main models: vertical through corporate connections, and horizontal, based on the example of foreign companies in the atmosphere of developed competition.

The Impact of Acquired Knowledge Base on Innovation Performance Within Technological Acquisition

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This paper examines the impact of size of the acquired knowledge base on the subsequent innovation performance of acquiring firms undertaking technological acquisition. Based on Poisson Regression, the result shows that within technological acquisitions size of the acquired knowledge base has a nonlinear impact on innovation output, and its impact was moderated by absorptive capability of acquiring firms.

Innovation in and for Low Income Countries

Is GM cotton good for all or only some farmers? A look into impact heterogeneity and micro behaviour of cotton farmers in India

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Agriculture in India, as in many parts of the world is suffering from increasing use of inputs (fertilizers and pesticides), lowering soil fertility and increasing costs leading to problems of indebtedness to small farmers. Today, solutions to productivity problems are being promised by gene revolution. This leads one to question whether GM plant varieties are socially discriminating, or causing any environmental damage, as the GR is claimed to have been, despite its wide scale adoption. This paper seeks to examine whether positive results of the adoption of Bt cotton¹ in India, translate into a positive result for all types of farmers or only some. Second, it looks into the ecological and other externalities, if any, generated by Bt cotton as experienced by its adopters. Despite near total adoption and a majority of impact studies evaluating Bt cotton reporting higher yields, reduced pesticide usage there is still opposition from activists. This leads us to the question; at a micro level what factors drive the farmers' choice of Bt cotton and their compliance to refuge? To answer these questions, the paper develops a conceptual model and applies it to the survey data collected from cotton farmers in Andhra Pradesh, India. We derive the implications for farmer support from the results of our analysis.

Technology transfer through face-to-face contacts to Lao PDR from its neighboring developing countries

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Lao PDR is a land-locked less developed country surrounded by rapidly industrializing countries such as China, Thailand and Vietnam. Although these neighbouring countries are major recipients of foreign direct investments (FDIs) in Asia, they are also the three largest direct investors into Lao PDR. One of the main industrial policy concerns for Lao PDR is how to promote technology transfers from these neighbouring countries with more advanced industrial foundations. This paper empirically examines South-South technology transfers to Lao PDR from China, Thailand and Vietnam. Our empirical results derived from a questionnaire survey in 2012-13 show that South-South technology transfers through face-to-face interactions with experts from China, Thailand, and Vietnam have statistically significant positive correlations with process control improvements for indigenous Lao firms. Such interactions only with those from Thailand have positive influence for foreign-owned firms to introduction of new products.

Innovation Management

Entrepreneurial subsidiaries' upgrading and lead companies' responses: Micro- and macro-perspectives of industrial upgrading

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This paper investigates the interplay between subsidiary upgrading and changes in parent companies' GVC specialization, on the example of multinational companies' Hungarian subsidiaries. We argue that local subsidiaries' moving up the value chain is paralleled by similar shifts in parent companies' GVC-specialization. Hence, local entrepreneurial subsidiaries' upgrading contributes to preserving their position within their lead companies' value chains. We explore the relation between micro-level upgrading and macro-level transition to a growth path that contributes to graduation into a high-income economy. We find that local subsidiaries' upgrading, however knowledge-intensive and high value-adding the activities they specialize in, are, does not push FDI-recipient countries to a higher-order modernization and growth trajectory, since not only value generation but also value capture matters for bridging the gap that separates middle- and high-income economies. Value capture is associated with indigenous rather than with subsidiary entrepreneurship.

A hybrid R&D procurement model for neglected diseases

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This paper proposes a new 2-stage procurement model of public-private partnership to provide better R&D incentives for neglected and orphan diseases. The model amalgamates several known proposals of advance market commitment, subsidized clinical trials, and rewards based on therapeutical contributions of new drugs through a prize screening mechanism. The model is primarily intended to facilitate R&D of small firms by providing cash flow and sharing risks and costs of new drugs development, while constraining moral hazards. The model's advantages include reduction of overpayments, better disclosure of information, provision of production licences, and direct targeting of better quality drugs.

Learning by building: Complementary assets and the migration of capabilities in U.S. innovative firms

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Using a sample of production-oriented start-up firms that licensed their core technology from the Massachusetts Institute of Technology (MIT) from 1997-2008, we track the growth trajectory of 150 firms and conduct in-depth interviews with senior managers of a subset of these firms to understand the critical factors in their scale-up process. Because these firms? Innovations are often at the technological frontier, they generally need highly complex, advanced

manufacturing capabilities that require more time and capital to scale than non-production firms. In this way, they provide an important test of the U.S. innovation ecosystem and its ability to support such firms. We find that the U.S. provides fertile ground as they prepare to enter the commercialization environment, iterating prototypes, developing pilot production facilities, and in some cases entering into commercial production. However, when these firms need to take the significant leap into larger-scaled processes, both the need for additional capital as well as the search for production capabilities pull many firms to move production abroad. This movement, which often entails the temporary relocation of key personnel with tacit knowledge, leads to the migration of key skills, capability generation and knowledge development outside of the country. We argue the migration of these capabilities has two consequences: one, expected returns to public investment in innovation are not fully realized and two, the movement offshore of vital capabilities may put at risk the U.S.A future capacity to innovate.

Multinational corporations as channels for international technology transfer: Evidence from the South African innovation survey

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In this article, we present evidence consistent with South African subsidiaries of foreign multinationals being channels for the introduction of foreign innovations in the South African market. We use firm-level data from the second wave of the South African Innovation Survey, which covers the 2005-07 period. We find that subsidiaries of foreign multinationals are significantly more likely to introduce product and process innovations, as well as foreign new products and processes than domestic firms that do not belong to a foreign multinational corporation.

Does university entrepreneurship education matter in China

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This paper aims to study whether the content of university entrepreneurship education matches the needs of undergraduates in China and whether there are any differences of entrepreneurial interest and expectations between students who have received university entrepreneurship education and those students who have not. We select one business university, two technology universities and one medical university in Sichuan province as our case studies, and then send 350 copies of designed questionnaire to undergraduates in these four universities. Based on our first hand collected data from 315 valid feedbacks, we find that the content of university entrepreneurship education does not fully match the needs of students. Students are interested in seminars given by successful entrepreneurs. They prefer practical entrepreneurship skill training and following up entrepreneurship service, whereas universities focus on organizing business plan competition, entrepreneurship courses and seminars. Acquiring the abilities to analyze business opportunities and the environment of business creation, interpersonal communication skills and learning from successful entrepreneurs are the top three expected learning by students from entrepreneurship education. There are no big differences in terms of entrepreneurship interest and preferences of entrepreneurship training between students who have received training and students who have not. Generally speaking, students who have not received training put higher expectations on entrepreneurship education. For students who have had training, they show lower interest in business creation than students who have not. Some practical suggestions are provided at the end of the paper.

Product development partnerships for neglected diseases: Exploring a new model of pharmaceutical R&D

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Improved health is a foundation for inclusive and sustainable development. In the World Health Organization, governments have recognized that tackling global health problems requires making the innovation system responsive to the global burden of disease. One of the challenges is the lack of new medical innovations to tackle diseases that have a large burden in poor populations in developing countries, but no or little burden in the developed world. Neglected diseases affect more than 1 billion people around the world. Infectious diseases in particular account for 10 million deaths each year, of which more than 90 percent occur in developing countries (WHO Health Statistics 2010). In the last decade, the landscape of neglected disease R&D for medical products has been improved significantly due to increased funding and collaboration among different public and private actors. These include pharmaceutical companies, biotechnology companies and other medium and small firms such as contract research organizations and academic and other research institutions. Such collaboration has mainly taken place through Product Development Partnerships (PDPs). These are institutions aimed to develop new medical products based on a collaborative model of R&D and operate on a non-profit basis. They bring together public and private actors with various capabilities and core competences in the R&D chain to join efforts on medical product development for neglected diseases. PDPs for neglected diseases are a relatively recent policy experiment, not designed by economists. In this paper, we explore PDPs as a new form of organization of collaborative pharmaceutical R&D in the area of neglected diseases. We define for purposes of our study PDPs as independent, non-profit organizations that aim to develop medical products in the area of neglected diseases, leveraging strategic complementarities of the public and private sector. Specifically, we map the entire population of existing PDPs, describe the PDP model, analyze the fundamentals of the PDP model and its limitations, and identify commonalities and differences among PDP. Some of our initial findings are that PDPs are playing an important role in channeling funding and organizing R&D for neglected diseases. PDPs are acting as catalysts for R&D and function as a "system integrator", bringing together the core competences of various to accomplish the goal of bringing about new medical products to meet public health needs in developing countries. The PDP organizational model responds to market failures in R&D for diseases for which commercial incentives are insufficient to trigger private sector investment in R&D.

Innovation Policy

The role of government, universities, and businesses in advancing technology for SMEs' innovativeness

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Knowledge and technologies play an essential part in this rapid response capability, by maintaining opportunities for continuous improvement and innovation needed in the development of sustainable competitive advantage. However, the low capability of SMEs to provide the needed resources is a barrier to the in-house development of their technological capability. Consequently, external resources such as government, businesses and universities to support their performance in developing technological capabilities, so-called knowledge and technology transfer programs, are needed, since knowledge and technology transfer has been recognised as a shortcut to capability for process innovation improvement. This study was to provide theoretical and empirical support of the role of government, businesses and universities in transferring knowledge and technology for SMEs innovativeness in emerging economies and the impact of process innovation on SMEs competitiveness. The results suggest policy directions for governments to support SMEs in emerging economies.

Public research institutes and national innovation system: Empirical evidence for Singapore

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Building on Resource-based Theory, Transaction Cost Economics, Open Innovation, Absorptive Capacity and Dynamic Capabilities theories, this research develops an integrated conceptual model to examine the factors affecting a firm's propensity to acquire external technologies (PAET) from PRIs, innovation outcome and commercial adoption performance. Based on 250 licensing agreements signed between firms and PRIs in Singapore, this study shows that firms' reliance on basic R&D and readiness level of PRIs' technologies significantly affect firms' PAET with PRIs. A firm's internal resources (IP and technologies), external resources (commercial officers, researchers, technologies and IP) and dynamic capabilities (communication capability and absorptive capacity) are found to be critical in converting external knowledge to new or improved products or services, and in generating related sales.

Personality Team Goals and Tacit Knowledge Sharing Performance within University Research Team

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Chosen university research team as the research object, the influencing factors structure of intrinsic tacit knowledge sharing performance in university research team is established. Questionnaires among 243 university teachers from 8 universities in Jiangsu Province are carried out. According to the survey data, reliability and validity analysis of those questionnaires are made, and the motivation of tacit knowledge sharing is divided into life-motivation and social motivation using factor analysis. The diversity of population characteristics of team members to related index of tacit knowledge sharing is also analyzed, and path analysis on influencing factors of tacit knowledge sharing performance within university research team is carried out by Structure Equation Model (SEM). Research results show that personality of team members has a significant and positive effect on tacit knowledge sharing motivation.

International Entrepreneurship

Boundary-crossing job mobility, new product area entry and the performance of entrepreneurial ventures

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How does moving across career boundaries affect an entrepreneur's new venture? An entrepreneur's career experience is a critical resource for a startup, so when entrepreneurs cross industry or functional boundaries to lead startups, they may lack specific human capital that they need for performance. At the same time, the diverse experience they carry can enhance innovation and exploration in the startup. We highlight important consequences that occur for startups when their leader has crossed career boundaries, using a multi-industry longitudinal sample of high-technology firms. We find that entrepreneurs who cross functional boundaries to lead startups are more likely to enter into new product areas. We also find that an entrepreneur's industry boundary-crossing increases the probability of a failure for the startup, but that it also increases the probability of an IPO.

Open innovation implementation through open innovation communities: The case of Starbucks

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The proliferation of information and communication technologies has made possible the use of Internet as a channel for customer integration, leading to a radical transformation of the innovation processes. Today, open innovation communities represent one of the most common strategies for open innovation implementation. This paper analyzes the case of Starbucks that created the "My Starbucks Idea" platform as a place where customers can share, discuss and evaluate ideas. More specifically, this paper aims to test to what extent the decision making of the organization is influenced by the preferences of the community. For this purpose, the received comments and votes and the size of shared ideas have been extracted from the My Starbucks Idea website.

R&D cyclicity and credit constraints: Comparative micro-evidence from 10 new EU members and two data sources

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The opportunity cost approach suggesting a countervailing cyclical effect between R&D and short-term investments is the subject of theoretical and empirical debate. The lack of firm-level panel data on R&D and ambiguous indicators for demand fluctuations has hindered empirical testing of theories suggesting pro- or countercyclical R&D in interaction with credit constraints. Our contribution provides comparative firm-level evidence for the effect of credit constraints and

demand fluctuations on firms' R&D. We use micro-data of manufacturing firms from new EU member states drawn from Business Environment and Enterprise Performance survey (BEEPs) conducted by the EBRD and the World Bank; and Community Innovation Survey (CIS) conducted by national statistical offices. The first one (BEEPs) is superior in measuring firm finances and credit constraints, and the second one (CIS) might be favoured for measuring firm innovation activities and factors hampering innovation. Both datasets are cross-sectional by construction but contain modest dynamics in demand – real growth in firms' sales over recent three years. Our results on two independently conducted surveys (BEEPs and CIS4) show surprisingly similar negative effect of credit constraints and a resembling positive effect of subsidies upon firm R&D activity in new EU member states. Also the direct effect of real sales growth serving as a demand proxy returns highly comparable positive effect in both surveys, though the estimate remains insignificant in considerably smaller BEEPs sample. Disentangling the direct effects from R&D equation and indirect effects from credit constraints equation provides deeper insight. This approach implies that foreign ownership promotes R&D due to relieved credit constraints, whilst reducing the incentives to conduct R&D per se. Finally, the real sales growth is no straightforward measure for tackling the R&D cyclical puzzle. Firm sales growth not only captures the demand, but also strengthens firm financial standing via improved liquidity and reduces credit constraints. Whilst the last effect is more obvious and has expected positive impact upon R&D, the direct effect – interaction between R&D incentives and demand fluctuations – is still open for debate.

Slow Movement? On the role of incumbents in technology niches – an evolutionary network analysis

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No abstract

Thanks, but no thanks: Companies' response to R&D tax credits

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This paper sets out to investigate whether firms learn from their peers with respect to managing the R&D process. We do this by considering to what extent firms with similar economic activities and located in the same region mimic peers adoption of newly introduced tax credits for R&D, independent from other explanations such as unobserved correlated effects. Using hazard rate models on a dataset of R&D active Belgian companies, we find that there are significant regional and industry-level peer effects from firms that have accessed tax credits on the other enterprises probability of doing the same in the future. Specifically, the more companies access tax credits within an industry and region, the higher the probability of their peers doing so in subsequent years. Due to known issues with the econometric identification of peer effects, we use various specifications in order to check the robustness of our results.

Entrepreneurial orientation and network ties: innovative performance of SMEs in an emerging-economy manufacturing cluster

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This study investigates the role of intra-cluster ties, extra-cluster ties, and entrepreneurial orientation in shaping firms' innovative performance. We conduct our analysis on a primary data set of 120 SMEs in the Cibaduyut footwear-manufacturing cluster, Indonesia. We find that extra-cluster ties mediate the relationship between proactiveness and innovative performance. Also, a combination of high extra-cluster ties and risk taking exert a positive impact on innovative performance. Surprisingly, we find that risk taking negatively moderates the influence of intra-cluster ties on innovative performance. Overall, the findings of this study points to the synergistic effects of entrepreneurial orientation and extra-cluster ties on innovative performance.

Is their knowledge valuable to bring us newness? Effects of using assemblers' knowledge in parts suppliers' different inventions

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Although previous studies have touched upon the role of assemblers' knowledge on the supplier, there still need a systemic and deep discussion on the effect of using assemblers' knowledge in the parts supplier's inventions. We argue that the assemblers' knowledge has different effect on different inventions. In this paper, we focus on the newness of inventions, and according to it to classify inventions. We use two dimensions to express the invention's newness: the novelty of the technological domain (the invention is initiated in an unfamiliar domain to the supplier) and the emergingness of the knowledge elements (emerging or nascent technological knowledge is used in the invention). Then four types of inventions generated by crossing these two dimensions, and each type exhibits different kind of technological newness: 1) the type 1 inventions (using mature knowledge in a familiar domain), 2) the type 2 inventions (applying emerging knowledge in a familiar domain), 3) the type 3 inventions (using mature knowledge to enter a novel domain), and 4) the type 4 inventions (using emerging knowledge to enter a novel domain). An empirical analysis applying patent data of the US automotive industry shows that, automakers are the most effective knowledge source for the supplier's type 3 inventions, and they are equally effective to the supplier's internal source for the type 1 inventions; the use of automakers' knowledge has no significant relationship to the usefulness of the type 2 or the type 4 inventions. The results have been discussed.

The global product standardization as an evolvement process: The case of Ford motor company

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Global standardization of products has attracted attention of scholars back to 1980s and in recent years there are still researches on this issue. There are some factors proposed by existing literature to explain the standardization process. In this study, we observed a process of standardization over 30 years in Ford and we hope to explain this process with the factors proposed and discovering new factors. Data is collected combining secondary sources and interview. Multi-level analysis (industry-level, company-level, and project-level) is done to explain this process and some unreported factors are revealed to explain the standardization process. Implication could be draw to other MNCs as well as growing domestic firms.

Why industrial clusters could incubate entrepreneurs? Empirical research on the relationship between agglomeration effect and entrepreneurial intention

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Based on previous research literatures, this paper proposes a theoretical model and its hypotheses of the relationship between agglomeration effect and entrepreneurial intention. 452 entrepreneurs of industrial clusters are chosen as research samples, and the structural equation modelling is applied to verify the hypotheses and theoretical models. The empirical results show that agglomeration effect has significantly positive influence on perceived desirability, perceived subjective norms, perceived feasibility and entrepreneurial self-efficacy respectively. Entrepreneurial self-efficacy plays a partial mediating role between agglomeration effect and perceived feasibility. Both perceived desirability and perceived feasibility have significantly positive influence on entrepreneurial intention. Perceived desirability plays a partial mediating role between perceived feasibility and entrepreneurial intention. Agglomeration effect has an indirect influence on entrepreneurial intention mediated by entrepreneurial self-efficacy, perceived feasibility and perceived desirability. Conclusions of this paper enrich both industrial clusters and entrepreneurship theories, but also provide theory guidance for industrial clusters and entrepreneurs.

Economic Transition and Regional Entrepreneurship Development in China

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One of the most important changes in the transition of China from a centrally planned economy to a market economy was the admission of private enterprises which are allowed to have more than eight employees (the so-called siyingqiye) in 1988. In this paper we investigate the evolution and regional differences in the number of siyingqiye, as compared with the traditional getihu, i.e., individual entrepreneurs and private businesses which are allowed at most seven employees. Using a unique data base for 31 regions over the period 1997-2009, we find that the rate of siyingqiye is exponentially increasing with economic development, whereas the rate of getihu is decreasing from a certain level of economic development onwards. We also find that determinants of the rate of siyingqiye and the rate of getihu are substantially different. Among others, we find that the regional rate of siyingqiye is positively related to the number of graduates per capita but negatively related to FDI, suggesting the existence of crowding-out effects. Since the siyingqiye form the backbone of the SME sector (as they create more jobs per firm, and have the potential to grow into large firms), our findings are relevant for policy makers in China.

International knowledge management

An analysis of current research profile of Indian universities and technical institutions and their IPRs policies

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The innovative performance of a country depends to a large extent on how different actors relate to each other as elements of a collective system of knowledge creation. These actors are primarily private enterprises, universities and public research institutes and their employees. Innovation in the economy is fuelled through research and development activities conducted either by private players like Industrial labs, any individual's research activities, or by public bodies like publically funded research organizations, universities and academic institutions. This project attempts to study the role of universities in the national innovation system. Firstly we present Indian universities and institutions' current publication and patenting activity and hence current research profile of Indian academic institutions (all central universities, state universities and IITs). In the second part we present a comparative analysis of various provisions and guidelines of proposed Indian bill i.e. "Protection and utilization of Public funded Intellectual Property rights - 2008" with that of current IPR policy of Indian universities and academic institutions. This shows the preparedness of Indian universities for the act.

The international patent propensity divide

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This article makes a conceptual and empirical contribution towards an innovation-based growth theory for developing countries. It adheres to the growing importance given by theoreticians and policy makers alike to re-visiting the neoclassical economics "one size fits all" innovation policy funnelled by current international intellectual property instruments. In so doing, the article offers a unique statistical country panel data model for comparing patent propensity rates as proxy for national innovation over sixteen years between 1996-2011 between two groups of countries adjoining the Developing-Developed countries divide. These are the IMF's labelled Emerging Economies perceived as hotbeds of meaningful innovation within the developing world the Advanced ones, mostly OECDs. It finds a statistical difference (gap) between relatively high propensity to patent in advanced economies, in comparison with the lower one by neighboring emerging economies. It further corroborates earlier related findings whereby countries today are converging to multiple innovation-based growth equilibria rather than to a single 'one size fits all' over their propensity to patent as proxy for domestic innovation. A second finding confirms that Emerging Economies indeed are slowly yet steadily converging towards advanced countries over their propensity to patent.

The impact of international collaboration between BIC EMNS and EU: A patent data assessment

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In this paper we look at a rather specific aspect of BIC-EU collaborations as we are going to compare a sample of domestically developed patents and a sample of coinvented patents (patents whose inventive team is composed by either Chinese, Indian, and Brazilian inventors and at least one European inventor) along several metrics capturing patent value and characteristics. Furthermore, we are going also to examine what is the effect of having EMNCs involved in the technological collaboration. Preliminary results show that coinvented patents seem to be more valuable than the domestic ones. The participation of EMNCs has relevant effects on the value and the characteristics of the patents. Inventions developed in these entities have a rather limited impact on future innovations but they might bring some economic value to the company in term of market access and patent portfolio building.

Innovation input, innovation output and firm performance: A dynamic panel analysis

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This study provides empirical evidence on firm performance impact of innovation in Germany based on data generated from Mannheim innovation panel over the years 2003–2010. The data which consist of a large number of manufacturing and service sectors across the country are collected on the basis of the standard Community Innovation Survey (CIS) guidelines which allow us to develop two ways of measuring innovation: using innovation input and innovation output. A quantitative indicator, innovation input takes R&D intensity, investment innovation intensity and total innovation intensity while innovation output is measured by product innovation to firm, product innovation to market and process innovation. Further, we proxy firm performance by labor productivity and estimate the effects the two innovation categories have on productivity of labor using system GMM estimator which takes into account endogeneity, fixed effects and time dynamics. The estimations show three major results: i) that innovation input and innovation output have different impacts on productivity of labor, ii) elasticity of labor productivity with respect to innovation input and innovation output differ among manufacturing, services, and manufacturing and services (aggregates of industries), and iii) innovation input tends to explain performance of output per unit labor better than innovation output does.

Promoting traditional textiles from West African rural communities through communal intellectual property models

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The paper discusses the possibility of using communal intellectual property models to promote traditional textiles originating from four West African countries, which are produced mainly by small or one-man holdings. It identifies the challenges faced by the producers in terms of market access, unfair competition from modernise products, and misappropriation of their products. These challenges threaten the survival of their long standing traditional knowledge. It notes that the producers have not been able to exploit the potential of their textiles to succeed in high end markets for many reasons mostly arising from weaknesses connected with their small size. To address these challenges, it refers to examples from other countries where communal intellectual property models have been used to address similar challenges. It discusses the extent to which these man be adopted in the case of the West African Countries.

New Product Performance and Exploratory and Exploitative Innovation in Technology Ventures The Moderating Role of R&D-Marketing Relationship

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In this study we examine how the firm's exploratory and exploitative innovation behaviours are related to the new product performance. We argue that both exploratory and exploitative innovation behaviours could help improve the new product performance, but exploratory innovation would play a more significant and important role than exploitative innovation. We further propose that this process will be moderated by R&D-Marketing relationship. Using a sample of 219 new technology ventures in China, we find strong support for our arguments. Our study contributes to a better understanding of the innovation and new product performance.

Business models and marketing practices of internationalising Norwegian maritime firms: the framing effects of business service innovation

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This article explores the relationship between business models and marketing practices of Norwegian maritime firms during the process of internationalization. Two questions are explored: 1) How do Norwegian maritime firms make management innovation in different elements of their business model from three main dimensions including technology, market offering and network architecture? 2) How do business models affect marketing practices (of maritime firms)? We conceptualise a business model as a 'framing device' for translating the elements of the business model into profitable business decisions. We then undertake an in-depth framing analysis of key informant interviews with two market-leading Norwegian maritime firms that have used business service innovation to internationalise their business in China. Our analysis provides three important contributions to the literature on business model/service innovation: business model as a communication tool for marketing, the effect of the context of network architecture on the success of a business model, and the effect of customers' framing of needs on manufacturers and business-service providers. The managerial implications of our study are critically examined.

The sustainable (eco) innovation output in the OECD area- analysis based on patent data at country level

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This paper studies and measures the output of sustainable innovation in the OECD area. Results are based on patent records and their use as indicators of innovation output. Two points have to be noted: First, It is of particular importance, when examining the innovation output of a broad area, which comprises of many and different countries, to identify main trends, highlight major innovation fields, locate fields of dynamism and indicate fields for further development and specialization. Second, the reference to the historical evolution or long-term perspective is necessary or even inevitable for such an analysis. In this context, this paper examines patents extracted by the OECD patent database for the total of OECD countries for a period of 13 years to study the innovation output in the sustainable area, aiming at providing a deep understanding of the existing situation and an objective statistical reference for future research in this field. Results show sustainable innovation accounts for 6.97%, with the fields general environmental management and missions abatement and fuel efficiency in transportation being the most important. In addition, the best sustainable innovation can be found in four European countries (e.g. Slovak Republic, Luxembourg, Greece and Denmark) and Japan.

The formation of internal innovation capability and external sources in Asian economies

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To achieve successful innovation, a firm has to own the capacity to create innovation. Based on survey data from four ASEAN economies, this paper identifies the content of internal capability at the technological level, in managerial organization, and through human resources. To make this concept more tractable for analysis, the index of internal capability using AHP (Analytical Hierarchy Process) was used. This paper also examines how external sources such as MNCs, universities, and public organizations enhance internal capability. This paper also attempts to identify the transmission mechanisms through which external sources influence internal capability. By using probit/Tobit models, the following results were obtained: (1) Internal capability promotes product innovation; (2) External sources influence enhanced internal capability; (3) Information from public organizations improves internal capability; and (4) Transmission channels which elevate the internal capability of local firms are extracted through the dispatch of engineers and cooperation for quality control with foreign MNC/JVs.

International comparison and its enlightenment in the promotion of enterprise continuous innovation power in globalization

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With international comparison and study of continuous innovation power of internationalized innovative enterprises as the purpose, based on literature research, with "Enterprise culture-Innovation strategy-Innovation investment-Innovation organization-Innovation ability" as the main research line, through case study of three internationalized innovative enterprises including Huawei, Samsung and Apple, comparison and study is made in terms of the mechanism of the influential factors in the process of the formation and promotion of continuous innovation power of three enterprises on enterprise innovation performance. The research result shows that the mechanism of the influential factors in the process of the formation and promotion of continuous innovation power of three enterprises on enterprise innovation performance is generally similar; however, the degree of the effect of various major influential factors on enterprise innovation performance is different due to different social culture in every country.

Stumbling blocks of born globals

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The Born Global firms have been an object of study for almost 20 years and recent research in this type of entrepreneurial enterprise has focused on establishing conceptual frameworks for the variables and factors leading to performance and identifying a formula for success in performance. Thus, the obstacles and barriers for performance have, to a lesser degree, been studied. In an explorative multi-case study with 15 originally Danish Born Global firms supplying the health sector, the objective was to identify stumbling blocks for the development of the business of the Born Globals. The study identified 11 stumbling blocks where time spent establishing financing, understanding the customer organizations, selecting marketing variables and access to users were common stumbling blocks. The study contributes to the research area of Born Globals as it uncovers the issues for investors and management in estimating the time and effort needed to develop the Born Global firm, and the implications for further research are discussed.

Strategic management of innovation in manufacturing SMEs exploring the predictive validity of strategy-innovation relationship

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This research investigates strategy-innovation relationship in manufacturing SMEs. The scope of investigation encompasses the technical, marketing, and organizational dimensions of innovation. Our work extends research on Miles and Snow framework of strategy configurations by exploring the relationship between attributes of strategic posture and innovation behavior. This approach aims to provide a more accurate representation of strategic management of innovation in manufacturing SMEs. Results (1) confirm the differentiated propensity to adopt specific innovation behaviors among strategic postures, thus confirming posture-specific innovation characteristics, and (2) highlight differentiated associations between strategic attributes and innovation attributes among strategic postures, thus bringing new insights on strategy-innovation fit. Results also emphasize the influence of hybridization of strategic profiles on the predictive validity of strategy innovation relationship. Finally, this research provides useful managerial inputs on the strategic management of innovation in SMEs from an innovation effectiveness standpoint.

Technology licensing and innovation performance: evidence from Chinese latecomers in high-tech industries

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As a catalyst for endogenous technological change, inward technology licensing can improve a firm innovation performance. This paper investigates the effect of learning by licensing and choice of licensed-in technologies on innovation performance. We extend the inward technology licensing strategy to the latecomer context, addressing two critical factors: (1) number of licenses and (2) age of licensed-in technology. We hypothesize about the relationship of the licensee innovation performance with the number of licenses and age of licensed-in technology, as well as the moderating effect of the licensee absorptive capacity. Based on a sample of 154 Chinese high-tech firms, empirical evidence is found in support of our arguments. This study is the first to consider the significance of age of licensed-in technology to innovation performance and found that the number of licenses has a curvilinear relationship with innovation performance. We also confirmed the significant moderating effect of absorptive capacity on the above two relationships.

International Knowledge Transfer

Patent club convergence among countries

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The article uncovers profound empirical and conceptual shortcomings concerning the "one-size-fits-all" innovation and intellectual property-related policies used internationally. These policies surely are funneled by the World Trade Organization (WTO) and the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) or the World Intellectual Property Organization (WIPO)'s archetypical Development Agenda. The article offers a novel delineation of these policies vis-à-vis distinct country groups or "convergence clubs." In so doing, the article offers a unique statistical model carrying out hierarchal cluster analyses for sixty-six innovating countries twice during the 1996–2011 time series period. The model detects country groups that are similar in their convergence patterns over patent propensity rates as proxy for their domestic innovation rates. Moreover, the article suggests a more accurate demarcation of two large patent propensity gaps and the convergence patterns therein. The first such gap refers to the stable expanse that separates the middle group of 'followers' from the stronger 'leaders' in terms of patent propensity capabilities. The second similarly refers to the impressive yet steadily closing gap that separates the weaker 'marginalized' from the 'followers' clubs. Overall, the article's findings should lead to optimizing future WTO member coalitions among such groups or clubs.

FDI, technological choices and spillovers in an emerging market economy: A study of Indian manufacturing industries

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With inflow of FDI and MNE operations in the Indian economy in the 1990s, the domestic firms had to face a very crucial issue of technological choice in the face of competition. On one hand technology could be imported in both embodied and disembodied form, while on the other; thrust could be given to develop local R&D. Again, there could also be a possibility of combining both. This paper tries to analyze the factors influencing the firms' technological choices across high-tech and medium-tech industries in the post reforms era. In this process, the role of the ownership of firms is taken into account. A logit framework is constructed to empirically explore the technology choice determinants. Results suggest that foreign ownership and technological spillovers from both domestic and foreign firms have significant effect on the technology choice of most Indian manufacturing industries. Dependence on imported foreign technical know-how is also evident.

The influence of scientific research funding, national innovation policies and institution-level supports on academic patenting in the Republic of Ireland

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Mode of Extraction –Technology Transfer Spillovers and FDI Policy

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Resource rich countries often depend on foreign direct investment to extract their resources. Host country governments may choose to set up a Joint Venture between a local state-owned firm and a foreign multinational. In more advanced economies, however, state-owned firms often compete with foreign companies that are extracting part of the nation's resources. We analyse foreign firm and host country preferences under these two possible modes of extraction. Differences in the degree of FDI spillovers and the level of the cost of technology transfer provide a novel explanation for widely observed modes of extraction and related foreign ownership restrictions.

Upgrading of EMNEs' acquire subsidiaries in developed countries: an unintended consequence of asset - seeking OFDI?

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Despite the rise of emerging economies multinational enterprises (EMNEs) and their rapid internationalisation, we still know very little about the impact of their overseas foreign direct investment (OFDI) on host economies. The extant literature is dominated by discussion of the impact of developed countries multinational enterprises (DMNEs). Using a recent acquisition in the UK by a Chinese firm as case study and integrating the literature on subsidiary evolution, knowledge transfer and global value chains (GVC), this paper studies the impact of EMNEs on their newly acquired subsidiaries in developed countries particularly regarding the latter's capability upgrading. The findings demonstrate that the Chinese parent firm helped its newly-acquired subsidiary in product, process, functional and intersectoral upgrading. This seemingly counter-intuitive outcome is ascribed to the parent firm's strategy : upgrading of the subsidiary in developed countries was supported by the parent EMNEs precisely because of the latter's asset-seeking acquisition motive. The study is the first study of upgrading in a hierarchical governance structure with EMNEs as lead firms.

Intellectual Property Rights, FDI, and Technological Development

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This paper presents the double trade-off of strengthening intellectual property rights (IPR) protection in a lagging country to attract foreign direct investment (FDI) and foster technology transfer. The first trade-off occurs between attracting FDI and deterring international technology spillovers, and the second between encouraging domestic innovation and suppressing technology diffusion. The optimal level of IPR protection depends on the technological capability of the host country (and its industries) in terms of technology gap and the efficiency of domestic innovation. For countries at a lower stage of development IPRs should be just strong enough to induce FDI. Countries at a more advanced stage of development also gain from IPRs by encouraging their domestic innovators; their optimal IPR regime therefore lies above the FDI-inducing level. The results conclude that although a lagging country can use IPR protection as an instrument to attract FDI, a unique global policy of harmonized IPR protection that does not take into consideration the level of development is not necessarily adequate as it may shift welfare from host to foreign firms.

Chinese firms' M&A in Western countries: A statistical comparison between M&A activities of Chinese and German firms

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With China's rapid economic growth in recent decades, many Chinese firms decided to expand abroad through mergers and acquisitions (M&A). In this study, we aim to uncover the real motivation of Chinese firms' outward foreign direct investment (OFDI) in Western developed countries. We do so by comparing the M&A behavior of Chinese firms to the M&A behavior of German firms in Western countries since 2008. By conducting several statistical tests (e.g. Anova and Tobit regression) test we find evidence that Chinese firms have a stronger motivation to seek for natural resources and markets when expanding abroad, compared to German firms and are less averse towards financial risk of a target firm. This research does not find a significant difference in strategic-asset seeking behavior among M&A activities of Chinese firms and German firms.

FDI and regional innovation capabilities in China: the moderating roles of industry diversity and specialization

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FDI brings technology spillovers. But little is known about the interactive effects of industrial structure at the regional level on how FDI works to bring spillovers. This is particularly relevant in the context of China as the leading recipient of FDI which is both regionally skewed regarding distribution of FDI and unevenly distributed by industry. We look at the effects of FDI through regional industrial structure on innovation at the regional level in China. Adopting a ten year panel of data on FDI into China, this paper empirically investigates both direct spillover effects of inward FDI and the moderating roles of industry specialization and diversity in affecting regional innovation capabilities. The results indicate that inward FDI has positive effects on regional innovation capabilities, but industrial specialization diminishes the positive effects of FDI whilst a more diversified industrial structure enhances spillovers from inward FDI. Policy implications are also discussed.

Chinese outbound mergers and acquisitions: an anatomy of domestic stakeholders and strategic actions

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The establishment and maintenance of legitimacy in home country environment is a critical strategic issue, concerning outbound mergers and acquisitions by Chinese acquiring firms. Based on stakeholder theory and institutional-based view, we make an anatomy of domestic stakeholders, i.e. real stakeholders (senior management and shareholders), stake-watchers (domestic institutional investors, governmental service agencies and officials), and stake-keepers (the regulatory part of the governments at both the central and various local levels). Then, we establish a strategic action model in China's conflicting institutional context, i.e. through the strategic actions such as manipulation, negotiation and adaptation, to manage real stakeholder, stake-watchers, and stake-keepers. In so doing, Chinese acquiring firms maintain the legitimacy of outbound M&A in home country and obtain critical resources. Further, inductive case studies of three Chinese acquiring firms are explored. Our most important contribution is revealing the interplay between senior managers and other stakeholders.

New Trends in Entrepreneurship

Lessons learned from the national institutes of health Oxford Cambridge program for forming and maintaining international collaboration

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As research-driven innovation becomes a global enterprise, the need for improved methods of forming and maintaining international research collaboration has increased. In order to investigate this question on how to best guide international collaboration, we turned to the National Institutes of Health (NIH) Oxford-Cambridge (OXCAM) program, a currently untapped resource for addressing such questions. In this program, every individual is given the task to form and maintain an international collaboration. The result has become a number of unique case studies for international collaborations that involve a number of different groups. Much can be learned from the collective experiences of these individuals towards understanding the potential for international academic networks driving innovation. By consulting current individuals in the OXCAM program, we developed a list of important lessons about forming and maintaining productive international collaboration. Using a Likert scale, we also demonstrated that these statements showed overall agreement within OXCAM.

Entrepreneurial survival among immigrant Chinese and native individuals in Portugal

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We use longitudinal matched-employer employee data for entrepreneurs and firms, to investigate the survival dynamics of immigrant Chinese vs. native Portuguese and Other immigrant entrepreneurs in Portugal. In our empirical approach, survival model (time-to-event) analysis is developed to assess entrepreneurial survival rates among individuals with Chinese nationality active in the Portuguese labor market in 2000-2009. Results show that Chinese immigrants' businesses do survive less than the native Portuguese, but perform better than other immigrants (i.e., have a lower hazard of exiting entrepreneurship). Among our explanatory variables we find a particular positive effect of firm size and foreign investment on the survival rate of Chinese individuals in entrepreneurship.

Certification of venture capital reputation in initial public offering of entrepreneurial firms

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Certification role of venture capital can help to mitigate information asymmetry between insiders of company and external investors. Such research has been more academic attention, but existing literature on empirical results still show bigger divergence. From the perspective of direct cost and opportunity costs of issuance, based on the data of 281 listed companies from 2009 to 2011 in China Growth Enterprise Market, we empirically test certification function of venture

capital reputation on Initial public offering of entrepreneurial firms with the moderating role of underwriter reputation, and finally confirm some of underlying hypotheses.

New Trends in Innovation

Assessing service innovation capabilities - an empirically grounded approach

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Innovation is a prerequisite for the development and maintenance of a firm's competitive advantage. Thus, being of such importance, research on innovation capabilities has been established for decades as a field of interest for scholars. Research on service innovation (SI) capabilities, however, still lacks a common understanding of their concrete nature. Within this study, a set of such capabilities and performance indicators is elaborated to fill this research gap and to provide a suitable point of departure for future studies in this field. Therefore, the authors build on recent works and models of the service innovation research and conduct an exploratory study consisting of several interviews with practitioners.

An approach to information sharing process on socio-technical system demonstration test with an example of a smart grid system demonstration test in Japan

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This research clarifies the processes for sharing information on smart grid system demonstration test results conducted among multiple firms who have different interests. One aspect that should be noted in such an information sharing process is the explicating of the role of the government in the processes of coordination among firms. The process for sharing information in the demonstration test is separated into two steps. The first step is sharing information within each project and among the projects to develop each system and the network system as a whole. The second step is sharing information within the project in order to report demonstration results to the Ministry of Economy Trade and Industry in Japan by the representative firms and the regional government. What became evident through this case study is that establishing the coordination council viewpoint from multiple levels (Multi Level Perspective) should be considered not only from the system introduction and diffusion phase but also from the demonstration test phase for improved information sharing.

The impact of client coproduction on service innovation performance

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Since services are created as they are consumed, always involved in the service production process are clients, working as co-producer. This client involvement will influence both the service production and innovation. Based on this rationale, six hypotheses are proposed regarding the influence of client co-production on service innovation performance. They are verified with data from 231 knowledge-intensive business service firms in China, and the following four are confirmed: (1) Client co-production has significantly positive influence on service innovation performance; (2) Client knowledge transfer fully mediates the influence of client co-production on service innovation performance; (3) Innovation orientation

moderates the influence of client co-production on client knowledge transfer; (4) Innovation orientation moderates the influence of client knowledge transfer on service innovation performance.

Special Panel Session: STEM-Preneur Initiatives: Opportunities, Operations and Outcomes

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Special Panel Session: Innovation in Low Income Countries

Policy Dynamics and Institutional Dysfunctions in Public Agricultural Research and Innovation

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No abstract

NSI to IDS - From the National System of Innovation to an African National Innovation and Development System (IDS)

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There are four approaches to economic growth and development. The first is historical development that is best articulated in the history of development studies; the second is the Listian political economy approach that inspired import substitution industrialization and the developmental state. List introduced the political context explicitly and forthrightly to the challenges of economic development. The third is the Schumpeterian innovation approach to economic development. The latter introduced innovation as emerging with the dynamics of creative destruction by introducing explicitly sociological constraints to the dynamic of economic development. The last is the uneasy treatment of economic development by neo-classical mainstream economics. Neo-classical economics did not appreciate the emergence of development economics as a separate field and later in the 80s some neo-classical economists denounced the field with books such as the poverty of development economics (Deepak Lal) prompting reactions such as the Dilemmas of Economic Development by John Toye and others. What this demonstrates is that there are a number of ways development economics is going through. What this paper will do is not address all of them, but select one approach, and that is the innovation approach to development economics. We think it will be useful to explore how the system of innovation has evolved, used and applied in order to filter through the epistemic virtue from it that can be employed to shed light on how development economics can evolve into a development and innovation system. We propose to unify the development economics with the economics of innovation by suggesting the new conceptual framework of innovation and development system.

Barriers to Diffusion of Innovation in Low Income Countries (LICs): In-depth case study from Ghana

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Innovation is a key element of industrialisation and catch-up in developing countries. The nature of innovation in low income countries (LICs) is strongly shaped by the different composition of the industrial sector specifically and the economy overall, compared to industrialized countries. Therefore technological capabilities in the context of LICs are more

than research and development (R&D). This study aims to explore the nature of innovation in the private sector and the determinants and transmission channels for innovation creation, diffusion and adoption in Ghana. The analysis focuses on three sectors of the industry relevant for the Ghanaian economy: food processing, textile, and firms supplying construction businesses. To capture how the characteristics and constraints typical of informal settlements can shape the nature of innovation and the way innovation is adopted or created, half of the firms sampled in the food and textile sectors are from the informal sector. We surveyed a total of ten firms in which we carried out 32 in-depth interviews among managers from different divisions and workers. In general, the Ghanaian firms are active in innovation although most of the innovations are incremental and not ground breaking. We observed innovation activities in broad sense, not only in production process and improved products, but also often seen in new or improved management and marketing practices.

Special Panel Session: Intellectual Property Rights Protection in Emerging Economies

Estimates of the value of patent rights in China

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We estimate the value of Chinese invention and utility model patents that were applied for during two periods, 1987–1989 and 1986–1998. We find that patents applied for by foreign entities invariably have higher value than do those applied for by domestic entities, and the gap is significant. The total value of invention and utility model patents in the 1987 cohort together represent about 40 percent of China’s 1987 governmental R&D budget.

National Intellectual Property Systems and Economic Development

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This project addresses the role of national systems of intellectual property (IP) in the socio-economic development of emerging countries, notably through their impact on innovation. It develops a methodology that identifies the key mechanisms how IP systems can support emerging countries’ innovation and development objectives. The aim is to allow conducting country studies of IP so as to identify relevant policies to strengthen national IP systems’ contributions to their innovation contexts. The project applies the methodology and conducts country studies of Colombia and Indonesia.

The Informal Economy, Innovation and Intellectual Property – Concepts, Metrics and Policy Considerations

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In this working paper, the authors connect concepts, definitions and data regarding the informal economy, innovation, and intellectual property in order to establish a framework for further qualitative and quantitative research and the improvement of public policies in respect of these issues. First, the authors review the literature defining the informal economy, and present an original synthesis of statistical data regarding the informal economy’s social and economic significance. Second, the authors apply established and emerging concepts of innovation to the context of informal systems. Third, the authors discuss a spectrum of appropriation mechanisms, ranging from formal intellectual property rights to informal mechanisms of knowledge protection, sharing and exchange. Fourth and finally, the authors review existing policy approaches toward innovation in the formal economy, and establish a framework to consider future scenarios for the application of intellectual property concepts in this context.

The economic argument for a patent system: A modern development perspective

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The global economic crisis has sparked renewed interest in reinvigorating the foundations for economic growth and development. In this context, technological progress and intellectual property will play a crucial role. This essay outlines the main economic rationale and development impact of establishing a patent system. It applies the findings of the aggregate and country-specific economic literature to this advanced developing country X.

Universities and Innovation

The impact of knowledge structure on academic patent's value: Evidence from the Max Planck society

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Academic patents generated from public research have high economic value and social returns. An important feature of academic patents differing from non-academic patents is that they are much higher in "Importance" and "Generality", in a form of a longer time window in forward-citation distribution. This paper uses the academic patent data of the Max Planck Society from 1991 to 2010 to investigate which factors influence and how they affect the specific feature of academic patents. Cluster analysis of patent cooperation network is used to examine the function of knowledge structure recombination in effecting academic patents' value through cooperation. The results suggest that knowledge structure recombination plays a key role in the process of academic patent production, and technological and scientific knowledge structure indifferent patterns of cooperation have significant positive impact on academic patents' value. It is also found that patent examiners are important actors in scientific and technical knowledge integration, which implies that they improve the quality of academic patents with their understanding of scientific knowledge and possible application. These findings make important contributions to understanding the unique role of academic patents in knowledge transfer and commercialization.

Indicators for measuring knowledge transfer activities from university to society

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In this article, we review and analyze the literature on the development of knowledge transfer indicators, with the objective of establishing a viable framework within which to integrate the accumulated stock of achievements in this area. The paper contributes an important methodological advance at a time when knowledge transfer activities at universities are being advocated by such stakeholders as policymakers and entrepreneurs as well as the wider society as a "Third Mission" of universities beyond teaching and research. Heightened worldwide competition, driven by the globalization of trade and production activities, has raised public expectations of universities regarding this new mission. Universities are increasingly perceived as an important source of assistance with respect to recovering from ongoing global financial turmoil. This paper seeks to improve our capacity to measure effective knowledge transfer by addressing the following research questions: How can complex interactions between universities and society be gauged, evaluated, and benchmarked? In particular, what are the key constituents of knowledge transfer activities? What are appropriate proxies or indicators that can be used to effectively measure knowledge transfer activities?

Publicly funded university based research projects: The diverging influence of project characteristics on soft and hard outcomes

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This empirical paper relates university based research project characteristics in terms of sources for research, involvement of a broad range of actors in the conceptualization of a project, breadth and depth of partner involvement, and government funding to the tangible outputs of government funded joint research projects. The study is based on the evaluation of the "programmes mobilisateurs" in the frame of the evaluation of the Plan Marshall 2. Vert par IWEPS (Institut wallon de l'Evaluation, de la Prospective et de la Statistique), based on a demand of the Walloon Government. Attention is paid to the translation of research in the project into soft outcomes which refer to results that are close to the market, and hard outcomes which refer to commercialization activities. The novelty of the paper is twofold. First, limited empirical research exists at project level on the range of soft to hard outcomes of publicly funded research. The inclusion of a broad range of indicators sheds new light on this relation. Second, the study of the effects during a time-span transcending the project duration provides new insights in the influence of pre-commercial outcomes on later successful commercialization. The paper adds to existing insights for policy makers regarding the determinants of project success and to the additionality of public funding at project level.

Factors affecting university-industry cooperation strategy - micro-level perspective of SMEs

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The purpose of this paper is to examine the cooperation of universities and small- and medium-sizes enterprises (SMEs) to identify negatively and positively affecting factors. The paper is based on a qualitative study comprising of semi-structured interviews with university researchers and representatives of SMEs in Estonia that have prior experience of U-I collaboration. The results confirm that besides tangible factors intangible ones like openness, explicit objectives and clear communication need to be addressed in higher attention to stimulate U-I cooperation. Main motives, facilitating and tackling factors were identified. This paper is one of the few to examine the cooperation of universities and SMEs in depth. The findings contribute to the literature of U-I relationships in European context where majority of the enterprises are SMEs.

Sino-foreign university alliance and its implication: An analysis of the development in the Chinese university reputation

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Since the Chinese government introduced the new regulation in 2003 for the internationalization of higher education sector, there has been a steady increase in Sino-foreign university alliances. Among others, reputation building appears to be a leading motive for the Chinese university in the alliance. However, there is no research enlightening whether these alliances meet their intended purposes. This empirical study attempts to conceptualize and analyze the actual performance (reputation building) of the Sino-foreign alliance. The evidence draws on 717 programs in the alliance, 261 Chinese universities and 327 foreign universities. The findings suggest that reputational contents of the partner, structural configuration of the alliance, national institutional conditions contribute to the flow of reputation between partners. In contents, economic ranking of the foreign country has a positive influence on reputation flow. In configuration, diversity of foreign countries and intended duration matter has positive effects. In national institutional conditions, national cultural distance matter in transmitting the interuniversity reputation flow.

Complexity caters collaboration: An analysis of MNEs' Open-Innovation for new product development in China

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High-technology companies are increasingly developing their new products in foreign countries. In doing so, they either keep their activities inside the firm, or they open up by collaborating with others. The perceived theory suggests that organizations tend to seek closed-innovation when they face technological complexity. Keeping innovation within organizational boundaries can increase upside opportunities and decrease downside risk. However, this is not the case in some emerging economies. The current study presents the alternative view that technological complexity in a new product development (NPD) project induces an open-innovation structure. Thus, knowledge complexity has a positive association with inter-organizational alliance. The empirical evidence draws on four dimensions of knowledge complexity in patent claims and new product development. The findings support that open-innovation reflects on four dimensions and levels of knowledge complexity: (i) main claims, (ii) sub-claims, (iii) links between main claims, and (iv) links between subclaims. Thus, the complexity-collaboration link raises a dilemma. Organizations seek strategic complexity in favour of closed-innovation. In consequences, strategic complexity pushes for open-innovation. The article discusses theoretical and practical implications and implications.

Structural versus organizational factors influencing the propensity of firms to collaborate with universities

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This paper studies the propensity for university industry collaboration (UIC) among innovating firms in the newly industrialized economy (NIE) of Singapore. It is hypothesized that in the context of an NIE, organizational factors are more influential than structural factors in explaining UIC propensity. The hypotheses tested address the organizational characteristics of firms in terms of technological capability, technological sophistication and openness to external sources of innovation. The findings suggest that there is a threshold of technological sophistication for collaborating with universities. Two measures of technological sophistication, patenting threshold and IP management capability, significantly differentiate firms that collaborate with universities from non-collaborators, especially in the manufacturing sector. Openness to external collaboration opportunities in general also significantly influences university collaboration. In the main, the results support the conjecture that organizational factors are more significant determinants of UIC propensity than structural factors.

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